

# R E V I E W

by Assoc. Prof. Dr. Petar Chobanov, Department of Finance, UNWE

**Subject:** Public defense of a dissertation for the award of the educational and scientific degree “Doctor”

**Author of the dissertation** - Tania Tsvetanova Karamisheva , part-time PhD student at the Department of Economics, Faculty of Economics, Sofia University “St. Kliment Ohridski”

**Dissertation Topic:** "The Credit and Financial Cycle in Bulgaria, its Interaction with the Business Cycle and Macroprudential Policy"

**Scientific supervisor:** Assoc. Prof. Dr. Mariela Nenova-Amar

## **General information about the competition**

Order RD 38-211/28.04.2021 of the Rector of SU “St. Kliment Ohridski” appoints me as an external member of the scientific jury in connection with the procedure for the acquisition of the PhD degree by Tanya Tsvetanova Karamisheva, part-time PhD student in the professional field 3.8 Economics (Political Economy), Department of Economics, Faculty of Economics. By the decision of the scientific jury with protocol No. 1 / 26.05.2021 I have been selected as a reviewer of the dissertation on "The credit and financial cycle in Bulgaria, its Interaction with the business cycle and macroprudential policy". Scientific supervisor of the PhD is Assoc. Prof. Dr. Mariela Nenova-Amar

## **Brief biographical data about the PhD Student**

Tanya Karamisheva graduated from the 91st German Language School "Prof. Konstantin Galabov", Sofia. She speaks German, English, Italian, Spanish and Russian. In 2000 she obtained a Bachelor's degree in Economics of Industry at the UNWE. She completed her Bachelor's and Master's degrees in Business Management at Julius-Maximilians University, Würzburg, Germany. She has been working as a Senior Expert in the Economic Research and Forecasting Directorate, Monetary and Financial Research Department at the BNB since March 2007. This gave her the opportunity for a number of specializations abroad, as well as for combining professional development and academic interests. She has participated in numerous international scientific conferences.

## **General presentation of the thesis**

The dissertation submitted for review is 200 pages long and consists of an introduction, five chapters, a conclusion, a bibliography and 2 appendices. 18 graphs and 28 tables are used. The list of references used includes 158 titles, of which 149 in English and 9 in Bulgarian. The volume of the annexes is 10 pages. 5 publications have been made on the topic of the dissertation, one of them co-authored, and papers have been presented at 3 scientific forums.

The dissertation is devoted to a topical and socially significant issue, as macroprudential policy is still in the process of development, which makes such research necessary and useful.

The main objective of the dissertation is to study the credit and financial cycle in Bulgaria and its interrelation with the business cycle.

The object of the dissertation is the cyclical fluctuations in the financial system measured by the deviation of a set of financial and macroeconomic indicators from their long-term trend and the relationship between the fluctuations in the financial system and the deviation of real gross domestic product from potential.

The subject of the study is the possibilities of using the financial cycle assessment in macroprudential policy decision-making, in particular the countercyclical capital buffer.

The research thesis is that aggregating information from different macroeconomic and financial indicators and deriving an aggregate measure of the financial cycle outperforms the assessment of the credit cycle by using the deviation of the credit-to-GDP ratio from its long-run trend and can provide timely and reliable signals of the build-up of cyclical risks in the financial system.

The main hypothesis of the study is that there is a correlation and synchronicity between the financial cycle and the business cycle. The accumulation of risks in the financial system and the existence of an inextricable link and synchronization between the financial cycle and the business cycle requires timely measures by the central bank to build up buffers in the banking system during the upward phase of the cycle to ensure greater stability and resilience of the financial system during the transition from the upward to the downward phase of the cycle.

The introduction presents the relevance and importance, the aims and objectives, the object and the subject of the study. The research thesis and hypotheses are formulated. The approaches and methods of the study are discussed, as well as possible limitations. An overview of the structure of the thesis is given.

Chapter one reviews the literature on the topic, highlighting five main parts: the theoretical models of the relationship between credit and economic activity; empirical studies of the factors influencing credit dynamics; a review and summary of the approaches used to

assess the credit and financial cycles; and the relationship between cyclical fluctuations in the financial system and the real economy are presented in turn.

Chapter two presents the dynamics of credit to the private sector, the main developments in the banking system and the BNB's policy after the introduction of the currency board in Bulgaria.

The third chapter is devoted to the determinants of credit dynamics in Bulgaria at the macro level using aggregate indicators, and at the micro level using individual bank data, as well as the results of the Bank Credit Activity Survey. A distinction is made between demand-side and supply-side credit factors.

Chapter 4 examines the assessment of the credit cycle in Bulgaria as well as the financial cycle. It then presents an assessment of the business cycle by considering the interrelationship between output, inflation, unemployment and interest rates. The relationship and the degree of synchronization between the financial cycle and the business cycle are examined.

Chapter 5 discusses the possible application of the results of the financial cycle assessment for macroprudential purposes and, in particular, for decision-making on the level of the countercyclical capital buffer.

The conclusion presents the main results and conclusions of the study.

