

D. A. TSENOV ACADEMY OF ECONOMICS - SVISHTOV

Faculty of Finance

Department of Finance

Raya Biserova Dragoeva

doctoral student's № D010219218

ABSTRACT

of a dissertation for the award of the educational and scientific degree 'doctor' in the doctoral programme „Finance, Money circulation, Credit and Insurance (Finance)” on the topic:

Financial Analysis of the Commercial Banks in Bulgaria in the Conditions of Post-Crisis Recovery

Scientific Advisor:

Assoc. Prof. Dr. Lyudmil Boyanov Krastev

Svishtov

2022

The dissertation was discussed and proposed for defence by the Department of Finance and Credit at the Faculty of Finance of D. A. Tsenov Academy of Economics - Svishtov.

Description of the dissertation paper:

Number of pages – 222.

Number of figures – 39.

Number of tables – 16.

Number of references – 268.

Number of publications on the topic – 6.

The defence of the dissertation will be held on 10.02.2023 at 13:00 hrs. at the Rectorate Conference Hall of D. A. Tsenov Academy of Economics – Svishtov.

All materials related to the defence shall be available upon request at the Department of Academic Studies and Academic Staff Development.

Contents of the abstract

| | |
|--|----|
| I. General characteristics of the dissertation. | 4 |
| 1. Relevance of the topic..... | 4 |
| 2. Object and subject of research in the dissertation. | 4 |
| 3. Research thesis statement. | 4 |
| 4. Research purpose and tasks. | 5 |
| 5. The methodology | 5 |
| 6. Constraints to the dissertation research..... | 5 |
| 7. Degree of development of the problem in the scientific literature | 6 |
| 8. Structure of the dissertation | 6 |
| II. Resume of the dissertation thesis | 9 |
| Introduction | 9 |
| CHAPTER ONE. REASONS FOR THE EMERGENCE OF CRISES IN THE BANKING SECTOR IN BULGARIA | 9 |
| 1. Historical development of banking activity..... | 9 |
| 2. The Bulgarian banking legislation and the European regulations for banking supervision | 11 |
| 3. Banking sector crises – factors and phases | 12 |
| CHAPTER TWO. CHARACTERISTICS AND ROLE OF FINANCIAL ANALYSIS AS A METHODOLOGICAL TOOL FOR ASSESSMENT OF BANK ACTIVITY | 13 |
| 1. Financial analysis as a tool for the assessment of banking activity..... | 13 |
| 2. The bank performance assessment model..... | 15 |
| 3. Main indicators of the banking sector in the conditions of the economic crisis (2007–2008)..... | 16 |
| CHAPTER THREE. FINANCIAL ANALYSIS OF COMMERCIAL BANKS IN BULGARIA IN THE PERIOD OF POST-CRISIS RECOVERY | 17 |
| 1. Bank consolidation processes as a prerequisite for banking sector stability | 18 |
| 2. State of the banking sector in a period of post-crisis recovery..... | 19 |
| 3. Guidelines for future development of banking activity in Bulgaria | 25 |
| CONCLUSION | 26 |
| III. LIST OF THE SCIENTIFIC AND APPLIED CONTRIBUTIONS OF THE DISSERTATION PAPER | 27 |
| IV. PUBLICATIONS ON THE TOPIC OF THE DISSERTATION PAPER | 28 |
| V. REFERENCE FOR COMPLIANCE WITH THE NATIONAL REQUIREMENTS UNDER THE RULES FOR THE IMPLEMENTATION OF THE LAW ON THE DEVELOPMENT OF THE ACADEMIC STAFF IN THE REPUBLIC OF BULGARIA | 29 |
| VI. STATEMENT OF ORIGINALITY | 30 |

I. General characteristics of the dissertation.

1. Relevance of the topic.

The relevance of the topic is determined by the importance and the key role of banking institutions in the countries' economy and by their predisposition to various risks. In today's dynamic economic conditions, the role of banks and their financial stability is an issue of an increasing importance.

A number of crises - the financial and economic crisis of 2008, the COVID-19 crisis in 2020, climate change, inflationary processes, wars and energy crises have brought to the fore the need for stricter control and supervision over the activity and stability of banking institutions. Therefore, the regulation and supervision of commercial banks are defined as one of the main tasks of the Central Bank, which aims to provide for the sustainability of the banking sector. The focus of banking supervision is mainly on maintaining stable capital and liquidity positions, control over various aspects of banks' activities and monitoring of the individual risk exposures.

In this regard, methods and tools for comprehensive financial analysis of banking activity are needed to make an assessment, based on which to analyze the changes in the external and internal circumstances on the financial condition of banks. The information obtained from the financial analysis is to be used for making timely and effective decisions about improving the indicators of banks and ensuring their stability. All this determines **the relevance** of the topic of the dissertation, as far as it is possible to present an effective financial analysis in the conditions of a constantly changing economic environment and dynamic regulations.

2. Object and subject of research in the dissertation.

The object of research is the financial condition of the commercial banks in Bulgaria (first group). **The subject of research** is focused on the key indicators for evaluating the banking activity. With the appropriate tools, we can assess the banks' resilience and ability to adapt to dynamic changes.

3. Research thesis statement.

The thesis statement defended in the dissertation is that the banking sector in Bulgaria (in particular the banks of the first group) remains stable even in the conditions

of multiple crises, thanks to formed capital buffers and adequately managed balance sheet positions in accordance with the national and European regulatory framework.

4. Research purpose and tasks.

The research purpose of the dissertation is using the tools of financial analysis to establish the state and the stability of the commercial banks in the conditions of economic instability. To achieve this research purpose, the following **tasks** are defined:

- to outline the theoretical and applied aspects of banking sector regulation in Bulgaria, the implementation of the Basel agreements: Basel I, II and III and possibly IV;
- to do a theoretic research on the nature and causes of crises in the banking sector;
- to highlight the importance of financial analysis as a tool for evaluating banking activity;
- to review the key indicators and propose a model for evaluating the banking activity;
- based on the presented model for the analysis and assessment of banks to investigate their financial condition.

