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INVESTIGATION OF DIGITAL OPTION TRADING

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Abstract. Nowadays there are plenty of ways how people can invest their savings in order to increase their wealth in the upcoming future and option contracts are one of the ways to achieve this. It is possible to trade option contracts by using many different strategies that can bring many opportunities for the investors. However, in order to succeed and end up with a profit, relevant steps have to be taken as well as many risks considered. The goal of this article is to create and investigate selected option trading strategies through their implementation in digital trading platform. In order to achieve this goal theoretical perspective on derivatives and their fundamentals, including option background and trading strategies, are being analysed, selected triple – strip and strap – option trading strategies are being created and implemented in “IQ Option” digital trading platform, and finally results of both trading processes are being analysed and evaluated. After examining theoretical aspects of derivatives and option trading as well as implementing the presented methodology for option strategies creation, final conclusions are being given.

Keywords: digital trading, investing, option contract, call option, put option, triple strategies, strip, strap.

Introduction

In the world full of financial difficulties, uncertainties about living conditions and one’s wealth in the upcoming future, investing matter was always an important thing to consider. It is known that more or less all people tend to save and accumulate money. However, why they are doing so remains unclear and can vary from case to case due to various reasons and can be done to achieve many different goals. These may include the desire to postpone current consumption to the future in order to gather funds for making down payments on a house, financing family member’s education, starting a business, financing retirement, or for meeting financial emergencies that may arise throughout anyone’s life, and many more. On the other hand, only saving and accumulating funds “in a sock” or “under the pillow” will not help to increase their value and to achieve desired future goals more easily. Therefore, exactly at this point investing and financial trading come to light and brings numerous possibilities to increase the value of savings.

Generally, it does not really matter whether people decide to trade or invest into stocks, bonds, precious metals, mutual funds, derivatives, created investment portfolios or anything else, until the overall objective is to make money work for them. On the other hand, it is crucial to understand that investing is not only about making money, but also knowing how to do it, since countless risks are brought together with opportunities. Some investments may have none or very little amounts of risk, but also small rewards, whereas others may have so large risks that they might come out of hand easily, but in the case of success can also bring large rewards. Exactly this is the reason why the knowledge about investing as well as risks associated with it, and the willingness to take them, is essential for everyone who makes the decision to invest.

In this paper, the main attention will be focused on one type of derivatives known as option contracts and their trading strategies. It is not a secret that making trading and investment decisions without any strategies makes the whole process a lot riskier as well as problematic and for option trading the situation is no different. For this reason, the usage of various option trading strategies can provide investors with more opportunities as well as make trading much more appealing for them. However, in order to prove the actual advantages of option strategies and the possible opportunities for investors, it is important to investigate the field more deeply and apply the strategies not only theoretically, but also practically.

The object of this article is option trading possibilities using specific strategies.

The aim of the article is to create and investigate selected option trading strategies through their implementation in digital trading platform.

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1. Theoretical perspective of derivatives and their fundamentals

Derivatives and their fundamentals is a very wide and complex subject. For this reason, it is important to analyse not only their definitions, general essence, but also how they are classified in order to get a better understanding of the whole matter. Moreover, since creation of options strategies is the focus of this paper, some chosen strategies will be described and analysed in more detail further.

1.1. Understanding derivatives and their classification

When talking more deeply about derivatives, their essence and classification, it is important to understand that these financial assets and investment possibilities essentially differ from other standard securities (Martinkutė-Kaulienė, 2014). In literature derivatives are defined as securities whose values are determined by the market price or interest rate of some other assets (Brigham & Houston, 2012) or indices, and, basically, could be considered as some kind of assets that are not primary ones (Teall, 2012). Similarly, derivatives are described in Oxford dictionary where it is stated that they are arrangements or products whose value derive from and is dependent on the value of underlying assets, such as commodities, currencies, or securities, also any kind of financial contracts and even such concepts as the weather and credit losses. For this reason, it could be said that the performance of these securities depends on, as well as derives from how something else is performing. This feature of derivatives serves a valuable purpose in providing means for managing financial risks. By using derivatives, individuals and business companies can transfer any unwanted risk to other parties who either have risks that offset it, or who want to assume that risk (Chance & Brooks, 2015). Moreover, they can use derivatives for hedging, arbitrage and speculation purposes. Here hedging can be understood as the reduction of market risk on a specific exposure, arbitrage is when derivative contracts are used to offset positions in several instruments to lock a profit without taking risk, whereas speculation is when derivatives contracts are used to bet on a specific market direction (Deloitte, 2016).