### **Evaluation of scientific and applied contributions**

The dissertation is dedicated to a topical problem, an appropriate scientific style is used and the in-depth knowledge of the topic is demonstrated.

A large volume of statistical information and indicators has been used, and the data are presented correctly, with explicit reference to the relevant sources.

The research methods are used correctly, and the author demonstrates a high degree of knowledge in this respect. The following research approaches and methods can be highlighted:

- Error Correction Model - to investigate the determinants of credit dynamics.
- Panel regressions - to distinguish supply and demand side factors affecting credit dynamics.
- The Hodrick and Prescott filter - to estimate the credit cycle in the economy.
- The Christiano and Fitzgerald filter - for estimating the financial cycle in the Bulgarian economy.
- Structural model with unobservable components - for business cycle assessment

- Turning points method and synchronization measures - for the analysis of the interrelationship between the financial cycle and the business cycle.

Some limitations in the use of these methods are critically outlined.

The results obtained are characterized by accuracy, having been derived on the basis of the available data and with the correct use of appropriate methods.

The author has formulated six main contributions, which are listed in the abstract. They are correctly stated, which gives me a reason to accept them as fully realistic and based on concrete research results. They extend and enrich the empirical knowledge, as there are not enough in-depth publications on the specific issues. This makes the thesis particularly useful for the academic community as well as for macroprudential policy formulation and implementation. A large body of literature on the issue is critically analyzed, with an emphasis on that which is applicable to our context. Research methods are demonstrated that allow for the analysis and modeling of a significant number of indicators, as well as the formulation of conclusions with broad applicability.

The specific contributions are:

- A comprehensive review of the literature on the credit and financial cycle, the business cycle, their relationship and macroprudential policy;
- An analysis is made of the development of the banking system in the period before and after the Global Financial and Economic Crisis, focusing on the role of the BNB in preserving financial stability;
- On the basis of empirical analysis, the factors of credit dynamics in Bulgaria are examined both at the macro level using aggregate macroeconomic indicators and at the micro level using individual bank data and a distinction is made between demand and supply side factors;
- The phases of the financial cycle in Bulgaria are estimated by aggregating information from a wide range of indicators and the estimated financial cycle in the Bulgarian economy is compared with an estimated business cycle for Bulgaria, derived using a model with unobservable components. The main contribution of the dissertation is the derivation of an aggregate measure of the financial cycle. This is one of the first attempts to estimate the financial cycle in Bulgaria, going beyond the limitations of using the deviation of the credit-to-GDP ratio from its long-run trend;

- Conclusions are drawn on the length of the financial cycle in Bulgaria, the peak and the trough of the cycle, the current phase of the cycle, and the degree of synchronization between the financial cycle and the business cycle. These findings could have important implications for the formulation and implementation of macroprudential policy measures aimed at limiting the build-up of cyclical systemic risk in the financial system.
- On the basis of the results of the empirical analysis, the paper discusses the periods in which it is appropriate to apply preventive macroprudential policy measures, such as decisions on countercyclical capital buffer levels. Knowing the phase of the financial cycle that the economy is in at any given time is essential to identify the most appropriate times to build up or release buffers, which will make the system more stable and resilient to shocks

### **Compliance with the minimum national requirements under Article 26 of the Law on the Development of Academic Staff in the Republic of Bulgaria and opinion on the correctness of the thesis abstract**

The enclosed reference for the fulfilment of the minimum national requirements under Article 26 of the Law on the Development of Academic Staff in the Republic of Bulgaria is evident that PhD student Karamisheva meets them fully and correctly. Participation in numerous scientific conferences, as well as in central bank and IMF seminars are a prerequisite and evidence of the high level of knowledge and skills achieved by the PhD student.

The abstract the thesis is 42 pages long. It meets the necessary requirements and objectively reproduces in a synthesized form the content, the main conclusions as well as the achieved research results in the dissertation. I fully accept and support the contributions that are formulated in the abstract.

### **Critical comments and recommendations**

In view of my participation in the internal discussion of the thesis, my comments and recommendations are correctly reflected. This gives me reason to make no further critical comments. My recommendation is that the doctoral student continues to develop academically and publish new research on this and similar topics.

## Questions to the doctoral student

1. Can you assess the role of the countercyclical capital buffer in the current situation of uncertainty related to the coronavirus crisis?
2. What recommendations can you make for the formulation and implementation of macroprudential policy at national and European level?
3. Do you have any observations on how homogeneous the business cycle is in the euro area and how does this relate to the conclusion that the business cycle in Bulgaria is largely synchronized with it?

## Conclusion

It can be concluded that the dissertation has the character of a topical, substantiated, independent and complete scientific research, of high quality and usefulness for practice. The author possesses and demonstrates considerable knowledge and very well-developed research skills.

**This gives me reason to confidently recommend to the distinguished members of the scientific jury that Tania Tsvetanova Karamisheva be awarded the educational and science degree “Doctor” in the professional field 3.8 Economics (Political Economy).**

Sofia

28.06.2021 г.

Reviewer:



/Assoc. Prof. Dr. Petar Chobanov/