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THEORETICAL ASPECTS OF CRYPTOCURRENCIES CHALLENGES IN FUTURE REGULATION

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Abstract

Interest in cryptocurrency, its investment opportunities, and related infrastructure is constantly growing. However, this market is often described as a risky market. One of the reasons for this risk is the absence of a regulatory framework. Some of the main characteristics of cryptocurrencies are unregulated, decentralised, and anonymous. Although lack of regulation is identified as a major problem in the cryptocurrency market, too much regulation can also lead to other risks, such as a large decrease in value or liquidity. The purpose of this topic is to present theoretical aspects about future developments in cryptocurrency regulation, paying close attention to Markets in Crypto-Assets Regulation (MiCA). To achieve this goal, this research uses the analysis of literature and bibliometric analysis.

Keywords: cryptocurrencies, regulation, MiCA, risk, liquidity

INTRODUCTION

The cryptocurrency market and its related infrastructure are growing every year, and due to the availability of cryptocurrencies, more and more institutional and individual investors of various profiles are investing and trading in cryptocurrencies (Čuljak et al., 2022). However, the cryptocurrency market is described as a very risky market, which is hampered by the lack of a regulatory framework (Tomić, 2020). The future regulation of cryptocurrencies becomes a challenge for the cryptocurrency market, where it is unclear how the market will react to the expected requirements.

Conlon et al. (2024) note that the future regulation of cryptocurrencies plays a key role in this fast-paced financial world, developing pathways that promote growth or create new limitations. Inci & Lagasse (2019) draws attention that although the lack of regulation is cited as a major problem for cryptocurrencies, increased regulation could create an even bigger problem, as it could undermine the key feature of cryptocurrency being unregulated that makes it popular as an investment asset, leading to a decrease in value and high illiquidity. In this context, cryptocurrency research in the field of regulation becomes especially necessary and relevant. It is important to note that such research is particularly important in the context of the European Union's legal regulation. The implementation of the Markets Crypto-assets (MiCA) regulations in the European Union marks a significant step forward for the whole cryptocurrency sector, offering a chance to meet the increasing demand for governance within the crypto domain, while also creating an opportunity to spearhead global initiatives to address the main challenges encountered in this industry (Conlon et al., 2024).

Research problem. What challenges await cryptocurrencies in future regulation?

Research object. Cryptocurrencies within the framework of regulation.

The purpose of the study. To present theoretical aspects about future developments in cryptocurrency regulation, paying close attention to Markets in Crypto-Assets Regulation (MiCA).

Research methods. Literature analysis, bibliometric analysis.

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Research limitations. The Scopus database is used for bibliometric analysis. Bibliographic records obtained using "cryptocurrency", "regulation" and "MiCA" keywords. Research period from 2014 to 2024. It is also important to note that the study was conducted in 2024, so the data do not cover the entire year of 2024.

THEORETICAL ASPECTS OF THE REGULATION OF CRYPTOCURRENCIES

Cryptocurrencies are decentralised virtual currencies that are not regulated by central banks (Bondar et al., 2020). Tomić (2020) notes that cryptocurrencies are based on the idea of decentralisation. Aliu et al. (2022) argue that a regulatory consensus for cryptocurrencies internationally is elusive. The decentralised and borderless nature of cryptocurrencies presents challenges to traditional regulatory frameworks, which are confined to national jurisdictions (Benson et al., 2024).

Countries decide on this issue independently (Aliu et al., 2022). Boiko et al. (2021) note that cryptocurrency is a technology that removes the involvement of a regulator supporting the infrastructure and allows for the safe sharing of resources by users who do not trust each other. The absence of third parties helps to reduce or even eliminate costs (Andrianto & Diputra, 2017). Cryptocurrency is unregulated, decentralised, and anonymous and these are its three main characteristics (Inci & Lagasse, 2019). Cryptocurrencies have their own market and users, and ongoing discussions in central banks and governments of most countries, as well as widely discussed in the business environment, require a unified approach, so the problems of cryptocurrencies such as implementation, use, regulation, circulation, research are relevant for all countries (Bondarenko et al., 2019).