Going further, in order to better understand derivatives, it is also important to highlight that they can be classified on several different bases. One classification distinguishes derivatives based on their nature and divides them to commodity and financial derivatives, which mainly differ in the nature of the underlying asset or instrument. In the case of commodity derivatives, the underlying assets are such commodities as wheat, cotton, corn, paper, crude oil, natural gas, silver, and etc., whereas in financial derivatives the underlying instruments are such as stocks, treasury bills, foreign exchange, bonds, cost of living index, stock index and many more. Some worth mentioning basic financial derivatives are forwards, futures, options, warrants and convertibles, while complex ones are swaps and exotics (Martinkutė-Kaulienė, 2014; Gupta, 2017). However, since this paper will not analyse all kind of derivatives, a more detailed explanation of each type will not be provided.

Continuing, according to Gupta (2017) derivatives can also be classified on the basis of market trading where they are divided into either over–the-counter or exchange-traded contracts, which are further distinguished into equity, interest rate, foreign exchange, and interest rate, forex and credit, respectively. Generally, over-the-counter contracts mean that contracts are taking place between several private parties, and the terms of those contracts are decided between the parties. One huge disadvantage of over-the-counter contracts is that there is a need to search for a party, which will be willing to enter the contracts. However, brokers who bring different parties together can solve this problem. Some other problems arising in over-the-counter derivatives contracts are that they are highly unregulated and less transparent, which increases the level of risk and uncertainty. Going to exchange-traded contracts, these are the contacts that are traded on derivatives exchanges. In this case, the exchanges make decisions on the terms of the contract, and the parties can trade these contracts in a manner similar to the trading of shares in a stock exchange. Unlike in the case of over-the-counter contracts, exchange-traded contracts are highly regulated and offer transparency for the parties trading on the derivatives exchanges (Janakiramanan, 2014).

To sum up, it was seen that different sources describe derivatives in a similar manner and instead of contradicting each other provide a bigger picture of the subject. Therefore, derivatives can be generally defined as products whose value derive from the value of different types of underlying assets, and are mainly used for managing and reducing possible risks and losses while investing. The same situation is with derivatives classifications. Both of the provided classifications classify derivatives on different bases, but this does not mean that one has more advantages that the other, since derivatives can belong to both classifications at once. For this reason, it is not expedient to choose a better classification.

Now as the matter of derivatives became more clear, it is possible to go further by analysing one particular type of derivatives known as option.

1.2. Option background and trading strategies

Different authors (Teall, 2012; Sousa, Lopes, & Santana, 2015) define options as traded securities that give their owners the rights, but not the obligations, to buy or to sell an asset at a specific price on or before a certain date, and can be either put or call options. They can be traded on a variety of instruments as in the case of other derivatives,

and can be used for investment purposes in many different ways based on various levels of strategies and diverse combinations of puts and calls. Talking more about the levels of option strategies, these include the following three levels (Martinkutė-Kaulienė, 2006):

1. Threshold. This is the lowest level of option strategy, where the strategy for trading is constructed only from one option or equity, and is known as naked strategy;
2. Typical. This is a higher level of option strategy. Here the strategy is constructed only from option and equity, and is known as hedging strategy;
3. Excellent. This is the highest level of option strategy, where the strategy consists of multiple options. Some examples could be double, spread or triple strategy, and many more.

