

MYKOLAS ROMERIS UNIVERSITY
FACULTY OF LAW
PRIVATE LAW INSTITUTE

IRYNA BERESTOVA
(EUROPEAN AND INTERNATIONAL BUSINESS LAW)

DIGITAL EURO: ISSUES IN CREATION OF LEGAL AND REGULATORY
FRAMEWORK

Master thesis

Supervisor –
Dr.
Kazimieras Zaveckas

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INTRODUCTION

The relevance of the master thesis. The era of technological progress rapidly changes every corner of human activities, which also has touched people's payment habits. Society nowadays obtains various options on how to make payments, they vary from conventional cash transactions to payments by credit and debit cards, e-money payments, and gaining momentum new tool-electronic token-based money, namely cryptocurrency, and stablecoin. Albeit the latter do not have legal approval in the EU's jurisdiction. That rich palette of choices provides customers with the capacity to opt for a means of payment, which is the most comfortable for them. The possibilities granted by electronic money seems more convenient, efficient, and more adapted to modern needs, that is why people more and more frequently tend to prefer electronic means of payment to cash. To illustrate, according to the statistics consumers proceed to decline the use of cash in payment for goods and services when the numbers dropped from 53% in 2016 to 47% in 2019.¹ Additionally, this trend was accelerated by the corona crisis, when required on the limitation on people contacts raises the demand on cashless transactions.

In the scenario when the cash dwindling proceeds, the European Central Bank (hereinafter – the ECB) will lose its power to supply the society with the monetary anchor, which now is euro cash. It will entail substantial changes in the financial system with potentially detrimental consequences. As the ECB guarantee the convertibility of private money into the ECB's money and preserve a well-functioning payment system and financial stability, which is a pre-condition for maintaining the transmission of monetary policy, issuing a monetary anchor is not just the ECB's right under Article 128 (1) of the Treaty of Functioning of the European Union (hereinafter – TFEU)², but also the duty, therefore the ECB must continue to provide ECB money to the public to achieve its objects under Article 127 (1) TFEU.³ That has triggered the ECB to look for alternative approaches how to prevent migration out of the ECB's money, they seem that a digital euro could sustain the *status quo*.

The ECB has already done researches in the sphere of the central bank's digital currency (hereinafter – CBDC) and has provided a comprehensive Report regarding the conceptual consideration of the scenarios of a digital euro introduction, its objectives, and design options.⁴

¹European Central Bank, *Study on the payment attitudes of consumers in the euro area (SPACE)*, (Frankfurt am Main, December 2020), 57, Accessed 24 November, <https://www.ecb.europa.eu/pub/pdf/other/ecb.spacereport202012~bb2038bbb6.en.pdf>.

² Treaty on the Functioning of the European Union", EUR-Lex, Accessed 24 November, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

³ "Treaty on the Functioning of the European Union", EUR-Lex, Accessed 24 November, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

⁴ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, 2020), https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

The Report does not touch the legal regulation and framework of a digital euro, but just draws up potential design boundaries, which plays a role, when legal frameworks of a digital euro are analyzed. Now the European Union (hereinafter – EU) is on the stage of an investigation phase of a digital euro project, which has started after the ECB on 14 July launched such a decision.⁵ They suppose that only after 2 years investigation phase and after 3 years pilot project of a digital euro, they will be ready to make an ultimate decision about the issuance of a digital euro.

Whatever the decision will be, a possible issuance must comply with the current legal framework of the EU, or the amendments must be done respectively, in order not to cause digital euro unlawfulness. So that, the legal framework of Monetary and Banking law must be observed on the issue of a feasibility of a digital euro to fit the requirements of the ECB`s competence under Article 127 (1) TFEU and the interpretation of a legal tender of the EU under Article 128 (1) TFEU. Also, other fields of the law affected by a digital euro should be examined, namely Economic law regarding the free business activities of the bank sector and a digital euro influence on it. Additionally, Anti-Money Laundering and Countering the Financing of Terrorism (hereinafter- AML/CFT) requirements have to be taken into account, as a digital euro could become a robust tool to maintain those provisions, but the balance between security and demand on a digital euro privacy characteristic has to be appreciated. All in all, even when a digital euro is still just a project and the possibility of its introduction is considered to be done only in years, the EU community has to be ready to bring it into the legal framework.

The scientific research problem. As a digital euro is in the early stage of the investigation phase, the aim of which is to find its appropriate design that will be accepted according to political and economic reasoning, there is an urgent need to define its legal boundaries. A new digital euro phenomenon is not directly enshrined in the EU legal framework. But for its possible introduction, the possibility of its issuance and functioning must fit into the existing framework of legal regulation, specifically in primary law, regarding the ECB's competence to issue a digital euro, designation of the digital euro as a legal tender, compliance with the laws in the field of illegal actions, as well as the smoothness of its implementation into the existing financial system. **Thus, the question arises: “Does a digital euro is legal according to current EU legislation?”** This research is aimed to find the response to this question while analyzing all listed law dimensions and identifying the existing possibilities for adding legal norms to fit the digital euro in them and to reinforce its legal regulation.

The level of the analysis of the researched problem. The Master Thesis work is based on both laws, case law, research of financial institutions and international organization, and work

⁵ “Eurosystème launches digital euro project”, European Central Bank|Europa, Accessed 14 July 2021, <https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210714~d99198ea23.en.html>.

of legal scholars and practitioners. The research is related to the literature that overviews the phenomenon of the CBDC, the type of which is a digital euro, to the working papers of the different banks⁶ and the ECB itself⁷, the core document for nowadays in regard to the concept of a digital euro is the ECB's Report on a digital euro 2020. As well as, thesis refers to the researches of the international working group of the Bank for International Settlement (hereinafter - BIS)⁸ and analysis provided by the international organization the International Monetary Fund (hereinafter - IMF)⁹. The preliminary ruling of the Court of Justice of the European Union (hereinafter- the CJEU) in *Dietrich and Häring V Hessischer Rundfunk* is, also, reviewed in the thesis. Finally, the contributing discussion of the scientific community is made by Seraina Grünewald, Corinne

⁶ Banque de France, *Central Bank Digital Currency*, (Paris: Banque de France, 2020), https://publications.banque-france.fr/sites/default/files/media/2020/02/04/central-bank-digital-currency_cbdc_2020_02_03.pdf; Bank of England, *Central Bank Digital Currency: Opportunities, challenges and design, Discussion Paper*, (London: Bank of England, 2020), <https://www.bankofengland.co.uk/-/media/boe/files/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design.pdf?la=en&hash=DFAD18646A77C00772AF1C5B18E63E71F68E4593>;

ECB and Bank of Japan, *Balancing confidentiality and auditability in a distributed ledger environment*, (Frankfurt am Main, Tokio: Project Stella, 2020), <https://www.ecb.europa.eu/paym/intro/publications/pdf/ecb.miptopical200212.en.pdf>.

⁷ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, 2020), Accessed 22 November 2021, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf; European Central Bank, *Eurosystem report on the public consultation on a digital euro*, (Frankfurt am Main: ECB, 2021), Accessed 22 November 2021, https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf; European Central Bank, *Digital euro experimentation scope and key learnings*, (Frankfurt am Main: ECB, 2021), Accessed 22 November 2021, <https://www.ecb.europa.eu/pub/pdf/other/ecb.digitaleuroscopekeylearnings202107~564d89045e.en.pdf>.

⁸ Christian Barontini and Henry Holden, "Proceeding with caution — a survey on central bank digital currency", (BIS papers. No. 101: BIS, 2019), <https://www.bis.org/publ/bppdf/bispap101.pdf>; Committee on Payments and Market Infrastructures, *Fast payments – Enhancing the speed and availability of retail payments*, (ISBN 978-92-9259-003-1: BIS, 2016), <https://www.bis.org/cpmi/publ/d154.pdf>; Claudio Borio et al., *BIS Quarterly Review March 2020 International banking and financial market developments*, (BIS papers. No. 101: BIS, 2020), <https://www.bis.org/publ/qtrpdf/rqt2003.pdf>; Committee on Payments and Market Infrastructures, *Central bank digital currencies*, (Markets Committee Papers No 174: BIS, 2018), <https://www.bis.org/cpmi/publ/d174.pdf>.

⁹ Mancini-Griffoli et al., *Casting Light on Central Bank Digital Currency*, (Staff Discussion Notes No. 18/08:IMF, 2018), <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2018/11/13/Casting-Light-on-Central-Bank-Digital-Currencies-46233>; Wouter Bossu, et al., "Legal Aspects of Central Bank Digital Currency: Central Bank and Monetary Law Considerations", (Working Paper No. 2020/254: IMF, 2020), <https://www.imf.org/en/Publications/WP/Issues/2020/11/20/Legal-Aspects-of-Central-Bank-Digital-Currency-Central-Bank-and-Monetary-Law-Considerations-49827>.

Zellweger-Gutknecht, Benjamin Geva¹⁰, Carel C A van den Berg¹¹, Markus K. Brunnermeier, Dirk Niepelt¹², Christian Hofmann¹³, Daniel Heller¹⁴, Dmitriy Kochergin¹⁵.

The scientific novelty of the master thesis. Under the current digitalization tendencies, the feasibility to issue and the scope of the CBDC has previously been considered by research works. Besides, the ECB has already published its comprehensive reports about its CBDC digital euro, on the basis of which the ECB launched the investigation phase of a digital euro project. One dimension of which is the definition of a digital euro`s necessary legislative frameworks.¹⁶ However, there is no consideration of a digital euro legal framework yet, the only considered field of law is the possibility of a digital euro to become a legal tender, but it is not enough. The legal frameworks of a digital euro have crucial meaning, since the decision on the issuance of a digital euro when it does not adequately comply with the law, makes it inadmissible. This research seeks to disclose the legality of the issuance of a digital euro from the side of the several fields of law, in particular the European Central Bank Law, Monetary Law, the AML/CFT requirements, and Economic Law. The thesis underlines whether a broad interpretation of existing legal provisions fits a digital euro implementation and proposes the amendments which need to be done to codify a digital euro in law.

The aim of the master thesis – to identify whether a digital euro, as a phenomenon of the CBDC, is compliant with the current EU legislation framework and figure out which amendments are needed to be prepared, before the decision on the issuance of a digital euro will be launched by the ECB, in order to prepare the solid legal base of the operation of a digital euro.

The objectives of the master thesis. These tasks must be carried out, to achieve the aim set in the master thesis:

- 1) to disclose the concept of the CBDC as a type of electronic money, the reasons for the introduction of a digital euro the EU`s CBDC for the EU community;

¹⁰ Seraina Grünewald et al., “Digital Euro and ECB Powers”, *Articles & Book Chapters* 2864, (2021): 1130-1155. https://digitalcommons.osgoode.yorku.ca/cgi/viewcontent.cgi?article=3864&context=scholarly_works; Seraina Grünewald et al., “A Legal Analysis”, *Journal of Financial Regulation* 7, 2, (2021): 284–318. <https://academic.oup.com/jfr/article/7/2/284s/6375131>.

¹¹ Carel C A van den Berg, *The Making of the Statute of the European System of Central Banks – An Application of Checks and Balances*, (Amsterdam: Rozenberg Publishers, 2005).

¹² Markus K. Brunnermeier and Niepelt, Dirk, “On the equivalence of private and public money”, *Journal of Monetary Economics*, 106 (2019): 27-41.

¹³ Christian Hofmann, “The changing concept of money: A threat to the monetary system or an opportunity for the financial sector?”, *European Business Organization Law Review* 21,1, (2020): 37-68. <https://doi.org/10.1007/s40804-020-00182-z>.

¹⁴ Daniel Heller, “Do Digital Currencies Pose a Threat to Sovereign Currencies and Central Banks?” *Peterson Institute for International Economics*, 12, 2017, <https://www.piie.com/system/files/documents/pb17-13.pdf>.

¹⁵ Dmitriy Kochergin, *Electronic money*, (Moscow: Center for Research of Payment Systems and Settlements, 2011).

¹⁶ “Preparing for the euro’s digital future”, European Central Bank| Eurosystem, Accessed 24 November 2021, <https://www.ecb.europa.eu/press/blog/date/2021/html/ecb.blog210714~6bfc156386.en.html>

- 2) to draw up the current level of a digital euro development in the EU with the reference to the document which addresses its key principle and conceptual design and to elucidate them;
- 3) to analyze current legislation framework about the ECB competence and the possibility to interpret it as the one that authorize to issue a digital euro, whether a digital euro could obtain the status of a legal tender in the EU, possible balance between the demand on a digital euro privacy characteristic and its mandator fit into frames of ALM/CFT requirements, how the business activities of banks will be maintained;
- 4) to discuss suggested ways in regard to the needed legal amendment in the examined legal field to codify a digital euro in them.

The practical significance of the master thesis. From the practical point of view, this research could be useful for academics, lawyers, and legal authorities who are involved in the scope of discussion about a digital euro`s necessary legislative frameworks, which is currently taking place along the investigation phase of a digital euro project. Also, stakeholders of a digital euro utilization and operation, such as customers, merchants, and financial intermediaries, could find out from the thesis clarification of both the scope of digital euro and points of the legality of its implementation. Besides, as thesis not only provides the analysis of the compliance of a digital euro with EU law but also gives examples of solutions that may help law-makers of the EU.

Methods used in the master thesis. For this scientific research following methods were used:

1. Data collection method bases the relevant information for the further thesis`s research, with its help the master thesis includes working papers of the ECB and financial organizations, legal acts, case law, scholars and practitioners` articles regarding the scope and legal regulation of a digital euro.

2. Data analysis method systematically organizes necessary legal and scientific data to contemplate it into a coherent structure, points out the view with arguments, and draws argumentative conclusions in the field of digital euro legal frameworks.

3. Historical method exhibits the development of EU considerations about a digital euro introduction for a public with a growing number of research concerning this issue.

4. Linguistic method gives an understanding of the terms relating to the scope of a digital euro and, also, the terms used by legal authorities in legislation regarding banking and monetary legislation frameworks. Specifically, it defines the norms of law, makes it possible to determine a conception of what legal provisions are about, especially when the notion of a term is not explicitly mentioned.

5. **Comparative analysis** measures the difference between a digital euro and other types of electronic money and international experience about their own CBDC, relating to the subject of the current research. What is more, with the help of comparison between different design options of a digital euro, the one which fits the best to current legislative framework is tried to be figured out. Thereby, to show advantages and disadvantages in design approaches of each possible design option of a digital euro in regarding their compliance with the legal frameworks.

6. **Logical method** consistently applies the sum of opinions and arguments to show the perspective with all the uncertainty of the current research and to find the best option on how to solve them.

7. **Teleological method** is used as a tool to overview the purposes pledged by the lawmakers of the primary EU legislation, as regard objectives they have beholden and the state of evolution of mechanism to achieve them. Thus, the clearance of the core issue of the thesis about the legitimacy of a digital euro in current legislative frameworks becomes coherent according to the tasks established by the legislators.

The structure of the master thesis. The master thesis work is divided into two separate parts:

The first part of the master thesis gives a general understanding of a digital euro and its current development state. Starting with the discussion on the current tendency on digitalization of money and the general scope of the emerged type of electronic money – the CBDC, thereafter the arguments of the reasons for the introduction of a digital euro as the EU's CBDC are listed and the comparison between a digital euro and another representative of electronic money, Libra, regarding their pro and cons are performed. Followed by the chronological overview of a digital euro researches by the ECB, with the analysis of issued by the ECB's documents on digital euro and decisions regarding its future investigation. Ending with the clarification of key principals and conceptual design options of a digital euro mentioned in ECB's reports.

The second part of the master thesis is referred to the legal consideration of a digital euro, where it examines different law spheres and the degree to which the digital euro corresponds to them. The analyzed fields of law are: the European Central Bank Law, where the competence of the ECB about the issuance of a digital euro is scrutinized; the Monetary law, which addresses the possibility of granting the digital euro the status of a digital euro; the equilibrium between AML/CFT requirements and the demand on the privacy of a digital euro is evaluated; the Economic law in the part of the business activities of commercial banks and the possible effect of a digital euro on them, with the recommendations on how to avoid potential threats, is mentioned. The analysis is followed by consequential conclusions and possible regulatory framework

amendments proposal to correspond potential legal gaps of the regulation of a digital euro if it will be introduced as a retail means of payment for the general public.

The defendant statements.

Having conducted the analysis of the EU legislative framework concerning feasibility to fit a digital euro as the EU's CBDC in them, the research concludes that the broad interpretation of primary legislation, as well as the CJEU practice, bestows the introduction of a digital euro under the competence of the ECB and can grant it a status of legal tender. However, the limitations and mandatory requirements have to be implied to the possible design characteristics of a digital euro. Moreover, to avoid the lack of exhaustive regulation on a digital euro, the respective secondary legislation needs to be adopted and certain amendments to the existing directives and regulations have to be done.

LIST OF ABBREVIATIONS

- AML/CFT – Anti-Money Laundering and Countering the Financing of Terrorism
- BIS – Bank for International Settlement
- Charter – Charter of Fundamental Rights of the European Union
- CBDC – Central Bank Digital Currency
- CJEU – Court of Justice of the European Union
- DLT – Distributed Ledger Technology
- ECB – European Central Bank
- ECHR – Convention for the Protection of Human Rights and Fundamental Freedoms
- ELTEG – European Legal Tender Expert Group
- EU – European Union
- Eurosystem – comprise of the European Central Bank and the national central banks of the Member States
- FATF – Financial Action Task Force
- IMF – International Monetary Fund
- MiCA – Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets
- MS – Member State
- NCB – National Central Bank
- Report – the Report on the digital euro
- Statute – Protocol No 4 on the Statute of the European System of Central Bank and of the European Central Bank
- TFEU – Treaty of Functioning of the European Union
- TEU – Treaty of the European Union

1. GENERAL OVERVIEW OF A DIGITAL EURO

The ECB has been providing the available monetary object for the European general public from 1 January 2002, when euro banknotes and coins were launched.¹⁷ The ECB's money serves as a unit of account, store of value, and medium of exchange. Moreover, they are an indispensable precondition for the conduction of monetary policy, targeted to achieve the ECB's object of the maintenance of price stability. Therefore, the right of the ECB to issue a monetary object is its important tool.

