REVIEW

by James Borislavov Jolovski, Associate Professor at the Higher School of Insurance and Finance, Doctor of Economics

of a dissertation 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

doctoral program *Finance, insurance and provision*

Author : PhD student Kiril Anachkov

Topic : Impact of financial technologies on banks' credit risk management

Scientific advisor : Daniela Bobeva, professor at the Higher School of Insurance and Finance, Doctor of Economics

1. General description of the materials presented

By order No. 135 of 15.04.2025 of the Rector of the Higher School of Insurance and Finance, Prof. Dr. Boris Velchev, I am appointed as a member of the scientific jury for ensuring a procedure for the defense of a dissertation on the topic of Impact of Financial Technologies on the Management of Banks' Credit Risk for the acquisition of the educational and scientific degree " Doctor" in Field of higher education 3. Social, economic and legal sciences, Professional field 3.8. Economics, doctoral program Finance, insurance and provision. The author of the dissertation is Kiril Anachkov - a doctoral student in an independent form of study to the department Finance and insurance with scientific supervisor Prof. Dr. Daniela Bobeva from VUZF.

The materials submitted by Kiril Anachkov include documents according to the presented inventory:

- Application for admission to defense
- dissertation
- Abstract in Bulgarian and English
- Autobiography
- List of publications on the topic of the dissertation
- Publications on the topic of the dissertation
- Publication summaries
- List of other publications

- Declaration of originality and authenticity
- Reference for meeting minimum requirements

The doctoral student has submitted a total of six publications, four of which are on the topic of the dissertation.

The package of documents is comprehensive and well-organized, allowing for easy review and assessment for compliance with national requirements.

2. Brief biographical data about the doctoral student

Kiril Anachkov holds a Master's degree in International Banking and Financial Markets from the University of National and World Economy. He began his professional experience in the financial sector and later grew his career at Maxima Bulgaria, currently holding the position of Head of Business Analysis Department. He is the recipient of numerous awards and scholarships, including those from the Burov Foundation, Postbank, and others.

3. Relevance of the topic and appropriateness of the set goals and objectives

The topic of the dissertation is undoubtedly relevant and significant. Financial technologies are developing dynamically and significantly influence the activities of financial institutions. These phenomena have not yet been sufficiently studied not only on a national but also on a global scale. The doctoral student's argumentation regarding the relevance and significance of the research could be more strongly emphasized.

4. Knowledge on the topic

As can be seen from the doctoral student's autobiography, as well as from the extensive list of literary sources (149 in number), through which the information provision of the work was carried out, Kiril Anachkov is familiar with the researched issues in the dissertation in sufficient depth.

5. Research methodology

The methodology is listed on page 13 of the paper and includes:

- Theoretical analysis

- Historical-logical approach

- Comparative analysis

- Hypothetical-deductive method

- Descriptive analysis

- Statistical analysis

- Econometric modeling

The doctoral student has correctly indicated in which part of the work each research method was applied. The tools used are appropriate and fully sufficient for the fulfillment of the set goals and objectives and the realization of the corresponding scientific and applied contributions.

6. Characteristics and evaluation of the dissertation work

The dissertation is written in Bulgarian and consists of 213 pages. The methodological framework of the study is well formulated in the introduction. The relevance and significance of the study are argued. The subject, object, goals and objectives are correctly defined. The thesis is formulated that financial technologies are becoming a significant factor for the successful management of credit risk in commercial banks. It is decomposed into three hypotheses. The composition of the research tools is exhaustively listed, which is undoubtedly sufficient to fulfill the tasks set, and therefore to realize the goals. My only recommendation is that the limitations of the study be formulated more explicitly.

The individual chapters are balanced in volume. Appropriate logical connections are built between them. The text is varied with various visualizations – figures and tables, which makes it easier for the reader to perceive it. I would recommend that the author try to develop such himself, since the work mostly presents translations of foreign researchers.

The first is entitled CONCEPTUAL FRAMEWORK OF CREDIT RISK MANAGEMENT AND FINANCIAL TECHNOLOGIES. It is mainly of a scientific and theoretical nature. The types of risk characterizing banking activity are examined. The relationship between regulatory requirements and risk management, or the need for banking regulation, is established. A historical review is carried out, starting from the beginning of the 18th century and reaching the present day. Financial technologies are presented with their essence and their importance for credit risk management.

The second chapter is related to the application of financial technologies in the management of banks' credit risk. It makes a transition from a scientific-theoretical to a scientific-applied nature. First of all, artificial intelligence is examined in detail. Subsequently, the author focuses on blockchain. Table 3 is impressive, in which his own contribution is the comparison of different types of blockchain. The doctoral student also considers the application of cloud computing and big data. Again, his own comparative analysis between big data and traditional statistical data (table 4), respectively. traditional and alternative sources of data for building credit scoring (table 5).