In this paper, the main attention will be focused on the third level of option trading strategies. The main reason for choosing this level of trading strategies was to increase trading processes complexity, which at the same time creates an opportunity to protect oneself against higher possible losses. This could be explained by the fact that, for example, if an investor decides to buy both put and call options during one trading session, in the end of this session he will receive either reduced profit or a smaller loss. This is beneficial for the investor since it helps to reduce the possibility of ending up with a huge loss. However, in the case of success the profit would be much higher without owning an opposite position. Therefore, before choosing any kind of trading strategy, every investor has to decide on the goals he wants to pursue.

Continuing, since there are many different option trading strategies, it was decided to choose triple strategies to investigate what kind of possibilities they provide for the investors. Basically, there are two different triple strategies that are known as strip and strap, which are characterized by the fact that different combinations of puts and calls are being bought in one trading session, and will be explained further.

Starting with strip option trading strategy (look at Figure 1), it could be said that it involves a long position in one call and two puts with the same expiration dates and strike prices, while the situation with straps is a little bit different.

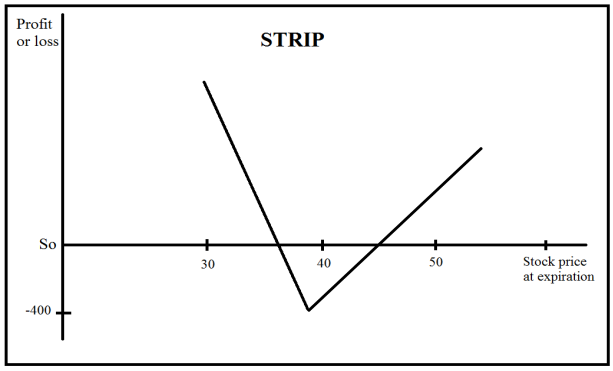

Figure 1. Illustration of strip option trading strategy (Suresh, 2015)

Strap strategy (look at Figure 2) involves a long position in two calls and one put with the same expiration dates and strike prices. Since both of the strategies involve taking two equal positions and one different, it may seem that they do not really differ. However, investor's decision on which strategy to choose largely depends on his expectations on the change in direction of underlying asset price.

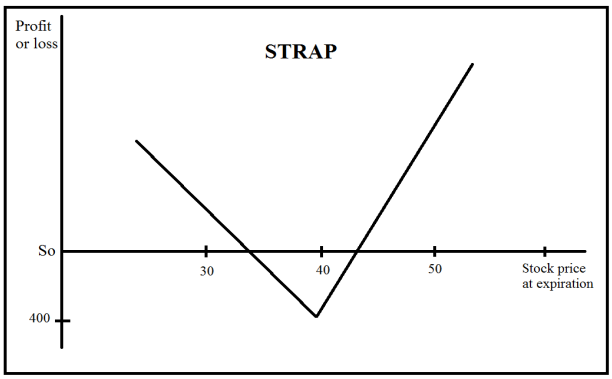

Figure 2. Illustration of strap option trading strategy (Suresh, 2015)

Usually, investors decide to use strips when they believe that there will be a huge price movement in the chosen asset, but a fall is more likely. In contrary, strap investors have the same point of view about large price movements, but they consider that an increase in the asset price as a more likely event (Shalini & Duraipandian, 2014). According to Hong, Sung and Yang (2018), and Zhang (2014) strip and strap strategies can also be referred as volatile or volatility strategies, which can only realize positive returns when there are big price movements. From one point of view this may seem very risky, since higher price volatility brings higher levels of risk, but, on the other hand, the usage of such option strategies help to reduce that risk since different positions are being taken at once. This means that when prices are going to completely different direction than the investor has expected, his loss would not be as big as without using any kind of strategies.

Now as the option background and chosen trading strategies have been discussed, it is possible to go further by defining the ways and methods that will make the implementation of both strategies possible.

2. Methodology of option strategies creation

As the time passes the interest in investment activities is increasing more and more. Therefore, there is no surprise that the variety of various trading possibilities, platforms and other related subjects is increasing as well.

For this paper, in order to create the chosen strip and strap option trading strategies, it was decided to use "IQ Option" trading platform. This platform was found in 2014, and provides possibilities for its users to get involved with Exchange Traded Funds (ETFs), online Contract for Differences (CFDs) on stock trading, forex currency trading and Digital Options, in this way helping to diversify their investment portfolio in the process. In addition, the platform includes many different tools that are useful in the investment activities, and provides a blog full of latest international financial news (IQ Option, 2018).