The world is rapidly changing now. Digitalization modifies public habits, including the way how they pay. Society actively utilizes new payments tools, the difference between electronic payments and electronic money has to be explained. The trend on electronic money, as a substitute for cash as a means of payment, needs to be analyzed in this light. Euro cash is the only means of payments delivered by the ECB for the general public, if their use declines to the level when they could no longer efficiently perform as a monetary anchor, the ECB will be unable to fulfill its constitutional obligations. To prevent this, the ECB could provide, as complementary to euro cash, the EU's CBDC – a digital euro, that will be more supporting and flexible means of payment in the EU's payment system, thus more efficient, but still secure. Prior to considering the legal frameworks of a digital euro, significantly is to discuss what a digital euro is all about and the current stage of the EU's development in this sphere.

In this vein, it is important to elucidate the main triggers for considering the feasibility of introducing the digital euro in the EU, compare the digital euro with another type of electronic money - Libra, determine the time frame of the development of the digital euro in the EU and point out the key principle and conceptual design features of the digital euro.

1.1. Phenomenon of electronic money

Digital innovations penetrate and change almost every sector of the economy nowadays.¹⁸ Alongside this trend in the digitalization, the innovative solutions in consumers payments trigger the development of money and payment services.

Before analyzing the current modifications regarding money that appeared under the technological progress waves, it is important to figure out what money is. McLeay, Radia and Thomas define money as a special kind of IOU ("I owe you") – a document that proves the

¹⁷ "History and purpose", European Union, Accessed 24 November 2021, https://european-union.europa.eu/institutions-law-budget/euro/history-and-purpose_en.

¹⁸ Anderton, R et al, *Virtually everywhere: digitalisation and the euro area and EU economies*, (ECB Occasional Paper series, No 244, ECB, 2020), 12-15, <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op244~2acc4f0b4e.en.pdf>.

existence of a debt or a promise to pay, that fulfills certain functions in society.¹⁹ Hicks proposes to identify the scope of money on the basis of functions it performs, more specifically money is what a money does.²⁰ There are **three functions that money serves: a unit of account, a store of value, and a means of payment.**

As a **unit of account**, money serves as something that could be used to define the value of specific products or services. In particular jurisdiction a unit of account is its currency unit which serves as a measurement of value across the jurisdiction. The currency unit of the EU is euro according to Article 2 of Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro.²¹

As a **store of value**, money obtains a capacity to accumulate for future payments, which is associated with the characteristic of money to maintain its purchasing power for some time. Therefore, money can go out of circulation, for instance, in the case when the income exceeds the expenditure, then those savings appear in the form of funds of citizens or business entities. The accumulation is shaped because money has to correspond to the risk-free feature. Such characteristic occurs because money is banked by its issuer, like euro currency, which is banked by the ECB.

As a **means of payment**, money is a tool with which payments are made for goods and services, that discharges debts obligations, for example, when selling goods, paying salaries or paying fines, etc. Therefore, money completes the exchange process by paying off the promissory note, it could perform that if at least two individuals are prepared to treat it as a store of value.²² Money as a means of payment have to be embodied in monetary objects. Monetary objects can be any objects, tangible or intangible symbols or records that represent currency unit and its value. A currency unit as the main denomination of the monetary system in a state is embodied in banknotes and coins, which are issued by central banks of states, are the liabilities of a central bank of a state. In the EU, those are banknotes and coins issued by the ECB or national central banks (hereinafter – NCB), which shall have the status of legal tender in the EU according to Articles 10,11 of Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro.²³

¹⁹ Michael McLeay et al., “Money in the modern economy: an introduction”, (Bank of England Quarterly Bulletin Q1, Bank of England, 2014), 6-7, <https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/2014/money-in-the-modern-economy-an-introduction.pdf?la=en&hash=E43CDFDBB5A23D672F4D09B13DF135E6715EEDAC>.

²⁰ John Hicks, “Critical essays in monetary theory”, *The Economic Journal*, 78, 309, (1968): 108–110.

²¹ “Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro,” Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31998R0974>.

²² Karl Brunner and Allan H. Meltzer, “The Uses of Money: Money in the theory of an exchange economy”, *American Economic Review* 61, 5, (1971): 784-805.

²³ “Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro,” Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31998R0974>.

So, money, according to its functional characteristic, is a unite of account, which serves as a store of value, and which can discharge debts as a means of payment. In the particular jurisdiction, money is called currency as a risk-free monetary object, banked by the central bank of a state, which represents currency unit and its value, which usually is granted with a status of a legal tender.

However, beside public money, there are private money, such as commercial banks money, the regulation of which within the EU is based on Directive (EU) 2015/2366 of 25 November 2015 on payment services in the internal market; e-money, which are ruled by Directive (EU) 2015/2366 of 25 November 2015 on payment services in the internal market and the regulation of an electronic money; and gaining momentum new tool-electronic token-based money, namely cryptocurrency and stablecoin. Albeit the latter do not have legal approval in EU's jurisdiction, their legal frameworks are now in the stage of development and are embodied in Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets (hereinafter–MiCA).

Throughout history, money have adapted to the needs of society. The evolution of money now is characterized by its embodiment in new monetary objects. There are two types of them:

- 1) based on electronic access to accounts (access products);
- 2) electronic money (e-money).²⁴

Access products is a method of making payments, in which customers, through various means of communication (such as debit cards, credit cards, pre-authorized cards, electronic checks), within closed banking or open telecommunication networks, gain access to debit accounts and conduct transactions on them. Thus, the process of working with the client's deposit money placed on his/her account with credit institutions takes place. Such payments are made by transferring funds through accounts on the basis of a previously issued order in the electronic access system. Thus, tools for transferring money become electronic, but money is still presented in the form of account records (deposits).

Electronic money is an electronic means of payment that has been produced by emitting an electronic code (emission of an electronic squeak), which is an electronic demand to the issuer, which is transmitted upon payment from the payer to the recipient. Electronic money is a new means of payment, in which the monetary value in the form of a claim to the issuer is fixed in a certain form on the information carrier and which allows the consumer to make payments without requiring mandatory access to deposit accounts and the participation of the issuer in the transfer

²⁴ Kochergin Dmitriy, *Electronic money*, (Moscow: Center for Research of Payment Systems and Settlements, 2011), 18-22.

of value. That is, the monetary value, expressed in public or private currency, that is stored electronically on a special device.

The difference between the two described means of payment is where the monetary value is stored and what mechanism is used for the payment. It can be concluded that non-cash payment using a debit or credit bank card is an electronic payment, but it is not a type of electronic money, since cash is still deposited in debit accounts of banks, which is not the case with electronic money, which is issued and stored as independent monetary value. Thus, digital money is the same in concept and use as its counterpart cash, in the sense that it can be a unit of account and a medium for daily transactions, but it cannot be tangible and cannot be withdrawn. In this context, electronic money means a combination of two elements: an asset and an exchange mechanism that allows customer to make payments and calculations using blockchain technology. In other words, electronic money is a means of payment that functions exclusively electronically and is intangible.

There are three forms of an electronic money: a cryptocurrency, a stablecoin and the CBDC.

1. Cryptocurrency or crypto-asset (as central banks -the ECB and international organizations like BIS and IMF refers to them) is a type of private asset, that represents the value, which is transmitted and stored electronically by blockchain technology, such as distributed ledger technologies or other corresponding technologies. The crypto-asset does not represent any underlying asset or liability of its issuer, which makes them highly volatile, hence not suitable to serve as money (that is, function as a medium of exchange, store of value, and unit of account).

2. Stablecoin is a subcategory of a cryptocurrency as a type of private asset, that represents the value, which is transmitted and stored electronically by blockchain technology, such as distributed ledger technologies or other corresponding technologies, with an additional characteristic that it is backed by another asset or a pool of assets, like currencies or physical goods (gold, oil). The stable coin represents a claim vis-à-vis its issuer or on assets backing the stablecoin, which makes it stable and more capable to be considered as money, functioning as a medium of exchange, store of value, and unit of account.

3. The CBDC is a type of electronic money, which is a digital asset issued by the central bank as a liability of the central bank of the state or monetary union for the purpose of payment and settlement, in either retail or wholesale transactions.

1.1.1. CBDC as a type of electronic money

The emerge of private forms of money, which might potentially compete with money issued by the central banks, has triggered the contemplation of the feasibility to issue the CBDC.

Financial international organizations, like the IMF and the BIS, and central banks of states have already researched the CBDC and the results of the research were written in the documents issued by them. The IMF defines CBDC as a new form of money that is issued electronically by a central bank and is intended to serve as a legal tender. It differs from other forms of money issued by central banks: cash and reserve balances, and is intended for a wide circle of persons.²⁵ The BIS provides a definition of the CBDC as a digital currency, which could be used by individuals to pay businesses, shops or each other (a "retail CBDC"), or between financial institutions to settle trades in financial markets (a "wholesale CBDC").²⁶ The main peculiarities of the CBDC are:

1. Issued by a central bank of a state or another state institute with a monetary functions' competence. Today households and business can obtain physical banknotes as money issued by a central bank of a state, however, in some jurisdictions, banks and some other financial institutions have an access to digital central bank reserves.²⁷ The ability of the CBDC, as an electronic form of central bank money, to be used in a retail payment and perform the role of a store of value for households and businesses will provide new opportunities for payment service and monetary and financial stability of a central bank of a state. Such form of money will be not targeted to replace cash and banks deposit accounts, but it will functionate alongside them, complementing them in response to the need for technologically advanced functions that the CBDC can perform.

2. Backed by a central bank. The CBDC has the same guarantees that back a nation's cash currency. The CBDC is backed by a state's central bank, which will guarantee that the CBDC is reliably available, that its value is stable and risk-free, and that it is widely accepted. Only a central bank under its mandate can provide the institutional backing necessary to issue reliable forms of money and strongly preserve public trust in it.

3. The CBDC is pegged to a fiat currency. The CBDC is denominated in a currency unite of a state issuer, therefore a value of one unite of the CBDC is equal to the value of one unite of the state's currency. There is an association of the CBDC as an equivalent to a digital banknote, it could be in place if a CBDC will serve the same functions as a banknote does, albeit if a design features of the CBDC will provide it with additional functional set that goes beyond the boundaries of typical money, such as ability to carry interest or money programmability, with a possession of which the CBDC will not be considered as an equivalent of cash banknote.

²⁵ Mancini-Griffoli Tommaso et al., *Casting Light on Central Bank Digital Currency*, (Staff Discussion Notes No. 18/08: IMF, 2018), <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2018/11/13/Casting-Light-on-Central-Bank-Digital-Currencies-46233>.

²⁶ Christian Barontini and Henry Holden, *Proceeding with caution — a survey on central bank digital currency*, (BIS papers. No. 101.: BIS. 2019), <https://www.bis.org/publ/bppdf/bispap101.pdf>.

²⁷ "What is TARGET2?", European Central Bank| Eurosystem, Accessed 21 November 2021, <https://www.ecb.europa.eu/paym/target/target2/html/index.en.html>.

4. The CBDC serves peer-to-peer transaction. Such kind of transaction is unavailable now with the means of payment as cash, since it is performed as an electronic transfer of money from one person to another, which is proceeded with a help of an intermediary. The CBDC can carry out peer-to-peer transactions as an instant money exchange through special apps or digital platforms that do not necessarily require intermediation from a bank depending on the design features of the CBDC.

5. The ability of the CBDC to be programmable. The CBDC could be provided with a smart contract, which will allow it to process programmable payments, namely enable automatic transfers to be carried out or blocked when pre-defined conditions are corresponded. Programming features can bring many benefits, allowing stakeholders to create new workflows, processes and digital business models without affecting the properties of the CBDC itself.²⁸

All in all, money currently undergoes significant changes, and this prompts central banks to consider the feasibility to issue a new type of electronic money - CBDC. The CBDC is defined as a means of payment, a unit of account and store of value, that is issued by the central bank as a liability on the balance sheet of the central bank, in digital form, available for retail use by the general public. The CBDC will provide the advantages that technological progress in the field of payment grants, where the CBDC serves as resilient, secure, fast, efficient, extensible, available and scalable means of payment. Thus, the CBDC will be revolutionary for the current banking system, which will allow the central banks of the countries to strengthen the monetary stability of the state by providing the population with safe media.

1.2.Reasons why the ECB contemplating a digital euro

Importantly to understand what has contributed to the decision of the ECB to consider the issue of launching its own CBDC. Officially, the reasons are listed in Report on a digital euro issued by the ECB in October 2020, there are seven scenarios that trigger the ECB to go to the step of issuing a digital euro:

- 1) to support the digitalization of the European economy;
- 2) to response to the significant decline in the use of cash;
- 3) to prevent the domination of foreign payment methods in the EU;
- 4) for transmission of monetary policy;

²⁸Jonas Gross, “Programmable Money and Programmable Payments”, Medium, Accessed 24 November 2021, <https://jonasgross.medium.com/programmable-money-and-programmable-payments-c0f06bbcd569>

- 5) to ensure the security of means of payment in the event of any unforeseen situations, such as a pandemic, cyberattacks, natural disasters. Private financial institutions are exposed to many risks;
- 6) to improve the international role of the euro;
- 7) to introduce improvements in the cost of servicing monetary units, including with regard to the footprint that remains on the environment.²⁹

All the mentioned reasons are relevant to the objectives of the ECB, and the right design of the digital euro can help to achieve them. However, even when there are various possible reasons why the ECB might introduce a digital euro, **two political reasons** have triggered the consideration of the possibility of introducing a digital euro in the EU. The main reasons are related to **the decreased use of cash euro** which is caused by its substitution of available private money solutions, and as a consequence ECB incomplete performance of its object, and **the risk of losing European monetary sovereignty**.

1.2.1. Cash decline

The current trend of the cash migration is justified by statistic researches comparison. There are two studies, which analyze the use of cash, cards and other payment instruments - **“The use of cash by households in the euro area”** and **“Study on the payment attitudes of consumers in the euro area (SPACE)”** presented by the ECB. They show the customers` habits related to how they pay in the 2016 year and the in 2019 year, respectively. The tendency is that the number of cash transactions by consumers in selected euro area countries has reduced. The major part of transactions 73% is still made by cash, which represented 48% of the total value of all payments made by individuals in 2019, in 2016 79% of transactions were carried out with cash, with their 54% of the total value, hence number has fallen off.³⁰ Moreover, the half of total number of responded consumers said that they opt for contactless means of payment when they have a choice.³¹ Where the consumers` preferences for cash have dropped from 32% in 2016 to 27% in 2019, and preferences for contactless means of payments have risen from 43% to 49%.^{32 33}

²⁹ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed November, 2021, p.9-14, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

³⁰ European Central Bank, *Study on the payment attitudes of consumers in the euro area (SPACE)*, (Frankfurt am Main: ECB, 2019), 77, <https://www.ecb.europa.eu/pub/pdf/other/ecb.spacereport202012~bb2038bbb6.en.pdf>.

³¹ Ibid p. 57.

³² European Central Bank, *The use of cash by households in the euro area*, (Frankfurt am Main, ECB, November 2017): p. 53, <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op201.en.pdf>.

³³ European Central Bank, *Study on the payment attitudes of consumers in the euro area (SPACE)*, (Frankfurt am Main: ECB, December 2019): p. 77, <https://www.ecb.europa.eu/pub/pdf/other/ecb.spacereport202012~bb2038bbb6.en.pdf>.

The general reasons for cash demand decline are stipulated by:

1. The more convenience of means of payments provided by commercial banks relatively to use of cash as a means of payment. Apparently, the decrease in cash usage has gone along with the increase of commercial banks' money popularity. It is explained by the convenience advantage of private money. First of all, digital innovations and under them the development of banking sector provides customers with the electronically booked deposits. With the latter, people do not perceive such burdens as the physical transportation and storage of money, and the associated costs and risks, as well as the fear of counterfeiting money. All of them are eliminated with the usage of electronic private means of payments with additional advantage of money fast proceeding, including their transfer over long distances.

Also, commercial banks propose a wide range of infrastructure and interfaces in customer`s preferences, with additional appealing services and facilities, such as near field communication and instant settlement systems like TARGET Instant Payment Settlement, which now allow practically unrestricted and immediate payments with commercial banks` money.³⁴

2. The introduced public law measure, which limits cash usage. There public laws which exclude cash means of payment and, thus, encourage payment by contactless means of payments. As there are the provisions in member states jurisdictions, like in German Income Tax Act³⁵ and Finnish Employment Contracts Act to pay tax bills via cashless form.³⁶ What is more, cash limitation payments legislation frameworks are related with AML/CFT requirements. Like EU law set in Article 1 of Directive (EU) 2018/843 of 30 May 2018 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, that above 15 000-euro transactions have to be made under the due diligence rules with its compulsory authorization, so cannot be done in cash.³⁷

3. The rise of e-commerce. The last years are associated with the booming of online shopping, which grants the customers possibility to make purchases in real-time accessibility and is available 24 hours a day. The fact that 84% of European are internet users,³⁸ one of the uses of which is to make purchases on the Internet that are convenient, efficient and affordable, increases

³⁴ Committee on Payments and Market Infrastructures, *Fast payments – Enhancing the speed and availability of retail payments*, (ISBN 978-92-9259-003-1, BIS, 2016), <https://www.bis.org/cpmi/publ/d154.pdf>.

