

# **GAME-THEORETIC METHOD FOR OPTIMIZING THE PORTFOLIO RISK LEVEL AMONG THE PORTFOLIOS THAT ARE ALLOWED IN THE MODEL BLACK**

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In the article the game-theoretic method of decision-making about optimizing the level of risk portfolios, allowed in the Black model. Particular attention is paid to the conditions, compliance with which enables us to find the optimal portfolio structure based on the solution of the corresponding antagonistic game. A concrete example is considered.

Investor strives to create a portfolio that has the lowest level of economic risk, in cases where the terms of the investor it is impractical to take risks. Such cases include, for example, the presence of 1) the crisis, 2) pre-crisis situation, 3) a significant aversion to risk the investor, etc.

In most cases, if possible correct application of game-theoretic method of choosing the optimal portfolio structure, it is possible to find the structure of the portfolio has the lowest level of risk. This is due to the peculiarities of the theory of antagonistic games.

First of all, the fact that the decision of antagonistic game orients the decision maker, at extremely cautious behavior.

The use of antagonistic games to optimize the level of risk portfolios, allowed in the Black model, it is possible, for example, in the case where the corresponding antagonistic game the second player has a completely mixed optimal strategy.

***Keywords:*** game-theoretic method, optimizing the portfolio risk level, portfolios that are allowed in the model Black, antagonistic game.