The goals of both strip and strap option trading strategies are to avoid losses and to make some undefined amount of profit by using two different option assets. Moreover, in order to achieve better results, it was decided to use at least two different technical analysis tools, which are supposed to help in the decision making process.

Generally, technical analysis involves choosing assets based on prior trading patterns (Azzam, 2015). In other words, it means that technical approach examines past market actions and uses that data to predict the future. It is thought that markets tend to repeat themselves; therefore, previous trends in most areas of life are usually good indicators of the future (Asefeso, 2013). There are many various technical analysis indicators, however, in this paper the main focus will be dedicated for two: Bollinger bands and parabolic SAR.

To begin with, Bollinger bands were created by John Bollinger in 1983, and is one of the most popular tools used by technical analysts on candle, bar and line charts. Bollinger band could be defined as volatility bands drawn a specified number of standard deviations, usually two, above and below a moving average. The reason for using these bands is that they provide additional information about the chart and the state it is in. Adding the bands allow investors to see areas where the trend is strong and where a trend change is coming. Moreover, they show areas of low volatility, which always precede a breakout, although the direction of the breakout is not part of Bollinger bands analysis (Plessis, 2015). In addition, a narrow band means that the price variation of particular asset is more stable, whereas a wide band means greater volatility. Bollinger bands indicator is useful in two ways. Wide bands denote more risk (and opportunity) compared to narrow ones. Most important, when the price of a particular asset is at the top of the band, it can be expected to come down, and when it is at the bottom, it can be expected to go up. This is a cycle. The time it takes for the price of the asset to reverse is affected by other factors, and these factors may affect a breakout from highs and lows (Brown, 2012).

When going to the parabolic SAR, it could be said that during a trending period it is a very useful and accurate indicator. It was devised by Welles Wilder with a purpose to find potential reversals in the market price direction of traded assets, such as stocks or currency exchanges (forex). In this indicator, SAR stands for stop and reverse, and the term parabolic comes from the shape of the curve (resembling a parabola) that is created on the technical chart. Sometimes called a reversal system, the parabolic SAR allows the investor to follow the dots in either an upward or downward trend until stop position is reached and the trend is reversed. It is primarily used in trending markets and is based on the assumption of having a position in the market. The indicator may also be used to determine stop points and estimating when the trader would reverse a position and take a trade in the opposite direction. The first entry point on the buy side occurs when the most recent high price of an issue has been broken and it is at this time that the SAR is placed at the most recent low price. As the price of the share or any other asset rises, the dots will rise as well, first slowly and then picking up speed and accelerating with the trend. The SAR starts to move a little faster as the trend develops and the dots soon catch up to the price momentum of the share. Parabolic SAR should only be employed in trending markets to identify entry and exit points. Moreover, it is known that a parabola below the price line is generally bullish (prices tend to go up), which is an indicator for the investor to buy an asset, whereas a parabola above is bearish (prices tend to go down), which, in contrary, is a sign for the investor to sell an asset (Ranganatham, 2006).

It is visible that the performance of technical analysis and the use of different technical indicators should guide every investor while making a decision on buying or selling a particular asset. However, it is important to remember that technical analysis is completely based on the past, and the trends created by various indicators may not lead to successful investment decisions all the time.

