

REVIEW

by **assoc. prof. Irena Nikolova Markova, D.Sc.**,
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regarding: dissertation work on the topic “**Assessment of the impact of
blockchain technologies on financial institutions in Bulgaria - problems,
trends and solutions**” with author **Marina Ivanova Milinova**,
doctoral student at the Department of Finance at
D. A. Tsenov Academy of Economics – Svishtov

I present this review in connection with Order No. 1156 of 23.10.2024 of the rector of the D. A. Tsenov Academy of Economics – Svishtov and with Protocol No. 2 of 22.10.2024 of the Faculty Council of the Faculty of Finance of the Academy of Economics.

I declare that in the last five years I have not been in a labor-legal relationship with D. A. Tsenov Academy of Economics – Svishtov.

I. General presentation of the dissertation work

The dissertation was developed in compliance with the requirements of Art. 27, para. 2 of the Regulations for the Implementation of the Act on the Development of Academic Staff in the Republic of Bulgaria.

The author's scientific interest is provoked by the topicality of issues related to the use of financial institutions of financial applications of blockchain technologies in the economy, the dynamic development of fintech companies and the possibilities for establishing adequate regulations in the financial sector.

The introduction of the dissertation clearly states the object and subject of the study. Based on the formulation of the research thesis, the main goal of the dissertation is also set, which, according to the doctoral student, is: to reveal the degree of impact and challenges facing the financial sector with the introduction of blockchain technologies in Bulgaria.

The presentation contains three chapters of proportional volume, in which the points are arranged in a logical sequence.

The first chapter outlines the characteristics of blockchain technologies and cryptoassets. The analysis of blockchain technologies is aimed at clarifying their nature, development and challenges that arise for the financial sector in the context of the digital economy. Based on the presentation of opinions and definitions of authors in the special literature and discussions in scientific circles, the doctoral student emphasizes the advantages of blockchain technologies. In the context of the constantly growing popularity of blockchain technologies, their wide application and their ability to generate financial values, the author logically raises the issue of regulations for financial institutions. The doctoral student outlines the conclusion that as a member of the EU, Bulgaria applies the provisions of the European supervisory authorities and of paramount importance for the Bulgarian fintech market is the creation of a national legal and regulatory framework that will provide security to fintech companies. The first chapter of the dissertation focuses on the importance of the established European Union Blockchain Observatory and Forum and the European Blockchain Infrastructure – EBSI, which represents the world's first cross-border blockchain initiative in the field of public administration.

In *the second chapter*, the author demonstrates a very good knowledge of the characteristics of fintech companies and the capabilities of the fintech sector in the application of software and other modern information, blockchain and communication technologies to improve security and automate financial services. The author's scientific interest is oriented towards analyzing the new alternative financing methods that fintech companies have the opportunity to use, such as: crowdfunding, crowdsourcing, angel investors, venture capital funds, initial public offering of digital coins (ICO), security tokens (STO), initial exchange offering (IEO).

The dissertation argues the importance of *the sandbox* regulatory regime, which “represents a type of test regulatory environment” and provides an opportunity for fintech startups and other innovators to try out new business models that are not covered by the existing regulatory frameworks and are not under the supervision of regulators or even outside the existing regulatory norm. The doctoral student outlines the conclusion that the regulatory *sandbox* regime is a “safe place” where businesses can test their innovative products and services, business models and delivery mechanisms so that consumers are protected, respectively, new financial products and technologies can be tested to see if they meet certain rules and requirements for regulations and safety.

In *the third chapter* of the dissertation, the author analyses the effects of financial applications of blockchain technologies in the financial sector. The emphasis is on alternative methods of financing fintech companies.

In the third chapter, the issue of embedded payments as innovative solutions in the fintech sector is at the forefront. According to the author, the goal of embedded financing is to provide easier and cheaper access to financial processes for consumers, and after the rise of the fintech sector, embedded finance “is the next revolutionary stage in the unification of software and commercial business models”. In the third chapter, the author substantiates the problems and challenges facing fintech companies in the implementation of blockchain technologies.

In *the conclusion*, the author summarizes the results achieved from the study and makes reasoned conclusions.

