

International Cooperation of EU Countries in the Exchange of Information in the Cryptocurrency Crimes Investigation

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Abstract

The study aimed to determine the role of international cooperation of EU countries on the information exchange in the investigation of cryptocurrency-related crimes. The research employed a combination of general scientific methods (description, analysis, synthesis, etc.) and empirical methods, particularly content analysis. The author used descriptive, comparative methods and analysis of legal acts. The conducted research gave grounds to provide suggestions for improving the legal framework of international cooperation of the EU countries on the information exchange in the investigation of cryptocurrency – related crimes; the adoption of the basic EU document on combating criminal activity using cryptocurrency is substantiated, proposals for its adoption are formulated in the work. Prospects for future research may include studies on the further development of regulations for the exchange of information in the investigation of cryptocurrency crimes.

Keywords: cryptocurrency, cryptocurrency crimes, EU cooperation, information exchange, crime prevention.

Introduction

The study of the experience of international cooperation of the EU countries on the information exchange in the investigation of cryptocurrency-related crimes and consideration of the problems of its legal regulation for the activities of law enforcement agencies of the world and Ukraine are of particular importance. In January 2019, the UN published a report on its official website reviewing the global economic and social situation in 2018. The report concluded

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that cryptocurrencies and blockchain are an important part of the global financial system, which helps the world eliminate many bureaucratic procedures and create innovative business models capable of increasing management efficiency. They will also be applied in the fight against crime, based on the study of the possibility of using blockchain technologies. At the same time, cryptocurrency is considered a “new mark in digital finance” (United Nations, 2018).

As noted in scientific doctrine, cryptocurrency is a convertible decentralised virtual currency based on cryptographic operations (Brenig et al., 2015). “Cryptocurrencies are privately owned means of payment that are produced and distributed using a decentralised peer-to-peer transfer system known as blockchain technology” (Abadi & Brunnermeier, 2018). The main principles of cryptocurrency circulation are decentralisation and anonymity (Dyntu & Dykyi, 2018; Khamzin et al., 2016), which make cryptocurrencies increasingly popular among ordinary users and criminals. The popularity of cryptocurrency is related to its convenience, financial benefits for the company, and personal purposes of use (Nolasco Braaten & Vaughn, 2019; Hrytsai, 2023).

The significant scale of the spread of cryptocurrency and the unsettled social relations regarding its circulation, both at the international level and at the level of national legislation, led to an increase in crimes involving its use. Since the beginning of 2008, the role of cryptocurrency in money laundering has been increasing, particularly due to dynamic innovations in payment systems (Casey et al., 2018). This results in reduced time and a wider scope of criminal activity (Kamps & Kleinberg, 2018). Bitcoin, as the most common virtual currency, can provide users with the laundering of \$76 billion annually through illegal activities (46% of bitcoin transactions) (Barone & Masciandaro, 2019). All the above-mentioned trends in the growth of economic crimes are related to the circulation of virtual currencies.

Considering the decentralisation and anonymity of cryptocurrency, cryptocurrency payment systems are used for “legalisation of criminal proceeds, the commission of corruption crimes, crimes in the field of narcotic drugs, psychotropic substances, and precursors, crimes in the field of protection of state secrets, cybercrimes, etc.” (Samoilenko & Titunina, 2023). Europol (2023) notes the popularity of cryptocurrency in the criminal sphere in organised crime in its report. At the same time, “the availability of the database of transactions in the crypto-currency system in open access also gives law enforcement officers new tools to fight crime – forensic means of investigating criminal offences related to the use of cryptocurrencies are being modernised” (Just Talk, 2021).

At the same time, means of combating cryptocurrency-related crimes develop more slowly than innovative technologies, particularly in payment systems (Barone & Masciandaro, 2019), which are related to cryptocurrency circulation. Investigating economic crimes and money laundering schemes using cryptocurrency makes it difficult. The cross-border nature of virtual currency transactions and anonymity technologies make it difficult to investigate such criminal offences (Kethineni & Cao, 2020). Unfortunately, the EU has no basic documents capable of forming the framework for forming regulatory legal acts aimed at countering cryptocurrency-related criminal activity. It is possible to contribute to solving the mentioned problems through established international cooperation in investigating cryptocurrency-related crimes, which should be manifested, among other things, through an active exchange of information. The experience of EU countries in this area is especially valuable for Ukraine because of our country's European integration aspirations.

