Emerging Markets Queries in Finance and Business

New Option Strategy and its Using for Investment Certificate Issuing

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Abstract

The aim of this article is to develop new option strategy, formulate optimal algorithm of its creation and using this new strategy to develop a new type of investment certificate from the point of view of its issuer. We provide algorithm for issuer, which can be used also by individual investor. The paper was elaborated within the project VEGA 2/0004/12.

Keywords: option strategies; options; investments certificates; financial derivatives;

1. Introduction

The financial derivatives are instruments, which might be used in many areas of financial management in firms. Instruments like financial options can be mainly used for hedging and investing. Nowadays, we face very high volatility on financial markets and very high degree of uncertainty in economic environment as the whole. Euro-area is suffering from the instability caused by irresponsible decisions of government in fiscal and monetary policies Siničáková, Pavličková, 2010. Investors look for guaranteed products, which would combine the profit potential of stock markets with the security of banking products. That is why investment certificates experience rather strong development.

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There were some authors, who focused on existing option strategies and their creation Rusnáková, Šoltés, 2010 as well as their using for creation of investment certificates Šoltés, V., 2011, Šoltés, M., 2010. In this paper, we develop new option strategy and create new investment certificate, which might be interesting for potential investors.

2. Option strategy NOS3

The strategy NOS3 can be created by two ways. In both cases, we create the strategy by purchasing options at the lowest strike price, selling the same amount of options at higher strike price and purchasing the same amount of options at the highest strike price at the same time. Particular ways differ with each other in types of options used. Final profit functions are very similar.

3. The ways of option strategy NOS3 creation

A. Let us create the strategy by purchasing n call options with strike price x_1 and premium p_{1N} per option, selling n call options with higher strike price x_2 and premium p_{2P} per option and purchasing n call options with the highest strike price x_3 and premium p_{3N} per option.

By purchasing of call option we obtain the right to purchase underlying asset at mature date at strike price. Profit functions from the first and the third positions will be the same, they differ only in strike prices and option premiums and they are

$$P(S) = \begin{cases} -np_{1N} & if\ S < x_1, \\ n(S - x_1 - p_{1N}) & if\ S \geq x_1, \end{cases} \tag{1}$$

resp.

$$P(S) = \begin{cases} -np_{3N} & if\ S < x_3, \\ n(S - x_3 - p_{3N}) & if\ S \geq x_3. \end{cases} \tag{2}$$

Profit function from the second position, i. e. selling call options is

$$P(S) = \begin{cases} np_{2P} & if\ S < x_2, \\ -n(S - x_2 - p_{2P}) & if\ S \geq x_2. \end{cases} \tag{3}$$

By adding all three positions we get the NOS3 option strategy, profit function of which is

$$P_{NOS3_A}(S) = \begin{cases} -n(p_{1N} - p_{2P} + p_{3N}) & if\ S < x_1, \\ n(S - x_1 - p_{1N} + p_{2P} - p_{3N}) & if\ x_1 \leq S < x_2, \\ n(x_2 - x_1 - p_{1N} + p_{2P} - p_{3N}) & if\ x_2 \leq S < x_3, \\ n(S - x_1 + x_2 - x_3 - p_{1N} + p_{2P} - p_{3N}) & if\ S \geq x_3. \end{cases} \tag{4}$$

If we wanted to create this strategy with no initial costs, the further condition would have to be satisfied

$$-n(p_{1N} - p_{2P} + p_{3N}) \geq 0, \tag{5}$$

$$-p_{1N} + p_{2P} - p_{3N} \geq 0, \tag{6}$$