5. The methodology of the conducted research is based on the use of a wide range of scientific and applied methods - comparative analysis, the historical method, the inductive method, rank classification. To achieve the research tasks, publicly available data from the banks' official databases were used.

6. Constraints to the dissertation research – the analysis is focused only on the banks of the first group (according to the classification of the BNB), since they are considered as systemically important financial institutions, whose activity affects the state of the entire banking sector and the economy of the country. They have the largest market share and the evaluation of their financial condition is largely a reason to draw conclusions for the entire banking sector.

Since the global financial crisis, systemic institutions have been a key priority in supervisory policy. As from 2020, the European Central Bank has been directly supervising the five largest banks in our country. Consolidation processes are concentrated in the banks of the first group, which leads to a change in market share and to difficulty in processing empirical data.

7. Degree of development of the problem in the scientific literature - in the scientific literature there are studies on the financial analysis of commercial banks during and after a crisis, the reasons that lead to the emergence of these crises, a number of papers have been published on their impact on individual aspects of banking activity. Each of the papers undoubtedly has its scientific contribution and supports the future development of the banking sector.

The dissertation is based on research papers by Bulgarian and foreign authors in the field of banking, banking analysis and supervision. Some of the Bulgarian authors that have investigated the research matter are: Zhelio Vatev, Bozhidar Bozhinov, Silvia Trifonova, Maria Vidolova, Stefan Vachkov and others. In the foreign scientific literature, we can highlight the works of Asli Demirguc-Kunt, Frederic Mishkin, Ben Bernanke, Henry Thornton and other.

Despite the above-mentioned research in the field of analysis of banking activity and banking crises, the continuous, dynamic processes we witness today have been bringing changes in modern banking institutions. In the conditions of developing digitalization of the economy, a new approach is needed in the management of banking activity and the processes related to it.

8. Structure of the dissertation

The dissertation is in a volume of 222 pages, structured in an introduction, three chapters and a conclusion as follows:

Contents

Introduction

CHAPTER ONE. REASONS FOR THE EMERGENCE OF CRISES IN THE BANKING SECTOR IN BULGARIA

1. Historical development of banking activity
 - 1.1. Origin of the banking activity
 - 1.2. The banking institution in the modern financial system
2. The Bulgarian banking legislation and the European regulations for banking supervision

3. Banking sector crises – factors and phases

CHAPTER TWO. CHARACTERISTICS AND ROLE OF FINANCIAL ANALYSIS AS A METHODOLOGICAL TOOL FOR ASSESSMENT OF BANK ACTIVITY

1. Financial analysis as a tool for the assessment of banking activity
2. The bank performance assessment model
 - 2.1. Indicators for the assessment of the capital adequacy of the banking activity
 - 2.2. Assessment of the quality of bank assets
 - 2.3. Static and dynamic indicators for measuring liquidity
 - 2.4. Indicators for the assessment of earnings and profitability
 - 2.5. Econometric methods and tools for analyzing the activity of the bank
3. Main indicators of the banking sector in the conditions of the economic crisis (2007–2008)

CHAPTER THREE. FINANCIAL ANALYSIS OF COMMERCIAL BANKS IN BULGARIA IN THE PERIOD OF POST-CRISIS RECOVERY

1. Bank consolidation processes as a prerequisite for banking sector stability
 - 1.1. Reasons for consolidation and bank efficiency hypotheses
 - 1.2. Legislation on mergers and acquisitions
 - 1.3. Analysis of the performance indicators before and after consolidation processes in the Bulgarian banking sector
2. State of the banking sector in a period of post-crisis recovery
 - 2.1. Macroeconomic indicators and their impact on banking activity
 - 2.2. Analysis and ranking of commercial banks in Bulgaria (first group) based on a modified CAMEL model
3. Guidelines for future development of banking activity in Bulgaria

Conclusion

List of references

LIST OF THE SCIENTIFIC AND APPLIED CONTRIBUTIONS OF THE DISSERTATION PAPER

**PUBLICATIONS ON THE TOPIC OF THE DISSERTATION PAPER
REFERENCE FOR COMPLIANCE WITH THE NATIONAL
REQUIREMENTS UNDER THE RULES FOR THE IMPLEMENTATION OF
THE LAW ON THE DEVELOPMENT OF THE ACADEMIC STAFF IN THE
REPUBLIC OF BULGARIA
STATEMENT OF ORIGINALITY**

II. Resume of the dissertation thesis

Introduction

The introduction to the dissertation presents its theoretic and empirical relevance and added value. It consistently clarifies the research thesis, the object, the subject, the purpose and the research tasks of the dissertation. It also defines the main constraints to the dissertation research and the used methodology.

CHAPTER ONE. REASONS FOR THE EMERGENCE OF CRISES IN THE BANKING SECTOR IN BULGARIA

The first chapter is of mostly theoretical and methodological nature and traces the historical development of banking institutions. The chapter presents an in-depth study of the Bulgarian regulatory framework and the European regulations for banking supervision as well as the views and interpretation of crises of a number of theoretical schools.

1. Historical development of banking activity

Based on a study of various literary sources, the dissertation begins with an overview of the establishment of the first banking institutions and their development to the present day. The aim is to highlight their purpose and functions, which, despite the development over time, remain unchanged, and also to emphasize their role in the stability and development of the national and world economy.

Banks are a major factor and a driving force in the economic development of any country. For this reason, the history, condition, strengths and weaknesses of the banking sector are in the focus of the research of a number of scholars, researchers and economists.

The development of banking as an activity is a function of the development of the socio-economic relations. The emergence of banking institutions is related to the acceptance of money as a universal means of exchange. Over the years, banking has undergone a number of changes, but its main purpose has remained the same – to collect deposits and to grant loans. It is the sphere in which institutions are needed to manage the money and credit relations in a given country.

According to some authors, the first bank-like institutions appeared in ancient Babylon in the 7th century BC. Such institutions were the temples, where taxes and fees were collected. As sacred places, at that time, temples were considered one of the safest places. During the Middle Ages, banks gradually expanded their activities. In the early Middle Ages, we find the so-called giro operations (transfers related to foreign trade). As evidence by literature sources, the first bank to perform giro operations was "Monte Nuovo".

