

Financial and Legal Regulation of Electronic Money Circulation in Developed Countries

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Abstract: The relevance of this paper is conditioned by the study of the regulation of electronic money circulation in the countries of the world, in particular in Ukraine, the specifics of carrying out activities in the field of issuing electronic money and establishing the regulatory basis for such activities. The purpose of this study is to investigate and analyse the financial and legal regulation of electronic money circulation, and to establish the specifics of issuing electronic money. The following methods were used: dialectical method, formalisation, hermeneutical, legal, formal and legal, logical and legal methods, system, structural and functional method, axiomatic method, induction and deduction, analysis, synthesis, etc. The findings are the definition and establishment of the features of the concept of "electronic money" and "electronic money circulation"; the establishment of the regulatory framework for regulating electronic money; investigation of the history of the establishment of electronic money in the world; the regulations of the sphere of electronic money circulation in Ukraine are studied and ways to improve this sphere are proposed. Subjects who can engage in activities aimed at issuing electronic money were identified and the features of their activities were determined. The provisions set out in this paper are of practical value primarily for subjects whose activities are aimed at implementing electronic money circulation and regulating this activity, and for persons who somehow participate in electronic money circulation and whose rights may be violated by the providers of such services.

Keywords: Electronic Money; Issuer; Means of Payment; Money; Payment Systems.

JEL Classification: E42, E5, G00, P2

1. INTRODUCTION

Over the centuries, money has evolved and emerged in new forms. In recent years, electronic money has become very popular, performing the function of payment on the Internet and more, and therefore the role of electronic money in the world is only growing every year. The development of electronic money circulation in the world was also influenced by the pandemic caused by the spread of coronavirus infection COVID-19 and the introduction of quarantine (Volik, 2020). The 21st century can be called a century of significant changes and development in various spheres of public life. It is in the 21st century that there is a rapid increase in payment and trade turnover, which in turn entails minimising the costs of money circulation, and improving the efficient functioning of existing payment systems. The development of the Internet has contributed to the creation of new digital technologies. The study conducted by the International

Telecommunication Union at the United Nations in 2019 found that in 2019, the number of Internet users was approximately 53.6% of the world's total population (Tovkun, 2020; Emodi et al., 2022). This contributed to the emergence of such a phenomenon as electronic money. In addition, the implementation of technological development in the world required the use of new electronic payment instruments. In accordance with the evolution of means of payment, electronic money is a new payment instrument. Currently, and in accordance with the current realities that have developed in the world, electronic money is one of the best, most promising and effective means of payment (payment instrument).

Scientific progress that has been taking place in the world in recent years has led to the development of electronic means and communication systems through which payment and credit operations are carried out, which in turn contributed to the creation and development of electronic money. The very concept of "electronic money" appeared relatively recently and is mostly used during various types of payment operations. The need to use electronic money is primarily conditioned by the tightening of requirements for the efficiency

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and convenience of money circulation in situations where payments reach significant amounts of money. The development of e-commerce in the world and the high cost of banking services have led to the emergence of such a phenomenon as "electronic money" (Voronova, 2016; Smajla et al., 2022).

The current state of circulation of "electronic money" in the world and in Ukraine, and issues and tasks that need to be solved, are gaining more and more relevance. The emergence of such a phenomenon as electronic money is primarily conditioned by consumer dissatisfaction and increased requirements for the reliability of payments (Tsybalyuk, 2011). The impetus for the development of electronic money was also the implementation of non-cash payments. Today in Ukraine, about 25-30% of people are Internet users and their number will only increase every next year, and therefore the number of people using electronic money will also increase (Tovkun, 2020; Zaro et al., 2022). Electronic money, at this stage, is an integral part of civil turnover. However, in Ukraine, there are many problems and obstacles in the use of electronic money, among which are the lack of effective and efficient regulations of electronic money circulation, and one of the main problems in the functioning of electronic money is the failure to ensure an appropriate level of security when making payments using electronic money. Given the fact that Ukraine has announced its intention to become a member of the European Union, it is necessary to improve electronic money circulation. Therefore, according to the study, it is necessary to investigate the financial and legal regulation of electronic money circulation in foreign countries and analyse their experience in the functioning of payments using electronic money.

The main objectives of this study are:

- investigation of the history of the establishment of electronic money in the world;
- determination of the regulatory framework for regulating electronic money circulation;
- establishment of the specifics of financial and legal regulation of electronic money circulation in the countries of the world and in Ukraine;
- analysis of the activities of entities engaged in electronic money circulation.

