

REVIEW

by Professor, Dr. Daniela Nikolova Bobeva-Filipova

of a dissertation for the award of scientific Doctor of Science degree
in the field of higher education 3. Social, economic and legal sciences

Professional field 3.8. Economics

Author: VIRGINIA IVANOVA ZHELYAZKOVA

Subject: BANKING RISK MANAGEMENT IN THE TRANSITION TO CIRCULAR ECONOMY

1. General description of the submitted materials

By order № № 38 / 15.03.2021 of the Rector of VUZFAssoc. Prof. Dr. Grigoriy Vazov I have been appointed a member of the scientific jury in the procedure for defense of a dissertation on "Management of banking risks in the transition to a circular economy to obtain the degree of" Doctor of Science "in Higher Education 3. Social , business and legal sciences, Professional field 3.8. Economics. The author of the dissertation is a professor, Dr. Virginia Zhelyazkova - a candidate at the Department of Finance at VUZF.

The submitted materials include documents according to the submitted inventory:

1. Abstract ONS Doctor
2. Abstract of the dissertation for the degree "Doctor of Science"
3. Diploma for ONS Doctor
4. Dissertation on "Bank risk management in the transition to a roundabout Economics ”for the degree of Doctor of Science.
5. Bulgarian Stock Exchange Review.
6. Postbank review 1

7. Postbank Review 2
8. Summaries of publications
9. Reference to the citations.
10. Reference national minimum requirements
11. Autobiography.
12. Feedback from the BSE

The candidate has submitted 1 study, 1 monograph and 12 articles.

The attached documents meet the requirements and provide an opportunity to comprehensively assess the scientific contribution of the candidate.

The dissertation consists of 297 pages, of which 277 pages are body text and 18 pages are appendices. The main text contains 7 figures and 13 tables.

3. Topicality of the topic and expediency of the set goals and tasks

The presented dissertation examines particularly topical issues, both theoretically and in practice. The failures of global and European policy to introduce a nature-friendly model of economic growth, the divergence in the actions of different governments (withdrawal and return of the United States to the Paris Agreement) demonstrate not only political inconsistency, but also raise the question of convincing theory to argue the need and develop ways to form a global working economic model. The topic of the circular economy as one of the five pillars of the so-called The green economy is already part of the contractual package of policies and will create a new framework for the functioning of the economy and the financial system of the EU and Bulgaria.

The topicality of the topic is related to the positive trend of increased interest not only from governments and international organizations but also in business to implement projects in the context of the circular economy, and that more and more investors are turning to company assets, which in one way or another are defined as "green", i.e. as those whose activities support the protection of the environment, including the fight against climate change.

For the banking system, as the candidate points out, the imposition of a circular economy creates new risks and opportunities and their assessment and management is no longer a matter of choice, but of a regulatory framework. In this sense, both theory and practice need research such as that of the candidate to fill the theoretical vacuum and to offer workable models for ensuring both financial stability and growth.

The subject, the object and the purpose of the dissertation work are precisely defined and on this basis the set tasks give the opportunity to understand the depth of the problem and reach important scientific and applied results.

4. Knowledge of the problem

Most of the candidate's research is devoted to the circular economy and the risks associated with its establishment for the banking sector. For this relatively long period, associated with hesitant policies and even more hesitant results in the introduction of circular economy models, Prof. Zhelyazkova actively participated in the theoretical debate and in the application of the first banking models. It must be assessed that this innovative approach is difficult to implement given the conservatism of the banking system.

The lack of theory and the rapidly changing political and regulatory concepts of the scope and manner of imposing the circular economy is also evident in the list of references. A significant part of the sources are reports and policies of official government institutions, international financial organizations, etc.

The good knowledge of the problem and the active publishing activity confirm the candidate as one of the most prominent authors in the academic literature on the subject. The literature used covers 158 sources.

