OPINION

by Prof. Virginia Zhelyazkova, DSc (Econ.)

from the Economic Research Institute at the Bulgarian Academy of Sciences and from VUZF University

on the dissertation submitted for the award of the educational and scientific degree "Doctor" in the field of higher education 3. Social, Economic and Legal Sciences Professional field 3.8. Economics

Author: Kiril Georgiev Anachkov

Title: "The Impact of Financial Technologies on the Management of Credit Risk in Banks"

1. General Description of the Submitted Materials

By Order No. 135 dated April 15, 2025, of the Rector of the University of Insurance and Finance, Corresponding Member Prof. Dr. Boris Velchev, I have been appointed as a member of the scientific jury for the defense procedure of the dissertation by Kiril Georgiev Anachkov – a doctoral candidate at the Department of Finance and Insurance at VUZF.

The submitted materials include:

• the dissertation titled "The Impact of Financial Technologies on the Management of Credit Risk in Banks" (213 pages);

• the author's abstract of the dissertation;

• a list of scientific publications (a total of four);

• copies of the publications and other required documents.

2. Brief Biographical Data about the Candidate

Kiril Anachkov is a doctoral candidate at the Department of Finance and Insurance at VUZF. He demonstrates consistent interest in the topics of credit risk, banking regulation, and digitalization in the financial sector. His publications reflect a high degree of independence and academic potential. He also has practical experience in the field of finance, which supports his ability to

comprehend and critically analyze the processes examined in both his dissertation and his publications.

3. Characteristics and Evaluation of the Dissertation

The dissertation by Kiril Georgiev Anachkov is a methodologically rigorous and analytically substantiated study dedicated to one of the most topical and practically relevant areas of modern banking economics — the impact of financial technologies on credit risk management. The theme is highly relevant, especially in view of the ongoing transformation of the banking industry under the influence of digitalization, automation, and the need for adaptation to increasing regulatory requirements and market challenges.

The dissertation is logically structured in three content-rich chapters, spanning 213 pages, each with a clearly defined focus and analytical direction. In the introduction, the doctoral candidate formulates a pertinent and up-to-date research goal related to the assessment of the possibilities and limitations of financial technologies in credit risk management. The object and subject of the research are clearly defined, with a focus on Bulgarian commercial banks, which adds practical value to the study. The subject — the effectiveness of processes for identifying, evaluating, and managing credit risk through innovative technological solutions — is well grounded both theoretically and practically.

The research tasks are logically aligned with the defined goal and provide a robust framework for a comprehensive approach to the topic. Their formulation is precise and balanced, encompassing both the necessary theoretical decomposition of core concepts and processes, and an in-depth analysis of the potential of specific technological solutions — artificial intelligence, blockchain, cloud computing, and big data — in the specific context of banking risk management. In addition, the study includes a section on ESG criteria, which enhances its relevance in terms of sustainable finance and regulatory frameworks.

The methodological part of the dissertation is particularly impressive. The candidate employs a variety of methods, including theoretical-historical analysis, comparative analysis, hypotheticodeductive approach, descriptive and statistical analysis, as well as econometric modeling using Gretl software. Notably, web scraping is employed for the automated extraction of public information, which is an innovative element in banking research and indicates a high level of methodological competence. Importantly, the candidate does not limit himself to static descriptions of technologies or processes but builds rigorous empirical models based on data from leading Bulgarian banks for the period 2015–2022, successfully integrating both micro- and macroeconomic perspectives. The established correlations between non-performing loan ratios and variables such as IT expenses, operating income, staff numbers, or macroeconomic indicators are statistically substantiated and interpreted with analytical depth.

Particularly commendable is the high level of critical reflection with which not only the opportunities but also the limitations and risks of fintech applications are assessed — including algorithmic opacity, technological dependence, regulatory uncertainty, and social challenges. Terms such as "explainable artificial intelligence" (XAI) are introduced, and realistic recommendations are proposed for managing the associated challenges. The discussion is grounded not in general assertions but in contemporary literature, international standards, and findings from interviews with banking experts, which further strengthens the author's argumentation.