The third chapter is empirical in nature and practically represents an independent study. In it, the author assesses the effect of the application of financial technologies in the management of credit risk of banks in Bulgaria. An econometric model with 8 factors is proposed, in which the resulting variables are the value of non-performing loans and the share of non-performing loans. Macroeconomic factors include economic growth, CPI, unemployment, average wage and loan size. Data from the 8 largest banks in Bulgaria, which form almost 83% of assets and 84% of the loan portfolio, are used. The model establishes dependencies between the share of non-performing loans and the unemployment rate (direct) and the change in the average wage (inverse).

The chapter also examines the impact of financial technologies on ESG. In my opinion, this topic can be developed in a separate study. It is undoubtedly interesting and has significant significance, but the focus of this dissertation does not suggest that it be considered in full.

Some individual views of the author do not fully correspond to my personal understanding. However, they are sufficiently substantiated in the monographic work. For this reason, I could not accept that this circumstance has any bearing on the merits of the proposed scientific research.

7. Contributions and significance of the development for science and practice

The following contributions are formulated in the dissertation:

1. Definition of the concepts of "banking fintech " and "external fintech " and classification of 4 main groups of financial technologies.

2. The stages of credit risk management are systematized and the existing weaknesses and opportunities for overcoming them are indicated.

3. A comprehensive methodology and models have been developed to assess the effect of the use of financial technologies in credit risk management. The methodology has been tested with rich empirical material, combining statistical data and our own empirical research, and thus it has been proven that the use of financial technologies improves banks' credit risk management.

4. The research experience was enriched by the development of an innovative method for automated data collection regarding the application of financial technologies in the studied banks, based on Web scraping . In this case, the technology simulates human interaction with the given website, by navigating through its pages and automatically extracting the desired information. The scripts are written in Python .

5. A quantitative and qualitative assessment of the relationship between financial technologies and ESG has been made and the application of financial technologies to meet ESG requirements and sustainable development goals has been assessed.

6. Successful examples from leading credit institutions around the world regarding the use of modern financial technologies in managing their credit risk have been systematized, which can serve as a guideline for other institutions that are looking for ways to implement these technologies and improve their processes.

7. Recommendations have been formulated to assist credit institutions in using modern financial technologies in credit risk management.

They were reduced from a total of 12 after a recommendation was made during a preliminary discussion of the work. It is possible that they could be further consolidated, but overall I can accept them. I consider the presence of scientific and applied contributions in the work to be indisputable.

8. Assessment of dissertation publications

A total of 4 articles and reports were presented, which correspond to the topic of the dissertation work. Two of the publications were published by the publishing house of VUZF "St. Gregory the Theologian", and the other two - by the publishing house of the UNWE. They carry a total of 40 points, with 30 required according to national requirements.

9. Assessment of compliance with minimum national requirements

As can be seen from the attached report, the doctoral student exceeds the minimum national requirements. The dissertation project brings him 50 points, and the four publications – 40 points. The total points acquired are 90, with a minimum requirement of 80.

10. Personal participation of the doctoral student

I have no doubt about the personal participation of the doctoral student in the development of the work. I have not established plagiarism according to the statutory procedure.

StrikePlagiarism system report , the similarity coefficient reports 11% correspondence, which is a completely acceptable result. In addition, it should be noted that the detailed analysis shows that nearly 5% is the doctoral student's own report published at the UNWE, and 4% - another report published at VUZF, i.e. the real coefficient is very low.

11. Autor's abstract

The abstract is presented in Bulgarian (54 pages) and English (49 pages). Its length is appropriate, and the main conclusions and key points of the research are well presented. I believe that it meets the standard requirements for a publication of this nature.

12. Critical remarks and recommendations

I have no critical remarks, beyond those mentioned above in the text. I recommend that the candidate continue to develop his research activities, including publishing internationally.

1 3. Personal impressions

I do not have detailed personal impressions of Kiril Anachkov. I know the doctoral student from participation in research conferences at VUZF, where he presented himself impressively. During the internal discussion in the department, he accepted the recommendations made and reflected them in a highly ethical manner.

14. Recommendations for future use of the dissertation contributions and results

The PhD student could continue his research work by conducting additional analysis of the extent to which his recommendations are adopted. As already commented in the review, ESG policies are a good direction in this regard, but it is also possible to further expand the scope of application of financial technologies.

CONCLUSION

The dissertation work contains scientific, scientifically-applied and applied results that represent an original contribution to science and meet all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADSRB) and the Regulations for the Implementation of the ADSRB. The presented materials and dissertation results fully comply with the specific requirements of the Regulations for the Admission and Training of Doctoral Students at the Higher School of Insurance and Finance.

The dissertation shows that the doctoral student Kiril Anachkov possesses in-depth theoretical knowledge and professional skills in Professional Field 3. 8. Economics, demonstrating qualities and skills for independently conducting scientific research.

Because of the above, I confidently give my positive opinion assessment of the conducted research, presented by the above-reviewed dissertation, abstract, achieved results and contributions, and I propose to the esteemed scientific jury to award the educational and scientific degree 'doctor' to Kiril Anachkov in the Field of Higher Education 3. Social, Economic and Legal Sciences; Professional Field 3. 8. Economics; Doctoral program "Finance, Insurance and Provision"

26.05. 2025   Reviewer: Assoc. Prof. Dr. James Jolovski