# OPINION

**by Assoc. Prof. PhD Petar Plamenov Petkov**
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**1. General information**

The opinion was prepared on the basis of the order of the Rector of the UARD No. RAS-33/30.03.2026 on determining the composition of the scientific jury for the defense of a dissertation and the decision of the scientific jury from its first meeting on 08.04.2026.

**Author of the dissertation:** Stoycho Gochev Stoev

**Topic of the dissertation:** "Models for financial risk management in healthcare "

**Higher education area** 3. "Social, Economic and Legal Sciences"

**Professional field** 3.8. "Economics"

**Doctoral Program** "Finance and Banking"

**Primary unit**: Department of Economics and Finance

**Receiving structural unit:** Department of Economics and Management

**Scientific supervisors:** Assoc. Prof. PhD Georgi Petrov Georgiev and Prof. PhD Dimitar Stoyanov Vergiev

**2. General description of the dissertation work**

The dissertation submitted for defense by PhD-candidate Stoev is a large-scale, in-depth and up-to-date study that demonstrates a high degree of theoretical preparation and practical skills in applying complex mathematical and statistical apparatus in the specific field of healthcare.

The overall impression is of completeness and high professional maturity. The author has managed to identify a critical gap in the management of hospitals in Bulgaria – the neglect of financial risk management at the expense of formal administration. The work is distinguished by a clearly expressed research thesis and methodological consistency.

The topic of the dissertation is focused on an extremely topical and socially significant problem - the management of financial risks in the healthcare system. Modern healthcare systems operate in a dynamic

economic environment, increased uncertainty, limited financial resources and increasing requirements for efficiency and sustainability.

The health sector is characterized by specific economic and financial features – a high degree of regulation, significant dependence on public funding, the presence of asymmetric information between participants in the system and high public expectations for the quality and accessibility of medical services. In this environment, financial risk becomes essential for the stability of medical institutions and the sustainable functioning of the health system as a whole.

The dissertation examines a number of factors that generate risks for healthcare organizations, including economic, technological, social and institutional factors. Among them, technological risks related to cyberattacks against hospital information systems, the rapid obsolescence of medical technologies, as well as socio-demographic processes such as population aging and migration trends stand out.

In the context of these processes, the need to develop adequate models and tools for managing financial risks in healthcare is becoming increasingly obvious. Therefore, the chosen topic of the dissertation is relevant, scientifically sound and practically significant.

The dissertation provides an in-depth review of existing concepts and standards in the field of risk management, examining major international frameworks such as ISO 31000, PMBOK, and COSO, which define the principles, processes, and tools for risk management in organizations.

The author analyzes the possibilities for integration of these standards and their application in the healthcare sector with arguments. Particular attention is paid to the relationship between risk management and strategic management of organizations, which is a key factor for the effective management of resources and sustainable development of healthcare institutions. The theoretical analysis shows the author's good awareness of modern scientific developments in the field of financial risk management and their applicability in the specific healthcare environment.

**3. Evaluation of the structure and content of the dissertation**

The work has a total volume of 170 pages, structured logically and balanced, including an introduction, three chapters, a conclusion, a bibliography and appendices.

The first chapter examines the theoretical foundations of risk management in healthcare, analyzing the specifics of financial risk in this sector, the types of risks and the main approaches to their identification and management. The author makes a detailed classification of risks in healthcare (eight types according to the ERM concept), correctly distinguishing endogenous from exogenous factors. The analysis of the specifics of financial management in a sector where the human factor is leading, but economic sustainability is mandatory, is particularly valuable.

Chapter two is dedicated to modern quantitative methods for risk analysis, examining a number of analytical tools, including:

- probability-impact matrix (PIM),
- the Monte Carlo simulation method,
- the value-at-risk (VaR and CVaR) models,
- the “cash flow at risk” (CfaR) model.

The author skillfully adapts the principles of the Basel Framework to the needs of healthcare, which is an original scientific solution.

The third chapter represents the practical proof of the research thesis. Specific stochastic models for Bulgarian hospitals are constructed. The use of data from a specific medical institution (MBAL "St. Petka" - Vidin) gives the work applied value and verifies the theoretical conclusions. Current problems of the health insurance system in Bulgaria are analyzed with proposals for reforms.

In this part of the study, the author examines the possibilities for adapting risk modeling to the specific conditions of the healthcare sector. The author proposes a systematized approach for integrating different risk assessment models and their application in the management of financial resources in healthcare organizations.

**4. Evaluation of the abstract for the dissertation**

The abstract corresponds to the author's main work.

**5. Evaluation of the contributions of the dissertation work (scientific, scientific-applied)**

I fully agree with the scientific and applied scientific contributions defined by the PhD-candidate Stoev, which are impartially derived and defensible in the context of the analysis of the results of the empirical study.

**6. Critical notes and recommendations**

I don't have any critical notes and recommendations.

**7. Question to the PhD-candidate**

Why does the PhD-candidate Stoev argue that the use of machine learning to identify risk patterns and automated real-time simulations will make forecasting methods increasingly accessible and accurate?

**8. Conclusion:**

The attached certificate-declaration shows that the dissertation candidate has fulfilled the minimum national requirements under Art. 2b, para. 2 and 3 of the Law on the Protection of Academic Rights and Freedoms of the Republic of Bulgaria. No plagiarism has been established in this thesis.

I recommend to the esteemed Scientific Jury to vote for the PhD-candidate Stoycho Gochev Stoev **to be awarded the educational and scientific degree "DOCTOR".**

Date: Jury member: ……..

(Assoc. Prof. PhD Petar Petkov)