The unique features of cryptocurrencies attract investors, but they can cause several problems in the future, due to which cryptocurrencies may lose interest as an investment instrument. Inci & Lagasse (2019) list the risks associated with investing in cryptocurrencies such as illiquidity, theft, fraud, ransomware / hacking, and possible heavy government regulation. Investing in cryptocurrencies has disadvantages, and one of the most important disadvantages, which is quite controversial in the literature, is government regulation, which should be very careful and well thought out for cryptocurrencies to remain popular and useful in the future. Inci & Lagasse (2019) argue that increased regulation can undermine a key feature of cryptocurrency, such as being unregulated, which can lead to a decline in value and high illiquidity.

To manage risk and protect customers, there should be careful customer screening, ascertaining the legitimacy and financial stability of customers, strict compliance with rules, and compliance with laws and other regulations when conducting cryptocurrency transactions (Gapurbaeva et al., 2024). Regulators are increasingly challenged to respond quickly and appropriately to protect customers, investors, and the public from cryptocurrency-related risks, address the risks themselves, and still promote technological advancements in the field (Wronka, 2024). A major obstacle to formulating clear regulation of cryptocurrencies is the lack of clear and common terminology for crypto assets (Benson et al., 2024). Benson et al. (2024) argue that various definitions of cryptocurrency are used in different countries, often interchangeably and without specific classification.

After extensive consultations and a review of the cryptocurrency ecosystem, the European Commission recently confirmed its mandate for these highly dynamic virtual assets and launched a regulatory framework for cryptocurrency markets to address the risks posed by cryptocurrency markets in the context of the European Union (Wronka, 2024). Markets in Crypto-Assets (MiCA) is a progressive stage of international regulatory development where attempt to explore its impact on the price and liquidity

of international cryptocurrency markets across different developmental stages (Conlon et al., 2024). Evaluating the influence of regulatory acts on the dynamics of cryptocurrency prices is one of the options for analysing the effectiveness of cryptocurrency regulation (Benson et al., 2024).

MiCA is an important step in improving the EU's regulatory position on digital assets, which aims to unify the regulatory environment for cryptocurrencies across the European bloc by replacing fragmented national regulations (Conlon et al., 2024). However, when analysing MiCa, attention is already drawn to its shortcomings, which should be reviewed in the future. Due to the long legislative process and rapid changes in the virtual and asset markets, the MiCA still requires an update, although it has not yet entered into force (Benson et al., 2024). For example, the MiCA regulation does not explicitly mention the innovation Decentralised finance (DeFi), which decentralised nature and the absence of a central entity pose potential challenges (Benson et al., 2024). The main difficulties with MiCA are related to its adaptation to all forms of cryptocurrencies that exist in the market, as well as any new varieties of cryptocurrencies that may appear later (Daskalova & Kumanov, 2024).

MiCA is to change the legal framework of the cryptocurrency industry and for the first time cryptocurrencies and tokens will be regulated (Lehmann, 2024). In crypto asset markets, issuers and service providers will be subject to a comprehensive regime and especially strict rules will apply to stablecoins (Lehmann, 2024). MiCA has all the potential to become the new global standard, but there is also the possibility that MiCA can separate the EU from the global cryptocurrency market and further innovation (Lehmann, 2024). EU citizens and residents may find it difficult to access cost-effective and new digital services that are available in the rest of the world (Lehmann, 2024). In this context, it may appear that MiCA was too bold, and only time will show which of these scenarios will play out (Lehmann, 2024).

Recent arguments regarding the regulation of cryptocurrencies are very controversial. Ba & Şen (2024) argue that governments have interest in maintaining control over their fiat currencies, exchange rates, and capital accounts, and have many options to limit the reach of cryptocurrencies. While cryptocurrencies are still in their infancy, they have the potential to transform the international political economy, hastening the end of the hegemony of the US dollar and reducing the coercive financial power of the US (Ba & Şen, 2024). In order to understand the potential of cryptocurrency to change the international political and economic status quo, it is necessary to understand these possibilities and understand why governments are implementing various policies toward the new technology (Ba & Şen, 2024).