5. Research methodology

The chosen research methodology allows to achieve the set complex goal and to obtain an adequate answer to the tasks solved in the dissertation. The methodology applied in the study is a combination of quantitative and qualitative analysis. Qualitative analysis is used to illuminate the subject and object of the study, and quantitative analysis - simulations of different algorithms for calculating and assessing environmental and social risk in bank lending - for the purposes of implementing and testing the author's proposed model for managing these risks. Critical analysis of the methodologies of international financial institutions such as the EBRD and IFC for environmental and social risk assessment allows the author to justify his own model.

The results of the study are the basis for the simulations that show the efficiency and applicability of the selected model.

The emphasis that the candidate places on the data and their quality is also impressive, as they are ranked from macro to micro level and are operationalized in the standards of the banks.

6. Characteristics and evaluation of the dissertation

The study consists of an introduction, five chapters, a conclusion and appendices.

The first part focuses on applicable theories in the field of climate change and identifies some major environmental issues that affect the economy;

The second part clarifies the concept of the circular economy. An overview of good practices and policies in developed countries, which are successful in introducing a circular economic model. This justifies the need for funding and thus makes the logical connection with the next part.

The third part analyzes the role of the two main elements of the financial system - the banking sector and capital markets - for the financing of the circular economy. The environmental risk and its specifics in the two financial sectors are defined.

In the fourth part Some basic problems of ecological accounting and the specifics of reporting the risks associated with the circular economy are considered.

The fifth part proposes an author's model for environmental and social risk management in bank lending. The concept of a Green Bank is being developed.

The conclusion presents the main conclusions of the study

Both the dissertation and the candidate's publications argue the need for reforms: first - at the macroeconomic level - the transition to the presented models of circular economy; second: at the corporate level - not only compliance with environmental standards, but also investing in the context of the circular economy and third: at the level of financing institutions - especially banks - lending to such projects. The successful transition from macro to micro level of analysis is impressive.

It must be acknowledged that this approach to the problem is convincing and naturally leads to the success of defining a banking policy and an accounting model to help banks make this transition as painless as possible. Of course, the question here is whether now is the right time to reform the severe pandemic situation, over-regulation in the banking sector and competition from non-banking institutions and fintech companies, which are increasingly taking away market share from banks.

The dissertation is a balanced study between the opportunities and risks that the financing of the circular economy gives rise. In-depth and analyticalness is found in their identification, and enviable pragmatism is found in the proposed approaches on how banks take advantage of opportunities and manage to reduce risks.

The scope of the research and the results achieved are remarkable: analysis of working country models, the role of international financial institutions and their risk assessment methodologies, rich empirics and simulations.

Seemingly, the mechanical pooling of risks associated with the circular economy and the so-called "socially responsible investment" is in fact presented as a logical synergy, ieBecause, due to the nature of their activities, companies that invest in "green projects" also appear to be socially responsible, ie their investments have the character of "socially responsible investments" (SRI) and "sustainable and responsible investments" (sustainable and responsible investments),

The dissertation is developed at a high academic level with clear and professional language and style.

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

I fully support the contributions made by the candidate

Significance of development for science: There are few studies in Bulgaria on the circular economy and the impact of its imposition on the financial sector. The proposed dissertation is a one-of-a-kind comprehensive study of a wide range of issues in this field. The active role of banks in the transition to a circular economy is justified, taking into account the risks and economic rationality of the process. An ambitious model of a "green bank" in line with the level of development in the EU and Bulgaria is also presented.

Significance of development for practice: An important contribution is to shed light on the problem of risks and benefits of the circular economy for banks, and the proposals an eight-factor author's model for environmental risk assessment in lending is fully applicable in practice. This is proved by the results of the simulations. The model was tested on the basis of data on the portfolio of corporate loans of one of the systemic banks in Bulgaria for a period of four years. The results show that the application of the alternative model leads to a more accurate assessment of environmental risk.

8. Evaluation of the publications on the dissertation

The publications fully meet the requirements for their number, type and place of publication. In this review, we focus on the quality of the publications:

- The publications cover mainly the period after 2014, ie they are relatively new and reflect current issues;

- Although relatively new, the publications have already been cited by a number of authors in refereed and non-refereed publications, which illustrates the relevance and innovation of the theoretical and practical charge of the candidate's work;
- The topics of the publications, with the exception of one, are entirely and directly focused on the individual aspects of the dissertation, which not only summarizes the publications, but builds on the achieved scientific results in the individual publications. In this context, the dissertation is a kind of synthesis and inductive understanding of banking risks in connection with the transition to a circular economy;
- It is noteworthy that most of the publications are a continuation of participation in scientific conferences, seminars and round tables. Definitely, this enabled the candidate to think well and present the discussions in a balanced way and to defend his theses with reliable arguments.

