

SCIENTIFIC REVIEW

in connection with the defense of a doctoral thesis
for the acquisition of the educational and scientific degree "doctor"
in Field of higher education: 3. Social, economic and legal sciences
Professional direction: 3.8. Economy
Doctoral program: "Economics and Management (Industry)"

Doctoral Thesis Topic: *"Methodological Aspects of Stress Tests in the Financial Industry and Their Applicability to Systems in the Republic of Kazakhstan"*

Author of the doctoral thesis: Kairat Bolatovich Koishibekov, Ph.D student

Scientific supervisor: Professor Sava Hristov Dimov, PhD

Reviewer: Professor Mariana G. Assenova, PhD - University of Agribusiness and Rural Development, Plovdiv

1. General information.

The present review is prepared on the basis of the Order UMO 30 of 6.10.2022 of the Rector of Burgas Free University - Burgas and on the basis of Article 18, paragraph 1 and paragraph 3 of the Regulations for the Development of the Academic Staff of Burgas Free University and the decision of the Scientific Council of BFU of 03.10.2022 to open a procedure for the defense of a dissertation.

2. Brief biographical data about the dissertant.

Kairat Bolatovich Koishibekov is a foreign doctoral student who is from the Republic of Kazakhstan. He passed the complete course of study in the doctoral program of Burgas Free University, fulfilled all the requirements - passed doctoral examinations, publications on the topic of the dissertation, which exceed the minimum scientific metric requirements of the National Assessment and Accreditation Agency.

3. General presentation of the dissertation.

The dissertation submitted by Kairat Bolatovich Koishibekov has a total length of 221 standard pages. Structurally it includes: introduction, statement in four chapters, conclusion, appendices and list of references used. The text of the dissertation is 180 pages, the appendices are in 22 pages and the bibliography in 20 pages, citing 178 sources. The literature used is listed by chapters, using many recent works of national and foreign authors as well as normative documents and acts on the subject. In support of the main text, 30 tables, 35 diagrams, 2 charts and 1 figure are included.

In the presentation there is a logical sequence in the development of the individual problems arising from the topic of the dissertation, a large number of literature sources have been studied and the theoretical substantiation and scientific-applied orientation of the considered problems has been achieved.

The chosen topic is dissertationable. It has not been widely discussed in the Bulgarian specialized literature, and in the conditions of crisis and pandemic it acquires a special relevance. In this respect the research is useful for the financial and banking system for the Republic of Kazakhstan.

4. Assessment of the structure and content of the dissertation and opinion on the correctness of the abstract.

The chosen structure is classical and meets the requirements for a scientific-methodical study on the relevant issues. There is a logical sequence between the chapters. The conclusions after the end of the individual chapters are precise and synthetically reflect the results of the conducted research. A sufficient amount of specialised literature has been studied, empirical studies are based on real data and thus not only the reliability of the research is achieved, but also the possibility to draw specific conclusions and recommendations for the research subject. The methodology used is appropriate for the specific study.

In terms of content, the presentation fully corresponds to the set topic and is subordinated to proving the scientific thesis. Doctoral student Koishibekov demonstrates a detailed knowledge of the specialized literature on the research problem. Technically, the dissertation is formatted as required.

The thesis is balanced in theoretical and practical-applied plan. The conclusions drawn are based on a large-scale empirical study.

The thesis, aims, objectives, object and subject of the study are very well formulated.

The main objective of the dissertation is to make a simulation modeling of the results of stress-testing the implementation of prudential standards of the Basel Accords, respectively the implementation of Basel II and III in the Kazakh financial industry, based on the studied theoretical and methodological aspects and information database.

The research thesis proves that "Stress testing of sectors of the financial industry of the Republic of Kazakhstan one of the effective managerial approaches, which shows their resilience to systematic risks and global shocks, reflecting on the stability of financial and economic life in the country".