Unfortunately, the role of international cooperation in the information exchange in investigating cryptocurrency-related crimes remains understudied in domestic historiography. The provisions of the EU's main regional regulatory legal acts relating to the subject under consideration, acts of national legislation, remain unexplored by domestic researchers.

Objectives of the study

This article aims to determine the role of international cooperation of EU countries regarding information exchange in the investigation of cryptocurrency-related crimes.

Under the set goal, we have outlined the following range of objectives:

- Carry out a content analysis of current international legal acts, which are the regulatory and legal basis of international cooperation of EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes.
- Analyse the opinions available in the theory regarding international cooperation on the information exchange in investigating cryptocurrency-related crimes.
- Identify the problems of international cooperation of the EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes and provide propositions for improving the legal framework of international cooperation of the EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes.

Methods

Research design

The research is based on combining different methods, both general scientific and unique, to achieve the research's set aim and objectives. This study employs a combination of general scientific (methods of description, analysis, synthesis, etc.) and empirical approaches, characteristic of both the general theory of law, the theory of international law, and comparative law.

The author conducted a content analysis of the current international legal acts, which are the legal framework for international cooperation of the EU countries regarding the information exchange in investigating cryptocurrency-related crimes. Only official sources were used in the research, including official websites of international organisations, their reports, etc. The work also analysed the theorists' opinions regarding international cooperation on information exchange in investigating cryptocurrency-related crimes. For this purpose, the author analysed academic articles by European and Ukrainian authors, more than 80% of which were published in 2018-2023. Considering that the role of international cooperation of EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes was not the subject of specialised research, the articles that, in one way or another, relate to the topic under consideration were selected for this study. The work focused on the analysis of modern academic articles by European researchers. In general, the research design can be illustrated using the Figure 1.

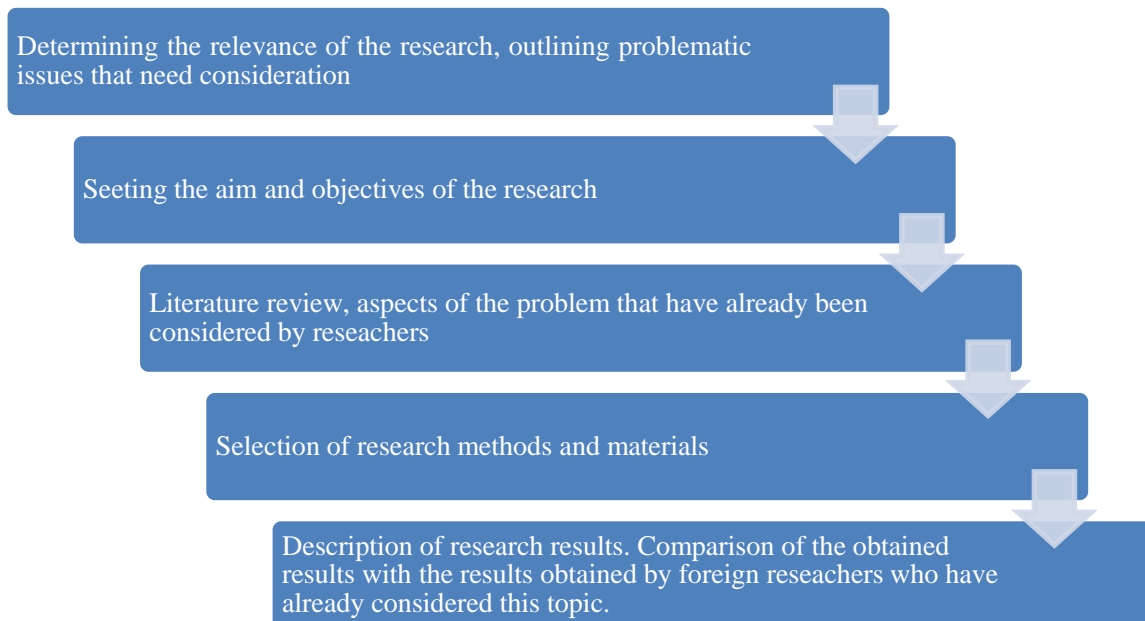


Figure 1. Research design

Methods

The research employs several methods, such as descriptive method, comparative analysis and analysis of legal acts. Special attention is paid to special methods of research, in particular, the method of interpreting legal norms for studying the content of international conventions, which are the legal framework of international cooperation of EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes. The comparative law is also used to identify common and distinctive features in the activities of the institutions engaged in cooperation with law enforcement agencies of the European Union.