In summary, it can be noted that cryptocurrencies are based on the idea of decentralisation, which have their own market and users. Government regulation should be very careful and well thought out so that cryptocurrencies remain popular and useful in the future, and consumers are not harmed but certainly protected.

METHODOLOGY

The purpose of this study is to present theoretical aspects about future developments in cryptocurrency regulation, paying close attention to MiCA. This study uses bibliometric analysis as its method and applies VOSviewer software. Bibliometric analysis includes performance assessment, scientific mapping, and network exploration (Qudah et al., 2024). Bibliometric analysis is performed on the database to assess the significance and direction of the research topic. This analysis consists of three steps that are shown in Figure 1.

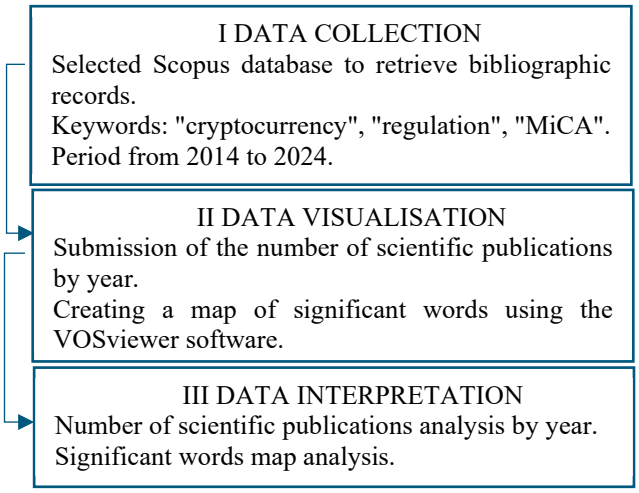

Fig. 1. *Scheme of the research*
Source: created by the authors

In the first stage of the research, the Scopus database of scientific publications is selected for bibliometric analysis. An important step in conducting a bibliometric study is the selection of a suitable database collecting the necessary literature data (Qudah et al., 2024). Qudah et al. (2024) note that Scopus and Web of Science databases are bibliometrically significant. According to the selected keywords "cryptocurrency", "regulation" and "MiCA" a search for scientific publications is performed from 2014 to 2024. The bibliographic records obtained in this way will be further used for data visualisation and interpretation.

In the next stage of the research, a visualisation of the data obtained from the Scopus database are presented. In order to visualise the obtained data, the VOSviewer software is used at this stage of the research.

The third stage of the study presents the interpretation of the data obtained and visualised. The significance and direction of the research topic is also presented.

As noted in the introduction, this study has limitations, including the chosen scientific publication database, keywords, and time frame.

RESULTS AND DISCUSSION

The results of the bibliometric analysis showed that the relevance of the topic of cryptocurrency regulation has increased over the last five years. Although the research period was taken from 2014, the first publications on this topic were only found from 2020 (Figure 2). After researching the Scopus database of publications with query ((ALL(cryptocurrenc*) AND ALL(regulat*) AND ALL(MiCA)) AND PUBYEAR > 2013), 136 publications were received from 2020 to 2024.

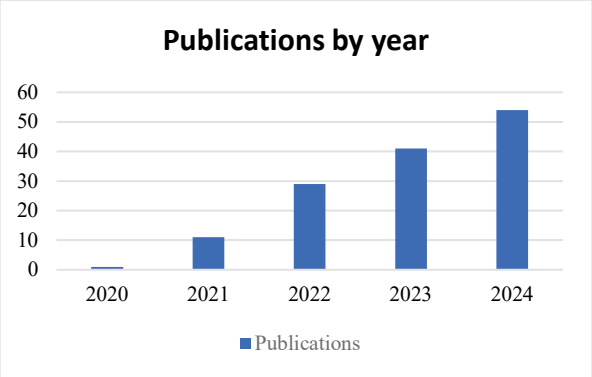

Fig. 2. *Publications by year*
Source: created by the authors based on Scopus (n.d.)

