

**Review by a member of a scientific jury
 for the acquisition of an educational and scientific degree "doctor"
 in "D. A. Tsenov" Academy of Economics – Svishtov**

Reviewer: Prof. Silvia Trifonova Trifonova-Pramatarova, PhD
Author of the dissertation: Beatris Ventsislavova Lyubenova, d020218170, part-time form of doctoral studies
Dissertation topic: „Assessment and risk management of regulated financial institutions”

Doctoral student Beatris Ventsislavova Lyubenova, d020218170 is in part-time doctoral studies, financed by the state, in the area of higher education: 3. Social, economic and legal sciences, professional field: 3.8. Economics, in doctoral program "Finance, money circulation, credit and insurance (finance)" in Department "Finance and credit", "D. A. Tsenov" Academy of Economics – Svishtov. Dissertation adviser of the doctoral student is Prof. Stoyan Prodanov, PhD.

I. General presentation of the dissertation thesis.

1. The subject of research in the dissertation is risk management in banks and insurance companies in the context of increasing regulatory requirements. Banks and insurance companies are the object of research in the dissertation.

In the introduction, it is correctly clarified that the group of regulated financial institutions, in addition to banks and insurance companies, also includes pension insurance companies, investment intermediaries, and collective investment schemes, which, however, remain outside the scope of the study.

2. The dissertation has a total volume of 272 standard pages.

3. The structure of the dissertation is classic, consisting of an introduction, three chapters, a conclusion, a bibliography and two appendices.

The first chapter presents the theoretical foundations of risk management in the banking and insurance sectors. The basic concepts of the nature of risk are examined, based on which the features of risk management in the banking and insurance sectors are derived. There is no specific point in the work where a systematic review of the existing theoretical and empirical studies on the issue is made. However, the main and up-to-date studies on the issue are indicated in this first chapter of the dissertation. Important attention is given to methods and models for quantitative risk assessment and to the stress testing approach.

The second chapter analyzes the regulatory framework of the banking and insurance sectors. To this end, a variety of regulations are explored here, starting with the Basel I, II and III international capital accords, the evolution and innovations in these accords, and the Solvency I and II international regulatory framework in insurance. A useful comparative analysis of Basel III and Solvency II regulatory requirements has been made.

The third chapter analyzes key indicators for capital and risk management in banks and insurance companies. For this purpose, the PhD student constructed a number of single and multiple regression models to determine which risk factors have the strongest impact on the capital base of banks and insurance companies. An analysis of the structure of equity capital, the fulfillment of capital requirements and the dependence between risks and equity capital in the banking sector and in the insurance sector was made. The information provision of the research is based on official statistical data of the BNB, ECB and EBA for the banking sector and of the Financial Supervisory Service and the European Insurance and Occupational Pensions Authority (EIOPA) for the insurance sector. The analysis is based on a database of 77 banks with the highest level of consolidation for the period 2017-2021. Based on the

analysis, conclusions and recommendations are drawn, with a practical focus on policy-makers in the banking and insurance spheres.

4. The bibliography includes a total of 145 literary sources, which, however, are not numbered.

5. Two appendices containing numerous tables and empirical data are presented to the dissertation.

II. Assessment of the form and content of the dissertation.

1. The dissertation is dedicated to a topic that is significant and particularly relevant given the extremely important role of risk management in banks and insurance companies for their resilience in the face of financial and economic turbulence and crises

The doctoral student is very well acquainted with the problems of scientific research, which is contributed by her extensive practical experience in the banking sphere.

Beatris Ventsislavova Lyubenova is currently working (from August 2022) at Central Cooperative Bank AD as an analyst in the Financial and Supervisory Reporting Service, Financial and Accounting Directorate. In the period January 2021 – July 2022, she worked at Raiffeisenbank Bulgaria EAD as a methodologist in “Reporting” Sector, “Accounting” Department, “Finance” Directorate, and before that (August 2019 – December 2021) as specialist in the same department of the bank. In the period November 2018 – August 2019, she was a junior expert in “Reporting, analysis and budgeting” Department of Bank Piraeus Bulgaria AD, and before that (July 2017 – January 2018) – an intern at UniCredit Bulbank AD, branch office in Svishtov.