Sample

This research involved an analysis of the Convention on Cybercrime signed in Budapest on November 23, 2001 (Verkhovna Rada of Ukraine, 2001), and the Treaty on the stepping up of cross-border cooperation, particularly in combating terrorism and cross-border crime, which was signed on May 27, 2005 in Prüm (Germany) and others, acts of national legislation of the EU countries, as well as reports, recommendations, and standards of the Financial Action Task Force (FATF), as a leading international organisation for the prevention and development of policy for the regulation of economic crimes related to with the circulation of cryptocurrencies. The FATF Anti-Money Laundering Development Group is an intergovernmental organisation with thirty-five member states and

two regional organisations. About 170 countries work with FATF as associate members or observer members and members of regional bodies such as FATF that provide international cooperation within the framework of requirements and standards.

The analysis of the above materials gave grounds for concluding the current lack of basic documents in the EU that can form the basis of forming regulatory legal acts aimed at countering cryptocurrency-related criminal activity and the need to develop such documents. These documents should contribute, in particular, to the information exchange during the investigation of cryptocurrency-related crimes.

Literature review

The issue of countering cryptocurrency-related crimes is the subject of active discussion, particularly in EU countries. The academic literature (Barone & Masciandaro, 2019; Bloomberg, 2017) examines money laundering schemes through mechanisms of cryptographic operations such as investments, new payment instruments and methods, and substitutes for state currencies. European researchers often focus on the joint pan-European counteraction to such criminal offences and the exchange of information while investigating cryptocurrency-related crimes.

Barone and Masciandaro (2019) present a dynamic new study to compare old and new (cryptocurrency) money laundering techniques to reveal the relative role of cryptocurrency as an effective means for criminal organisations to launder their illegal proceeds. Bloomberg (2017) identifies four main forms of cryptocurrency-related crime: money laundering, smuggling, tax evasion, and extortion.

Domestic researchers state in their 2016 article (Nahorniak et al., 2016) that the lack of legal status and base of cryptocurrencies causes difficulties in the investigation of criminal offences related to this tool of money laundering (identification, the fact of the crime), and hinders international cooperation in their investigation. According to the authors of the article, in today's post-industrial society, where market forces have become quite complex, traditional economic transaction mechanisms, including credit cards, debit cards, ATMs, and other electronic systems, are insufficient to cope with new economic pressures and societal demands. The document concludes that there is no legal framework for Bitcoin and proves the need to adopt a single law on virtual currency, create an authority that will be authorised to issue licenses, exempt transactions with virtual currency from taxation, and spread ideas about the use of virtual currency in modern society (Nahorniak et al., 2016).

The authors of another article (Dyntu & Dykyi, 2018) emphasise that the international fight against cryptocurrency-related crimes is hindered by the fact that despite the widespread use of cryptocurrency around the world for various types of purchases and transactions, there is no unified definition of cryptocurrency, as well as its legal status. The lack of a unified definition of cryptocurrency and its legal status leads to a lack of a unified understanding of the criminalisation of certain violations of the procedure for circulating cryptocurrencies. Accordingly, it also hinders international cooperation in investigating cryptocurrency crimes, including information exchange. Moreover, the above-mentioned circumstances cause difficulties during the investigation of criminal proceedings regarding the facts of money laundering with the use of cryptocurrency.

So, law enforcement agencies face problems identifying criminals and determining whether they are committing a crime. Besides, the authors indicate the main concepts of cryptocurrency in the article: anonymity and decentralisation, which give rise to the main problems in investigating crimes (Dyntu & Dykyi, 2018).