The data presented in the second figure show that research related to cryptocurrency regulation is still in its infancy, and the observed rapid growth in the number of publications shows the increasing relevance of the topic of cryptocurrency regulation. Based on the growing trend in the number of publications received, it can be assumed that the topic of cryptocurrency regulation will remain relevant in the future. Such a relevance of research can be associated with the increasing popularity of cryptocurrencies and the resulting desire to reduce possible risks in this market. Laboure et al. (2021) note that cryptocurrencies have become a priority for regulators. Concerns about economic stability, investor protection, and widespread cybercrime remain paramount (Conlon et al., 2024).

The visualisation of bibliographic data collected by Scopus using VOSviewer software is presented in Figure 3. The network shows the nodes that represent the most frequently occurring keywords and the

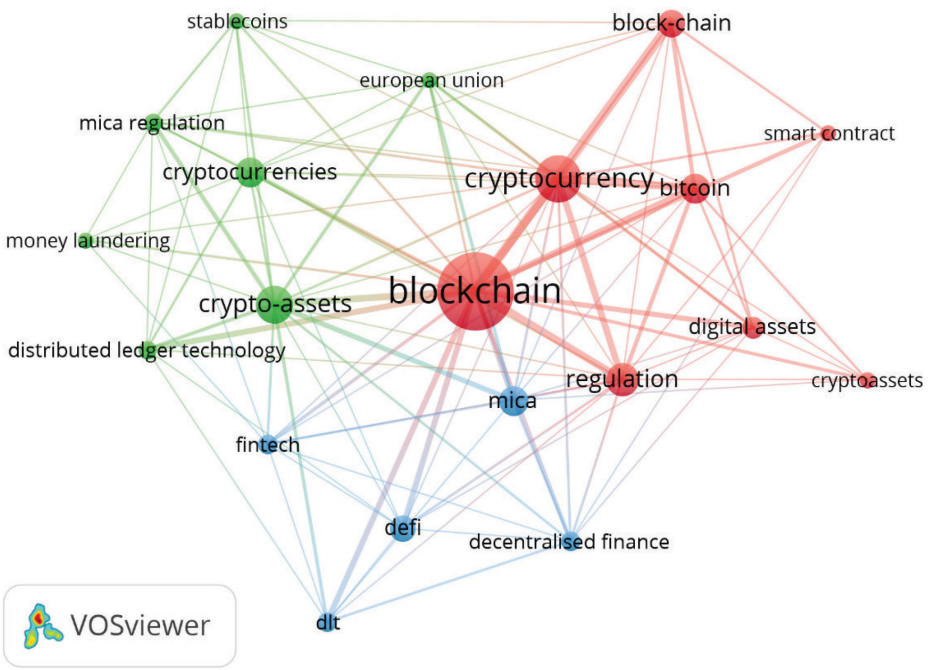

Fig. 3. *Network visualisation*
Source: created by the authors based on Scopus (n.d.)

relationships between them. Analysing the keywords, it can be seen that the most frequently repeated words are "blockchain", "cryptocurrency", "bitcoin" and "regulation". We are also watching the keywords "European Union", "MiCA regulation", "stablecoins", "decentralised finance".

In summarizing, it can be noted that the topic of cryptocurrency regulation has been especially relevant in the last few years, and the greatest attention is directed to the European Union. Decentralised finance (DeFi) is also currently being focussed on.

CONCLUSION

A theoretical study of the regulation of cryptocurrencies in the future has shown that the annual growth of the cryptocurrency market and its related infrastructure, as well as the active involvement of institutional and individual investors, has led to the creation and implementation of the regulatory system of the cryptocurrency market. However, it is important to note that the upcoming regulation becomes a challenge for the cryptocurrency market, where it is not clear how the market will react to the expected requirements.

MiCA is an important step in improving the EU's regulatory position in the field of digital assets, but there are fears that this regulation will leave the EU isolated from the global cryptocurrency market and further innovation. Recent arguments regarding the regulation of cryptocurrencies are very controversial, and only time will show which of the predicted scenarios will work out.

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