Beatris Ventsislavova Lyubenova graduated from the “Finance” specialty, Bachelor degree at “D. A. Tsenov” Academy of Economics in 2017 with an excellent grade (6.00), then the “Financial Management” specialty, Master degree at “D. A. Tsenov” Academy of Economics in 2018 with the thesis topic “Presentation of an index portfolio based on DAX constructed using FCFF”. Beatris Lyubenova received her secondary education at “Dimitar Hadjivasilev” Vocational State Commercial High School, Svishtov in 2013 in “Economic Informatics” specialty.

Beatris Lyubenova is distinguished by an extraordinary number of honors, awards and scholarships, which is a clear testimony to the qualities of her research work. Until now, I have never met a PhD student with so many awards, honors and scholarships. Some of her main awards are:

XIV “Young Economist 2018” competition, III prize; Certificate for excellent grade (6.00) in the educational and qualification degree “Bachelor”, awarded by the Academic Management of “D.A. Tsenov” Academy of Economics, 2017; Certificate for achieved excellent grade, awarded by the Rector of “D.A. Tsenov” Academy of Economics, 2017; XIII Young Economist 2017” competition, II prize; XVIII Conference on student scientific creativity, Burgas Free University, Burgas, 2017, II prize; International student competition for financial analysts – „CFA Institute Research Challenge 2017“, Sofia, 2017 (top 5); National Student Scientific Conference, “D. A. Tsenov” Academy of Economics, 2016, I prize; Certificate for excellent success in studies and creative performances, awarded by the head of „Finance and Credit” Department, Svishtov, 2016; Student scientific session, “D. A. Tsenov” Academy of Economics, 2016, I prize, and many others.

The aim of Beatris Ventsislavova Lyubenova’s dissertation is to examine the regulatory requirements in relation to the assessment of risk and capital positions of banks and insurance companies in the conditions of the Basel III and Solvency II regulatory mechanisms.

The purpose of the dissertation is decomposed into 6 research tasks:

1. Presentation of concepts about the essence of risk.
2. Clarification of the peculiarities of risk management in banks and insurance companies.
3. Characterization of risk measurement methods in the banking and insurance sectors.

4. Presentation of the theoretical and methodological basis of stress tests and their application in risk management in the banking and insurance sectors.

5. Characterization and comparison of the regulatory requirements of Basel I, II and III for the banking sector and Solvency I and II for the insurance sector.

6. Analyzing key indicators for capital and risk management in credit institutions and insurance companies.

The research thesis of the dissertation is: "In order to achieve stability, predictability and solvency of banks and insurance companies in the conditions of periodic turbulence of the global environment and dynamic changes and transformations in the financial services sector, it is necessary to constantly revise, adapt and expand the regulatory risk management requirements. This dynamic in the regulatory framework poses new challenges to the management of insurance companies and banks in making adequate, innovative and responsible management decisions."

The research methodology includes a wide range of research methods such as the deductive and inductive approach, the method of analysis and synthesis, the interdisciplinary approach and the statistical approach in studying mass phenomena in the financial sector. In the process of the research, publications of Bulgarian and foreign authors in the field of finance, management, probability theory, statistical methods for the analysis of variation distributions, for the analysis of connections and dependencies, etc., were studied and systematized. Calculations were performed using MS Excel.

2. In the dissertation, appropriate graphic and tabular tools are used to illustrate the presented theses and statements – a total of 29 figures and 33 tables.

3. The dissertation of Beatris Lyubenova is characterized by consistency and logic of reasoning. A smooth transition between the individual parts of the work was carried out. There is solidity of the scientific apparatus and proportionality of the separate three chapters in the work.