2. MATERIALS AND METHODS

To achieve the goals and objectives, the study used a number of general, specific, and philosophical methods of scientific knowledge within the framework of this research. Together with the use of these methods, it became possible to carry out an effective study of this topic and establish the features of electronic money circulation.

The fundamental method of this research is the dialectical method, with the help of which the place of electronic money in the theory of modern money is established and the features of regulating electronic money circulation in developed countries of the world are established. The use of this method leads to a theoretical and practical investigation of the issue of improving the sphere of electronic money circulation in Ukraine in the experience of European countries and

the United States of America. The historical method was used to investigate the peculiarities of the establishment of electronic money circulation in the world and characterise its stages.

Using the comparative and legal method, an analysis of the regulation of electronic money circulation in different countries of the world was carried out. The hermeneutical method was used to reveal the essence of the concept of "electronic money", and the possibility of determining the essence and features of this concept. The use of statistical and structural methods allowed identifying the features of electronic money circulation in developed countries of the world and adopting such features to improve this area in Ukraine. For the more effective implementation of this research, the study used methods of synthesis and theoretical analysis, with the help of which the analysis of research papers in the field of electronic money circulation was carried out, the features of the implementation of electronic money issuance activities in Europe and the United States of America were determined, and the regulation of such activities was analysed.

An important role in this study was also played by the following methods: analysis, synthesis, induction, and deduction, which were used to establish the essence and features of electronic money and study foreign experience in money management. The formal legal method was used to reveal the concept of "electronic money", establish the activities of banks and institutions to carry out their activities aimed at issuing electronic money, and also consider the procedure for improving this area in Ukraine. Using the system method, an analysis of the establishment and development of the sphere of electronic money circulation was carried out, and the range of problems studied was determined and, therefore, proposals for their solution were developed.

In addition, the effective technical and legal methods used to determine the area for improving the legal regime of electronic money as objects of legal regulation. Using the system and structural method, the financial and legal regulation of electronic money circulation is established and the regulatory framework for such a regulation is indicated. The method of formalisation, which reflects meaningful knowledge in a well-known sign-symbolic content; the method of system analysis and theoretical generalisation is used to generalise research related to the sphere of electronic money circulation in Ukraine and in countries of the world.

3. RESULTS AND DISCUSSION

Researchers determine the level of development of electronic money in the world initially, arguing that this tool for making payments is underinvestigated and has a great potential for development in the future. Among researchers, there is an opinion that "electronic money" is a new type of money, which in turn combines the characteristics of both cash and non-cash money (Shlapko and Mironov, 2017; Antoniou and Tringides, 2023). Approaches to determining the financial and legal essence of electronic money vary. Thus, A. Berendstein suggests that electronic money is one of the types of payments made and a type of payment instruments like bank cards that have a magnetic stripe (Makhaeva, 2011). L. White and D. Yevsyukov, in turn, understood electronic money as monetary obligations of issuers (Lozovyk, 2012).

S. Friedman defined electronic money as a financial product with a prepaid value (Lozovyk, 2012). There are various definitions of the concept of "electronic money". Thus, in the Glossary of terms published in 2001 by the Bank for International Settlements, electronic money was understood as a value that is stored electronically on devices such as a hard disk drive or in the form of a chip card (Ivasiv, 2008; Xia et al., 2022). The European Central Bank has given the following definition of "electronic money", according to which electronic money should be understood as electronic storage of money on an electronic medium, which can be used to make payments in favour of entities and which in turn does not entail the use of bank accounts, but simply works as a bearer prepayment tool.

Therefore, electronic money should be understood as a prepaid means of payment issued by the bank in exchange for non-cash or cash funds, the purpose of which is to make payments for goods or services provided. The main purpose of electronic money is to pay for a variety of goods and services on the Internet, and are endowed with the same value as cash. It can be argued that electronic money is a substitute for money in cash and is used to pay for goods and services without using bank accounts, which are stored on special media and do not need to be exchanged for cash.

Electronic money has the following characteristics: it is expressed in a certain currency, is a means of making payments, can only be put into circulation after it is exchanged for currency, is an obligation of the issuer, etc.

The methods used for electronic money circulation include: denomination, monetary reform, nullification, issue, devaluation, deflation, revaluation.