Historically, the development of banking in Bulgaria is characterized by cyclicity. The introduction of a modern banking system in Bulgaria began after the Liberation of Bulgaria. The Bulgarian National Bank (BNB) established in 1879 with state funds, functioned as a commercial bank and was subordinate to the Minister of Finance. It was charged with no issuing activity and the operations it performed were more typical of a commercial bank than of a central authority. In 1926, BNB was legally established as an independent entity of the right to issue. Pursuant to an act from 1991, BNB began to function as a typical central bank. Its independence was restored and the its functions were distinguished from those of the rest banking institutions.

The structural changes in the banking sector in recent years have been changing the banking system. The competition between financial institutions has become dynamic. Striving to gain stable market positions and, accordingly, make profit, banking institutions must adapt to the changing financial environment by improving their operations and innovations. Figure 1 shows the economic processes that characterize modern commercial banks.

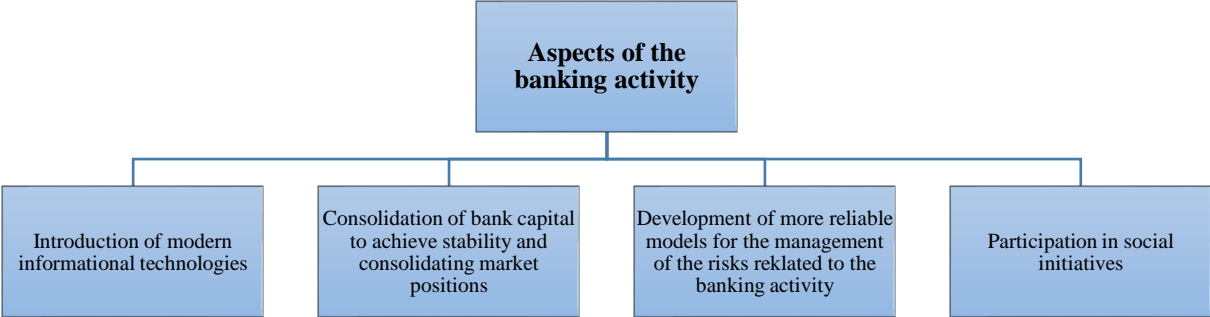


Figure 1. Aspects of modern banking activity

Source: Adapted by the author

2. The Bulgarian banking legislation and the European regulations for banking supervision

The dissertation first highlights the importance of banking supervision and its role in terms of bank stability. The changes in banking legislation aimed at improving the efficiency of supervision and providing for the higher stability of the banking system have been studied. Particular attention is paid to the Basel regulatory framework.

The existence of legislation on which to base its activity is a necessary condition for the efficient work of the supervisory body. Having laws and regulations on the activity of banking institutions significantly reduces risk. In addition to the national legal framework, it is also important to have global practices and systems to increase the efficiency of supervision.

The Bulgarian legislation in the field of banking supervision has undergone many changes, aiming at improving the efficiency of supervisory control and providing for the higher stability of the banking system. This includes the development of banking laws and regulations and their efficient use by supervisory bodies. Figure 2 presents the changes in the Bulgarian banking legislation in accordance with the periods of adoption of the Basel agreements.

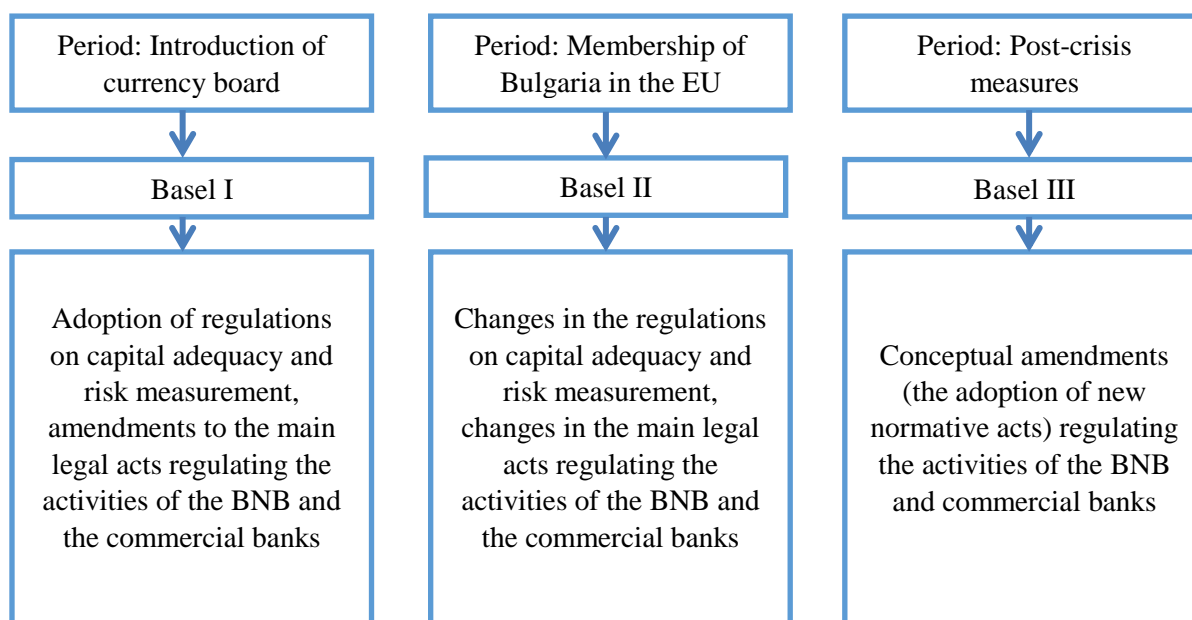


Figure 2. Changes in the Bulgarian banking legislation

Source: Adapted by the author

The sound and efficient banking supervision is of paramount importance for a country's financial stability. The regulation and supervision of banking institutions in our country is performed by the BNB. This is one of the most important functions of the Central Bank, which aims to achieve stability of the banking sector and protection of the interests of the depositors.