The subject of this dissertation is stress testing of financial-credit institutions by studying prudential and supervisory standards of macro and micro economic resilience, application of best practices in defining stress test scenarios.

The subject of the research is focused on stress testing simulations of organizations of the financial industry of the Republic of Kazakhstan. In this aspect, they concentrate on second-tier banks, microfinance organizations, insurance companies, financial organizations managing investment portfolios in the securities market and pension and insurance institutions.

The dissertation highlights four focuses that follow the theoretical and applied issues developed by chapter.

The first emphasis is related to the study in theoretical aspect of the nature, concepts and discussion points of stress testing in the financial system. The authors' views on these issues are very well researched and systematized, with the dissertation taking up a number of discussion points such as the pros and cons of stress testing, the different approaches to constructing stress tests and the particularities of their manifestation before and after the financial crisis.

The second focus brings into the scope of the study the so-called prudential requirements in stress testing of financial systems. If we were to translate the essence of these requirements into English, we could hardly find a single word, because they include all reasonable, prudent and predictable requirements leading to the application of a forward-looking policy of moderate risks. Doctoral student Koishibekov analyses not only the conceptual apparatus, but also the Basel requirements, the debt crisis, and the consequences of the pandemic and the war, the results of the stress tests conducted in six Bulgarian banks and the requirements and the peculiarities of their manifestation in the Republic of Bulgaria.

Kazakhstan. The conducted simulations of stress testing of sectors of the financial industry, with few exceptions, show a certain stability, as about 95% of the institutions meet the prudential regulatory requirements. Thus posed and clarified in theoretical terms, the issues of prudential requirements can be empirically investigated in the following chapters of the dissertation.

The third focus is related to the stress scenarios for the study of financial and credit institutions in Kazakhstan for a period of 15 years, covering two crisis periods, that of 2007-2009 and the COVID-19 crisis for the period 2019-2021. Kazakhstan are well capitalized and have a significant level of liquidity. The revaluation of their positions in US dollars and Euros carried out by Kazakh banks towards the revaluation of their positions in US dollars and Euros indicates the banking sector's currency resilience to possible future shocks. As of 2021, no shocks are seen to impact the stability of the financial industry.

The fourth focus has the most practical application and is the result of a large-scale empirical study to present a simulation model to analyze the results of stress testing conducted in sectors of the financial industry of the Republic of Kazakhstan. The study covers not only the banking sector, which is a traditional study in stress testing, but also the insurance, pension, investment, and microeconomic sectors in the dissertator's home country. For each of the sectors, a detailed empirical study has been carried out and conclusions have been drawn that are useful for practice and are in the nature of contributions to the dissertation.

The main *results and conclusions* of the study are presented in the conclusion.

In connection with the above mentioned, it can be summarized that the relevance and significance of the issues studied by Kairat Koishibekov are undeniable, the topic of the development is highly dissertable and it can be successfully defended before a scientific jury.

5. Assessment of the correctness of the thesis abstract.

The abstract accurately, correctly and in a synthesized form presents the main issues and problems studied in the dissertation. The author's opinion is evident, on the basis of the theoretical and especially empirical research the thesis is proved, the results reached and the contributions of the dissertation are clearly highlighted. The language and style are of a very good level.

A *list of contributions* is appended, publications on the dissertation topic are indicated and a declaration of originality and credibility is attached.

6. Determination and evaluation of the scientific and applied contributions in the dissertation.

I accept the contributions formulated by doctoral student Koishibekov in the dissertation work, which I divide into two groups: *scientific-theoretical* and *practical-applied*. They do exist in the dissertation and are highlighted in the individual chapters.

The following studies can be noted as *scientific-theoretical contributions*:

1. Research and systematization of the existing methodologies for conducting stress testing of financial institutions by leading international auditing and rating agencies in the world and the transfer of experience in their use in the Republic of Kazakhstan.