1. The establishment and development of electronic money circulation in the world can be divided into several stages:
2. The first stage was characterised by the implementation of the first telegraph transfer for clearing, which was carried out between two US federal banks.
3. The second stage is characterised by the appearance of debit and credit cards, the transfer of banks to an electronic system for making wholesale payments, and this stage is also characterised by the appearance of clearing settlement systems.
4. The third stage of the establishment of electronic money circulation was characterised by an experiment conducted by D. Chaum's company called "First Electronic Bank DigiCash".
5. At the fourth stage, electronic payment systems emerged and individuals entered electronic money circulation.
6. At the fifth and last stage, which continues to this day, the emergence of new electronic money (network money) became characteristic (Mokienko et al., 2019; Belanche et al., 2022).

The founder and discoverer of electronic money in the world is considered to be the Dutch researcher and professor at the University of California David Chaum, who founded the

DigiCash company, which was the first to start producing electronic money in the world. To preserve its reliability, Chaum created a "blind digital signature" system, the main purpose of which was that the issuer of electronic money could not see the serial numbers of electronic banknotes of operations performed, but after checking the operation, a digital signature is put on them, thereby confirming the originality and authenticity of electronic banknotes. Subsequently, the PhonePaid system was created in Europe, which allowed making transactions using mobile phones (Yavanova et al., 2012; Alsharif, 2022).

The active use of electronic money dates back to the 1980s, when microchips appeared that were embedded in a plastic card, which allowed paying for goods or services without using cash. It worked as follows: electronic information about the user's money from their card was passed to the recipient of funds, who could exchange them for cash at the service bank. Technical and scientific progress, computerisation of the population and the spread and development of information technologies in the field of banking services, which have taken place over the past decades in the world, have led to the evolution and development of the use of electronic money in the world. Subsequently, payment systems appeared on the Internet, with the help of which it became possible to exchange electronic money without any participation of the bank in this process. These payment systems include: WebMoney, Goldmoney.com, Beenz.com, PayPal, Qiwi, Flooz.com, etc. (Ryadinska, 2016; Gong et al., 2022). In the modern world, electronic money is used not only to pay for goods and services on the Internet, but also to pay for goods in stores, travel in transport, or as payment during parking. That is, it can be argued that electronic money is now a complex legal and economic institution used to pay for goods or services, and provides commodity and money circulation, and international settlements, which in turn leads to the preservation of part of the income received and their use in the future.

The establishment of electronic money in Europe at the official level occurs in 1994. Since this time, the history of the establishment of financial and legal regulation of the phenomenon of electronic money as a means of payment begins. In European countries, for quite a long time there was no unified approach to regulating electronic money circulation as an institution. For a long time, in countries such as Germany, France, Italy, and the Netherlands, only credit institutions, in the vast majority of banks, were allowed to issue electronic money. In Belgium and Sweden, there were no restrictions on the issue of electronic money, only later, due to the adopted acts of the European Union, the unification of legislation regulating the implementation of electronic money circulation was carried out. It was with the advent of the European Union directives that the regulation of electronic money circulation acquired modern features that have been preserved and are used today in many countries.

At the legislative level, the term "electronic money", in European countries, was first consolidated in the Directive of the European Parliament and of the Council Relating to the Taking Up and Pursuit of the Business of Electronic Money Institutions and Prudential Supervision (Directive of the European Parliament, 2000). According to this Directive, elec-

tronic money should be understood as the monetary value, which is a claim made against the issuer and stored on an electronic medium. Directive No. 2009/110 defines the concept of "electronic money", which refers to the monetary value that represents a claim to the issuer (Directive of the European Parliament, 2009).

In accordance with the European Union Directive, which was issued in 2009 and established the right to issue electronic money not only by banks, but also by legal entities that meet the criteria of the prudential supervision regime and a number of established standards (Directive of the European Parliament, 2009). This Directive establishes the following categories of legal entities that can issue electronic money: specialised institutions that issue electronic money; credit institutions (but operate with certain restrictions); states that are members of the European Union; the European Central Bank or national banks of states; postal institutions. Article 7 of the Directive of the European Parliament 2009/110 establishes the safety of funds received in exchange for electronic money. Thus, they can become the object of guaranteeing their safety only after they are credited to the actual accounts of institutions whose activities are related to the field of electronic money, and the guarantee mechanism is applied to them within five days after the issuance of electronic money. This directive also establishes guarantees for owners of electronic money, that is, establishing and guaranteeing the right of owners of the corresponding electronic money to repay electronic money at face value (Directive of the European Parliament, 2009).