3. Banking sector crises – factors and phases

This paragraph examines the nature and causes of banking crises. In it, the core characteristics and the causes of the negative phenomena are deduced based on an analysis of various literature sources. Attention is paid to the impact of the global financial crisis of 2007-2009 on the banking sector, which brought new insight into the theory of financial crises.

Studying the phenomena and processes that can have a negative impact on the banking sector is essential for its proper functioning. One of these phenomena is crises. Nowadays, they are one of the most essential economic processes of a systemic nature. In recent years, the banking sector has faced serious and severe challenges, which gives grounds for researching banking crises and the reasons for their emergence.

Banking crises are in the focus of public interest and this calls for their continuous study. The banking sector has always been at the center of crises - in the 1930s, the global financial crisis in 2008 and now, when the situation is different, as we are facing an unprecedented crisis related to systemic health problems - the COVID-19 crisis.

Crises are not a new phenomenon. They are an important element of the economic cycle and are therefore the subject of research by a number of economists. Representatives from different theoretical schools interpret the specifics of the processes that disrupt the stability of the financial system. From the analysis of banking crises, it can be concluded that they are a complex phenomenon and there is no consensus among the authors about their core characteristics and the reasons for their emergence. Every single crisis is unique in its own way - they have their own specifics and peculiarities that arise from the characteristics of the economy both at the national and the global level.

The literature review on causes for crises in the banking system gives reason to classify them into the following groups:

- Macroeconomic causes at the international level – usually include international macroeconomic conditions (unsustainable macroeconomic policies), excessive credit booms and large capital inflows;

- Macroeconomic causes at the national level – weaknesses and structural problems in the economy, dependence on foreign currency, foreign debt and other;

- Causes at the banking sector level - in general, they are related to the role of the central bank, financial liberalization, financial, bonus systems of managers and employees in the banking sector;

- Causes at the banking institution level – liquidity problems (Laeven, 2011), lack of good management practices and problems with asymmetric information.

It is important to analyze the crises in the banking sector and their causes, which will allow their timely detection and the implementation of measures to reduce or completely avoid the negative consequences.

CHAPTER TWO. CHARACTERISTICS AND ROLE OF FINANCIAL ANALYSIS AS A METHODOLOGICAL TOOL FOR ASSESSMENT OF BANK ACTIVITY

The second chapter is predominantly of a methodological focus. It presents the statistical and econometric methods used for the study of the research problem. It also outlines some basic relations on which the analysis presented in the third chapter is conducted.

1. Financial analysis as a tool for the assessment of banking activity

In the conditions of economic instability, there is an escalation of negative factors in the financial sphere. These circumstances require modern commercial banks to have an adequate system for managing their financial stability, which is based on diagnostics of the financial condition of the bank. The in-depth analysis of the financial condition of the banking institution increases the reliability of the assessment of both the bank itself and the entire banking system.

Economic analysis refers to the analysis in the economy of a set of relations that emerge in the process of production, exchange, distribution and consumption of goods. In other words, economic analysis gives a summary description of the analytical

procedures as a whole. The description itself consists in the application of specific methods and models for the evaluation of the phenomena or the actions in the economy. The most important and essential element of economic analysis is financial analysis.

There is no uniform and generally accepted definition in the literature for financial analysis. From the presented views on the features and the scope of financial analysis we can derive the following definition of the financial analysis of a commercial bank: **a set of techniques and tools for systematizing, researching and evaluating individual aspects of banking activity through the use of financial data, thereby contributing to the assessment of the results of the operational activity and the financial condition of the banking institution.**

It can be said that the main subject of financial analysis is financial management. One of the reasons is that the interest of the financial management in the financial condition of an organization covers all aspects of its activity. In addition, it has an advantage over other subjects of financial analysis, which is expressed in the opportunity for access to internal information on the financial condition of the organization.

According to the prevailing view in scientific literature, there are five managerial functions of the financial management of banking institutions (Figure 3).

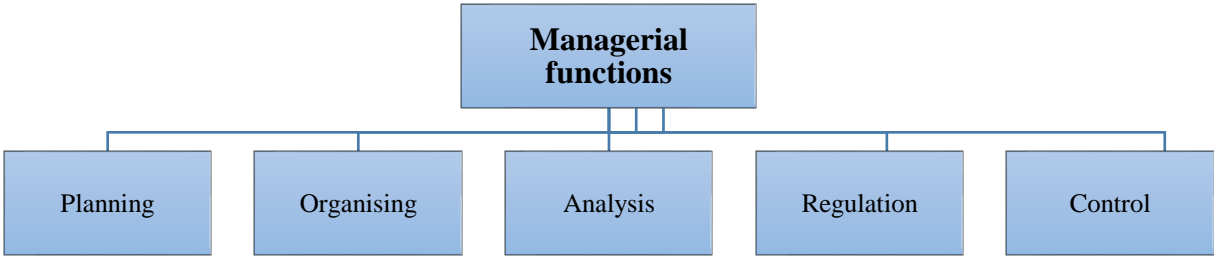


Figure 3. Managerial functions of financial management

Source: Adapted by the author

After the 1990s, when the financial sector was under the influence of increasing instability, the need to apply appropriate methods and tools for anti-crisis risk management increased. Their use refers to the assessment of the risk profile and sustainability of individual banking institutions and the entire banking sector. In recent

years, stress tests and rating systems have been the most applied tools for analyzing and evaluating banking activity.

2. The bank performance assessment model

This paragraph presents the full methodology used for the assessment of commercial banks in the next chapter. The focus is on the application of the CAMEL rating system and its modified model. An analysis of the five basic components of the CAMEL model as well as of the financial assessment indicators was carried.

The analysis of the individual aspects of the banking activity gives information mostly for making relevant decisions and for evaluating the effectiveness of the results achieved in their implementation in practice.

The CAMEL rating system is widely used in practice as a key framework for financial supervision and monitoring of banking institutions. The CAMEL system is an internationally recognized supervisory tool for assessing the stability of financial institutions and is considered a modern and most appropriate approach for managerial and financial assessment of banks.

The basic indicators are introduced following the methodology of the CAMEL system (**C**apital adequacy, **A**sset quality, **M**anagement soundness, **E**arnings and profitability, **L**iquidity). The methodology of the International Monetary Fund, regarding indicators of financial stability was also based on this principle.