³⁵ “German Income Tax Act”, Bundesministerium der Justiz und für Verbraucherschutz, Accessed 23 November 2021, Article 36 (a), <https://www.gesetze-im-internet.de/estg/>.

³⁶ “Finnish Employment Contracts Act”, Finlex, Accessed 23 November 2021, Article 16, <https://www.finlex.fi/fi/laki/kaannokset/2001/en20010055.pdf>.

³⁷ “Directive (EU) 2018/843 of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing”, Eur-lex, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L0843>.

³⁸ “Individuals regularly using the internet”, Eurostat, Accessed 23 November 2021, <https://ec.europa.eu/eurostat/databrowser/view/tin00091/default/table?lang=enhttps:%2F%2Fec.europa.eu%2Feuros%2Ftatabrowser%2Fview%2Ftin00091%2Fdefault%2Ftable%3Flang%3Den>.

the use of non-cash payment methods, since online shopping requires electronic payments. Moreover, the EU supports the digital single market, which encompasses e-commerce. Since, among the key priorities of the European Commission is the digital transformation to achieve a Europe fit for the digital age. To that regard, the EU has adopted e-commerce legislation³⁹, improves customers` data protection by law⁴⁰ and enhance cybersecurity regulation.⁴¹ So that, e-commerce, which is both popular by population and facilitated by the authorities, opens doors to electronic means of payment solutions, contributing to the emergence of a cashless in the EU.

4. Additionally, the cash decline is accelerated by the corona crisis. There is a survey of the ECB conducted to measure the impact of the pandemic on cash trends performed in July 2020. According to its results, 40% of respondents answered that they have started to use contactless means of payment more often, and the same percentage said they have used cash much less often.⁴² The reasoning for that, apart from its convenience, includes the correspondent`s fear that there is a risk of infection from banknotes, their concerns about hand contact with the cashier, and the abidance of the government recommendation to pay less with cash. 87% of responded people said that they would continue to pay contactless after the pandemic, 46% of which were certain that they would continue to do so.⁴³ Such study shows that with the emerge of pandemic crisis the tendency of cash usage decline has accelerated in all euro area countries, because of the grounds induced by the pandemic.

The underlying trend is clear - dwindling use of cash will not stop, subsequently, it will lead to a disruption of the current order of affairs regarding the fulfillment of the ECB's objects. Nowadays, the cash euro is the only means of payment provided for the general public for making payments and the only money whose face value is intrinsically guaranteed. Whereas private money relies on its convertibility with the central bank money, the monetary anchor – euro. Thus, private money possesses operational, credit, liquidity and market risks. People use private money, because they are confident that their value is convertible at par with euro anchor. Therefore, convertibility to euro is essential for confidence in private money as a means of payment and as a store of value.

³⁹ “Commission Regulation (EU) 2018/1263, establishes the forms to fill out for the submission of information by parcel delivery service providers, regulation on cross-border parcel delivery services (EU) 2018/644”, Eur-lex, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32018R1263>.

⁴⁰ “Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation”, Eur-lex, Accessed 23 November 2021, <https://eur-lex.europa.eu/eli/reg/2016/679/oj>.

⁴¹ “Proposal for a Directive of the European Parliament and of the Council on measures for a high common level of cybersecurity across the Union, repealing Directive (EU) 2016/1148”, Eur-lex, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:823:FIN>.

⁴² European Central Bank, *Survey on the impact of the pandemic on cash trends*, (Frankfurt am Main: ECB,2021), Accessed 22 November 2021, <https://www.ecb.europa.eu/pub/pdf/other/ecb.spacereport202012~bb2038bbb6.en.pdf#page=22>.

⁴³ Ibid p.24.

By providing the monetary anchor, euro plays a key role in maintaining a well-functioning payment system and financial stability and, ultimately, trust in the currency. This, in turn, is a precondition for maintaining the transmission of monetary policy, which requires sufficient transactions with reserves. Their turnover is needed to manage relationship about the conditions of transactions between the ECB and its counterparts- commercial banks. The situation will be that monetary policy counterparties neither demand new nor use their existing reserves of the ECB, which will cause turnover collapse.⁴⁴

As the drop of the role of cash in the future will not allow the cash euro to serve as a monetary anchor anymore, the ECB will lose its control of monetary policy transmission and maintaining price stability as a whole, subsequently, will fail to perform its obligations. Without central bank money to serve as an undeniable monetary anchor, people would have to keep an eye on the safety and stability of private money issuers, because the quality of their money would become weaker, in order to value every form of money.⁴⁵ Such a scenario would undermine the currency unity and cause financial disruption, as, for example, it was in times of crises cause by coexistence by different forms of private money and the absence of sovereign money.⁴⁶

To prevent the aforementioned, the ECB need to broad the choice of means payment available for general public, which will satisfy customers` demand on convenient and efficient in digital era money and, thus, guarantee the smooth functioning of payment system. A well-designed digital euro as a digital form of central bank money for people and businesses to use in retail payments, alongside with cash, will ensure that central bank money remains the monetary anchor of the payments ecosystem and continues to serve as a medium of exchange, store of value and unit of account.⁴⁷

1.2.2. Monetary sovereignty of the EU

One more important reasoning for the introduction a digital euro is to maintain the monetary sovereignty of the EU, which potentially could be affected by either dominant international service providers or cryptocurrencies and stablecoins.

⁴⁴ Grünewald et al., “Digital Euro, Monetary Objects, and Price Stability: A Legal Analysis”, *Journal of Financial Regulation* 38, (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3839325.

⁴⁵ Christian Hofmann, “The Changing Concept of Money: A Threat to the Monetary System or an Opportunity for the Financial Sector?” *European Business Organization Law Review* 21,1, (2020): 54–56, <https://doi.org/10.1007/s40804-020-00182-z>.

⁴⁶ Arthur J. Rolnick and Warren E. Weber, “New evidence on the free banking era”, *American Economic Review* 73, 5,(1983): 1080-1091.

⁴⁷ “Central bank digital currencies: a monetary anchor for digital innovation”, European Central Bank| Eurosystem, Accessed 23 November 2021, <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211105~08781cb638.en.html>.

Since digitalization is not domestic, but a global phenomenon, the key role in **payment providing services is held by a few international entities**, which substantially influence the European market with **their dominant position** in it. More specific, now the main substitution of a cash are debit and credit commercial banks card, the transaction with which are conducted by digital payments providers, which handling the card`s payments. They serve as a transfer of money from the payer account to the payee account. The majority of electronic payment in the EU zone are made by the foreign payments` services providers. About 60% of all these transactions were done with Visa cards, and 39% of them with a use of MasterCard service.⁴⁸ Under such circumstances the monetary sovereignty of the EU is in danger to fall under the control of foreign companies` management. The ECB`s representative argues that dependence on non-European players for two-thirds of non-cash payments creates the risk that the payments market would not be fit to support the EU single market and euro.⁴⁹

Subsequently, digital payments could become an important factor in reducing foreign dependence across Eurozone. A digital euro could complement the European Payments Initiative, which is a viable pan-European system to rival US dominant payments providers. The European Payments Initiative goal is to create a unified payment solution managed and operated within Europe, akin to the introduction of the digital euro which could facilitate the development by supervised intermediaries of a full range of pan-European end-user solutions accessible to consumers.⁵⁰ In such a scenario, the issuance of a digital euro would help to preserve European autonomy in such a strategic sector as retail payments, where European players will remain competitive and independent from non-European players. So, a digital euro could serve as a domestic alternative to international widespread means of payment service providers with the induce of the private sector to offer efficient services at a low cost.

The second **threat for the European monetary sovereignty comes** from the side of **cryptocurrencies**. Nowadays, there is the dawn of the age of digital currencies, where crypto tokens and other innovations in finance are challenging established views on what constitutes money. There is a risk that the EU public will switch to widespread digital money denominated in non-national currency units, or to private currency denominated in euro, in addition to or instead of domestic cash and deposits. Therefore, cryptocurrency will gain a significant share of the payment markets.

⁴⁸ "Market share of international and domestic payment card schemes in 15 countries in Europe in 2019", Statista, Accessed 24 November 2021, <https://www.statista.com/statistics/1116580/payment-card-scheme-market-share-in-europe-by-country/>.

⁴⁹ "Towards the retail payments of tomorrow: a European strategy ", European Central Bank|Eurosystem, Accessed 24 November 2021, <https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp191126~5230672c11.en.html>.

⁵⁰ "EPI and the digital euro", Netcetera, Accessed 24 November 2021, https://www.netcetera.com/home/stories/news/20210624-EPI_and_the_digital_euro.html.

Cryptocurrency or crypto-asset is a type of private asset, that represents the value, which is transmitted and stored electronically by blockchain technology, such as distributed ledger technologies or other corresponding technologies. With the use of a cryptocurrency, such possibilities are offered: irreversibility, pseudonymous, immense, permissionless. Ironically, but all its advantages are disadvantages connecting with the ECB's proper functionality, as they substantially limit the ability of the monetary union to regulate and control cryptocurrency activities.⁵¹

The loss of financial control is considered in:

- 1) the anonymity of a cryptocurrency, which facilitates risk of the outlaw activities;
- 2) the decentralization characteristic, which if the cryptocurrency gain market power, namely capitalization, will substantially influence state economy, where the usual course of events, where the ECB fully controls the money supply and receives money at disposal, will be disturbed;
- 3) the speculation with the cryptocurrency expresses in scam-token affairs, where the EU should act to protect investors rights from frauds;
- 4) the issue of the tax imposing on the cryptocurrency since the EU do not want to lose those state funds from activities related to them, like stoke exchange, trading, and mining.

The biggest threat for the ECB is the scenario, when the cryptocurrency become widely accepted, the ECB will shorten its ability to control monetary policy, such as to control the whole monetary system of the country including prices, citizens' transactions, interest rates for loans, etc. To prevent such, the alternative in face of a digital euro could be introduced, which will obtain the certain advantages of a crypto-asset but will be issued and controlled by the ECB.

There is a substantial drawback of the cryptocurrency, because of which it is not effectively performs three functions of money. The high volitivity of cryptocurrency does not allow it to be a store of value, since its wide fluctuation of price, which not allow the stability of the cryptocurrency.⁵² Therefore, despite the growing number of transactions with them, they still play a minor role as a medium of exchange. The limited list of merchants accepts the cryptocurrency as a means of exchange, as well as a few goods and services are measured by the cryptocurrency unite of account.

The situation can change if the cryptocurrency becomes stable with its backed by precious assets, such as other currency or goods like oil or gas, such type of cryptocurrency is a stablecoin. Those could influence the willingness of customers to accept the stablecoin as a medium of

⁵¹ "How do cryptocurrencies threaten the traditional financial system and the state?", Forglod, Accessed 24 November 2021, <https://forklog.com/chem-ugrozhayut-kriptoalyuty-traditsionnoj-finansovoj-sisteme-i-gosudarstvu/>.

⁵² Daniel Heller, "Do Digital Currencies Pose a Threat to Sovereign Currencies and Central Banks?", *Peterson Institute for International Economics*, 2017, <https://www.piie.com/system/files/documents/pb17-13.pdf>.

exchange as payment because they become confident that enough other users will be also willing to accept it. Then the threat of the monetary sovereignty of the EU could arise if the society will switch to stablecoin and the huge capital flow emerge. Libra, introduced in 2019, as a stablecoin has jeopardized that threat.

All in all, the ECB cannot keep silent to current developments and the consequences of them in the dwindling of cash and emergence of private new means of payments threatening to overflow the EU'S financial system. The entire payment system, which provides citizens with the possibility to do their daily purchases, receive remuneration and access their savings, cannot be put into the hands of private actors. Only the central bank can offer these services with the sole aim of guaranteeing the common good, which is the ECB`s constitutional obligation consequently, with a digital euro more opportunities and growth to achieve the aforementioned are possible. A digital euro will complement cash, serving as an efficient and secure means of payment, and will become a competitive European solution, that could compete in the market with dominant payments services and Libra.

1.3. Libra (Diem) v. Digital euro

A group of 28 companies led by Facebook have announced their intention to launch their own global payment infrastructure with their own means of payment on 18 July 2018, when they have published document White Paper proposing the creation of a Libra token. According to their aim, they would like to issue a stable currency built on a secure blockchain, which is backed by a reserve and managed by the independent association.⁵³ Thus, the Libra is a digital currency, secured by cryptography, that bears an underlying mechanism to stabilize its price. With the last capacity, the Libra solves the cryptocurrency problem of high volatility, thus becomes value-stable crypto-asset, and should be name as a stablecoin.

The fact that the most influential global companies have become participants in the Libra project and that the Libra is backed by the pool of other currencies was assessed by the authorities all over the world as the most serious initiative to introduce a new cryptocurrency and was criticized. The Libra was evaluated as a threat to states monetary sovereignty. To illustrate, Minister of Finance of France Bruno Le Maire said that he would advocate a complete ban of the Libra across the Eurozone, since this cryptocurrency may pose risks to the state sovereignty of

⁵³ Libra Association Members. "White Paper", Libra Association Members, June 2019, https://sls.gmu.edu/pfirt/wp-content/uploads/sites/54/2020/02/LibraWhitePaper_en_US-Rev0723.pdf.

many countries.⁵⁴ A similar position was made by Yves Mersch, member of the ECB Executive Council, at a conference in Frankfurt am Main.⁵⁵ Later, the EU decided to ban stable cryptocurrencies until the legal, regulatory and oversight challenges and risks have been adequately identified and addressed.⁵⁶

Trying to change the attitudes towards the project, in the spring of 2020, Facebook rebranded the Libra into the Diem. At the same time Mark Zuckerberg made a statement about the rejection of the desire to create a global financial infrastructure. The main difference is laid in the abandon of initial concept of the stablecoin as a single coin, now the intention is that the Diem project will include several stablecoins. Nevertheless, the attitude of regulators and politics towards the Diem project has not changed. As, the Minister of Finance of Germany Olaf Scholz estimated that "the wolf in sheep's clothing is still a wolf," Senators from the US Democratic Party called for abandoning the launch of the Novi crypto wallet, arguing that "Facebook cannot be trusted to manage payment or digital currency."⁵⁷

The EU's position on the Diem is that it should be fully harmonized and compliant with the legal framework that needs to be put in place to prevent regulatory loopholes and a fragmented market. The MiCA framework will regulate crypto-asset, including stablecoin.⁵⁸ That Regulation is not accepted yet, but when it will come in force, the Diem will fall under its regulation. Gaining legal force of the MiCA, the Diem could be launched across the EU by following its provisions. A digital euro could be introduced after its investigation and developing phasis in the EU in 5 years. If a digital euro is launched, a digital euro will compete with the Diem. Thus, it is important to compare the of the Diem`s and digital euro`s characteristics to figure out the benefits and drawbacks.

1.Issuer. Since, the Diem operation is governed by the members of the Diem Association (former the Libra Association), which is a group of global players in the fields of payments, technology, e-commerce and telecommunications, made up of 27 member organizations, issuance of the Diem, as the appearance of a liability on the balance sheet, will be held by members of the

⁵⁴ Elizabeth Schulze, "France says it 'cannot authorize' Facebook's libra project on European soil", CNBC, Accessed 22 November 2021, <https://www.cnbc.com/2019/09/12/france-says-it-will-block-development-of-facebooks-libra-in-europe.html>.

⁵⁵ "Money and private currencies: reflections on Libra", European Central Bank|Eurosysteem, Accessed 22 November 2021, <https://www.ecb.europa.eu/press/key/date/2019/html/ecb.sp190902~aedded9219.en.html>

⁵⁶ "Joint statement by the Council and the Commission on "stablecoins"", European Council and Council of the European Union, Accessed 22 November 2021, <https://www.consilium.europa.eu/en/press/press-releases/2019/12/05/joint-statement-by-the-council-and-the-commission-on-stablecoins/#>.

⁵⁷ Andrea Shalal, Christian Kraemer, "G7 finance officials back need to regulate digital currencies: Treasury" , Reuters, Accessed 22 November 2020, <https://www.reuters.com/article/g7-digital/g7-finance-officials-back-need-to-regulate-digital-currencies-treasury-idUSKBN28H1Y6>.

⁵⁸ "Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937", Eur-lex, Accessed 22 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0593>

Diem Association. The Diem coins will be exclusively distributed through a network of authorized resellers, thus centralizing control over public access to the Diem will occur. It was already announced, that the Silvergate Bank will become the exclusive issuer of the Diem USD stablecoin.⁵⁹ Whereas a digital euro will be issued by the ECB as its liability as the customer`s claim against the ECB, which is fully backed by resources held by the Eurosystem (comprise of the European Central Bank and the national central banks of the Member States).

2.Backing. The Diem is not a supernational basket currency anymore, as it was previously announced in the Libra project, but now the Diem is declared to become basket on a single national currency. Now, the Silvergate will issue the Diem USD, later it is planned, also, as a Diem in other national currencies. With such, the Diem purchasing power is not determined by the supply and demand but recovered from the asset backing Diem, always matching the value of the underlying assets. The members of the Diem Association will be acting as buyers of the last resort, who ensure the value of the Diem. Whereas a digital euro is fully backed by resources of the ECB. Since a digital euro is backed by the full faith and credit of the ECB as an institution, a digital euro will be safe and will not drop in its value and will not fall for its worthless.