Non-bank electronic payment systems are of great importance in the implementation of electronic money circulation. In 1998, the European Central Bank published a report on electronic money, according to which the issue of electronic money in the future should have a significant impact on the payment policies of institutions and banks operating in the field of electronic money circulation (Law of Ukraine No. 537-V, 2007). The European Central Bank has established requirements for the implementation of activities by non-bank electronic payment systems, namely: transparent and effective legal support; repayment of electronic money; implementation of prudential supervision, that is, supervision carried out by special bodies and assessment of the economic condition of an economic entity; technical base. It was the electronic group of the European Central Bank that was one of the first to propose allowing electronic money to be issued not only to banks, but also to non-banking institutions.

Regarding the regulation of the implementation of electronic money circulation by non-banking institutions, there is a North American approach to regulation (Tsymbalyuk, 2011, Chakraborty et al., 2022; Chen et al., 2022). The US Federal Reserve System developed regulations that established general legal boundaries for the functioning of electronic money, the peculiarity of which was the lack of strict regulation of the activities of institutions engaged in electronic money circulation and created conditions for free competition. In the United States of America, not only banks, but also other non-banking institutions have the right to carry out activities related to the issuance of electronic money. There are no special regulations for the activities of such institutions, but individual states may create separate legal norms that partially

regulate the activities of non-banking institutions operating in the field of electronic money circulation. They do not need to obtain permits to issue electronic money. It is this provision that establishes the non-interference of regulatory authorities that the United States should not interfere in the activities of such bodies until there is a real threat to the economic security of the state, society, or a person. In the United States, there are the following regulations governing the issuance of electronic money circulation: Regulation Z (Truth in Lending, 2008) and Regulation E (Electronic Fund Transfers, 2010).

Regulation E protects the fundamental rights and freedoms of consumers of services, and regulate obligations with extrapolation to the rights and obligations of institutions whose activities are aimed at carrying out electronic money circulation (Electronic Fund Transfers, 2010). In some countries, there is no separate institution or special regulations that would regulate electronic money circulation. But still, in some countries, there are separate institutions and legal acts in the field of electronic money circulation. Thus, in Venezuela and Thailand, there are regulations aimed at governing the issue of electronic money, as a separate institution of financial law.

One of the most important organisations whose acts are designed to regulate electronic money circulation is the World Trade Organisation. The World Trade Organisation is an international organisation whose task is to regulate trade and political relations between its member states and liberalise international trade. Nowadays, 164 countries are members of World International Trade, including Ukraine. In 1994, the World Trade Organisation adopted the General Agreement on Trade in Services (1994). The provisions of the agreement came into force and became binding on Ukraine in 2008, after it became a member of the World Trade Organisation. This Agreement established a regime of facilitation for trade in services, which established the principle of maximum possible openness of electronic payment systems for settlements and payments made by participating countries in accordance with their commitments.

One of the first countries where the electronic money market was created was the United Kingdom, and therefore it has extensive experience in regulating the implementation of electronic money circulation. In accordance with the legislation of the United Kingdom, electronic money should be understood as the monetary value that is located on an electronic medium and is a requirement that is put forward to the issuer and issued upon receipt of funds for payment operations. One of the main legal acts regulating electronic money circulation in the UK is the UK law "On the legal regulation of electronic money" (The Electronic Money Regulations, 2011). According to this law, the issue of electronic money can be carried out by both banks and other institutions that have a license issued in accordance with UK law. A license to carry out activities related to the issuance of electronic money is issued by a specially authorised – financial control body responsible for ensuring the normal functioning of the financial services market. There are two types of the above license: limited and full. The difference between a limited and full license is that a full license is issued for an unlimited time and is not limited to the field of activity, that is, an in-

stitution that has this license can provide any services within the European Economic Area without having to go through the licensing procedure in another state that is a member of the European Economic Area.