The EU is actively discussing the need to regulate cryptocurrency as a potential financial instrument for money laundering. Kamps and Kleinberg (2018) note the lack of government regulation of the cryptocurrency market and the detection of potential criminal activity, which is possible through trading data on exchanges, allowing for the detection of signals of a real money laundering situation. The authors note that there is little academic literature on cryptocurrency pumping and dumping schemes, and government regulation has not yet caught up, making cryptocurrencies particularly vulnerable to this type of market manipulation. This paper reviews the existing information on pumping and dumping schemes from the classical economics literature, synthesises it with cryptocurrencies, and proposes criteria that can be used to define the pumping and dumping of a cryptocurrency. These pump and dump schemes exhibit anomalous behaviour. So, anomaly detection research techniques are used to identify points of abnormal trading activity to indicate potential pumping and dumping activity. The findings suggest that certain signals in trading data can help detect pump-and-dump patterns, and we demonstrate this in our detection system by examining several real-world cases. Moreover, we have found that fraudulent activity is concentrated on certain cryptocurrency exchanges and coins.

Stroukal (2016) also proves the need for active government intervention in the functioning of the cryptocurrency market. The government must ensure the functioning of a reliable financial system by regulating the requirements for circulation and cooperation at different levels (Spithoven, 2019). The importance

of international cooperation among the EU countries is substantiated by Haydanka (2019) – a researcher from Slovakia.

At the same time, establishing effective international cooperation between EU countries regarding investigating cryptocurrency-related crimes requires adjustment of monetary, trade, and state security policies, particularly in cyberspace (Nath, 2020). Nath provides an overview of global EU law enforcement action on cryptocurrency-related crime. The author also substantiates the need for private-state cooperation to implement effective regulation of cryptocurrency transactions. The author concludes that there is a need for comprehensive global cryptocurrency regulations to control cryptocurrency-related crimes (Nath, 2020). However, there is still a unified understanding of cryptocurrencies and a unified approach to taxation policy and regulation of their circulation (Solodan, 2019).

International cooperation on the information exchange in the investigation of cryptocurrency-related crimes is hindered by the peculiarities of the legislation on taxation of cryptocurrency in different European countries. Solodan (2019) used the anthropo-socio-cultural approach to justify the need for the proper legal regulation of cryptocurrency taxation to ensure the realisation of the human right to taxation. The legal regulation of cryptocurrency taxation at the pan-European level is analysed. The author notes that there is still no unified approach to defining what cryptocurrencies are and how countries can develop a common policy related to them. This is partly determined by users' anonymity and virtual currencies' desire to bypass traditional financial institutions. The author notes that Eastern European countries have simpler and more attractive tax rates. The article's author analyses the European judicial practice in IT activities, particularly cryptocurrency, focusing on the practice of the European Court.

The international cooperation of the EU countries in the investigation of cryptocurrency-related crimes is hindered by the fact that, despite the widespread use of cryptocurrency around the world for various types of purchases and transactions, there is no unified position on the definition of cryptocurrency, as well as its legal status in the EU. Law enforcement agencies face problems identifying criminals and determining that they are committing a crime.

International cooperation is a potential way to counter the threats of criminal activity in the studied area. At the Group of Twenty (G20) meeting in 2018, the European Union recommended that its member states develop regulations for the circulation of cryptocurrencies, noting the growing interest in virtual assets in the future. The main task for governments should be to support the fight against tax fraud, money laundering, and other crimes, as well as the

dynamic development of a legal framework for the circulation of decentralised cryptocurrencies that can ensure security, privacy, and anonymity.

Results

The content analysis of the legal framework of the international cooperation of the EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes (see Sample section) showed the following. The legal framework for international cooperation on the information exchange in the investigation of cryptocurrency-related crimes consists of several international legal acts. They include the Convention on Cybercrimes dated November 23, 2001 (Verkhovna Rada of Ukraine, 2001), the Treaty on the stepping up of cross-border cooperation, particularly in combating terrorism and cross-border crime dated May 27, 2005, etc. (Council of the European Union, 2005). The provisions of the Prüm Treaty of 2005 provide the obligation to create an infrastructure within the EU that allows for wide information exchange in criminal cases and open access to databases of police bodies of all member states. The Prüm Convention contains provisions to ensure the process of information exchange for crime prevention, especially when carrying out large-scale measures against cross-border organised crime. Chapters 3 and 4 of the Convention), police cooperation (Chapter 5 of the Convention provides for the qualitative development of cooperation between internal affairs bodies of member states in the fight against crime, such as giving the police the right to exercise their powers on the territory of a foreign state).