The individual sub-paragraphs present the indicators for capital adequacy, asset quality, static and dynamic indicators for measuring liquidity and indicators for evaluating profit and profitability.

The study is based primarily on secondary data, which was collected from the financial statements and annual reports of the the banks for the period from 2010 to 2021. The analysis was based on a modified model of the CAMEL rating system, where to the main five components – capital adequacy, asset quality, management soundness, earnings and profitability and liquidity, five more were added: risk profile, lending rate, resource availability, bank intermediation and credit activity, as they contribute to a more reliable assessment of the banks.

Commercial banks were assessed for each individual component, the average score for the entire period was calculated and compared to the average value of the indicator for the entire group. The rating scale is from one to three as follows:

- Score 1 - the values of the indicator are below (lower) than the average for the group;
- Score 2 - the values of the indicator are close to the average for the group;
- Score 3 - the values of the indicator are above (higher) than the average for the group.

After that, the total score of each commercial bank was calculated for all indicators for the analyzed period, and based on this total score, the banks were assigned to one of three rating groups (minimum total score 5, maximum total score 15), as follows:

- Rating A – score 13 to score 15;
- Rating B – score 9 to score 12;
- Rating C – score 5 to score 8.

3. Main indicators of the banking sector in the conditions of the economic crisis (2007–2008)

The focus in this paragraph is on the causes that provoked the global financial and economic crisis of 2007-2008 and its global impact. An analysis of some key indicators of the Bulgarian banking sector was conducted to investigate the impact of the crisis in our country.

Most economists and world organizations consider the 2008 crisis as the worst global crisis of considerable intensity and scope since the Great Depression of the 1930s. The crisis had an adverse impact on the financial and real sectors of countries all over the world. Because of the shrinkage of world trade, production indicators in the world economy deteriorated.

The factors that are generally associated with the emergence of the 2008 crisis are: the general cyclicity of economic development, the mortgage crisis and the high prices of raw materials, including oil. In 2008, one of the largest American banks - Lehman Brothers (the fourth largest investment bank in the USA) went bankrupt, and

this became the reason for the collapse of the stock markets. The economic decline reported by the G-20 countries lasted for nearly nine months - until April 2009. In a special report, the US Financial Crisis Inquiry Commission presents its position regarding the causes for the crisis.

The analysis of the banking sector in crisis conditions suggests the following conclusions: the crisis leads to an increase in some risks, but in the period 2007-2008 their impact on the banking sector was relatively weak. This is also evident from the fact that a year after the beginning of the crisis, the Bulgarian banking sector and banking institutions of the first group maintain a high level of capital adequacy. There is a deterioration in the quality of assets in the banks of the first group, which is the result of aggressive lending. Exposures under supervision and non-performing exposures are trending upwards. A major risk for the entire banking sector is an increase in the share of bad loans. The banks of the first group and the banking sector in general maintain good liquidity in the period of the crisis. At certain times, negative changes in the ratio of liquid assets are observed, due to changes in the economic situation. The analyzed profitability indicators show the stability of the banking sector. Profit and profitability indicators maintain good values, despite disruptions in financial markets. The performed correlation and regression analysis prove the strong dependence between credit activity and the country's GDP.

CHAPTER THREE. FINANCIAL ANALYSIS OF COMMERCIAL BANKS IN BULGARIA IN THE PERIOD OF POST-CRISIS RECOVERY

Chapter three focuses on the processes of consolidation of the banking institutions. It presents the results of the empirical part of the study of Bulgarian banks from the first group. The state of commercial banks in our country for the period 2010-2021 was analyzed using financial stability indicators based on a modified model of the CAMEL rating system.

1. Bank consolidation processes as a prerequisite for banking sector stability

This paragraph reviews and analyzes the nature of mergers and acquisitions. The procedures for the consolidation of the banks in Bulgaria are considered. The main reasons for consolidation and the hypotheses for banking efficiency are clarified. Attention is paid to the legal framework affecting mergers and acquisitions. The efficiency of the Bulgarian banks before and after the consolidation processes is analyzed.

After the period of Bulgaria's accession to the European Union and the global financial crisis (2007-2008), the Bulgarian banking sector became more dynamic and this led to the consolidation of credit institutions. For this reason, the number of banks operating in Bulgaria has been decreasing - at the end of 2007 there were twenty-nine, and at the end of 2021 there were twenty-five. The looming financial and economic crisis of 2020 brought about by the COVID-19 pandemic has also had an impact on mergers and acquisitions in the banking sector, changing their nature, objectives and participants.

The reviewed publications on the reasons for consolidation, give reason to draw the following conclusion: the main reasons for mergers and acquisitions between banks are – growth, synergy, competitiveness and efficiency. One more reason can be added to them - digitization.

The supervision of mergers and acquisitions in the Bulgarian banking sector is performed by the Bulgarian National Bank and the Commission for Protection of Competition. This supervision is legally regulated in the Law on the BNB and the Protection of Competition Act (PCA). Legislation related to banking institutions and to the control and regulation of mergers and acquisitions is quite broad and covers many consolidation processes.

Mergers and acquisitions have been changing the structure of the banking sector. The aim is to improve its sustainability and efficiency. The analysis carried out on the impact of mergers and acquisitions on the efficiency of Bulgarian banks shows that these processes, for the period 2007-2021, have a positive impact on their efficiency.

2. State of the banking sector in a period of post-crisis recovery

The main macroeconomic factors were studied and their impact on the banking sector was assessed. The paragraph presents research conducted to assess the financial performance of the commercial banks from the first group: UniCredit Bulbank AD, DSK Bank, United Bulgarian Bank AD, Eurobank Bulgaria AD and First Investment Bank AD. In the study, the modified CAMEL rating framework was used to rank the selected banking institutions based on their performance.

There are many different factors which directly or indirectly influence the activity of the banking sector. The relationship between other branches of the economy and the banking sector is bilateral. On the one hand, the effect of macroeconomic factors in other sectors of the economy has a significant impact on the banking sphere, and on the other hand, the processes that unfold in the banking sector have an impact on other economic sectors. This is also a reason the authorities responsible for maintaining financial and monetary stability to analyze and determine the links between the macroeconomic development and the banking sector.

