

SCIENTIFIC OPINION

by Stanislav Dimitrov Petkov, Associate Professor at the Higher School of Insurance and Finance - Sofia, Doctor of Economics

of dissertation for awarding the educational and scientific degree "**Doctor**" in the field of higher education 3. Social, economic and legal sciences, Professional field 3.8. Economics, doctoral program "Finance, Insurance and Social Security" at the Higher School of Insurance and Finance (VUZF) – Sofia

Author: Volodymyr Busygin

Topic: Development and Research of Applied Digital Economy Basis: Blockchain and Optional Approach

Scientific supervisor: Assoc. Prof. Dr. Radostin Vazov

1. General description of the presented materials

I have been appointed a member of the scientific jury under the procedure for defense of the dissertation of doctoral student Volodymyr Busygin for obtaining the educational and scientific degree "Doctor" in the field of higher education 3. Social, economic and legal sciences, Professional field 3.8. Economics, doctoral program "Finance, Insurance and Social Security" at the Higher School of Insurance and Finance - Sofia (VUZF) by order of the Rector of VUZF Prof. Dr. of legal sciences Boris Velchev № 118/05.05.2022

The topic of the dissertation is „Development and Research of Applied Digital Economy Basis: Blockchain and Optional Approach“. The scientific supervisor of the doctoral student is Assoc. Prof. Dr. Radostin Vazov. The dissertation is in English language.

The doctoral student has presented the following materials in connection with the procedure:

- dissertation work;
- abstract of dissertation - in Bulgarian and in English;
- reference for fulfillment of the minimum national requirements for obtaining the educational and scientific degree "Doctor" in professional field 3. 8. Economics;
- list of publications on the topic of the dissertation;
- publications on the topic of the dissertation;
- CV;
- Order of the Rector of VUZF to determine the scientific jury for the defense procedure.

The materials are characterized by completeness.

2. Brief biographical data about the doctoral student

The doctoral student Volodymyr Busygin has a master's degree in Computer Science and a master's degree in Agronomist. The bachelor's degree is in the field of Finance.

Volodymyr Busygin has gained significant experience in practice, business and entrepreneurship for over 20 years. He has held positions as Director of International Relations at several companies, and participated in the establishment and is the CEO of a company in the field of sports equipment and sports management.

3. Characteristics and evaluation of the dissertation

The dissertation has a volume of 190 pages. The work is in English. The dissertation is structured in Introduction, Six Chapters, Conclusion, Bibliography and Appendices. A list of tables and figures is included at the beginning of the work. The number of illustrations included is 68, including 8 tables and 60 figures.

In his research work Volodymyr Busygin clearly formulates the reasons, goals and objectives of the study - p. 14. The author tests 6 hypotheses, which are correctly described on p. 15. On p. 16 the author correctly formulates the subject and object of the study. The research methodology is described on page 16. The author presents scientific results on pages 16-18. The importance of the work for the practice is described on page 18.

The author has correctly justified the relevance and significance of the topic. Today, blockchain technology is one of the most important components of the digital economy.

The literature used includes a variety of sources of information. The sources of information used are up to date. The number of used sources of information is 183.

The technical requirements for the preparation of a dissertation are met by the doctoral student.

The presented dissertation is a significant development of the chosen topic. The research is extremely thorough and comprehensive. The analysis is characterized both by its theoretical aspects and by its practical and applied dimensions.

The first chapter is entitled " Basic Principles of the Digital Economy Technology Organization and the Problems of its Practical Implementation". The volume of the First Chapter is 41 pages. This chapter consists of 9 points.

The second chapter is entitled "Innovative Blockchain Technology as a Basis of the Digital Economy: Development of Theory, Design, Programming and Modeling Problems". Chapter Two is structured in five points. The volume of Chapter Two is 30 pages.

The third chapter is entitled "Development of a New Blockchain System Based on a Linear-Scaling Consensus Mechanism". Chapter Three is structured in eight points. The volume of Chapter Three is 24 pages.

The fourth chapter is entitled "Problems of Modeling Digital Economy Tasks and High-Performance Computing". Chapter Four is structured in seven points. The volume of this chapter is 26 pages.

Chapter Five is entitled "New Types of Options as One of the Adaptive Tools in the Digital Economy". Chapter Five is structured in four points. The volume of this chapter is 13 pages.

The sixth chapter is entitled "New Methods for Pricing Options". Chapter Six is structured in three points. The volume of this chapter is 26 pages.

The footnotes are used correctly. The number of quotations under the line is significant - 183.

In general, the qualities of the dissertation are indisputable. The topic of the research is relevant. There is a clear authorial presence. Based on the analysis, conclusions are drawn. The conclusions follow each chapter. There is a logical connection between the individual chapters.

4. Contributions and significance of the study for science and practice

An abstract is attached to the dissertation. The results of the research are formulated on pages 37 - 40 of the abstract. 12 results are listed. They are not formulated as contributions. I

accept most of the results formulated by the author for contributions, namely nine of the 12 results mentioned.

5. Evaluation of the publications on the dissertation

For the purposes of the present procedure, the doctoral student Volodymyr Busygin has presented a significant number of publications on the topic of the dissertation.

I accept that the presented publications are on the topic of the dissertation. With the presented publications the doctoral student fulfills the national minimum requirements for acquiring the ONS "Doctor".

6. Assessment of compliance with the minimum national requirements

PhD student Volodymyr Busygin meets the national minimum requirements for acquiring ONS "Doctor" set in the Regulations for the implementation of the Law on the Development of Academic Staff of the Republic of Bulgaria - he is awarded 50 points for his dissertation and a total of 32.5 points for his scientific publications. The total points collected by the doctoral student are 82.5 points.

7. Abstract of dissertation

The dissertation is accompanied by an abstract - in Bulgarian and English. The abstract is 46 pages long. The abstract contains a description of the main characteristics of the dissertation, structure and content of the work, a summary of the dissertation, research results and publications on the topic of the dissertation.

The abstract of the dissertation is prepared in accordance with the requirements adopted for such research. It illustrates well enough the main points in the dissertation.

8. Critical remarks and recommendations

I have no significant notes on the dissertation of doctoral student Volodymyr Busygin. I am of the opinion that the study would benefit if fewer hypotheses were formulated that were proven or rejected as a result of the analysis. It is also good for the author to find clearer scientific contributions both in the research and in the abstract.

CONCLUSION

In conclusion of the above, I give my **strong positive assessment** of the dissertation, abstract, results and contributions, as well as the scientific publications of PhD student Volodymyr Busygin and **I suggest the esteemed scientific jury to award him the educational and scientific degree "Doctor"** in the field of the higher education 3. Social, economic and legal sciences; Professional field 3. 8. Economics; doctoral program "Finance, Insurance and Social Security" at the Higher School of Insurance and Finance (VUZF) - Sofia.

27.05.2022

Sofia

Reviewer:

Assoc. Professor PhD Stanislav Dimitrov