Publications on the topic of the dissertation are reflected in the content of the scientific work. The doctoral student has published two independent articles and two independent scientific reports.

II. Assessment of the form and content of the dissertation

The content of the dissertation is distinguished by the doctoral student's serious theoretical knowledge in the field of the researched issue, a thorough review of the literature, the author's views on the topic and the correct handling of special terminology.

In *terms of structure*, the dissertation is well-structured. It consists of an introduction, an exposition in three chapters, a conclusion, a bibliography and appendices. The research is developed in a volume of 165 standard pages, of which 125 pages are the main text and 39 pages are appendices (5 appendices).

The methodology of the study is based on basic scientific research methods, such as: analysis and synthesis; abstraction and generalization; induction and deduction; classification of scientific research, comparative analysis, etc. In proving the working hypotheses, SWOT analysis and a simulation mathematical model based on a questionnaire survey, field research, statistical tools – SPSS, Excel, PP are applied. To illustrate the results in the dissertation, the tabular and graphical methods are used. One table and 25 figures are presented in the dissertation work.

The dissertation is passed in terms of formatting, scientific writing style and handling of the formula apparatus.

The bibliography contains 71 sources, of which 22 sources are in Bulgarian, 39 – in a foreign language. 10 electronic sources were also used. The literary and Internet sources used are correctly cited in the main text of the work.

The abstract is correctly structured and reflects the content of the dissertation in a summarized form. It is 72 pages long and includes: a reference to the scientific and applied scientific contributions in the dissertation, a list of publications on the topic of the dissertation, a reference to compliance with the national requirements under the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria, as well as a declaration of originality and authenticity. The abstract also specifies guidelines for future research on the topic under consideration.

III. Scientific and scientific-applied contributions of the dissertation work

The dissertation represents a current and timely author's research on the application of blockchain technologies and fintech models and their impact on the financial sector.

The study of possible effective regulations in the use of blockchain technologies occupies a central place in the dissertation and in this regard the author's analyses deserve high marks. The author argues the question of the importance of *RegTech*, respectively the application of regulatory technology to introduce regulatory compliance in risk management regarding new financial innovations. The doctoral student focuses on analyzing technology-based solutions to alleviate or resolve regulatory and supervisory obstacles that accompany the fintech industry in Bulgaria, Europe and around the world.

The identification of the main problems and challenges facing fintech companies and the search for flexible management solutions is a positive moment in the dissertation. The author's empirical research deserves high marks.

I believe that the five research tasks set in the thesis have been successfully solved and in this regard I accept the formulated contributions by the author of the dissertation.

IV. Dissertation critical notes, questions and recommendations

Regarding the directions for future research indicated in the abstract, I recommend that doctoral candidate Milinova continue her research work in the field of blockchain technologies in the financial sector and their role in improving the transparency, security and speed of financial services (p. 68). I suggest that at the defense of the dissertation, the doctoral candidate answer two questions. In the context of the regulations in the EU member states, what are the main prescriptions (warnings) of the FSC and EIOPA for the normal functioning of the fintech market and in the prevention of cyberrisks? In view of

the risks that accompany transactions with digital assets, what is the role of insurance in increasing the cybersecurity of the fintech sector?

V. Summary Conclusion and Opinion

With this research, the doctoral student enters an innovative and topical issue related to the latest trends in the development of blockchain technologies and their role in the development of the fintech sector. The doctoral student demonstrates knowledge of the effective regulatory mechanisms applied in Europe, as well as the initiatives of the European Commission to promote blockchain innovations and to implement the European Blockchain Partnership.

The in-depth and purposeful research work of doctoral student Milinova is evident in her publications, through which the author fulfills the minimum national requirements for her publication activity with a score of 40 points.

In conclusion, it can be summarized that the dissertation has the necessary scientific and scientific-applied contributions. This gives me the reason with full conviction to propose to the respected members of the scientific jury to vote **positively** and to propose to the Faculty Council of the Faculty of Finance the **awarding** of an educational and scientific degree “doctor” in the scientific specialty “Finance, monetary circulation, credit and insurance (finance)” by Marina Ivanova Milinova.

05/12/2024

Sofia

Reviewer:

(assoc. prof. Irena Markova, D.Sc.)