One of the key indicators that characterize the activity and current state of an economy is the dynamics of the gross domestic product. The pace of reduction of credits and the deteriorating economic situation in the country are a prerequisite for a future shrinkage of consumption and investments in production equipment, which will also affect the gross domestic product in the direction of its reduction.

Another macroeconomic variable is inflation, which also affects the banking sector. Inflation has a lot to do with banking institutions. On the one hand, it changes interest rates in order to balance the economy. On the other hand, credit growth can stimulate investment and economic activity, but excessive growth can affect price stability. And this, in turn, affects the stability of the financial system and is a prerequisite for increasing the risks at the micro- and macro-level.

The purpose of the rating systems is to provide the public and other interested parties with a real, objective assessment of the risk profile, the state and the results of the activity of a given bank. The investigated indicators refer to capital adequacy, asset quality, management, profitability, liquidity, credit activity, risk profile, resource assurance, bank intermediation and lending rate.

First. Capital adequacy

For the studied period, UniCredit Bulbank AD is well above the minimum capital requirements. During the analyzed period, UniCredit Bulbank AD maintained values of the capital adequacy indicator close to and above the average for the group. Despite the still unfavorable environment at the beginning of the analyzed period, DSK Bank AD managed to maintain a stable capital position. In the period 2014–2018, the capital adequacy values were below the group average. For the considered period, United Bulgarian Bank AD maintained values of the capital adequacy indicator close to and above the average for the group. During the analysis period, Eurobank Bulgaria AD maintains a stable capital position, and the values were around the average for the group. During the COVID crisis, the bank maintained capital adequacy values of 20%. First Investment Bank AD reports for the period 2010-2021 levels of capital adequacy above the minimum required, but lower than the average for the group.

Second. Asset quality

In 2019, UniCredit Bulbank AD managed to reduce risk and further improve the quality of its assets. Certain fluctuations are observed during the studied period. The values of the indicator are around the average for the group. As a result of the non-performing loan management policy, DSK Bank AD managed to significantly improve the dynamics of the quality of its loan portfolio. At the beginning of the research period, the values of the non-performing loans of United Bulgarian Bank AD were high - about 19%. There is a tendency to improve the indicator, up to 3–4% at the end of the period.

For the period 2010–2021, a gradual decrease is observed in the non-performing loans of Eurobank Bulgaria AD. The ratio of non-performing loans improved significantly to 6.7% in 2020. At the beginning of the analyzed period, First Investment Bank AD reported a low percentage of non-performing loans, compared to other banks in the group. After 2015, the values of the indicator are above the average for the group.

Third. Management

UniCredit Bulbank AD maintains good management efficiency. In general, the trend is positive, and the values of the indicator are close to the averages for the group. At DSK Bank AD, the efficiency in the management of human resources was high at the beginning of the period. The bank maintains values of the indicator above the

average for the group. Certain fluctuations are observed in the efficiency in human resources management of United Bulgarian Bank AD. In most of the years, the values of the indicator are around the average for the group. The efficiency in human resources management of Eurobank Bulgaria AD tends to increase for the period 2010-2021. At the end of the studied period, the values of the indicator are close to the average for the group. At the beginning of the research period, the values of the ratio of First Investment Bank AD were low. In general, the ratio has values lower than the average for the group.

Fourth. Earnings and profitability

In 2020, the profitability of the assets of UniCredit Bulbank AD is below 1%. In most years, the banking institution maintains profitability levels above the group average. At the beginning of the research period, DSK Bank AD maintained high values of return on assets. DSK Bank AD reported values higher than the average for the group during most of the considered period. In the first years of the period, the return on assets of United Bulgarian Bank AD was low, in 2012 being negative. In the period 2010–2021, the level of the indicator was below the average of the group. The low values of the return on assets of Eurobank Bulgaria AD in 2014 were the result of the less generated profit. For the studied period, the value of the return on assets of Eurobank Bulgaria AD was above the average for the group. For the considered period, large fluctuations are observed and the values of return on assets of First Investment Bank AD were in most years below the average for the group.

Fifth. Liquidity

The trend observed in the liquidity of UniCredit Bulbank AD is relatively constant, and the values of the indicator from 2014-2021 are above the average for the group. At the beginning of the period, the liquidity of DSK Bank AD was low at around 10-11%. The bank faced the COVID-19 crisis with stable liquidity positions. Liquidity values for the period were around the average for the group. Unlike the previous two commercial banks, at the beginning of the studied period United Bulgarian Bank AD maintained higher values of the ratio of liquid assets. In some of the studied years, the bank's liquidity level was below the group average. The trend in the liquidity of Eurobank Bulgaria AD was constant for the period 2010-2021. During the pandemic in 2020, Eurobank Bulgaria AD did not experience a shortage of cash or other liquidity

problems. However, for the period, the bank maintained values of the indicator below the average for the group. After the crisis period, First Investment Bank AD maintained a high level of liquidity. In 2020, the ratio of liquid assets was high thanks to measures taken to further strengthen bank liquidity in order to overcome the consequences of COVID-19 crisis.

Sixth. Credit activity

During the studied period, the credit activity of UniCredit Bulbank AD was intense. In 2020 and 2021, there was a decrease in the ratio due to the reduced credit activity of economic agents during the pandemic. DSK Bank AD has maintained a high level of credit activity in the years following the crisis. In the conditions of COVID-19, the bank reported a slight drop in the ratio to around 70%. DSK Bank AD reports values higher than the average for the group. United Bulgarian Bank AD also maintained high levels of credit activity. The level of the indicator is close to the average for the group. Eurobank Bulgaria AD managed to maintain a level of credit activity above the average for the group throughout the entire period. The increase in the ratio in 2016 and 2019 is mainly due to the acquisition of Alfa Bank Bulgaria AD and Bank Piraeus Bulgaria AD. First Investment Bank AD followed a strategy of moderate growth of the loan portfolio, to respond to the development of the economic environment. During the period, First Investment Bank AD maintained credit activity values below or close to the average for the group.