Central bank money is by definition the securest form of money, since it is backed by the strength, the credibility and the authority of the ECB. While, private money is backed by the liabilities of private issuers, where it depends on the soundness of the private issuer and, ultimately, on the promise of convertibility into central bank money. But this promise could prove to be temporal, in cases of the private issuer fails to manage its liquidity or solvency.⁶⁰

3.Ledger. The Diem is managed by the blockchain, which forms contentious journal of the registered Diem`s transactions. The blockchain of Diem is constructed as a centralized system, where the members of the Diem Association permit the validation of transactions with Diem. The nodes in the Diem transactions must be authorized. The Diem Association will control the Diem blockchain. Apparently, the Diem is highly centralized with the accountability to the members of Diem Association. They will have privileged access to private data that they can abusively monetize. And they will have complete control over the currency distribution network. Even thought, a digital euro ledger is not decided yet, there are proposals to base it either on already existed ECB`s database (TARGET) or on technology, which is used by cryptocurrencies,

⁵⁹ “Silvergate to be the Exclusive Issuer of U.S. Dollar Backed Stablecoins by Diem”, Silvergate, Accessed 24 November 2021, <https://ir.silvergate.com/news/news-details/2021/Silvergate-to-be-the-Exclusive-Issuer-of-U.S.-Dollar-Backed-Stablecoins-by-Diem/default.aspx>.

⁶⁰ “Designing a digital euro for the retail payments landscape of tomorrow “, European Central Bank| Eurosystem, Accessed 24 November 2021, <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211118~b36013b7c5.en.html>.

distributed ledger technology (hereinafter – DLT). The fact, that the ECB does not have any commercial interest to private data of customers, will defend the secure of customers data.

4.Programmability. The Diem combining with smart contracts makes it a programmable means of payment. Move is a new programming language for implementing custom transaction logic and smart contracts in the Diem. Under such circumstances, payments with the Diem can be made automatically under the terms of a contract or commitment, even in current supply chains or Internet transactions directly from and to products, machines, plants. Regular transfers of account balances cannot do this in the same way as cash. Smart contracts can to some extent replace expensive notarial documents and traditional ways of managing property and rights of use.⁶¹ Therefore, payments could become fully automated with a help of smart contracts, which enabling money to be clearly allocated to individual process steps.⁶² The same technological basis will be needed to be delivered in a digital euro to compete with the Diem on such functionality. Without a programmable euro issued by the ECB, the EU could fall behind its international competitors.

5.Speed, price and availability. The very idea of the Diem project is to allow customers access to fast and cheap payment all over the world, thus contributing to the social inclusion.⁶³ Where the Diem will be issued through a public ledger running on a form of blockchain technology, which will allow to process a large number of transactions in short time. And also, those transaction will be free of charge, which means that the Diem will allow non-cash payments without charge, for any amount, over the distance. While, a digital euro technological tools will also allow the speed and costless means of payment, the design feature regarding the holding limitation might be imposed to preserve the use of a digital euro as an investment tool.

6.Legal regulation. The Diem must comply with legal regulation. Now such legal framework does not exist in the EU, but active work is proceeding in this sphere, the crypto-asset as well as a stablecoin are going to be regulated by **MiCA**⁶⁴, which is cryptocurrency regulations, which is now is under its legislative procedure.

This regulation will drastically simplify the extension of crypto businesses throughout the 27-nation EU. MiCA is the part of a larger Digital Finance strategy that aims to adapt Europe for

⁶¹ Alexander Bechtel, Jonas Gross, Philipp Sandner and Victor von Wachter, “Programmable Money and Programmable Payments”, Philipp Sandner, Accessed 22 November 2021, <https://philippandner.medium.com/programmable-money-and-programmable-payments-8038ed8fa714>.

⁶² Deutsche Bank, *Money in programmable Applications*, (Frankfurt am Mien: Deutsche Bank, Eurosystem, 21 December 2020), Accessed 22 November 2021, <https://www.bundesbank.de/resource/blob/855148/ebaab681009124d4331e8e327cfaf97c/mL/2020-12-21-programmierbare-zahlung-anlage-data.pdf>.

⁶³ 28. Diem Association Members, “Diem White Paper 2020”, Diem Association Member, 2020, Accessed 22 November 2021, <https://www.diem.com/en-us/white-paper/>.

⁶⁴ “Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937”, Eur-lex, Accessed 22 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0593>.

the digital age. The MiCA proposal was established in September 2020, followed by its complex legislative process, where already the ECB and the European Economic and Social Committee have submitted their opinions⁶⁵, and it is expected that the discussions in Parliament and the EU Council will be completed by early 2022 without any major changes to the current version of the MiCa proposal document.

The regulation set up the norm of obligatory licensing of the cryptocurrency company under MiCA, that license would become workable over 27 members of the EU. It will make clear who needs to be registered or licensed, and all market participants have to comply with the same framework, under which customers are protected and ensured that their investments in such kinds of assets are protected under the supervision of competent authorities.

MiCA will be applied to a crypto-asset as digital representations of value or rights which may be transferred and stored electronically, using distributed ledger technology or similar technology. With a subdivision on: the asset-referenced token, e-money token, utility token.⁶⁶

The following mechanism of the authorization of crypto-asset companies is set in the MiCA. A company that provides any service related to the defined crypto-assets, including custody services, trading and currency exchange, have to obtain authorization from regulatory authorities in the EU country. That company have to work out its white papers on crypto-asset operation regime and send it in advance to their respective national financial supervisory authority. To the authorization the compliance costs on crypto-asset service providers are needed. The maintain capital funds have to be equivalent to either €350,000 or 2% of total reserve assets. After a local authority have approved the company according to the EU regulations, they the authorized company is able to enlarge operations to other EU countries without having to obtain additional licenses. Thus, the license is passportable, other words, when it is once authorized, it becomes valid in every MS of the EU.

A digital euro exists at the stage of its development, that is why it has not its legal framework yet, they will be determined by the authorities further, they have an utmost importance to prevent the legal loopholes. The compliance of a digital euro with the primary law is examined in the second part of thesis. If a digital euro is legal under the EU's primary law, a digital euro still will need a comprehensive legislative framework, which could be set by the adoption of a secondary law according to Article 133 of TFEU, where in accordance with the ordinary legislative

⁶⁵ "Opinion of the European Central Bank of 19 February 2021 on a proposal for a regulation on Markets in Crypto-assets", Eur-lex, Accessed 22 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021AB0004>.

⁶⁶ " Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, and amending Directive (EU) 2019/1937", Eur-lex: Article 3, Accessed 22 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0593>.

procedure law-makers shall lay down the measures necessary for the use of the euro as the single currency.⁶⁷ Such secondary law act will put a detailed legal framework addressing legal matters arising from the introduction of a digital euro, some recommendation about them are yielded in the second part of this research.

To summarize, the very idea of the Diem issuance, which is the allowance customers access to fast and cheap payment all over the world, thus contributing to social inclusion, is respectable. However, those functions are reliably provided by the ECB across the EU, which with a strong mandate can provide the institutional backing necessary to issue reliable forms of money and rigorously preserve public trust in them. The Diem Association as the group of private companies still possess market and liquidity risk, as well as it has commercial interests to use the private data of their customers for monetarization, cannot be accessed as the fully trusted institute. In the scenario, if the Diem will be legally determined in the EU under MiCA rules, and if a digital euro will be launched in the EU, a digital euro needs to obtain the same level of advantageous characteristics regarding efficiency, speed, cost and programmability, in order to effectively compete with the Diem in the market.

1.4. Chronology of the development of a digital euro in the EU

The work related to a digital euro in the EU, according to the chronological records of the ECB, began in November 2018, when, at the Economic and Payments Conference, a member of the Committee on Payments and Market Infrastructure and a member of the ECB Executive Council Benoît Cœurfirst announced the possibility of issuing by the ECB its own CBDC based on DLT, as cryptocurrencies do, citing Central Bank BIS research on digital currencies.⁶⁸ The emergence of the EU's CBDC was presented as a tool to benefit on new technologies with the purpose to maintain financial stability by the ECB.

Thereafter, the President of the ECB Christine Lagarde announced that the ECB is considering and evaluating the merits and value of the possibility of issuing an EU's CBDC.⁶⁹ Also, she announced, that such work is performed by experts of the High-Level Task Force on Central Bank Digital Currency, created at the end of 2019.

⁶⁷ "Treaty on the Functioning of the European Union", Euro-lex, Article 133, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

⁶⁸ "The new frontier of payments and market infrastructure: on cryptos, cyber and CCPs", European Central Bank| Eurosystem, Accessed 22 November, 2020, <https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp181115.en.html>.

⁶⁹ "Interview with "Challenges" magazine", European Central Bank| Eurosystem, Accessed 22 November, 2020, <https://www.ecb.europa.eu/press/inter/date/2020/html/ecb.in200108~f3ba434000.en.html>.

Between May 2020 and October 2020, the ECB's members gave their opinions on the issuance of the ECB's CBDC. Yves Mersch, a Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, noted that since it is the responsibility of the ECB to provide a reliable method of payment and safe money, it should respond to a possible decline in the use of the ECB's only instrument for making payments to the public and businesses – euro cash.⁷⁰ He stressed that in the scenario of preferences of citizens of a technologically new form of money - digital currency, the ECB should introduce the CBDC in accordance with the ECB's mandate and proportionality and the necessity of its tasks. Fabio Panetta, a Member of the Executive Board of the ECB, said, that the ECB strives to stay a leader in exploring the CBDC, which could contribute both to the EU monetary policy and international financial stability.⁷¹ Christine Lagarde listed two reasons that influenced the start of work related to the ECB's CBDC in the EU: a change in the payment habits of citizens with a trend towards non-cash means of payments, and the fact that foreign payment providers dominate in the EU area. In her September's speech, she for the first time referred to the concept of a "digital euro" as the ECB's CBDC. In addition, she presented that the ECB is studying the benefits, risks and operational challenges of adopting the digital euro as a means of payment in the digital age.⁷²

On 2 October of 2020 year, **the first stage of the digital euro research phase** began with Fabio Panetta's submission of **the Report on the digital euro** (hereinafter -the Report). In the ECB's blog, the Report was presented as a document that analyzes the economic, strategic, technological and social aspects associated with a digital euro issuance, carried out by the High-Level Task Force on Central Bank Digital Currency.

The Report consists of different parts, namely: list of scenarios triggering the introduction of a digital euro; a possible effect of a digital euro; its legal contemplation; conceptual design considerations of a digital euro; an assessment of its technical and operational functionality and future work related to a digital euro. The Report presents a definition of a digital euro as a liability of the ECB recorded in a digital form as a complement to cash and central bank deposits and the core guiding principles found out from the current Eurosystem policy which must be submitted by a digital euro.⁷³

⁷⁰ "An ECB digital currency – a flight of fancy?", European Central Bank | Eurosystem, Accessed 22 November, 2020, <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200511~01209cb324.en.html>.

⁷¹ "Unleashing the euro's untapped potential at global level", European Central Bank | Eurosystem, Accessed 22 November, 2020, <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200707~3eebd4e721.en.html>

⁷² "Payments in a digital world", European Central Bank | Eurosystem, Accessed 22 November, 2020, <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200910~31e6ae9835.en.html>.

⁷³ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed 22 November, 2021, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

During the period of a research phase, **the opinion of main EU's bodies on a digital euro** was given in the documents issued by them. **The European Commission in the Communication**, listed the benefits of the introduction a digital euro and announced its wiliness to review the technical, legal and policy issues emerging from the possibility of the introduction of a digital euro.⁷⁴ **The European Parliament in the Resolution** welcomed the ECB's initiative on the preparatory work on a digital euro.⁷⁵ **The European Council in the Conclusion on the Commission Communication**, supported the work of the ECB on a digital euro as a euro retail CBDC and distinguished the important role of the Commission and the Eurogroup in its development.⁷⁶ **The Eurogroup in the Statement and then in a Summing-up letter**, called for an innovative payment system and, therefore, endorsed the ECB work on a digital euro and stressed that the Eurogroup will discuss its political appropriateness.⁷⁷

Also, the research phase was followed by launching the public consultation questionnaire on 12th October 2020,⁷⁸ which was targeted to evaluate public expectation on a digital euro and to identify their feedbacks regarding the design and other pressing issues, which are important to consider public trust in a digital euro as a root of their acceptance of a digital euro.

The questionnaire included 18 questions related to a digital euro's possible design features, and the discussion on pros and cons of the possibility of issuance of a digital euro. It was conducted for three months from 12 October 2020 to 12 January 2021. The 8,221 respondents took part in a public consultation, around them were both representatives from the public and professional sectors. The results of it were presented **the Report on the public consultation on a digital euro** on 14th April 2021.

According to the results, the main request from both public and professional is privacy, the next is security, followed by the accessibility across the Eurozone, minimum costs expenses, and the possibility of the offline mode of a digital euro. Also, the majority of respondents pointed that the infrastructure of a digital euro should be inserted in the existing payment system, where

⁷⁴ "The European economic and financial system: fostering openness, strength and resilience", Eur-lex, the European Commission's communication of 19 January 2021 on , Accessed 22 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021DC0032&qid=1611728656387>.

⁷⁵ European Parliament, *European Parliament resolution of 10 February 2021 on the European Central Bank - annual report 2020*, (Brussels: European Parliament, February 2021), Accessed 22 November, 2021, https://www.europarl.europa.eu/doceo/document/TA-9-2021-0039_EN.html.

⁷⁶ EU Council, *EU Council conclusions on the Commission Communication on a "Retail Payments Strategy for the European Union*, (Brussels: EU Council, March 2021), Accessed 22 November 2021, <https://data.consilium.europa.eu/doc/document/ST-6694-2021-REV-1/en/pdf>.

⁷⁷ Members of the Euro Summit, *The Statement by the Members of the Euro Summit of 25 March 2021*, (Brussel: Euro Summit , March 2021), Accessed 22 November, 2021, <https://www.consilium.europa.eu/media/48975/25-03-21-eurosummit-statement-en.pdf>; President of Eurogroup, *The Summing-up letter of the Eurogroup meeting of 21 May 2021*, (Brussel: Eurogroup, 21 May 2021), Accessed 22 November 2021, <https://www.consilium.europa.eu/media/50006/20210521-summing-up-letter-eurogroup.pdf>.

⁷⁸ "A digital euro for the digital era", European Central Bank| Eurosystem, Accessed 22 November 2021, https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp201012_1~1d14637163.en.html

intermediaries will provide innovative services to access a digital euro.⁷⁹ There is also a popular request from the respondent for a digital euro to perform as a cheap and easy cross-border means of payment.⁸⁰ To digital euro comply with cash-like features, the respondents assumed that modern hardware and software solutions, such as cards, wallets, and smartphones, could be used to make payments with a digital euro resembling cash payments.⁸¹

The mentioned Report on public consultation was one of the bases for the ECB to decide on whether to launch a digital euro project. The second base was a document summarizing experimental work on digital euro **the Digital euro experimentation scope and key learnings** by the ECB and representative of 19 European national banks, with additional involvement of practitioners and scholar. In it, the participants assessed the technological feasibility of a digital euro conceptual designs set in the Report on a digital euro. The four spheres were overviewed. The first was testing a flexibility of a digital euro ledger, from the provided experiment both the Eurosystem TARGET Instant Payment Settlement and the DLT resulted in capability to perform dozen thousands of transactions per second.⁸² Also, under the scope of first area of experiments, the capability of a programmability, minimis of environment footprint, multi-ledger infrastructure with both decentralized and centralized ledgers and offline regime of a digital euro were experimented. The second area was an examination of technical feasibility of a balancing between the confidentiality of users and legislative AML/CFT requirements, the possible solutions are seen in data separation or the use of cryptographic methods. The third was a limitation of a digital euro in circulation and its remuneration. The fourth area was connected with end-user's access. Overall, the results show that there are no technical obstacles to providing the mentioned design functionality, and any future political and legal considerations for the digital euro will technically be feasible by the ECB and other possible intermediaries.⁸³

On the basis of conducted work regarding a digital euro and its results illustrated in the Report on the public consultation on a digital euro, and the experimental work Digital euro experimentation scope and key learnings, which showed the public point of view and technological experiments with affirmative results, The Governing Council of the European Central Bank has

⁷⁹ European Central Bank, *Eurosystem report on the public consultation on a digital euro*, (Frankfurt am Main: ECB, April 2021), 19-20, Accessed 22 November, 2021, https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf#page=11.

⁸⁰ Ibid p. 27.

⁸¹ Ibid p. 24.

⁸² European Central Bank, *Digital euro experimentation scope and key learnings*, (Frankfurt am Main: ECB, July 2021) Accessed 22.11.2021, <https://www.ecb.europa.eu/pub/pdf/other/ecb.digitaleuroscopekeylearnings202107~564d89045e.en.pdf>.

⁸³ Ibid p.8.

decided on 14 July 2021 to launch **the investigation phase of a digital euro project**.⁸⁴ Thus, the decision on starting a digital euro project was given.

According to the press release, the investigation phase will last 24 months and will end in the fall of 2023. It aims to address key issues about the design of the digital euro and its distribution. Also, the estimation of a digital euro legal frameworks and its possible amendments will be looked at by the ECB with co-legislation bodies. The denoted sphere of investigation the ECB is planning to perform together with market advisory group, which will cooperate with all stakeholders (financial intermediaries, merchants and citizens), as well as with the European Commission, the European Parliament and other European policymakers.

The final stage after the two-year investigation phase may be the decision to launch **the development phase of the digital euro project**, which will be based on the previously conducted investigations. The development phase will last three years. Only after the two mentioned phases, the ECB will be ready to decide whether to issue the digital euro or not. Whenever decision will be, the ECB believes that the EU should be prepared anyway for the opportunity to write a new page in EU history regarding the issuance of the digital euro, the ECB's digital currency with the highest level of liquidity, resistance to risks, reliability.