In the Strategy for the fight against high-tech crime for 2019-2023, the European Union continued to improve its work on countering cross-border crimes and added new directions. These include the fight against financial crime and money laundering, increased attention to cyber security, and personal data protection as important areas. Among the EU bodies that carry out international cooperation on the information exchange in the investigation of cryptocurrency-related crimes are the European Police Agency (Europol), the EU Agency for Criminal Justice Cooperation (Eurojust), and the European Border and Coast Guard Agency (FRONTEX). In addition, there are specialised auxiliary bodies, such as the Standing Committee on Operational Cooperation on Internal Security, the European Crime Prevention Network, the European Anti-Fraud Office, etc. They were created at different times, depending on the integration processes and needs of the EU member states (Figure 2).

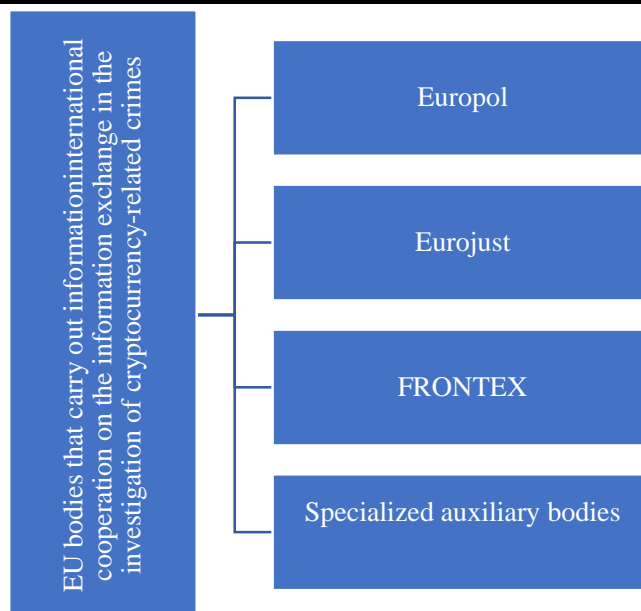


Figure 2. Institutional principles of international cooperation of EU countries regarding the information exchange in the investigation of cryptocurrency-related crimes

All this testifies to the EU's efforts to improve the fight against cross-border crime and ensure the safety of its citizens. However, this task is difficult, as crime is usually international and crosses national borders. Therefore, the EU actively cooperates with member states and third countries in fighting crime and with international organisations such as Interpol and the UN. At the same time, there are currently no basic documents in the EU capable of forming the basis for forming normative legal acts aimed at countering cryptocurrency-related criminal activity, reducing the effectiveness of such international cooperation.

Therefore, the international cooperation of the EU countries regarding information exchange in investigating cryptocurrency-related crimes is important, given their cross-border nature. The conducted research made it possible to identify the provisions of the current regulatory legal acts of the EU, on which such cooperation can be built, as well as pan-European institutions that make up the institutional component of such cooperation. At the same time, there are currently no basic documents in the EU capable of forming the basis for forming regulatory legal acts aimed at countering cryptocurrency-related criminal activity, reducing the effectiveness of such international cooperation.

The lack of basic documents capable of forming the basis for the formation of regulatory legal acts aimed specifically at countering cryptocurrency-related criminal activity necessitates the adoption of such a document, which should contain:

- unified terminology, in particular the definition of cryptocurrency, blockchain, etc.
- unified compositions of criminal offences in the sphere of cryptocurrency circulation.
- legal bases and restrictions on the information exchange in investigating cryptocurrency crimes.

Restrictions on the information exchange in investigating cryptocurrency-related crimes must consider personal data protection, which is one of the most problematic issues of such information exchange. This is related to the priority in the EU policy of observing the rights and freedoms of the individual. At the same time, the exchange of such information is necessary for the investigation of cryptocurrency-related crimes. Therefore, regulating such an exchange should be based on the principles of proportionality and availability of information from national databases for law enforcement agencies of EU member states.

In practice, ensuring the compatibility of the EU's main goals in most cases causes a certain elimination of interests in a certain direction among the EU member states.