After defining selected technical analysis instruments, it is important to mention the whole sequence and trading steps that will be implemented for both triple strategies. To begin with, the two trading processes will begin with a selection of particular options. "IQ Option" platform suggests many different options and give the possibility for investors to speculate on the price dynamics of currencies, indexes, commodities, and stocks. Therefore, for strip and strap strategies it was decided that one option on a currency pair and one option on a stock will be selected. A particular currency pair and a stock will be chosen randomly based on their availability at a certain point in time and personal interest. Going further, the second step for both trading processes will be to set a certain amount, which will be spent on each option, as well as decide on the duration of each trade. After doing this, the previously mentioned technical analysis tools will be used to guide the author in the decision making process. Moreover, it is important to mention that the choice of strategy for particular trade will be determined based on the price prognosis of a particular asset and the price change after buying or selling an option. For strap option trading strategy it is necessary to choose one put option and two call options, whereas for strip strategy one call option and two put options has to be selected. For both strategies, all of these combinations will have to be made within the purchase time, which in the "IQ Option" platform is marked as a white vertical line, indicating the exact time left until the end of trading session. When the purchase time passes, it is impossible to do any other put and call combinations; therefore, it is important to set appropriate purchase time so that all actions necessary for the strategies could be properly implemented. Finally, after doing all these steps for both strategies, there will be a possibility to either sell all the positions at a chosen point in time, or to wait until the trading expiration time, which in "IQ Option" platform is indicated as a red vertical line.

All in all, it can be concluded that for the creation and implementation of two chosen triple strategies, more precisely strip and strap, "IQ Option" trading platform will be used, and two technical analysis tools, such as Bollinger Bands and parabolic SAR, for a better guidance and more successful trading will be selected and used while trading.

3. Analysis of created option strategies, their results and evaluation

As it was mentioned before, for the creation of both strip and strap option strategies it was decided to use different instruments, including one option on currency pairs and one on stock. "IQ Option" trading platform gives the opportunity to trade on 21 different currency pairs exchanges, also known as currency exchanges, as well as on 25 different stocks of well-known companies, including such companies as "Facebook", "Google", "Intel", "Coca-cola", "McDonald's", and many more. Particular selections that were made for both strip and strap strategies, as well as overall trading steps and processes, their results and evaluations will be presented further.

3.1. Implementation of strip and strap option trading strategies

Starting with strip option trading strategy, it can be said that for the whole trading process an option with an underlying asset of currency exchange between Canadian dollar and Swiss franc (CAD/CHF) was selected. For the strap strategy, it was decided to use an option with an underlying asset of "Google" stock. These decisions were made based on the expectations that price movements in currency exchange between Canadian dollar and Swiss franc will go more downwards, while in "Google" stock – upwards. Both of these particular instruments, as it was already mentioned previously, were chosen randomly based on their availability and on personal interest. Some more important factors that need to be mentioned are that the amounts for both strategy instruments were set up to 1000 USD per each option, and the time period for both trading processes was set for 2 minutes.

After implementing strip option trading strategy it was visible that the volatility of the prices in currency exchange between Canadian dollar and Swiss franc was very high since the prices were changing very much within the trading period. However, this is not surprising, because high volatility in prices of currency exchanges is one of their main features. For this reason, in order to make better and more appropriate decisions at which moment to buy particular options, the previously mentioned indicators – Bollinger Bands and parabolic SAR – were used. Both of these indicators, along with many other technical analysis tools, are integrated into the digital trading platform and can be used by any investor who knows how to interpret them. This could be considered as one of the ways how digital trading platforms slightly help investors to achieve better results and desired goals.

Continuing, since strip trading strategy requires buying one call option and two put options, the whole investment amounted to 3000 USD. Moreover, the platform provides information on the assets' profitability, which in this particular case was equal to 84%. This means that, for example, if an investor decides to make an investment equal to 1000 USD and correctly predicts the possible changes in the movement of price, he will gain a profit equal to 840 USD. This also provides some guidance for the investor since higher profitability signalizes higher possible risk, and vice versa.

So, after all strategy's positions were closed, it was seen that each put option made a profit equal to 840 USD, whereas the call option made a loss, which amounted to 1000 USD. This happened due to the downward movements in prices. Gladly, this loss was compensated with the profit and gave the overall profit of 680 USD (840 USD +840 USD – 1000 USD), which meant that the overall profitability of the made investment was equal to 22.67%, and was achieved within the time frame of 2 minutes.