Apparently, nowadays the investigation phase of a digital euro project is taking place. During it, Fabio Panetta, at the ECB-CEBRA conference on international aspects of digital currencies and fintech, has already shed light on a topic of the international dimension of a digital euro, emphasizing that such sphere opens new opportunities rather than creates dangers.⁸⁵ Also, an important event was an announcement by the ECB on 25 October 2021 for members of the Digital Euro Market Advisory Group.⁸⁶ They are 30 senior business professionals, who have sufficient experience in the euro area retail payments environment. Their task is to figure out issues related to the design and distribution of a potential digital euro from an industry perspective, and ways using which a digital euro could become a value-added tool for all stakeholders in the EU payments market.⁸⁷

To make a conclusion, the start of the ECB work on a digital euro should be associated with its participation in the regional research programs of the BIS, together with the first

⁸⁴ “Eurosysteem launches digital euro project”, European Central Bank| Eurosysteem, Accessed 22 November 2021, <https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr210714~d99198ea23.en.html>.

⁸⁵ “Hic sunt leones” – open research questions on the international dimension of central bank digital currencies”, European Central Bank| Eurosysteem, Accessed 22 November 2021, https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211019_1~b91b5f9595.en.html.

⁸⁶ “ECB announces members of Digital Euro Market Advisory Group”, European Central Bank| Eurosysteem, Accessed 22 November 2021, <https://www.ecb.europa.eu/press/pr/date/2021/html/ecb.pr211025~08af93ada7.en.html>.

⁸⁷ “Mandate of the Digital Euro Market Advisory Group”, European Central Bank| Eurosysteem, Accessed 22 November 2021, https://www.ecb.europa.eu/paym/digital_euro/investigation/shared/files/digital_euro_mandate_mag.pdf.

preparatory actions conducted by the High-Level Task Force on the CBDC. Then the results of their work were structured in the Report on digital euro, which laid the foundation of a digital euro and onset the research phase of a digital euro. During it, valuable events happened, such as the European institutions` recognition of a digital euro importance; the results of public consultations on a digital euro identified public interest in it emerge, if a digital euro will possess benefits for users; and the experiments conducted by financial institutions regarding the technological feasibility of a digital euro design options showed that there are not any technical obstacles. The outcomes of that has been launched a digital euro project, followed by its investigation phase, the aim of which is to find answers on other pressing issues and challenges of a digital euro, which is planning to continue until the autumn 2022. In case of its affirmative results, it will be followed by a developing phase, only after which the ECB will be ready to make a decision whether to issue a digital euro or not, this will happen in five years, approximately in the autumn 2026.

1.5. Design of a digital euro

The design of the digital euro is a collection of all its characteristics that will determine its functionality and their boundaries. Nowadays, there is no clearly defined design of the ECB's CBDC - a digital euro. As it was already mentioned, the ECB is now conducting the investigation phase, the result of which will be a finding, based on the information received and the experiments carried out, of a decision on the most suitable design for the digital euro. Despite the fact that the exact design will be announced only after the investigation phase and determined according to the ECB in the fall of 2023,⁸⁸ we can analyze the conceptual solutions given in the guidebooks issued by the ECB, namely: Report on the Digital Euro⁸⁹, Report on the Public Consultation on the Digital Euro⁹⁰, Scope of Experiments with the Digital Euro and Key Findings⁹¹. The information contained in them is a general direction of future research on the design of the digital euro, usually suggesting several possible solutions, which will be considered as options.

⁸⁸ "Investigation phase", European Central Bank| Eurosystem, Accessed 22 November, 2021, https://www.ecb.europa.eu/paym/digital_euro/investigation/html/index.en.html,

https://www.ecb.europa.eu/paym/digital_euro/faqs/html/ecb.faq_digital_euro.en.html

⁸⁹ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, 2020), Accessed 22 November, 2021, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

⁹⁰ European Central Bank, *Eurosystem report on the public consultation on a digital euro*, (Frankfurt am Main: ECB, 2021), Accessed 22 November, 2021, https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf#page=11.

⁹¹ European Central Bank, *Digital euro experimentation scope and key learnings*, (Frankfurt am Main: ECB, 2021), Accessed 22 November 2021, <https://www.ecb.europa.eu/pub/pdf/other/ecb.digitaleuroscopekeylearnings202107~564d89045e.en.pdf>.

First and foremost, there are core principles, with which a design of a digital euro should be complied. They are mentioned in an introduction part of the Report and are always highlighted in all interviews with authorities from the ECB.⁹² Those principles are targeted to achieve the objectives of the Eurosystem mandated to the ECB of the maintenance of the financial stability. So that, even if the future design is still unclear and a lot of investigation work should be done in the future two years during the investigation phase of a digital euro project, the guiding principles are already established and should be taken into consideration in the future design of digital euro.

1.5.1. Guiding principles for the design of a digital euro

A digital euro will be an electronic equivalent to the existing euro currency, which is banknotes and coins. A digital euro is not expected to become a new currency union, but is considered to be a complement to the current offering by ECB means of payment – euro cash. It is not targeted to replace tangible money, but targets to become an additional means of payment as a new form of money, which will be a progressive solution in a fast-growing digital era, where people would like to make transactions secure, cheap and efficient.

As having the same value as conventional money, **a digital euro will be convertible at par in euro banknotes and coins**. A digital euro convertibility at par in euro cash will ensure the avoidance of the public's assumption that cash euros and a digital euro are two kinds of euro. So, one euro has the same nominal as one digital euro has and is the one same kind of euro.

The important note is that **cash money will not be abandoned**, they will proceed to function, but with a complement of a digital euro, as their equal value counterpart. So, people will be given a choice what kind of means of payment to use, regarding on their personal preferences. But a digital euro and cash are ranked equivalent in their substance but different in their form.

The next principle is a characteristic of **a digital euro as a liability of the ECB**. It will be issued by the ECB as the customer's claim against the ECB, which is fully backed by resources held by the Eurosystem. Such peculiarity would guarantee the holders of a digital euro its risk-free characteristic. In other words, a digital euro will be safe and will not drop in its value and will not fall for its worthless, since the full faith and credit of the ECB as an institution, which backs it will guarantee its risk-free future return without any possible loss. A digital euro with its riskless will not trigger any financial risks for the Eurosystem, as it will be under the total control of the ECB,

⁹² “Designing a digital euro for the retail payments landscape of tomorrow”, European Central Bank| Eurosystem, Accessed 22 November, 2021, <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211118~b36013b7c5.en.html>; “The future of money – innovating while retaining trust”, European Central Bank| Eurosystem, Accessed 22 November, 2021, <https://www.ecb.europa.eu/press/inter/date/2020/html/ecb.in201130~ce64cb35a3.en.html>.

which obligation is to manage the total amount of a digital euro is being issued. This feature is one of the main distinguishing factors compared to another type of a digital money – cryptocurrency, which is a highly volitively asset. So, a riskless background of a digital euro is an advantage of such means of payment, which will guarantee the EU citizen a means of payment, which is not just a technologically convenient for users, but also is safe and reliable, so will not pose on them risks of its price drops.

Nowadays, two forms of the liabilities of the ECB exists, which are cash as a physical form of bank liability, accessible for everyone; and central bank deposits, which are digital money deposits on central bank reserves manages by TARGET2 system⁹³, called wholesale fundings, they are accessible exclusively for a specified number of subjects, such as banks and some other selected institutions. A digital euro would combine those two features, so it will be digital and **accessible to every potential user under the same condition** for usage across the Eurozone.

The next feature underlined by the ECB in the Report is **the market neutrality of a digital euro**. Namely, a digital euro is not intended to replace the role and activities of a private sector in its digital retail payment solutions in the Eurozone. Conversely the ECB strives to the synergy with the industries, by complementing private initiatives of banks, payment service providers, etc. A digital euro will not cause losses or wind up the private sector, it will be just one more means of payment, which subsides together with others options, which people already have like cash, bank`s credit and debit cards, cards, that backed a customer`s mobile phone payment, payments in the Internet with payment service providers. So, people will have additional payment option in a face of a digital euro. Additionally, the activity of a digital euro could rely on the private sector innovative solutions, regarding the decentralized reflections of private firms` intelligence, that will come up with better new idea, which would ensure the best solutions to the efficient distribution and activities of a digital euro for the citizens. That also includes the fact, that the ECB has not ambitions to take-up front end or take away deposits from banks` balance sheets. And there are not any aims to cause a bank run in a term of financial distress or a structural disintermediation.

And last, but not least, a **digital euro must be trusted by its prospective users**. Money could perform its three core functions as a unit of account, a store of value and a means of payment, only when the society granted it with a characteristic of the trustworthy. That characteristic should be obtained by a digital euro in the same scope as a cash euro possesses. It could be done simultaneously by the sufficient and reliant design of a digital currency and appropriate communication during the time of the introduction of a digital euro for a society, specifically by

⁹³ “What is TARGET2?“, European Central Bank| Eurosystem, Accessed 22 November 2021, <https://www.ecb.europa.eu/paym/target/target2/html/index.en.html>

taking into account a public consideration on how a digital euro should look like, what design features it should obtain and even the opinion on the digital euro necessity to be issued.

To sum up, there are seven principles of a digital euro: a convertible equivalent of euro, a liability of the ECB, an accessibility, a market neutrality and an end-user trust, should lay in the future design of a digital euro, as factors which would guarantee, that people receive the safe, innovative, fast, efficient state-of-the-art payment toll and also will sustain the European system strategic objectives.

1.5.2. Design considerations

As it was already stated, that the EU is just in the stage of conceptual design considerations so that there is not a clear statement of characteristics for the digital euro. However, there are certain available options on the issue, they are based on the needs of both prospective users of future digital currency and the requirements set by regulatory authorities to address functional, legislative and technological obstacles. Those design options are generally divided into dichotomy options, which are supposed to coexist or to be chosen just one of them in a future decision on an established design of a digital euro. Furtherly, the analyze of those key dimensions of a design concepts is provided with the indication of its benefits and drawbacks.

1. Access model. The underlying feature of a digital euro design choice is the access model, which also could be named as the architecture of a digital euro. The access model defines the relationship between the ECB, payment service providers, commercial banks, and users in the future digital euro system.⁹⁴ There are two possible access models defined in the Report: a direct access to a digital money reserved by the ECB; or an access with a help of intermediaries.⁹⁵

The direct access model is that the ECB, as the only supervising participant of the relationship with a holder of a digital euro, provides all payment activities for users by operating retail ledger, including a technical support and authentication procedure and checking on the compliance with legislation in the fields of Know Your Customer and AML/CFT, etc. Thus, the ECB will be absolutely sure on the accessibility of the provided services, the maintenance of the nature of a digital euro as a liability of the central bank and the elimination of the possibility to create an extra digital euro by intermediaries` mistakes or wrongdoings, since the ECB will conduct all actions regarding a digital euro on its own. However, such an option of the direct access model stands out as a drastic change in the financial sector, which will lead to a one-tire reserve

⁹⁴ Mervyn King, "Where Does the ECB Go from Here?", Bloomersg, Accessed 22 November 2021 , <https://www.bloomberg.com/opinion/articles/2018-04-16/where-does-the-ecb-go-from-here>.

⁹⁵ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), 26-27, Accessed November 2021, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

banking system, where the ECB will provide all supplementary banking services that now are performed by commercial banks. As a result, the disintermediation will happen and the ECB will become a monopolist of all financial services. Such scenario will not just violate the competition in the sector of banking activities, which is guaranteed by legislation⁹⁶ but, also, will limit the innovational development of a banking services, which usually comes from the commercial banks and private payment providers competition. Subsequently, the cost will outweigh benefits as the direct access model will infringe on guiding principles laid down to a digital euro functioning.

The second option is the access model through intermediaries. That is a digital euro architecture, which serves as an equilibrium between public and private sector coworking, where the ECB issue money and supervise monetary police, which are transferred by intermediaries, so that users gain entry to the use of a digital euro via an authorized by the ECB intermediaries. Intermediaries are responsible for the providing of all retail payments and related to them services of monetary and non-monetary character, such as customers authorization, customer support, compliance with Know Your Customer and AML/CFT requirements. Thus, there is not the disintermediation and not any drastic changes to current financial sector functioning. Such scenario lays in line with a principle of a market neutrality and non-replacement of a private sector. Additionally, the innovational power of a private subjects will contribute for the development and operation of a digital euro. But the intermediation should proceed under the control of the ECB, in order to be sure, that the quality and accessibility for the users is provided and to monitor the actions of intermediaries with a digital euro to prevent the artificial emergence of extra digital euro by error or misconduct of the intermediaries.⁹⁷

Clearly, the intermediary access model is considered like one, which suites better to comply with the objectives of the Eurosystem. And such thesis is one which not trigger debates, the most likely option of the access model of a digital euro will be the access model through intermediaries.

2. Privacy as a necessary condition. Privacy is the biggest demand from society, according to the Report on the public consultation on a digital euro, where it was assessed as the most important feature for a future digital euro from both public and businesses. Specifically, 64% of respondents, from the other 9 options in the questionnaire, have chosen the ability of a digital euro to satisfy a private requirement.⁹⁸ So, the ECB should take into consideration the customers`

⁹⁶ “Charter of Fundamental Rights”, Eur-lex, Accessed 22 November, 2021: Article 16, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM%3A133501>.

⁹⁷ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed November, 2021: 26, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

⁹⁸ European Central Bank, *Eurosystem report on the public consultation on a digital euro*, (Frankfurt am Main: ECB, April 2021), 10-12, Accessed 22 November 2021,

needs and try to adapt the solution in the line with them. However, it should be balanced with an ability to prevent illicit activities, such as money laundering and financing terrorism. Ultimately, the ambitious design problem stands for the authorities, which is to equilibrate private and public interests. Hopefully, the participation of the ECB could mitigate the risk of misuse of confidential information of users, since the ECB has no commercial interest in its exploitation and is interested to provide citizens with secure means of payment, so targeted to ensure safety issues.⁹⁹ There are two possible conceptual solutions: verification of the identity while accessing the service; non-verification of the identity while accessing the service.¹⁰⁰

Looking at currently existing considerations on the issue of privacy from the Report, there is a strict position in the need for a primary verification when a user enters a digital euro service at first time. Such position is proved by the fact, that nowadays all functioning electronic payments are traced, since such requirement complies with the legal regulation connected the AML/CFT requirements, so the digital euro should, also, adhere to them. Additionally, because of the need of the limitation of a circle of users of a digital euro if it is required, for instance in the scenario when non-residents of the EU will be excluded from the right to possess a digital euro or in the case of prevention of the use of a digital euro as an investment tool, there will be a determined limit of an amount of a digital euro for one holder.

Nonetheless, even in the case of mandatory first service access provision, the users still can be granted by a certain level of anonymity depending on circumstances. Like when operations will be held in an offline mode, they will be totally confidential. Also, the different level of privacy verification is planned regarding the value of a transaction. In this vein, the low-value transactions should be out from the condition of an indication, whereas high-level transaction should be submitted under the AML/CFT requirements, so have to be verified.

Apparently, the current plans are not addressed to grant to a digital euro one of the main peculiarities of cash money as anonymity, even though this is the main request of society. The reasons for that are the anxiety of people that intermediaries could use their personal data connected to a financial and personal life for their commercial interests.¹⁰¹ That is why, even if the cash-like anonymity cannot be included in a digital euro design, because of AML/CFT law regime, there may be confidentiality, which would audit the data for the only purpose of tackling illegal

https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf#page=11.

⁹⁹ “Preparing for the euro’s digital future”, European Central Bank| Eurosystem, Accessed 21 November 2021, <https://www.ecb.europa.eu/press/blog/date/2021/html/ecb.blog210714~6bfc156386.en.html>.

¹⁰⁰ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed November, 2021: 27, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

¹⁰¹ “ECB promises that digital euro will boost consumer privacy”, Ledger Insights, Accessed 22 November, 2021, <https://www.ledgerinsights.com/ecb-promises-that-digital-euro-currency-boost-consumer-privacy-cbdc>.

activities, and will totally conceal the personal data of users from intermediaries with their business interests.¹⁰²

3. Limitation of a use a digital euro as an investment tool. The Eurosystem considers that appearance of a digital euro as the ECB`s liability and thus a highly reliable deposit tool will trigger an excessive switch from commercial banks deposit services to ECB`s liabilities, such could weaken the financial stability and cause banks to run. To prevent those consequences, the Eurosystem proposes to set a limit in an amount of a digital euro held by one individual.¹⁰³ To achieve mentioned submission, users will be obliged to adhere the verification, while primary entering the service of a digital euro, in order to prevent the frauds of the restriction to have a certain amount of money by impersonal users.

Given requirement has to be implemented taking in mind different cases which could happen, like when a payee receives an amount of a digital euro, which exceeds the required limit. The Report proposes in such case transfer an extra amount of a digital money in a regular money of a payee, however such account should be provided. Also, there are additional suggestions, when an amount of money exceed the threshold to posed burdens on it, such as a negative interest rate or fee for service.

Those restrains will make a digital euro less competitive as an investment tool, but still attractive to use it for the purpose of making retail payments, thus the ECB will preserve the financial stability and money policy.

4. Restrictions to access a digital euro service to certain subjects. The possibility of possessing a digital euro may be limited to a particular scope of individuals or entities, such as those, who are non-residents of the EU countries. This is linked with a potential threat of a capital flows, which could do by an excessive use oof a digital euro by international subjects. Nevertheless, the Report proposes to allow them to use a digital euro service under the certain circumstances, for instance, when a non-resident is performing actions via the EU borders.¹⁰⁴

5. Transfer mechanism. The transfer mechanism defines how users will gain access to a digital euro. There are two variant of transfer mechanisms observed by the Eurosystem: an account-based system or a bearer instrument. Both of them are used nowadays by consumers in regard to scriptural money or cash.¹⁰⁵

¹⁰² ECB and Bank of Japan, *Balancing confidentiality and auditability in a distributed ledger environment*, (Frankfurt am Main, Tokio: Project Stella, February 2020), 5-6, <https://www.ecb.europa.eu/paym/intro/publications/pdf/ecb.miptopical200212.en.pdf>.