The practical implementation of the idea of developing a basic EU document on combating cryptocurrency-related criminal activity also requires unifying the policies of EU countries regarding cryptocurrencies. The European Union currently has no specific regulations regarding the circulation of virtual currencies. Despite the absence of regulatory acts, virtual currencies can be regulated as an object of taxation or commodity. Several EU countries do not have a specially developed regulatory policy at all (Belgium, Cyprus, Denmark, Estonia, France, Greece, Italy, the Netherlands, Poland, Portugal). The tax regime of virtual currencies has been introduced in Spain and Slovenia. Germany is among the countries that generally regulate cryptocurrency as real currency, although cryptocurrency is not considered a form of legal means of payment (Figure 3).

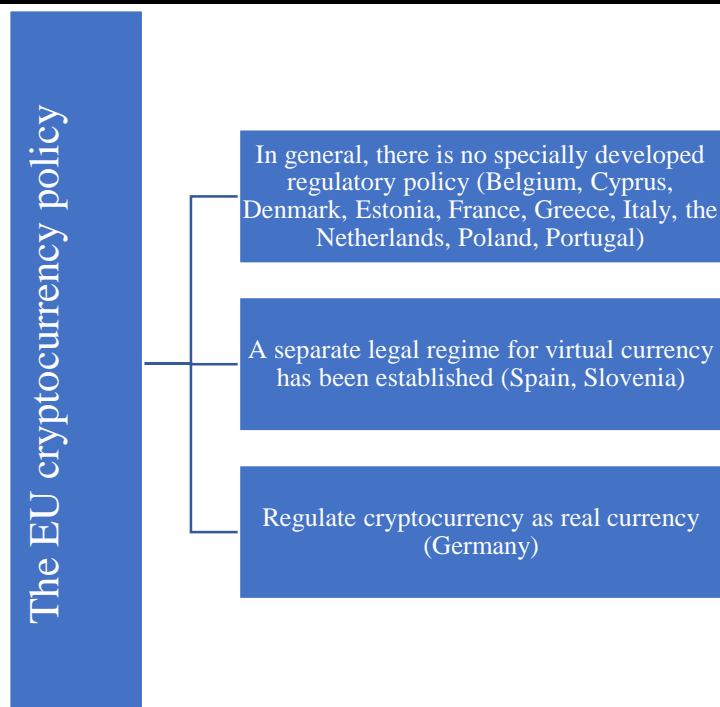


Figure 3. EU cryptocurrency policy

The lack of a unified cryptocurrency policy is an important problem of international cooperation of EU countries on the information exchange in the investigation of cryptocurrency-related crimes, as it makes it impossible to unify the composition of criminal offences in this area and prevents a full exchange of information.

Discussion

The analysis showed that currently, there are no basic documents in the EU capable of forming the basis for the formation of specialised regulatory legal acts aimed at countering cryptocurrency-related criminal activity, which reduces the effectiveness of international cooperation in this area. The above indicates the need to develop such a document, considering the above suggestions. The basic documents in this area should facilitate, in particular, the exchange of information in investigating cryptocurrency-related crimes.

Cryptocurrency is an important part of the global financial system, and its growing popularity is determined by its convenience, financial benefit for the company, and personal purposes of use. The main principles of cryptocurrency circulation are decentralisation and anonymity. The significant spread of

cryptocurrency and the unsettled social relations regarding its circulation, both at the international level and at the level of national legislation, have led to an increasing number of crimes involving its use. Cryptocurrency payment systems are used to legalise criminal proceeds, commit corruption crimes, crimes in the circulation of narcotic drugs, psychotropic substances, and precursors, crimes in the field of state secret protection, cybercrimes, etc. The cross-border nature of crime involving the use of cryptocurrency necessitates international cooperation on the information exchange in the investigation of cryptocurrency-related crimes.

In the academic literature, the role of international cooperation of EU countries in the information exchange in investigating cryptocurrency-related crimes remains understudied. However, certain aspects of this issue are discussed. As in our study, in other academic works on this and similar topics, researchers note the types of economic crimes associated with virtual assets, referring, as a rule, to FATF reports. FATF includes money laundering, the sale of controlled substances and other illegal items (including firearms), fraud, tax evasion, sanctions evasion, cybercrimes (such as cyber-attacks leading to theft), child exploitation, and human trafficking. Among these, drug-related crimes and fraud (such as investment fraud, blackmail, and extortion) are the most common (Financial Action Task Force, 2020). It should also be noted that the FATF invites national authorities to create coordination mechanisms for active information exchange in such a way as to promote a deeper understanding of money laundering risks in the cryptocurrency ecosystem (Financial Action Task Force, 2020), which has something in common with our findings.