Seventh. Risk profile

The risk associated with UniCredit Bulbank AD tends to decrease. In terms of this indicator, some fluctuations are observed, but in most cases the values are below the average for the group. In the years after the financial crisis, DSK Bank AD also maintained high values of risk-adjusted assets. The values of the indicator are below and around the average for the group. The ratio of risk-weighted assets to the total amount of assets of United Bulgarian Bank AD has certain fluctuations during the considered period. In general, for the period, the bank's risk profile reported values lower than the average for the group. Eurobank Bulgaria AD maintains a risk profile level above 60%. Some fluctuations are observed, at the end of the period there is a slight decrease. The values of the indicator for the period 2010–2021 are above and around the average for

the group. The risk profile of First Investment Bank AD, as with other banks in the group, is high. During the entire research period, the indicator for the risk profile of First Investment Bank AD has values higher than the average for the group.

Eighth. Resource availability

The trend in the deposits of UniCredit Bulbank AD is in a positive direction and has been constantly improving. In the conditions of a pandemic, UniCredit Bulbank AD did well in terms of attraction and management of the deposits of its customers. The indicator has the high value of 97%. DSK Bank AD was an active player in the deposit market. The values of the resource availability of DSK Bank AD during most of the period are above the average for the group. Because of the growing volume of deposits from customers, the deposit resource of United Bulgarian Bank AD went up. With the exception of 2011 and 2012, the indicator reports values well above the average for the group. In the years after the crisis, Eurobank Bulgaria AD made a lot of efforts and managed to increase its deposits. The increase in the resource base continues even in the conditions of a pandemic. For the analyzed period, the level of the resource availability indicator is above the average level of the group. The resource availability of First Investment Bank AD for the period 2010-2021 shows a constant trend. During most of the period, the indicator maintains values close to the average for the group.

Ninth. Bank intermediation

In 2010 and 2011, the values of the net interest margin of UniCredit Bulbank AD were the highest for the period – close to 4%. For the period, the bank maintained values lower than the average for the group. In the first years of the research period, the net interest margin of DSK Bank AD was around 5-6%. Despite the downward trend, the net interest margin maintained values above the group average throughout the period. The trend of the net interest margin of United Bulgarian Bank AD was also downward. In 2021, the margin decreased mainly due to the downward trend of interest rates and the large costs of the attracted resource. In 2011, Eurobank Bulgaria AD managed to keep the margin at a level slightly above 4%. In 2020 and 2021, the bank's interest margin narrowed, but its values for the considered period were above the group average. Unlike the other banks, First Investment Bank AD maintained lower net interest margin

values at the beginning of the research period. Over the period 2010–2021, the bank's interest margin values were lower than the group average.

Tenth. Lending rate

The lending rate of UniCredit Bulbank AD in 2010 was 114.20%, which indicates a very aggressive credit policy. In 2020 and 2021, it dropped to 65%. The values of this indicator for the period hover around the averages for the group. At the beginning of the analyzed period, DSK Bank AD maintained a level of the loan/deposit ratio of around 128%, due to the high credit activity in the years after the crisis. For the period, the level of the indicator is in most cases above the average for the group. From 2010 to 2015, the lending rate of United Bulgarian Bank AD was over 100%. After that, the trend is downward and the bank maintains values below the average for the group. In 2010, the loan/deposit ratio of Eurobank Bulgaria AD was over 100%. From 2016 to 2021, the lending rate values of Eurobank Bulgaria AD exceeded the group average. The lending rate of First Investment Bank AD for the period under review is below 100%, unlike the other banks in the group. In the period 2014–2019, the lending rate was over 90%. In most of the period, the lending rate was below the average for the group.

The table below presents the overall ranking of the financial stability of the banks, calculated by averaging the scores for the CAMEL framework parameters plus the five additional parameters. The results of the analysis show that the overall financial performance of DSK Bank AD is the best among the banks examined, followed by UniCredit Bulbank AD. Eurobank Bulgaria AD is in third place, United Bulgarian Bank AD is fourth and First Investment Bank AD ranks last.

Table 3

Final rating of the banks

| | <i>Banks</i> | UniCredit | DSK | UBB | Eurobank | FIB |
|---|------------------------|--------------------|--------------|--------------|-----------------|--------------|
| Average score of the banks according to the relevant indicators for the analysed period | <i>Capital</i> | 2,73 | 2,08 | 2,17 | 1,88 | 1,27 |
| | <i>Asset quality</i> | 2,17 | 1,58 | 2,58 | 1,38 | 1,82 |
| | <i>Management</i> | 2,58 | 2,92 | 2,17 | 1,50 | 1,00 |
| | <i>ROA</i> | 2,67 | 2,67 | 1,33 | 2,38 | 1,45 |
| | <i>Liquidity</i> | 2,42 | 1,83 | 1,75 | 1,50 | 2,18 |
| | <i>Credit activity</i> | 2,08 | 2,58 | 1,92 | 2,75 | 1,64 |
| | <i>Risk profile</i> | 2,42 | 2,00 | 2,50 | 1,75 | 1,18 |
| | <i>Resources</i> | 2,18 | 2,73 | 2,82 | 3,00 | 2,36 |
| | <i>Lending rate</i> | 1,67 | 2,67 | 1,75 | 2,50 | 1,27 |
| | <i>Intermediation</i> | 1,17 | 3,00 | 2,08 | 2,63 | 1,55 |
| | | Total score | 22,08 | 24,06 | 21,07 | 21,25 |

3. Guidelines for future development of banking activity in Bulgaria

The main research results and guidelines obtained and analysed in the dissertation work do not exhaust the issues related to commercial banks in Bulgaria and their financial analysis. The topic is still relevant and the following directions for future research and practical work can be outlined:

- the risk associated with an increase in non-performing loans;
- digitization;
- climate risks.

strategies at the bank level with market-based solutions with the participation of entities from the private and the public sectors, would help to reduce the level of non-performing loans or stricter control over credit rating

Combining strategies at the bank level with market-based solutions involving entities from the private and public sectors would help to reduce the level of non-performing loans. Effective management of non-performing loans needs new, innovative and collaborative approaches, increasing transparency in restructuring procedures and creating partnership structures to take advantage of digitization and platform businesses.