4. All empirical data concerning the structure of own capital and the fulfillment of capital requirements in the banking and insurance sectors have been correctly used and processed.

5. In connection with the fulfillment of the set goals and tasks of the research, the doctoral student used numerous foreign and Bulgarian sources on the subject. The bibliography includes a total of 145 literary sources, including in English and in Bulgarian. However, the bibliography is not numbered.

6. The abstract accurately and clearly reflects what is written in the dissertation. The abstract has a total volume of 53 pages.

7. A positive impression is made by the Reference of the PhD student's publications on the subject of dissertation and the Reference on compliance with the national requirements of the Regulations of the Law on the Development of the Academic Staff in the Republic of Bulgaria.

The PhD student has a total of 65.00 points from publications on the topic of the dissertation, which significantly exceeds the national minimum required number of points.

The doctoral student indicated numerous publications on the dissertation – a total of 7 publications, including 2 studies, 1 article, 4 reports (2 of which independent and 2 co-authored), 2 of which in English. It makes a positive impression that two of her publications are co-authored with her supervisor and other colleagues.

III. Scientific and scientific-applied contributions of the dissertation.

The dissertation work of Beatris Lyubenova is definitely distinguished by important scientific and scientific-applied contributions. However, they are presented in great detail and have the character of achieved scientific results. In my opinion, they can be presented in a synthesized form as follows:

1. An author's interpretation of the regulatory framework in the banking and insurance sectors is presented, highlighting specific features and differences in risk management in both sectors.
2. The nature, role, significance and differences in the regulatory requirements of the Basel Accords I, II and III for the banking sector and Solvency I and II for the insurance sector are clarified, given their unique characteristics and risk profiles.
3. The similarities and differences between the Basel standards in the banking industry and the Solvency directives in the insurance industry are clarified based on a historical and comparative analysis of their evolution, and three key components describing the regulatory impact – scope of application, requirements for equity capital adequacy and risk management concept.
4. An institutional analysis of the role and place of risk management in the banking and insurance sectors was carried out.
5. An author's empirical study was conducted with a number of single and multiple regression models constructed to assess key indicators for risk management, the structure of equity capital and the fulfillment of capital requirements of banks and insurance companies, with inferred factor influences and substantiated cause-effect relationships and dependencies.

IV. Critical remarks, questions and recommendations to dissertation:

I have minor recommendations for Beatris Lyubenova's dissertation research, which in no way detract from the merits of her work:

1. It is possible to shorten individual parts of the work, such as point 1.2. of Chapter 2, which could find a place in Chapter One, for example, in the analysis of the peculiarities of risk management in the banking and insurance sectors.
2. The dissertation would have benefited if the review of the specialized literature on the subject had been set aside in a separate point in Chapter 1. Thus, the systematization of the existing theoretical and empirical studies on this current issue would become clearer to the reader.
3. The dissertation and the abstract need a comprehensive grammatical revision. Improperly placed full and incomplete articles, commas, wrong words, etc. are noticeable.

I have the following question for the doctoral student:

Is compliance with the highest prudential regulations sufficient to achieve high resilience and stability of banks and insurance companies and to reduce risks to the banking and insurance sectors?

V. Summary conclusion and opinion.

The dissertation research is devoted to a particularly important financial problem and is of interest from both a scientific and a practical point of view for the banking and insurance spheres. The conclusions drawn express the doctoral student's own position. Therefore, I categorically give my *positive assessment* of the conducted research, presented by the above-reviewed dissertation and abstract, and I propose to the honorable scientific jury to *award* the educational and scientific degree "doctor" to Beatric Ventsislavova Lyubenova in the doctoral program "Finance, money circulation, credit and insurance (finance)" in the Department of "Finance and Credit" of "D. A. Tsenov" Academy of Economics – Svishtov.

Date: 19.08.2023

Reviewer:

(Prof. Silvia Trifonova Trifonova-Pramatarova, PhD)