2. The large-scale study of existing specialized literature and normative documents on the issues of stress testing in financial institutions and a critical look at the application of some of them in the practice of non-EU countries.

3. The characterization of the prudential requirements for stress testing in financial institutions and the possibilities of their implementation in the Republic of Kazakhstan. Concluding that "supervisory regulators can use discrete mathematical-statistical models to simulate potential default shocks."

The following contributions in the dissertation stand out with a *practical-applied nature*:

1. The carried out large-scale practical-applied research with the application of stress tests in five spheres of the financial industry of the Republic of Kazakhstan, namely: the banking, microfinance, insurance, pension insurance and managerial sectors for managing investment portfolios. For this purpose, a simulation model was built and the results of stress testing of certain financial systems were outlined. The database is presented in tabular form and as radar diagrams revealing correlational dependencies between strict mathematical-statistical quantities.

2. The approved scenarios for stress tests in Kazakh banks and the conclusions about their capital adequacy and term currency liquidity and the proposals that are made on this basis.

3. The approved scenarios for the stress test indications in the insurance companies in the Republic of Kazakhstan and the conclusion that they show a high adequacy of highly liquid assets while the others demonstrate a certain concentration of observed indicators in the normal range.

4. The approved scenarios for the stress test indications for 4 indicators of 7 pension insurance funds and companies managing pension assets and the results of the research.

5. The simulation stress testing of financial companies managing the investment portfolio of the Republic of Kazakhstan and the analysis of the stock market development and trading of the stock exchange in the country.

6. The conducted stress testing on three indicators: capital adequacy, borrower risk and total liability limit for 30 microfinance organizations and the results of the research.

7. Publications and participation in scientific forums

In connection with the dissertation, eleven publications were made, of which 2 studies, 6 articles and 3 report articles. The studies are independent, published with the BSU Yearbook and in the "Bulgarian Journal of Business Research" magazine of the BSU in Bulgarian. Five of the articles were published in Bulgarian, and only one was co-authored and in Russian. It is this co-authored article, as it is part of a collective monograph, that could be counted in the column of monographs. Two of the reports are in Bulgarian and one is in English and are from international conferences and participation in doctoral research sessions.

The requested publications exceed *four times* the minimum national requirements for the award of the educational and scientific degree "Doctor".

8. Critical notes and recommendations

I have no serious objections to the dissertation submitted for consideration, but rather I have a *few recommendations*:

1. Some of the terms used in stress testing need clarification, such as stress testing of financial industries and stress testing of financial systems.

2. The main contributions of the research in the dissertation work, which concern the economy of the Republic of Kazakhstan, can be offered in a publication or in another way to the governing bodies in the financial sector of the country in order to be used and gain wider applicability.

Critical notes in no way detract from the merits of the dissertation work, in which the set goals and objectives are fulfilled.

9. Questions for the dissertation student

The researched issues are very current, interesting and raise numerous questions. In the course of the defense, I would ask PhD student Koishibekov the following *question*:

First. In the conditions of the global economic crisis, to what extent does the small investor in the Republic of Kazakhstan use investing in securities on the stock exchange in the country as an alternative to bank investments? And in continuation, does the small investor believe in collective investment schemes and to what extent does he invest funds in investment funds with securities offered by banks or other intermediaries?

10. Conclusion.

The presented dissertation has the character of a completed scientific development. This work can be evaluated as successful and useful for both science and practice. Therefore, I confidently give my positive assessment of the conducted research, presented in a dissertation work, abstract, achieved results and contributions. This gives me the reason to vote "**YES**" and I propose to the honorable scientific jury *to award* the educational and scientific degree "Doctor" to **Kairat Bolatovich Koishibekov** in the field of higher education: 3. Social, economic and legal sciences; Professional direction: 3.8. Economics; Doctoral program: "Economics and Management (Industry)".

Date 05/12/2022
City of Plovdiv

Signature: *Professor Mariana G. Assenova, PhD*