Foreign researchers also prove the convenience of cryptocurrency as a tool for money laundering due to the relative autonomy of the owner of the currency and the lack of requirements to provide personal information about the user and his location (Dyntu & Dykyi, 2018). As a result, law enforcement agencies are less likely to track criminal activity. The exemption of cryptocurrency transactions from government control because of the lack of need for third-party verification is cited as a major reason for failure to investigate such crimes (Dyntu & Dykyi, 2018). It should be noted that this problem could be significantly reduced with more successful information exchange between governments.

Furthermore, another author (Campbell-Verduyn, 2018) notes the absence of a policy to regulate the circulation of cryptocurrencies entails additional economic crime risks, which fully corresponds to the conclusions of our study. The authors also note that FATF's comprehensive approach is aimed at organising regulatory measures to ensure the legal circulation of cryptocurrencies while reducing the risk of economic crimes. Governments that avoid international action

to implement FATF standards will increase the risks of illegal jurisdictions moving to their country.

In response to the identified challenges in the fight against economic crime, Vasylieva et al. (2018) propose a decentralised blockchain network exchange global information flows with low transaction costs of services to ensure the efficiency of international cooperation. Such a conceptual network provides tracking and early warning, detection of cross-border economic crimes, capital flows, and other information. “Distributed ledger technology, also known as blockchain, is gaining popularity around the world. Blockchain offers a reliable verification mechanism and decentralised mass collaboration” (Cumming et al., 2019). Nath (2020) emphasises the need to develop international control policies for independent governments in the context of the use of virtual currencies: “There is a need for comprehensive global cryptocurrency regulations to control cryptocurrency-related crimes”, which is in line with our opinion expressed in the research findings. A similar opinion is expressed by De Vido (2014), who proposes network regulation of cross-border crime based on standards and recommendations integrated at the national level.

Therefore, the conducted research, in general, corresponds to the conclusions of foreign authors. At the same time, certain propositions expressed in this work have not been expressed in the academic literature.

Recommendations:

- we recommend adopting a basic document at the EU level that would lay the foundation for the formation of normative legal acts aimed specifically at countering criminal activity using cryptocurrency;
- we recommend including in such a document: unified terminology, in particular the definition of cryptocurrency, blockchain, etc.; unified compositions of criminal offences in the sphere of circulation of cryptocurrency; legal bases and restrictions on the exchange of information in the investigation of cryptocurrency crimes;
- we recommend regulating such circulation based on the principles of proportionality and availability of information from national databases for law enforcement agencies of EU member states.

Conclusions

So, the significant scale of the spread of cryptocurrency and the unsettled social relations regarding its circulation at the international and national levels of the EU countries lead to the increasing number of crimes involving its use. The cross-border nature of crime involving the use of cryptocurrency necessitates

international cooperation on the information exchange in the investigation of cryptocurrency crimes. The EU actively cooperates with member states and third countries in fighting crime and cooperates with international organisations such as Interpol and the UN. At the same time, there are currently no basic documents in the EU capable of forming the basis for forming normative legal acts aimed at countering cryptocurrency-related criminal activity, reducing the effectiveness of such international cooperation. We propose to adopt such a document, which should contain unified terminology, in particular the definition of cryptocurrency, blockchain, etc.; unified compositions of criminal offences in cryptocurrency circulation; legal bases and restrictions on information sharing in investigating cryptocurrency-related crimes. At the same time, regulating such an exchange should be based on the principles of proportionality and availability of information from national databases for law enforcement agencies of EU member states. For the practical implementation of the mentioned idea, it is also important to unify the EU cryptocurrency policies.

The conclusions drawn in this study can be applied in developing the basic EU document on combating criminal cryptocurrency-related activity, propositions for adopting which are formulated in this work. Research prospects may be clearer, outlining the future basic documents and developing other propositions for regulating information exchange in investigating cryptocurrency-related crimes.

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