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Department of Accounting and Finance

MSc in Banking, Investment and Finance

2014

Model of Pareto financial investments optimal portfolio

Rineyskiy, Sergey

Banking investment and finance Program, School of Economics Sciences and Business,
Neapolis University Paphos

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**MASTER OF BANKING, INVESTMENT AND FINANCE DEGREE
EXAMINER'S REPORT ON DISSERTATION**

Name of Candidate: Rineykiy Sergey

Title of dissertation: "Model of Pareto financial investments optimal portfolio"

Name of first examiner: Dr. George Mountis

Name of second examiner: Dr. K. Giannopoulos

Abstract

Investment portfolio issues take a leading position in modern economic science due to their relevance in a developed market. However, the conditions of the Russian economy does not allow fully apply the general principles of the portfolio investment theory and formed by foreign researchers arsenal of investment strategies.

In the conditions of increasing complexity of investment mechanisms, development of the securities market, improvement of financial technologies, as well as increased uncertainty inherent in the domestic stock market is especially important the development of modern methods of analysis and the formation of Pareto-optimal financial investments portfolio as a factor in reducing the overall risk. In this case, the classical theory of the investment portfolio formation is not always adequately reflects the full range of factors: the instruments liquidity, the value of the transaction costs, the analytical component of operations, etc.

In modern conditions, a serious problem in the decision-making process on the financial investments portfolio formation is the search for effective options portfolio, which consists in determining the composition of the financial assets in the portfolio. Theoretically, all portfolios resulting in is an increase of its economic value to be taken for implementation. In practice, portfolio investment is carried out in a strictly limited ability to attract funds. Based on the above, we have developed an algorithm for deciding to build a financial investments portfolio, which is based on the mechanism of directed search Pareto optimal variants of a financial investments portfolio. The proposed algorithm is used to determine the effective range of financial investment ratio "return / risk" and the volume of investments (for well correlated portfolios).

The developed algorithm allows finding all the Pareto optimal variants of the portfolio on the basis of available observations on the dynamics of profitability and risk of the financial assets included in portfolio. The main advantage of the algorithm is incorporated in its base directed search mechanism, which allows omitting the bulk of the known variants of inefficient portfolios.

Acknowledgment

I am using this opportunity to express my gratitude to everyone who supported me throughout the process of dissertation writing. I am thankful for their aspiring guidance, invaluable constructive criticism and friendly advice during the project work. I am sincerely grateful to them for sharing their truthful and illuminating views on a number of issues related to the project.

I express my warm thanks to Dr. George Mountis for his support and guidance at Neapolis University Pafos.

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