¹⁰³ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed November, 2021: 28-29, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

¹⁰⁴ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed November, 2021: 29, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

¹⁰⁵ Ibid p. 29.

The first option is functioning in the same way as a mechanism of commercial bank`s electronic payment and payments providers do. In particular, an owner of an account is registered by a third party, the third party performs the role of validator of transactions between a payer and a payee and, also, changes a balance sheet of users according to a transaction, which was completed. This type includes the process of user verification, which is done by a third party so that via those transfer mechanisms the requirement of compliance with regulatory law of AML/CFT will be observed, thus it is traceable and safe. In addition, the stipulated requirements for a digital euro implied by the Eurosystem, such as the limitation on the amount of ownership of a digital euro and the remuneration, will be easily and conveniently implemented in an account-based transfer mechanism. The account-based system requires the mandatory identification of users, which totally excludes the option of anonymity, and it cannot be used in an offline mode exclusively.

The second mechanism- bearer instrument, is functioning on the basis of a self-identification between a payer and payee. This process is quite similar to the process of cash payments, when the verification is made through the physical possession of valid banknotes or coins, while during the verification of a digital euro, as a bearer instrument, parties of a transaction will validate cryptographic signatures. Subsequently, this variant does not need the identification of a holder to be made, so the condition of anonymity is possible, as well as it could be performed without online functioning. However, because of obligatory legislation of combating illicit activities, the Report insists on compulsorily users` identities before starting to use the devices with a digital euro, in order to fall under control of the Eurosystem or established intermediaries. So that, those devices should work only after users verified their identity by presenting physical biometrical attributes, like fingerprint or something else, only after such attestation the transaction will have proceeded.

So, the transfer mechanism could involve a digital token stored on customers` devices, when he/she buy something, he/she will send that token electronically to the other person, or could be account-based, where transactions involve credit and debits directly to ECB`s reserves. Both of which will need to attest the identity of users, in order, as the Report explains, be under the control of the Eurosystem to allow it access to monitoring the compliance with the AML/CFT law, the threshold of allowed digital euro`s holdings and the suitable subjects of a digital euro possession, hence the exclusion of the cash-like feature of anonymity.

6. Payment device. There are two options of a payment device for a digital euro: a web-based service and dedicated physical devices. ¹⁰⁶The first variant has a wide range of options like

¹⁰⁶ Ibid p.30.

any device that has an Internet connection, for instance, a computer, a phone, a watch, etc. The use of them for the purpose of payment will need them to be in an online regime. Whereas the use of specially created physical devices will work in the offline regime, but will need to be certificated by the ECB and embody security features like a cash has. Also, the variant of using both types of payment devices is considered.

Important is to pay extra attention to the aspects of security regarding the payment devices. The steal of an electronic monetary value will be equivalent to the loss to its cash counterpart. So, while developing the design of a payment device of a digital euro the level of strong hacking attack resistance of the payment devices should be set.

7. Availability and usability offline. One more feature of cash transactions is its availability in any time, without additional conditions such as an Internet connection.¹⁰⁷ In order to satisfy that, a digital euro could be used either in online or offline regimes.

The offline digital euro payment could be provided by trusted hardware module, which would allow users to make transactions instantly and without delay. The process determined in the Report is the one, where payment devices will have the funds on the balance determined when it was online. And also, an offline digital euro would need to exist online at some point for calculating remuneration applied to a digital euro and to support new advanced functionalities.

8. Remuneration. The Report considers the possibility of a digital euro to carry interest. Such an option would be an instrument to perform monetary policy in order to maintain financial stability.¹⁰⁸ A digital euro with its capacity to carry a negative interest would be a tool to control the customer's demand on it, thus, managing a financial stability in order to prevent the lack of deposits in commercial banks. There is a concept that a remuneration could be either fixed or tiered. As a fixed interest rate, it will be zero remuneration alike cash has. As a tiered remuneration, it could obtain less attractive interest rates in case of large holdings to demotivate a digital euro utilization as an investment. However, the legality of such design consideration is analyzed in the second part of thesis.

9. Legal tender. Legal tender status as a legal feature of a digital euro is a desirable for it. Such design will allow its mandatory acceptance across the EU. It will discharge obligations of all payees under any conditions and in any place. Such status will provide a digital euro of its official status, and underpin it from other electronic means of payments. The legal perspective of obtaining the legal tender status by a digital euro is described in the second part of thesis.

10. Parallel infrastructure. The ability of a digital euro to functionate in a parallel infrastructure would give it a capacity to be used in cases of cyber incidents and attacks, natural

¹⁰⁷ Ibid p. 31-32.

¹⁰⁸ Ibid p. 32.

disasters, and pandemics – extraordinary, uncontrolled circumstances. It is an expensive design consideration, since for its adoption and functionality additional costs will be needed.¹⁰⁹ The solution is laid on a necessity and plausibility of such extraordinary events magnitude to happened.

11. The infrastructure. The infrastructure defines a technical and organization approach of a digital euro functioning. The digital euro infrastructure could be based either on already existed ECB database (TARGET) or on technology, which is used by cryptocurrencies, DLT. The experiment conducted by the ECB together with a national MS` s banks shows the results that both of them have the capacity to perform dozens of transactions in a second.¹¹⁰

The experiments provides that DLT safeguards customer`s privacy on a lower-transactions, at the same time ensure the compliance of a high-value transactions with AML/CFT. As well as, DLT has a high safety from manipulations, since it excludes the one and only single point of mistake, which improve resistance. Also, DLT simplifies payment system, with an ability to proceed a programmability of money through the smart contacts. Additionally, DLT allows to make lower cost cross-border transactions with a full access.

The conventional transfer mechanism TARGET is a complex supervisory policy, which has a risk of inescapability with the growing complexity of the financial system, so that will not provide the sufficient service to fit the demand and realities of startups, scaups and decentralized finance systems.

To summarize, the decision about the design of a digital euro will depend on policy objections requirements, and must be granted to the option with the highest level of efficiency, safety, and privacy guaranteed. Considering current design option, such variants fit the objectives and principles of the introduction of a digital euro: intermediary accessed digital euro, where financial institutes provide monetary and non-monetary character services, with their innovative solutions for such services, and the ECB serves supervisory monetary functions; since the anonymity cannot be granted on the grounds of AML/CFT requirements, the confidentiality of customers must be maintained, where after their verification, their private data cannot be traced for any purpose, except tracing illicit activities; a digital euro could be limited in its holding possession to constrain its use as investment tool; the transfer mechanism of a digital euro might be the DLT as it guarantees the highest level of efficiency, safety and privacy; possible remunerational digital euro with the status of a legal tender.

¹⁰⁹ Ibid p. 33-34.

¹¹⁰ European Central Bank , *Digital euro experimentation scope and key learnings*, (Frankfurt am Main: ECB, July 2021), 4-5, Accessed 22 November, 2021, <https://www.ecb.europa.eu/pub/pdf/other/ecb.digitaleuroscopekeylearnings202107~564d89045e.en.pdf>.

2. LEGISLATION CONSIDERATION OF A DIGITAL EURO

The ECB is, now, on the investigation phase of a digital euro project, targeting to compose a contemporary form of central bank money corresponding to digital development in the field of means of payment and providing new opportunities. While active researches are taken place regarding the functional design variants to ensure that a digital euro will become a riskless, accessible, and efficient form of the CBDC, there is the same need to investigate a digital euro legal consideration. Because if, after its investigation and development stages, a decision is made to introduce a digital euro, the digital euro must be issued in accordance with the law, so as not to cause legal uncertainty that will lead to its inadmissibility. The legal framework of a digital euro has to be examined from the point of whether a digital euro fits the EU's constitutional frameworks, which includes such field of law: the European Central Bank law, the Monetary law, the AML/CFT requirements, and the Economic Law regarding the free business activities in the banking sector. Also, there is a need to issue a specialized legislation act governing a digital euro, which will include comprehensive regulatory frameworks of a digital euro regime, similar to those, which set a legal regime of the euro currency, commercial bank's money, e-money. Further parts of the thesis address mentioned issues of the legal and regulatory framework of a digital euro with the suggestions to the future secondary law ruling a digital euro regime.

2.1. European Bank Central Law and a digital euro legal framework

The activity of the European Central Bank is regulated by European Central Bank Law. It includes **TFEU** and **the Statute**.^{111 112} They formalize the establishment of the ECB and the Eurosystem, such as the ECB and the national central banks of these member states, list the decision-making bodies and their competencies, lay the foundations for its autonomy, and outline objectives, tasks and powers that constitute the competence of the ECB.¹¹³

The issuance of a digital euro will request a strong anchor in the competence of the ECB set under the European Central Bank Law. Otherwise, actions of the ECB beyond its competence will lead to legal uncertainty of the unauthorized digital euro as the liability of the ECB. In other

¹¹¹ "Treaty on the Functioning of the European Union", Euro-lex, Accessed 23 November 2021: Articles 3(1)(c), 119, 123, 127-134, 138-144, 219 and 282-284, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

¹¹² "Protocol #4, the Statute of the European System of Central Banks, and of the European Central Bank", Euro-lex, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12016E%2FPRO%2F04>.

¹¹³ Chiara Zilioli, and Martin Selmayr, "Recent Developments in the Law of the European Central Bank", *Yearbook of European Law*, 25, 1 (2006): 8-9, <https://academic.oup.com/yel/article-abstract/25/1/1/1659843?redirectedFrom=fulltext>.

words, the debt of the ECB, with further political, legal, financial, and reputational negative consequences for the ECB and its decision-making bodies. As the actions out of the frame of the ECB competence infringe the fundamental principle of the EU – **the principle of conferral**.¹¹⁴

Article 5 TFEU set a fundamental principle of the EU law, a principle of conferral, which means that the EU have capacity to act only within the limits of competence that the EU Member States have conferred on the EU in the Treaties.¹¹⁵ The catalog of mentioned competence is defined in Articles 2-6 of the TFEU, the competences not mentioned within those Articles stay on with EU MS eligibility. That principle serves as the limitation on the EU competences.¹¹⁶

Pursuant to the principle of conferral the ECB, as the EU institution, is granted to act only within the limits of the competence conferred upon the Treaties or the Statute. So that, the ECB performs only those tasks, which are set in TFEU and the Statute, the scope of the tasks can be extended exclusively by adopting amendments to TFEU and the Statute. TFEU provides the possibility to make amendments to the lists of Articles of the Statute mentioned in Article 129 (3) TFEU. That provision does not both name Article (3) of the Statute, which set the ECB`s tasks, and does not provide possibility for introduction new Articles about new tasks. Moreover, new task of the ECB cannot be set by the secondary legislation, because of protection of the ECB`s work from political impact, which is provided in Article 130 TFEU. So, the ECB cannot be entrusted by new tasks from the EU legislator, the only exception for a banking supervision, which can be conferred from regulation of the Council, it is an explicit permission to a conferral of tasks on the ECB set in Article 127(6) TFEU.

So, the ECB is authorized to perform those competence conferred to it by the ECB Law. However, the ECB Law does not explicitly state in writing the right to issue the digital euro for the ECB. Consequently, to the issuance of a digital euro that fits in the scope of the ECB's competence, either the text of the ECB laws should be amended or it should be integrated into the existing treaty provisions. The first way of Treaty amending is regulated by Article 48 of the Treaty on European Union, which presents two revision procedures.¹¹⁷ They provide a complicated procedure through establishing a new treaty with the unanimity from all MS and ratification procedure, thus it comprises difficulties. The second way is to analyze the mentioned tasks and power of the ECB already existing in the ECB laws and make a conclusion whether their

¹¹⁴ Ibid p. 11.

¹¹⁵ “Treaty on the Functioning of the European Union”, Euro-lex, Article 5, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

¹¹⁶ “Glossary of summaries”, Eur-lex, Accessed 23 November 2021, <https://eur-lex.europa.eu/summary/glossary/conferral.html>.

¹¹⁷ “Treaty on the Functioning of the European Union”, Euro-lex, Articles 48, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

interpretation implies the issuance of a digital euro. There are three available options on how to integrate the issuance of a digital euro in the ECB Law.

2.1.1. Options on how to integrate the issuance of a digital euro in the constitutional framework of the European Central Bank Law

The first option is to identify whether **the issuance of a digital euro** will be within the boundaries of the ECB's competence **under Article 128 (1) TFEU and Article 16 Statute**. The text of Article 128 (1) TFEU does not expressly emphasize the objective of the Eurosystem to provide the available ideal monetary object, which is explained by the historical remnant of its drafting process, where the full attention of law-makers was focused on the division of responsibilities, but the money issuance was not a pressing issue. Nonetheless, the objective of providing the public service of making available ideal monetary objects as a public good has existed for a long time as a duty of NCBs, and with Stage Three of the Economic and Monetary Union as the common responsibility of the ECB and the NCB of the Member States. Particularly, from 1 January 1999, when the Eurosystem introduced the issuance of euro currency as the EU monetary object. Article 128 (1) TFEU exclusively authorizes the ECB to the right of the issuance of euro banknotes and coins within the EU. As the result, **the issuance of banknotes and coins is the instrument to achieve the objective of the ECB of providing available ideal money objects** for the EU. The ECB and NCB are conferred with the power to issue euro banknotes, therefore those function was reserved at the EU level. The competence to the issuance of euro coins has remained to the MSs, with a mandatory approval of the volume of issued coins by the ECB according to Article 128 (2) TFEU. So, Article 128(1) TFEU set an instrument – the issuance of banknotes and coins to achieve the objective of the providing the available ideal monetary object, the question that must be analyzed through linguistic, historical and teleological methods, can a digital euro be this instrument.

Providing a linguistic analysis of Article 128(1) TFEU and Article 16 of the Statute, that provisions do not designate the definition of banknotes. Both articles refer to “banknotes” and do not mention neither the material from which those banknotes must be made nor its format. The wording “issuance of banknotes” is appealed to the emergence of liabilities on the ECB balance sheet, but not the expression of the mandator tangible format of euro. That is, they do not prevent the Eurosystem from issuing banknotes in an intangible form.

The given thesis is also justified by the history of drafting Article 128 (1) TFEU and Article 16 of the Statue. In the time of their drafting, there was no Internet, which influences the economy, and the electronic money was not exist too. Subsequently, the law-makers did not take in mind the

possibility of money to take electronic form. The materials of the drafting of the Treaty in 1990, do not show that it was intended to exclude any thinkable forms of euro under Article 128 (1) TFEU. The fact that the consideration about the electronic form of money and the Internet emerge did not manage to the amendments to in Lisbon Treaty 2007, is proven by its early stage of uprise. As we observe, the first electronic money considerations emerged after the ten years of the Lisbon Treaty adoption, when the Bank of England published the working papers “One bank research agenda” in 2015.¹¹⁸ Those facts means that the law-makers of Treaties did not expect that a digital form of money would ever exist. However, they did not explicitly or implicitly disqualify a digital euro from the scope of Article 128(1) TFEU and Article 16 of the Statute.

So that the linguistic and historical analysis of Articles reveals that they are drafted in a broad meaning relatively to the issuance of a banknote. Therefore, those provisions do not eliminate the issuance of digital banknotes by the ECB. However, the non-exclusion alone does not constitute the competence of the ECB to issue a digital euro. In order to reveal the empowerment to do that, the purpose identification of Articles should be extracted. That method is often used by the CJEU in their decisions, when they advocate to the teleological method of interpretation. There is an approach according to which the EU legislation is considered regarding objectives it contains and the state of evolution at the date on which the Article in observation is applied. The teleological interpretation means, that “... every provision of EU law must be placed in its context and interpreted in the light of the provisions of EU law as a whole, regard being had to the objectives thereof and to its state of evolution at the date on which the provision in question is to be applied.”¹¹⁹ Consequently, Article 128(1) TFEU and Article 16 of the Statute should be examined on the issue of theirs purpose with a conjunction of the evolution of EU environment.

Article 128(1) TFEU set an objective of the ECB to provide the availability of the ideal monetary object of the EU, which is risk-free, secure, efficient, and accessible. Such money can be created by the ECB as the public body which is an independent treasure, guarantees price stability, and has budget autonomy. The issuance of the monetary object is a public service, which must be performed in the public interest. The issuance of money is the instrument with which other objectives are achieved. However, the growth of digitalization with the private money solutions affects the use of ideal money object issued by the ECB -euro cash. Consequently, the use of cash declines, and the ECB declines the performance of its legal obligation of providing an available

¹¹⁸ Bank of England, *One bank research agenda*, (London: Bank of England, February 2015):31, Accessed 23 November 2021, <https://www.bankofengland.co.uk/-/media/boe/files/research/one-bank-research-agenda---summary.pdf?la=en&hash=B2C820FBF6A960C4A625C2DAB5B5B6CE4FEDF120>.

¹¹⁹ “CILFIT v. Ministero della Sanità Case C-283/ 81”, Curia, Accessed 23 November: para 20, <https://curia.europa.eu/juris/showPdf.jsf?jsessionid=CC3AFB3D4D9F2844B77EF3ED32CCF92F?text=&docid=91672&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=1309481>.

ideal monetary object of the EU. Therefore, with the further possible cash disappear the ECB will fail to perform this obligation at all and, thus, will infringe Article 128(1) TFEU. A digital euro can become an alternative ideal monetary object at the disposal of the EU. In regard to the theological analysis of Article 128 TFEU, with its narrow interpretation to only tangible banknotes, the ECB will not be able to resist the decline in demand for public ideal monetary object- euro cash and their authority to issue banknotes would be fruitless. This could not be the intention of the drafters of the treaty. Subsequently, Article 128(1) TFEU should be interpreted more broadly by defining a concept of banknote not as a paper medium, but according to its functional assignment, namely as monetary object (either tangible or intangible), which serves as the risk-free means of payment and store of value accessible to public.