One of the countries where electronic money circulation is widespread is the United States of America. In 2000, it adopted a basic regulation called the "Uniform Money Services Act", which governs the scope of electronic money circulation by banks and institutions whose activities are aimed at issuing electronic money, and which extends its effect both at the federal level and at the state level of the United States of America (Electronic money, 1997). In the United States, both banks and non-bank financial institutions can carry out activities related to the issuance of electronic money. As confirmation of the importance of the American model of electronic money circulation, it is necessary to mention only the functioning of one of the world's most famous PayPal Inc corporations, which in turn provides services to consumers around the world. Regulation of electronic money circulation in the United States of America is carried out by both federal and state legal acts. In addition, in the United States, an important role is played by federal agencies that monitor the legality of electronic money circulation activities by institutions and banks, but cannot interfere in such activities only if such activities do not threaten the security of the country, society, or people. State banking legislation plays an important role at the state level in regulating electronic money circulation. In the United States of America, electronic money is defined as a new type of financial service. In addition, to carry out activities for issuing electronic money, banks and institutions need to obtain a license to carry out this type of activity.

In Ukraine, electronic money circulation is regulated by the Law of Ukraine "On Payment Systems and Money Transfer in Ukraine" (2001), which regulates the principles of functioning of payment systems in Ukraine, the procedure for transferring funds and making settlements. According to this law, electronic money should be understood as a unit of value that is stored on an electronic carrier and acts as a means of payment. In addition, the regulation of electronic money circulation in Ukraine is carried out by the Civil Code of Ukraine (2003), which establishes that the hryvnia as a means of payment in Ukraine, and therefore the bank can issue electronic money only denominated in hryvnias. To regulate the issue of electronic money in Ukraine, letters and resolutions of the Board of the National Bank of Ukraine, the Law of Ukraine No. 1023-XII "On Consumer Protection", international acts and other legal acts that somehow regulate the sphere of electronic money circulation are also used.

International experience in regulating electronic money circulation shows that the development and improvement of electronic money helps to reduce costs and cash circulation and contributes to improving the level of the economy in the country. For Ukraine, the adoption of international experience and consideration of international legal norms in improving and developing the sphere of electronic money circulation will lead to:

- not only by banks, but also by other institutions, but to issue electronic money, such an institution must

have the size of its own capital, technical capacity, and business reputation.

- it would allow the use of electronic money when making settlements between legal entities, individuals and the public sector;
- activities related to the issuance and circulation of electronic money should be restricted and isolated from operations that are not related to payment operations.

4. CONCLUSIONS

In the course of this research, the study defined the concept of "electronic money", according to which electronic money should be understood as a pre-paid means of payment issued by the bank in exchange for non-cash or cash, and the purpose of which is to make payments for goods or services provided. The discoverer of electronic money was the Dutch scientist David Chaum, who founded the DigiCash company, which was the first to start producing electronic money in the world. However, the active development of electronic money circulation began in the 1980s with the advent of microchips, which were embedded in a plastic card, which allowed making payments for goods or services without using cash.

The development of electronic money in the world has great potential for development in the future. The topic of electronic money has many controversies, but one thing remains unchanged, it's convenience, since it is an electronic storage of money on an electronic medium. And this is a great way to replace cash.

The author gave the main list of regulations governing electronic money circulation in the European Union. First of all, it includes the directives of the European Union, namely European Union Directive No. 2000/46, Directive No. 2000/28 and Directive 2009/110. Other important legal acts regulating electronic money circulation are the requirements of the World Trade Organisation. It was the European Union Directive No. 2000/46 "On activities in the field of electronic money and prudential supervision of institutions engaged in this activity" that defined such a concept as "electronic money" for the first time in European countries. In Ukraine, electronic money circulation is governed by the following regulations: the Civil Code of Ukraine, the Law of Ukraine "On payment systems and money transfer in Ukraine", the Law of Ukraine "On consumer protection", international legal acts and other regulations.

The study analysed the financial and legal regulation of electronic money circulation in Europe and the United States of America. The specific features of issuing electronic money by banks and institutions are determined. It was found that not in all countries financial institutions can carry out electronic money circulation, but only banks, but in those countries where institutions still provide services for issuing electronic money, such institutions must obtain a license to carry out such activities.

The study analysed the experience of financial and legal regulation of electronic money circulation in the countries of the world and concluded that the adoption of such experience

would improve the sphere of regulation and implementation of electronic money circulation in Ukraine.

In Ukraine, the circulation of electronic money is regulated by the current legislation, which regulates the principles of functioning of payment systems. It is thanks to the international experience of regulating the circulation of electronic money that contributes to raising the level of the country's economy. Thus, the implementation of electronic money in Ukraine contributes to the development of a new digital platform for electronic money circulation. However, the procedure for the full implementation of this scheme has many corrections for the effective and safe use of electronic money.

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