When commenting on strap option trading strategy implementation and its trading tendencies, it was seen that the fluctuations in the price of "Google" stock were also quite high. Therefore, as previously, Bollinger Bands and parabolic SAR were used to make the decision process easier. The whole investment, as in the case of strip strategy, amounted to 3000 USD since three different options, including two calls and one put, were bought. In this case the possible investment profitability was lower and equal to 65%. On the other hand, at this point it is very important to clarify that in both strip and strap strategies it is impossible to achieve the maximum profitability, because these strategies are created for hedging against possible risks and big losses, and in all cases at least one of the three positions will bring losses instead of profits.

Going further, after all strap strategy's positions were closed it was visible that one call option and one put option made a profit of 650 USD per each, whereas the other call option made a loss equal to 1000 USD. However, as in the case of strip option strategy, this loss was covered by the profits and in the end of the trading amounted to 300 USD (650 USD + 650 USD − 1000 USD), which meant that the overall investment profitability was equal to 10%, and was achieved in the same time frame as it was with strip strategy.

3.2. Evaluation of strip and strap option trading strategies

The trading processes, which were based on the use of two triple strategies, known as strip and strap, went as planned, and achieved the goals set at the beginning, which were aimed at avoiding possible losses and achieving some amounts of profit. It was seen that the use of technical analysis tools also served well in making decisions at which particular moments to buy different combinations of puts and calls. Also, the predictions about possible price movements of different option assets, more precisely "Google" stock and currency exchange between Canadian dollar and Swiss franc, in both strategies where successful and fulfilled the expectations. In the case of strip option strategy it was expected that the prices will move more downwards than upwards, whereas in the case of strap option strategy – more upwards than downwards.

Continuing, in each strip and strap option trading strategy investments amounted to 3000 USD, and resulted in 680 USD profit while implementing the strip strategy, and in 300 USD while implementing the strap strategy. Both results were achieved within the time frame of 2 minutes, whereas the achieved profitability of each investment was 22.67% and 10%, respectively.

All in all, taking into consideration all the possible risks, as well as high volatility of prices of chosen option instruments, where the whole situation can change in seconds, the received results should be considered as very good ones since such trading is very risky, and can lead any investor, even experienced one, to huge losses. On the other hand, it is undeniable that possibilities created by digital trading platforms for investors are much higher now than it once was without them.

Conclusions

After analysing scientific literature on derivatives it became evident that most common definition of this matter define them as securities whose values are determined by the market price or interest rate of some other assets or indices, and, basically, are assets that are not primary ones. Most commonly they are classified in several ways: based on their nature and on market trading, while their most common types are options, futures, forwards and swaps. Options are traded securities that give their owners the rights, but not the obligations, to buy or to sell an asset at a specific price on or before a certain date, and can be either puts or calls. For this article it was decided to use triple option strategies – strip and strap. Strip strategy involves a long position in one call and two puts with the same expiration dates and strike prices, whereas strap strategy involves a long position in two calls and one put.

While creating strip and strap option trading strategies it was decided that in order to make better and more precise decisions two technical analysis tools – Bollinger bands and parabolic SAR – will be used. Both strategies were based on the use of different option instruments, including currency exchange between Canadian dollar and Swiss franc and "Google" stock, and were set up at "IQ Option" trading platform by using appropriate combinations of puts and calls, as well as investing 1000 USD per each option.

After two triple option strategies – strip and strap – were created, it was seen that both strategies helped to achieve the goals and gain profits instead of losses. The profit made from strip option strategy amounted to 680 USD, and the overall investment's profitability was 22.67%. The situation with strip strategy was that it made a profit equal to 300 USD, and its overall profitability was 10%. Considering all the risks and huge volatility in prices of chosen option

instruments, these results should be considered as very good ones, since each trading process took only 2 minutes, which is a very short period of time for such high results.

All in all, it could be stated that exactly digital trading platforms made it possible to trade within such short periods as 2 minutes without the necessity of waiting long months or even years to get the possibility of gaining wanted profits. Moreover, they not only made investment and trading processes much more affordable for a higher number of people, but also gave bigger powers in controlling the situation of their investments. On the other hand, with so many possibilities opened, it is important that every investor would realise that investing and trading is not about luck, but instead about making thoughtful decisions based on the financial knowledge and events that are happening in the financial markets.

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