Furthermore, the ECB has not just right to issue a digital euro under Article 128(1) TFEU, but also has a duty to utilize that right, which cannot be refused. The issuance of banknotes (either tangible or intangible) by the ECB is a task to achieve the availability of ideal monetary object for the general public. This available monetary object irreplaceably is connected to the conduction of monetary policy of the ECB, which is targeted to achieve its other object- monetary stability under Article 127(1) TFEU. The crowding out of cash, as the only monetary objected provided by the ECB, will cause exhaust the monetary policy transmission mechanism, and the ECB's ability to achieve the price stability. Since the private money are insufficient to serve as the monetary policy transmission mechanism,¹²⁰ a digital euro is required as issued by the public institution – the ECB, credit risk-free monetary object, which will, analogically as cash does, perform as an anchor to maintain the ECB's objects. Therefore, the ECB has not just the issuance power regarding a digital euro, but also the responsibility to do that.

Important to mention, that the possibility to emerge of a digital euro, besides its features updated to digital era, obtains capacity to perform activities that go beyond the constitutional functions of money, namely programmability of a digital euro. But, the issuance of the digital euro as banknotes in accordance with Article 128(1) TFEU has a confining effect. To clarify, in order to equate the digital euro with the form of a digital banknote, so that the regime provided for in Article 128(1) can be applied, a digital euro should not have any other functionality than those that cash provides. This means that a digital euro has to operate in the same way as banknotes used to operate, which is consistent with the non-remunerated digital euro scenario. So that, Article 128(1) TFEU legally restricts the use of a digital euro to the functions of cash regarding functional equivalent to paper-based euro.

¹²⁰ Dissenting Hofmann, "The changing concept of money: A threat to the monetary system or an opportunity for the financial sector?", *European Business Organization Law Review* 21,1 (2020): 58-65.

On the other hand, the possibility to add innovative design options as remuneration of a digital euro could be authorized under the textual wording of Article 16 (2) of the Statute. Such proposal is supported in the reports issued by the De Nederlandsche Bank¹²¹ and the Banque de France¹²². There is a provision of Article 16 (2) of the Statute, which governs that “the ECB shall respect as far as possible existing practices regarding the issue and design of banknotes.”¹²³ The wording in “as far as possible” can be interpreted as a departure from a static understanding of the Statute. Thus, if the need to safeguard price stability arises, the ECB may deviate from the usual practice of issuing money, including the change of design features. In such interpretation the remunerated digital euro could be feasible, if the necessity for it will be proved. However, the fact that Article 16 (2) of the Statute was added with the only purpose to satisfy the UK’s practices regarding the issuance and design of banknotes in the UK with the Queen’s face on them,¹²⁴ limits the scope of the understanding of Article 16 of the Statute. Thus, further clarification from the CJEU is needed whether with a proof of the necessity of issuing a digital with particular design options under the wording “as far as possible” of Article 16 of the Statute, might be allowed to move away from traditional practices regarding the issue and design of banknotes.

Linguistic, historical and teleological analyzes show that Article 128 (1) TFEU and Article 16 of the Statute refer to the issuance of retail money by the ECB without explicit or implied restrictions on the possible form of money and with the ability to change its shape to meet requirements about the unpredictable changes in human demand caused by technological development. As a result, the issue of the digital euro can be comprised in the competence of the ECB in accordance with Article 128 (1) TFEU. However, design limitation should be taken into consideration.

The second option is to include the issuance of a digital euro under Article 128 (1) TFEU to fulfill one of the main tasks of the ECB defined under Article 127 (2) TFEU. Article 127 TFEU determines the primary objective of the ECB as the maintenance of the price stability. The ECB defines price stability “...as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2%.”¹²⁵ The euro prices are kept stable by the

¹²¹ De Nederlandsche Bank, *2020 Annual Report*, (Amsterdam: De Nederlandsche Bank, 2021), 29-30, Accessed 23 November 2021, https://www.dnb.nl/media/djspazix/jaarverslag_2020_dnb_eng.pdf.

¹²² Banque de France, *Central Bank Digital Currency*, (Paris: Banque de France, 2020), 30-31, Accessed 23 November, https://publications.banque-france.fr/sites/default/files/media/2020/02/04/central-bank-digital-currency_cbdc_2020_02_03.pdf.

¹²³ “Protocol #4, the Statute of the European System of Central Banks, and of the European Central Bank”, Euro-lex, Accessed 23 November 2021: Article 16, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12016E%2FPRO%2F04>.

¹²⁴ Van den Berg, *The Making of the Statute of the European System of Central Banks – An Application of Checks and Balances*, (Rozenberg Publishers, 2005), 326, 333, 339–341.

¹²⁵ “The definition of price stability “, European Central Bank| Eurosystem, Accessed 23 November 2021, <https://www.ecb.europa.eu/mopo/strategy/pricestab/html/index.en.html>.

one of the tasks of the ECB stipulated in Article 127 (2) TFEU – maintenance of the monetary policy by the ECB. There are main instruments of monetary policy for achieving the goal of price stability - open market operations, reserve requirements, impact on market interest rates and liquidity in the banking system or in foreign currency interference. Albeit, those instruments and their conditions, can be changed any time by the Governing Council of the ECB. Like in time of crisis outbreak such monetary police tools were exploit: refinancing operations conducted as fixed rate tender procedures with full allotment; the minimum reserve requirements have been lowered; the collateral framework has been widened and foreign currency liquidity has been offered.¹²⁶ That is why, monetary policy instruments are implemented by the Governing Council of the ECB base on different monetary policy reasons, such as the crisis of 2008, reverberation of COVID-19 influence, etc. A digital euro could open a new horizon in the monetary policy, because of its versatile nature, where a digital euro could be designed with a possibility of interest bearing, by the utilization of which the ECB will be capable to impact the public demand on a digital euro. But the use of a digital euro in its meaning as a banknote under Article 128 (1) TFEU, as a tool of the ECB monetary policy is forbidden by law, because a digital euro issued under Article 128(1) TFEU will serve as the precondition for monetary police, but not a tool of the monetary policy, argumenta regarding that are mentioned below.

Starting from the systematic analysis of Article 127 (2) and 128(1) TFEU. Drafting patterns of provisions shows that law-makers placed the issuance of banknotes separately from basic tasks of monetary policy.¹²⁷ Because during the creation of the Maastricht Treaty firstly such function was listed with other basic tasks of monetary policy, but was amended and transferred to separate Article 128 TFEU.¹²⁸ These display the specific characteristic of banknote issuance as a core right of the ECB, which is stand out from the catalog of other tasks. Thus, the architecture of TFEU shows that issuance of currency to the public on the basis of article 128 (1) TFEU is not part of the instrument of monetary policy as mentioned in Article 127(2) TFEU.

The next argument is appealed to the functioning of the monetary policy following Article 127 (2) TFEU, where monetary transmission mechanisms must exist for its application. These monetary transmission mechanisms include stable counterparties in a stable market, a single currency, and effective means of disseminating monetary policy such as reserves and payment

¹²⁶ “Past and future of the ECB monetary policy”, European Central Bank| Eurosystem, Accessed 23 November 2021, <https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180504.en.html>.

¹²⁷ Van den Berg, *The Making of the Statute of the European System of Central Banks – An Application of Checks and Balances* (Amsterdam:Rozenberg Publishers, 2005), 338.

¹²⁸ Van den Berg, *The Making of the Statute of the European System of Central Banks – An Application of Checks and Balances* (Amsterdam:Rozenberg Publishers, 2005), 332-333.

infrastructures.¹²⁹ The object of Article 128(1) TFEU of the available ideal monetary object, provided by the issuance of banknote serves is an indispensable precondition for monetary transmission mechanisms, since the public use of issued banknotes is an essential precondition for conducting a monetary policy. In the scenario of the migration of cash, a digital euro adapted to the contemporary demand on the digitalization, will preserve the status quo of public continuous use of the ideal monetary object issued by the ECB, which is precondition for the transmission of the monetary policy of the ECB. A digital euro as an anchor, will ensure the singleness of the currency and will discipline and stabilize banks, which are the most essential counterparties in monetary policy operations, but cannot be used as a tool for monetary policy, since they are the precondition of monetary policy transmission.

Accordingly, the issuance of a digital euro under Article 128 (1) TFEU cannot be interpreted as the instruments of the tasks of the ECB under Article 127 (2) TFEU, since this is unacceptable in the current European Central Bank Law frameworks. The reason is based on the argumentation, that the issuance of a digital euro for the population based on Article 128 (1) TFEU is not part of the instrument monetary policy referred to in Article 127 (2) TFEU, but is the safeguard for existing cash transmission mechanisms as a precondition for singleness of the currency and stabilization of the banks, which are main counterparties in monetary policy operations. That is why, a digital euro issued under Article 128 (1) TFEU is an ideal monetary object, which serves as the precondition of monetary policy, so automatically cannot be the instrument of the monetary policy.

The third option is to issue a digital euro as an implied power of the ECB under Article 127 TFEU. The issuance of a digital euro with the functions that exceed those delivered by cash euro will violate Article 128 TFEU, however to fit the demand on a digital money, which performs additional powers, like negative interest rate feasibility or holding limitations, the solution needs to be found. Grünewald et al. proposes to issue a digital euro not in the sense of banknotes, but representing a new monetary object.¹³⁰ Such could be implemented on the base of implied ECB's power needed to perform its competence set in Article 127 TFEU.

The CJEU confesses the implied power of the EU institutions, when those powers are irreplaceable for the institution to perform tasks conferred on it by the constitutional frameworks. Such interpretation is mentioned in the case *Germany and others v Commission*, where the CJEU mentioned that "...it must be highlighted that where an article of the Treaty confers a specific task on the Commission it must be accepted, if that provision is not to be rendered wholly ineffective,

¹²⁹ Grünewald et al., "Digital Euro, Monetary Objects, and Price Stability: A Legal Analysis", *Journal of Financial Regulation* 38, (2021):9-16, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3839325.

¹³⁰ Grünewald et al., "The ECB and € e-banknotes", *Osgoode Legal Study Research Papers*, (2020):70-72, <https://ssrn.com/abstract=3671007>.

that it confers on the Commission necessarily and per se the powers which are indispensable in order to carry out that tasks...”.¹³¹ The ECB is authorized to fulfill its tasks by implying the explicit and implied powers to fulfill its tasks. If cash usage declines to the level, when it and does not perform its stabilizing effects, the conduct of monetary policy is obstructed. The issuance of a digital euro will become needed for the ECB perform its constitutional tasks under Article 127(2) TFEU, namely to define and implement the monetary policy of the Union.¹³² Consequently, the ECB has the implicit power to issue the digital euro in response to the possibility of cash outflow and the consequent failure to fulfill the ECB's tasks. However, performing implied powers, the ECB is bound by principle of proportionality as the general principles of the EU law. The principle of proportionality means that achieving the ECB's objectives, it cannot go beyond the necessity and appropriateness in order to achieve those objectives.¹³³ So that, the design functionality of a digital euro have to be not exceeding what is appropriate and necessary.

To summarize, the issuance of a digital euro must be under the ECB competence, otherwise the principle of conferral will be violated, with further detrimental consequences to the ECB and its bodies. The ECB's Law expressly does not provide such power, to avoid the complicated procedure of the Treaty amendment, the integration of it should be found in the interpretation of the ECB existing provisions. There are three possible options in that regard. The first is the treatment of the issuance of a digital euro as the issuance of banknotes under Article 128 (1) TFEU. Since it does not explicitly refer to tangible form of money, the drafters did not exclude the possibility of other forms of money and through the purposing approach did not have an intention to do so Article 128 (1) TFEU can be interpreted in a wide sense and integrate the issuance of a digital euro within its framework. Albeit, it provides limitations regarding the design of a digital euro, which must be equal to its cash counterpart. However, under Article 16 of the Statute even variable design tools of digital euro can be assumed if it is justified by the approved aim, but the future interpretation and clarification from the CJEU is needed as only it has the mandate to clarify the provisions of primary law. The second option of integration of issuance of a digital euro under Article 128 (1) TFEU as to fulfill tasks of the ECB provided in Article 127 (2) TFEU cannot be employed, because the issuance of a digital euro under Article 128(1) TFEU would be the indispensable precondition of the monetary policy, but not its tool. The third option is to issue a digital euro as an implied power of the ECB, meaning that a digital euro is not a banknote and not

¹³¹ “Germany and others v Commission, joined cases C-281, 283-285 and 287/85”, Eur-lex, para 28, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61985CJ0281>.

¹³² “Treaty on the Functioning of the European Union”, Euro-lex, Article 127, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

¹³³ “Gauweiler and others, Case C-62/14”, Curia, para 13, Accessed 23 November 2021, <https://curia.europa.eu/juris/document/document.jsf?jsessionid=49A7BFCBF18EF951E74E87DC576A67FD?text=&docid=165057&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=271968>.

fall under Article 128(1) TFEU, but serves as the tool of the ECB to preserve its performance of the constitutional task. In this case, a digital euro could obtain additional design options, which have to be needed and appropriate to achieve the ECB`s objects.

2.2. Monetary Law and a digital euro legal framework

The EU Monetary Law has emerged with the introduction of euro currency, as a field of law, which defines the currency in which a debt in the EU`s jurisdiction has to be paid. The Monetary Law governs the legal basis of the monetary value employment in the society, in the economy and in the legislation. The three main dimensions of the Monetary law includes: the determination of the currency and the currency unit with its subdivision, the determination of the value of the currency and the determination of the currency payment.¹³⁴ The core principle of the Monetary law is an absolute authority of the EU to establish each of the three elements across its jurisdiction.

The regulation of Monetary Law in EU is set in the primary law of EU- the TFEU, the Statue, a secondary law - Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro, Regulation (EC) No 1103/97 of 17 June 1997 on certain provisions relating to the introduction of the euro. The Regulation 974/98 highlight core principles of the Monetary Law in EU. Firstly, it stipulates the currency and the currency unit of the EU, which shall be a euro according to Article 2 of the Regulation 974/98, as well as, euro subdivision on 100 cents.¹³⁵ Those designation refers to economic function of money as a unite of account. Secondly, the Regulation 1103/97 in Article 2 determines the currency value, as it sets that all contracts shall be proceed in euro at the rate 1 for 1.¹³⁶ Thirdly, the Regulation 974/98 in Articles 10,11 governs that banknotes and coins issued by the ECB shall have the status of legal tender in the EU.¹³⁷ The legal tender status is an official establishment of the means of payment which is formally sanctioned as such by the EU. With the introduction of the TFEU, the last principle regarding the determination of the currency payment was established in a primary law via Article 128 TFEU, where banknotes and coins issued by the ECB and NCB are declared as the only such notes to have the status of

¹³⁴ Liber Amicorum AND Paolo Zamboni Gravelli, *Legal Aspect of the European System of Central Bank*, (Frankfurt am Maine: ECB, 2005): 236, Accessed 24 November 2021, <https://www.ecb.europa.eu/pub/pdf/other/legalaspectsescben.pdf>.

¹³⁵ "Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro", Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31998R0974>.

¹³⁶ "Council Regulation (EC) No 1103/97 of 17 June 1997 on certain provisions relating to the introduction of the euro", Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:31997R1103>.

¹³⁷ "Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro", Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31998R0974>.

legal tender in the EU.¹³⁸ The ECB claims that a digital euro will be a complementary means of payment in the EU, and will not constitute a new monetary unit and, thus, a digital euro will be expressed in the official monetary unit – euro currency. Therefore, a possibility to grant a digital euro as a means of payment denominated in euro currency a status of the EU legal tender should be examined.

Nowadays there is one legally and officially sanctioned means of payment in the EU as the legal tender – banknotes and coins denominated in euro currency. Legal tender status bestows the ability of euro currency to discharge monetary obligations. However, this does not preclude the other non-official means of payment, such as commercial bank's money, electronic money, to extinguish monetary obligations of debtor to creditor by their reciprocal agreement, when law does not forbid such. Those types of money do not obtain a status of legal tender according to the EU legislation. Nevertheless, they may be subjects of payment services for all kinds of transactions by choice of parties of such transactions within the Eurozone. The regulation of commercial banks' money is governed by Directive (EU) 2015/2366 of 25 November 2015 on payment services in the internal market and the regulation of an electronic money is stipulated in Directive 2009/110/EC of 11 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions. So, the legal tender status is not a mandatory property of means of payments, albeit, non-official means of payment in the long run are claims to receive officially issued banknotes and coins, if other is not contractually agreed by parties.

The legal tender status of money bestows them characteristics of trust-building effect, stability and the ability to ensure citizens' fundamental rights.¹³⁹ Such status has political and legal considerations. In the political dimension, the status of the EU's legal tender is protected by the ECB with the guarantee of its existence and usability, which prompts demand on such money. The legal tender status empowers a monetary union to exhaust monetary obligation, in other words by tendering a means of payment with a status of a legal tender a creditor, in face of the EU, discharge its monetary obligations to a debtor. Its legal importance is emphasized by the legal consequences followed from the use of money with a status of the legal tender, such as the mandatory acceptance of the jurisdiction of its legal tender means of payment; and the acceptance of it by the private parties in their transactions, if other was not contracted. So that, the possession of the status of legal tender could be recommended to a digital euro, since such status is followed by legal certainty in payment transactions as a default standard.