The value of the research lies not only in its topical focus but also in the depth with which the results are interpreted and the candidate's ability to place them within a broader scientific and regulatory context. The conclusions not only confirm the initial hypothesis regarding the positive impact of financial technologies on credit risk management but also contribute empirically validated arguments to the policy discourse on digital transformation in the banking sector. The proposed interpretation of ESG integration through fintech instruments adds a new dimension to the debate on sustainable finance, which remains underexplored in relation to credit risk in the Bulgarian academic context.

The dissertation demonstrates a high degree of analytical maturity, methodological sophistication, and interdisciplinarity, without losing its practical orientation. The author exhibits the ability to structure and substantiate complex concepts, to derive logical and evidence-based conclusions from data, and to present a comprehensive model of reasoning characteristic of a mature researcher. This allows for an unequivocally positive evaluation of the dissertation's substantive quality.

4. Contributions and Relevance of the Research to Science and Practice

The dissertation contains both theoretical and applied contributions of high scientific and practical value. Among the most notable are the systematization and critical classification of the four leading

groups of financial technologies applicable in banking — artificial intelligence, blockchain, cloud systems, and big data — as well as their connection to specific stages in credit risk management. A significant contribution is the development of an original econometric model that analyzes the impact of technological investments on the share of non-performing loans, tailored to the specific characteristics of the Bulgarian banking system. Noteworthy is also the innovative use of web scraping technologies for the automated extraction of public data, as well as the establishment of a well-grounded relationship between the application of fintech solutions and the implementation of ESG criteria. The conclusions of the dissertation offer concrete recommendations for improving credit risk management practices, including enhancing algorithmic transparency, reducing technological risks, and improving adaptability to regulatory requirements. The proposed recommendations have potential for direct application both in banking practice and in the processes of regulatory planning and supervision.

5. Evaluation of the Publications Related to the Dissertation

The candidate has presented four publications that reflect the main results and thematic directions of the dissertation. These publications address the impact of fintech on the banking sector, the use of artificial intelligence in risk management, the effects of the COVID-19 pandemic, and economic expectations regarding the eurozone. They have been published in peer-reviewed journals and conference proceedings, and they adequately represent the key contributions of the dissertation. The arguments are well-structured and analytical, demonstrating skills for independent academic research and critical thinking.

6. Assessment of Compliance with the Minimum National Requirements

Kiril Anachkov fully meets the requirements set forth in the Law on the Development of Academic Staff in the Republic of Bulgaria and the applicable regulations, including the internal regulations of VUZF.

7. Author's Abstract

The abstract is precisely structured and accurately reflects the content and findings of the dissertation. The research goal, defended thesis, and main contributions are clearly presented. The style is academically appropriate, and the content is coherent and comprehensive. The abstract

complies with formal requirements and fully fulfills its function as a summary of the conducted research.

8. Critical Remarks, Questions, and Recommendations

The dissertation is balanced and thorough and does not require substantial revisions. For future academic work, it would be beneficial for the author to extend his analysis through international comparative studies, and to further explore the interaction between emerging financial technologies and regulatory approaches in different jurisdictions.

- I would like to pose the following questions:
 In the context of the increasing use of algorithms in creditworthiness and ESG risk assessment, do you see potential dangers related to excessive automation such as discrimination against certain groups of potential beneficiaries, restricted access to finance, or lack of transparency in decision-making?
- In your view, how can a balance be achieved between the efficiency of technological solutions and the need for human judgment and regulatory oversight?

Conclusion

The dissertation contains original scientific and applied research results, meets the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation and the internal regulations of VUZF. The doctoral candidate, Kiril Anachkov, demonstrates thorough knowledge and independent research skills in the field of economics.

In view of the above, I give a positive assessment of the dissertation and recommend that the scientific jury award the educational and scientific degree "Doctor" to Kiril Georgiev Anachkov in the field of higher education 3. Social, Economic and Legal Sciences; professional field 3.8. Economics, doctoral program "Finance and Insurance" at VUZF.

May 21, 2025 Sofia

Reviewer:

(Prof. Virginia Zhelyazkova, DSc (Econ.))