An important priority of the supervisory authorities are the challenges posed by the digitization of banking activity. Digitization enables banks to reduce their costs, achieve greater efficiency and attract new sources of revenue. New technologies are changing the way banks produce and deliver financial services. However, the changes also bring negative consequences, creating new sources of systemic risk, which in turn can bring regulatory and political challenges.

Another important direction in the development of banking activity is how to manage the risks related to the changes in climate and environment. At first glance, it seems that climate change could not affect the banking sector. The role of banks as financial intermediaries that provide credit to all economic agents and sectors makes them highly dependent on potential losses. The ongoing transition to a green economy has caused more banks to start integrating climate risk into their risk management frameworks, but this is still a very slow process. Ecology, social responsibility and transparent governance are increasingly important and key to the future of the economy.

They are undoubtedly a big challenge for banking institutions, but at the same time they reveal new opportunities for development.

CONCLUSION

Maintaining a stable banking sector is of key importance for the condition and the development of the national economy, and this, in turn, is a prerequisite for economic growth. Banking institutions play a very important role in achieving this goal. The activity of banks has always been an indispensable part of the socio-economic life of a society. Through it, investment opportunities are directly determined, while at the same time it helps maintain trust in society and the economy. Like any other economic activity, banking is exposed to various external and internal factors.

The study presents an in-depth theoretical and empirical analysis of:

- modern banking activity;
- the regulatory norms and legal regulations for the implementation of control over it;
- crises and their impact on the banking sector;
- the model for evaluating banking activity and the main banking indicators included in it;
- the processes of consolidation of banking institutions in Bulgaria;
- an assessment of first group commercial banks based on an extended CAMEL model.

III. LIST OF THE SCIENTIFIC AND APPLIED CONTRIBUTIONS OF THE DISSERTATION PAPER

First. Based on a comprehensive critical analysis of the current legal regulations concerning the banking industry in Bulgaria, their positive influence on maintaining the financial stability and resilience of banking institutions during crises has been confirmed, which is supported by evidence from the evolution of the credit system in a functional and managerial aspect.

Second. A model based on CAMEL (extended by adding indicators) was developed to determine the stability of the credit institutions. Based on the obtained results, it has been proved that the banks are sustainable and are able to cope with the crises they face.

Third. Basic guidelines to improve the credit activity of banks have been formulated in three main directions – continuing the process of digitalisation, climate risks and the risk associated with the growth in non-performing loans (the combination of strategies at the bank level with market-based solutions with the participation of entities from the private and the public sectors, would help to reduce the level of non-performing loans or stricter control over credit rating).

IV. PUBLICATIONS ON THE TOPIC OF THE DISSERTATION PAPER

Articles:

1. Dragoeva, R. (2020). The crises in the banking sector - origin, factors and empirical studies.// Annual Almanac "Scientific Research of Doctoral Students" – Edition XIII – 2020, Book 16. p. 281 – 300. ISSN: 1313-6542.
2. Dragoeva, R. Impact of consolidation processes on the efficiency of banking activity.//Annual Almanac "Scientific Research of Doctoral Students" – Edition XIII – 2021, Book 17 (in press).
3. Dragoeva, R. Challenges to bank control and supervision in the conditions of digitalization.//International scientific and practical conference "The Digital transformation in control and analysis - risks and opportunities", 01-02.10.2021 (in press).

Reports:

1. Dragoeva, R. (2021). The consolidation of the banking sector in Bulgaria as a factor for sustainability.//Sustainable development and socio-economic cohesion in the XXI century - trends and challenges: International Scientific and Practical Conference, Svishtov, November 8-9, 2021, AI Tsenov, 2021, pp. 488-495, ISBN: 978-954-23-2067-8 (print) и ISBN: 978-954-23-2068-5 (online);
2. Dragoeva, R. Analysis of the factors affecting the profitability of the banking sector in crisis conditions.//International scientific conference "70th anniversary of the Finance and Accounting Faculty of UNWE", 20.05.2022 (in print).
3. Dragoeva, R. Assessment of the stability of the Bulgarian banks with the CAMEL rating system.// 87th International Scientific Conference on Economic and Social Development "Economics, Management, Finance and Banking", Svishtov, 28-30 September, 2022, pp. 171-180, ISSN 1849-7535.

V. REFERENCE FOR COMPLIANCE WITH THE NATIONAL REQUIREMENTS UNDER THE RULES FOR THE IMPLEMENTATION OF THE LAW ON THE DEVELOPMENT OF THE ACADEMIC STAFF IN THE REPUBLIC OF BULGARIA

National requirement for number of points: **30,00**

Number of studies, published in non-refereed peer-reviewed journals, or published in edited collective volumes: 0

Number of points for the author: 0

Number of articles, published in non-refereed peer-reviewed journals, or published in edited collective volumes: 3

Number of points for the author: **30**

Number of reports, published in non-refereed peer-reviewed journals, or published in edited collective volumes: 3

Number of points for the author: **30**

Total number of points: **60,00** > 30,00

VI. STATEMENT OF ORIGINALITY

The dissertation paper in the volume of 222 pp., titled: “*Financial Analysis of the Commercial Banks in Bulgaria in the Conditions of Post-Crisis Recovery*” is own research work of the author. It presents own ideas, text and graphic presentation using figures, tables and formulas in strict compliance with the requirements of the of the Copyright and Related Rights Act, including by properly citing and referencing the sources of information used, including:

1. The results achieved and contributions made in the dissertation are original and have not been borrowed from research and publications in which the author has not participated.
2. The information provided by the author in the form of copies of documents and publications, personally compiled references, etc. corresponds to the objective truth.
3. The scientific results obtained, described and/or published by other authors are duly and extensively cited in the text and in the bibliography.

Date: 11.11.2022.

Signed by:

| |
|--|
| The signature has been removed based on EU Regulation /EU/2016/679 |
|--|

/Doctoral student Raya Dragoeva/