9. Assessment of compliance with the minimum national requirements

After checking the data from the Report on the implementation of the minimum national requirements I consider that the academic achievements of the candidate exceed the minimum required for obtaining the scientific degree "Doctor of Science" in the professional field 3.8. Economics. With a minimum of 350 points required, the candidate has provided evidence of 585 points. It is noteworthy that the largest excess of the minimum requirements is achieved in citations or reviews in scientific journals, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes - by 90 points and citations in monographs and collective volumes with scientific review with 100 points, which shows the scientific recognition of the candidate.

10. Personal participation of the candidate

The dissertation is the result of independent scientific research, most of which are presented at scientific forums. Theoretical sources and institutional reports and documents are used and cited correctly.

The review of the dissertation and publications did not reveal plagiarism.

11. Abstract

The abstract correctly covers the entire issue of the dissertation. It is well structured and the individual parts are logically connected. Most attention is paid to the fifth chapter, which presents the Model for environmental and social risk assessment in lending, as well as the concept of a green bank.

The emphasis of the abstract is on the conclusions from the analysis in the separate parts of the dissertation.

12. Critical remarks and recommendations

My critical remarks are rather recommendations for future work.

The dissertation and publications do not clearly highlight the criticism of the current concepts and policies for the circular economy. For example, it is necessary to answer the question why the goal of the Environmental Action Program was not achieved: "to make the EU a resource-efficient, green and competitive low-carbon economy", as well as the goals of The 2020 Strategy and the Roadmap for a Resource Efficient Europe. In this regard, they could expand research to find an effective model of a circular economy in the context of the new paradigm for the green economy and based on the lessons learned so far.

The assessment of environmental risks could be considered together with the assessment of the growing regulatory and market risks of banks. In this way, the economic rationality of the transition to a circular and green economy will stimulate the interest of the financial sector, and not just the regulatory imposition of the model.

13. Personal impressions

I have known the candidate for 6 years in connection with my work at VUZF. She is an extremely balanced and dedicated scientist, focused and in-depth in the field of green transition and the circular economy and the associated risks. Her intensive scientific activity is combined with high qualities of a teacher and leader and organizer of the educational activity in VUZF.

14. Recommendations for future use of dissertation contributions and results

Given the active policy of the European Central Bank and the European Commission to assign functions for the implementation of the green transition to the banking system, the risk assessment could be applied in more banks.

The scientific work of the candidate provides an opportunity to identify significant gaps and lack of a clear model of green transformation in Bulgaria. In this regard, the analysis of the working practices and the definition of the different models of the transition to a circular economy are

important for the formation of the national strategy in this area. The business models substantiated by the applicant based on the classification of ING Bank could find a place in the revision of the National Plan for recovery and resilience, which will form the basis of the transition in the coming decades.

CONCLUSION

The dissertation contains results that represent an original contribution to science and meet all the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria (ZRASRB) and the Regulations for the implementation of ZRASRB. The scientific creativity of the candidate has a strong practical nature, which is confirmed by the attached feedback from financial institutions.

The candidate has high professional qualities and is an established and innovative scientist with a high scientific reputation. The dissertation shows that the candidate Virginia Zhelyazkova has in-depth theoretical knowledge and skills in Professional 3. 3. Economics, demonstrating a high capacity for independent research and their application in practice.

Due to the above, I confidently give my positive assessment of the research presented by the above-reviewed dissertation, abstract, results and contributions, and I invite the esteemed scientific jury to award *Doctor of Science degree* of Virginia Zhelyazkova in the field of higher education 3. Social, economic and legal sciences; Professional field 3. 8. Economics.

April 1, 2021

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Reviewer:

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(Prof. Dr. Daniela Bobeva)