¹³⁸ "Treaty on the Functioning of the European Union", Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

¹³⁹ Yves Mersch, *The role of euro banknotes as legal tender*, (Frankfurt am Main: 4th Bargeldsymposium of the Deutsche Bundesbank, February 2018), <https://www.bis.org/review/r180220b.pdf>.

2.2.1. Concept and scope of the legal tender status. Court of Justice of the European Union ruling about the status of legal tender

The EU legislation referring to the matter of the legal tender status is scarce, even the meaning of the legal tender is not stipulated in the EU legislation. This creates a level of uncertainty in this field. The European Legal Tender Expert Group (hereinafter - ELTEG) in the Report of ELTEG of 2009, presents its research regarding the notion of a legal tender. According to that document the ELTEG made a conclusion, that a legal tender definition is understood in every Member State in a line with its own national distinct definition, thus the national laws govern the notion of a legal tender, which is based on historical, legal and tradition factors.¹⁴⁰ Apparently, they do not provide the uniform notion of a legal tender, but they figured out the three elements of it, which were letter transfer in a secondary law framework.

The scope and effects of legal tender of euro banknotes and coins could be founded in the non-binding legal acts of the EU- **Commission Recommendation 2010/191 from 22 March 2010 on the scope and effects of legal tender of euro banknotes and coins**. Such act according to Article 288 TFEU does not impose rights on which individuals have to rely, because of its non-binding effect, however it could provide a useful guidance for the interpretation of the relevant provisions of EU law and in this regard be considered by the CJEU.¹⁴¹ Recommendation 2010/191 provides three peculiarities of a legal tender, which are extracted from the Report of ELTEG of 2009:

- 1) duty to be accepted (unless explicitly agreed otherwise);
- 2) acceptance at full face value;
- 3) legal recognition as a means of discharge from payment obligations.¹⁴²

Those features are used to designate the concept and scope of the legal tender status in the EU.

Additionally, there are clarifications of the legal tender concept and its scope by the CJEU in **Dietrich and Häring v Rundfunk preliminary ruling** from 26 January 2021.¹⁴³ The question

¹⁴⁰ European Legal Tender Expert Group, *Report on the definition, scope and effects of legal tender of euro banknotes and coins*, (Brussels: ECB, January 2009): 3-5, https://ec.europa.eu/economy_finance/articles/euro/documents/elteg_en.pdf.

¹⁴¹ “Grimaldi V Fonds des maladies professionnelles, C-322/88”, Eur-lex, para7, 11 18, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A61988CJ0322;>

“Arcor AG & Co. KG V Bundesrepublik Deutschland, C-55/06”, Curia, para 94, Accessed 23 November 2021, <https://curia.europa.eu/juris/document/document.jsf?jsessionid=E69038F057CD59F64F0BE39C14211F5B?text=&docid=72072&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=482757>.

¹⁴² “Commission Recommendation of 22 March 2010 on the scope and effects of legal tender of euro banknotes and coins”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32010H0191>.

¹⁴³ “Johannes Dietrich and Norbert Häring v Hessischer Rundfunk, Cases C-422/19 and C-423/19”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62019CJ0422>.

of the case is addressed to the possibility of a MS to adopt limitations in the use of cash, hence the exclusion of one of a legal tender status feature – duty to be accepted. Therefore, the CJEU’s preliminary ruling sheds a light on the elements of the legal tender status, which can be deduced from it.

The dispute existed between two German citizens and the public television service of Hesse Hessischer Rundfunk, when the latter denied to accept the payment for the services provided in cash, because of its procedural provisions. Argumentation of the CJEU is based on a Monetary law of EU, which includes Article 128 (1) of the TFEU, Article 16 Statute, Recommendation 2010/191/EU and recital 19 with the conjunction with Articles 10, 11 Regulation 974/98 of 3 May 1998 on the introduction of the euro.

The CJEU denies to define the legal tender status according to the law and practice in each MS, which has adopted euro, as was proposed in the Report of ELTEG. The CJEU rules, that in case, when Article 128(1) TFEU does not make reference to the national law of the Member States for the determination of the meaning of “legal tender” referred to therein, that definition should be given by the EU law that must be given an autonomous and uniform interpretation throughout the European Union, which interpretation must take into account not only the wording of the provisions in which it appears but also the context of those provisions and the objective pursued by them.¹⁴⁴ Thus, the CJEU rejected understanding of the legal tender as an open concept and gives an autonomous and uniform interpretation of it. Such proposal is, also, supported by the Advocate General Pitruzzella, he explains that the definition could be given from the concept given in law.¹⁴⁵ Consequently, the definition of a legal tender could be extracted from Article 128(1) TFEU, where it says that the banknotes issued by the European Central Bank and the national central banks are the only notes, which possess the status of legal tender within the Union. The same provision is copied in the Statute in Article 16, where the Governing Council has a right to issue banknotes across the EU and issued by the ECB and national banks banknotes possess the status of EU’s legal tender.

The CJEU, in paragraph 45 of the preliminary ruling, provides the notion of the legal tender as “a means of payment denominated in a currency unit signifies, in its ordinary sense, that that means of payment cannot generally be refused in settlement of a debt denominated in the same

¹⁴⁴ Ibid para.45.

¹⁴⁵ “Opinion of A.G. Pitruzzella delivered on Joined Cases C422/19 & 423/19, Johannes Dietrich and Norbert Häring v Hessischer Rundfunk”, Eur-lex, para95, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62019CC0422>.

currency unit, at its full-face value, with the effect of discharging the debt.”¹⁴⁶ Also, the CJEU rules that the obligation to accept the legal tender is general in principle, but not absolute.¹⁴⁷

Addressing the issue of the case, the CJEU explains that the ECB has a conferral power in the area of monetary policy of the EU according to Article 3(1)(c) TFEU, that precludes MS to issue their own legislation in regard those competence. As far as, the TFEU does not provide the definition of monetary policy, it should include its objects and instruments, which are available to implementing the monetary policy,¹⁴⁸ so the exclusive power of the ECB comprises both the operational implementation and regulatory dimension.¹⁴⁹ The later guarantees the status of the euro as a single currency, because the singleness of the euro is a precondition for the effective conduct of the monetary policy.¹⁵⁰ The EU legislature lays down the measures necessary for the use of the euro as the single currency.¹⁵¹ Those powers confer the EU legislature exclusively to specify the legal rules governing the euro as the single currency with the status of legal tender. And MS have not competence to issue law about the legal tender status, even when the ECB does not exercise its exclusive competence.¹⁵²

Nevertheless, MS have competence about the organization of their public administration, which could include derogation from the obligation to accept cash payments from citizens by administration.¹⁵³ So that, MS can adopt legislation concerning the exercise of a competence that is the MSs` own, like the organisation of its public administration, but MS cannot adopt legislation, which govern the status of legal tender of euro banknotes, because this power is the ECB`s exclusive competence.

Then, the CJEU explains that in a light of the 19th recital of the Regulation No 974/98 and Article 10,11 of the Regulation No 974/98, the limitation on payments in cash, because of the public reasons, are not incompatible with the status of legal tender, under the condition that other lawful means for the settlement of monetary obligation is available.¹⁵⁴ Also, the principle of proportionality should be implied, ensuring that restrictions are proportionate to the public interest objective pursued.¹⁵⁵

Additionally, summarizing the given preliminary ruling interpretation, the CJEU provides five criteria that authorize the legal limitation on the obligatory acceptance of the legal tender:

¹⁴⁶ “Johannes Dietrich and Norbert Häring v Hessischer Rundfunk, Cases C-422/19 and C-423/19 “, Eur-lex, para.45, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62019CJ0422>.

¹⁴⁷ Ibid para 55.

¹⁴⁸ Ibid para 34.

¹⁴⁹ Ibid para 38.

¹⁵⁰ Ibid para 43.

¹⁵¹ Ibid para 50.

¹⁵² Ibid para 51-53.

¹⁵³ Ibid para 56.

¹⁵⁴ Ibid para 63,67

¹⁵⁵ Ibid para 68-70

- 1) the law does not set rule managing the status of a legal tender of such banknotes;
- 2) the law does not abolish general possibility to discharge monetary obligation in cash;
- 3) the law is adopted in public interests;
- 4) the limitation is proportionate and necessary to a public interest;
- 5) there is an available lawful means of payment.¹⁵⁶

The CJEU highlights that the national referring court is authorized to ascertain whether the implied limitation in the case observed are satisfy the above-mentioned criteria.¹⁵⁷ However, the CJEU provides its guidance. From its point of view, the public interest in the given case is to have cost-effectively services, which do not involve authorities in unreasonable expense impairing, and a limitation on cash payments is justified by such public interest. However, proportionality needs to be examined, namely whether there are legitimate alternative means of payment available to every customer who is responsible for paying radio and television license fees, in the absence of these, this would entail providing the option to pay in cash.

Thus, the preliminary ruling establishes that an element of legal tender -its acceptance as a principal obligation for the discharge of the payment obligation could be restricted in public interest reasoning.

Importantly, that the Advocate General Pitruzzella has mentioned the trend of economic digitalization with the emerge of new means of payments, which are non-physical forms of money, and even emphasize the possibility of introducing the CBDC, due to current trend on technological innovation, which could threaten monetary sovereignty of the EU in future.¹⁵⁸ And even more, he stipulates that Article 128(1) of the TFEU and any other EU rules does not prohibit to assign other types of the legal tender, alongside euro banknotes, that are not obligatorily tangible. Therefore, Pitruzzella concludes that the EU has a competence to identify the instruments, which have a status of legal tender, because of consistence with the need for flexibility that EU law must have in order to adapt to the changes brought about by technological progress.¹⁵⁹

The decision and the Advocate General opinion provide that the CJEU underscores the current downward trend in cash and allows cash payment to be limited in the event that alternative means of payment are available in the public interest or under contractual clauses. In doing so, the CJEU has abandoned one of the main characteristics of legal tender - its mandatory acceptance. Thus, the digital euro can become an alternative to cash. While the decision does not directly

¹⁵⁶ Ibid para 78.

¹⁵⁷ Ibid para 71.

¹⁵⁸ “Opinion of A.G. Pitruzzella delivered on Joined Cases C422/19 & 423/19, Johannes Dietrich and Norbert Häring v Hessischer Rundfunk,” Eur-lex, para 82, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62019CC0422>.

¹⁵⁹ Ibid para 96, ref 53.

protect the digital euro, however, since it was adopted in January 2021, following the ECB's Report on a digital euro, it is likely that the CJEU indirectly reacted to the creation of the digital euro concept. Thus, the CJEU indirectly supports the argument that the ECB could issue the digital euro as legal tender.

2.2.2. Conditions under which a digital euro could be granted the status of a legal tender

Fabio Panetta has recently announced that a digital euro probably will become legal tender in the EU jurisdictions.¹⁶⁰ The legal conditions under which a digital euro could be granted the status of legal tender should be examined.

From the primary EU law and the CJEU preliminary ruling, **a legal tender of the EU – are notes denominated in a currency unit signifies, in its ordinary sense, that that means of payment cannot generally be refused in settlement of a debt denominated in the same currency unit, at its full-face value, with the effect of discharging the debt, which are issued by the European Central Bank or the national central banks.** So, in order to fall under such definition, a digital euro should meet two conditions: who is an issuer of a digital euro and the denomination of a monetary object- digital euro in a currency unit -euro.

1. The public authority as the issuer of a digital euro. The possibility of a digital euro to obtain legal tender status depends on who is its issuer. Therefore, the digital euro's architecture and issuance model play role in the determining a legal tender status. Article 128(1) TFEU and Article 16 of the Statute explicitly mentions that the legal tender **should be issued by the ECB or NCBs.** That is why, a digital euro issued by the ECB or NCBs under Article 128(1) TFEU by definition falls in line with a legal tender, whereas the issuance of a digital euro by non-Eurosystem subjects, like commercial banks or other financial or non-financial institutions, is excluded from a legal tender status according to Article 128(1) TFEU. Moreover, the assign of the right to issue a digital euro with a status of a legal tender for non-Eurosystem subjects by the secondary legislation provisions will be prohibited under the primary law.¹⁶¹

So that, the issuance of a digital euro with the status of a legal tender has to be the act of public authorities – the ECB or NCBs, differently a digital euro issued by private actors – financial or non-financial institutions, could not be given the status of legal tender.

¹⁶⁰ Carolynn Look and Kati Pohjanpalo, “Digital Euro ‘Likely’ to Become Legal Tender, ECB’s Panetta Says”, Bloomberg, Accessed 24 November 2021, <https://www.bloomberg.com/news/articles/2021-11-09/digital-euro-likely-to-become-legal-tender-ecb-s-panetta-says>.

¹⁶¹ “Opinion of A.G. Pitruzzella delivered on Joined Cases C422/19 & 423/19, Johannes Dietrich and Norbert Häring v Hessischer Rundfunk,” Eur-lex, para 94, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62019CC0422>.

2. The denomination of a legal tender in the euro currency unit. The wording and aim of Article 128(1) TFEU and its counterparts provisions mentioned in other Monetary Law documents, such as in Article 16 of the Statute “...the provision that sets those banknotes issued by the ECB and the NCBs shall be the only such notes to have the status of legal tender within the Union”¹⁶²; and Article 10 of the Regulation 974/98 mentions that “...these banknotes denominated in euro shall be the only banknotes which have the status of legal tender in all Member States”¹⁶³, refers to a **legal tender status to attribute the legal tender status to the euro**, which have to be **the only single currency across the EU**. In other words, a legal tender status could be given to any monetary object denominated in euro and issued by the ECB or NCBs according to Article 128(1) TFEU.

Subsequently, a digital euro, which is issued by the ECB or NCBs and is qualified as a banknote under Article 128(1) TFEU, receive a legal tender status by the definition. The question whether a digital euro could be attributed to banknotes under Article 128(1) TFEU is analyzed in previous section. It is suggested that the broad interpretation of banknote under Article 128(1) have to be implied, as based on the functional purpose of banknotes, namely as monetary object (either tangible or intangible), which serves as the risk-free means of payment and store of value accessible to general public. Thereafter, a digital euro falls under the scope of banknotes according to Article 128(1) of the TFEU, albeit in such scenario the design of a digital euro would be limited to those functional capacities assigned to cash, so interest-bearing digital euro cannot be a legal tender under Article 128(1) TFEU.

As concerning a digital euro as a monetary object which is not a banknote under Article 128(1) TFEU, Grunewald et al. suggest that the wording of Article 128(1) TFEU does not preclude the assignment of a legal tender status to a digital euro, which is not qualified as banknotes.¹⁶⁴ As, a digital euro, even without its qualifying as banknote in a meaning of Article 128(1) TFEU, but as another monetary object, would be denominated in euro. Those digital euro characteristic is highlighted in the Report on a digital euro as the core principles of a digital euro as an electronic equivalent of euro cash and its convertibility at par with euro cash.¹⁶⁵ Thus, a digital euro is the same kind of monetary union denominated in euro as cash euro is and nothing in the wording of Article 128(1) TFEU indicates that legal tender status is excluded for a token-based monetary

¹⁶² “Protocol #4, the Statute of the European System of Central Banks, and of the European Central Bank”, Euro-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12016E%2FPRO%2F04>.

¹⁶³ “Council Regulation (EC) No 974/98 of 3 May 1998 on the introduction of the euro”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31998R0974>.

¹⁶⁴ Corinne Zellweger-Gutknecht, Benjamin Geva, Seraina Neva Grunewald, “The ECB and € e-banknotes”, (*Osgoode Legal Study Research Papers*, 2020), 72-74, <https://ssrn.com/abstract=3671007>.

¹⁶⁵ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), Accessed 22 November, 2021, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

object issued by the ECB or NCBs. Subsequently, the primary law does not preclude the assignment of a legal tender status of a digital euro, such status could be granted by an act of secondary law, with the condition that a digital euro would be issued by the ECB or NCB.

Last but not the least, if a digital euro is assigned with a status of a legal tender, a general public should be technically equipped to have an access to the utilization of a digital euro. Thus, the pressing **issue of equal access emerges**. In situation when customers and merchants do not have special equipment to use digital euro, they will lose a possibility to employ it as a legal tender. So, to operationalize legal tender status, it would require the EU imposing on individuals the acquisition of the technical infrastructure to hold and transfer this form of legal tender. Such, treatment might raise political and legal challenges concerning financial inclusion and comprising proportionality, fairness and other legal concerns. What is more, the need for accelerating the proportionality is emphasized in *Dietrich and Häring v Rundfunk* preliminary ruling.¹⁶⁶ So, granting a digital euro with a status of legal tender will require technical equipment of population in order to guarantee their inclusion, which might be efficiently hard to achieve.

To summarize, according to the definition of the legal tender status, which is extracted from the wording of Article 128(1) TFEU, a digital euro qualified as a banknote according to article 128(1) TFEU, issued by the ECB or NCBs, will receive the status of a legal tender by definition. A digital euro which is a monetary object without its qualification as a banknote according to article 128(1) TFEU, issued by the ECB or NCBs possibly could obtain the status of a legal tender based on secondary law, if later will be issued for this purpose. A digital euro issued by non-Eurosystem entities, such as commercial banks or another financial or non-financial institutions, cannot be given the status of legal tender. The legal tender status of a digital euro would grant characteristics of trust-building effect, stability, and the ability to ensure citizens' fundamental rights, which would trigger to spur demand in a currency i.e. network effect. However, there is a substantial obstacle regarding the operation of a digital euro as the legal tender in the EU, which is the public technical equipment inclusion in this process, which might be efficiently hard and costly to fulfill. To avoid that, a digital euro could function without the status of legal tender i.q. other non-official means of payment, such as commercial bank's money and electronic money do. Even though a digital euro would not obtain a status of legal tender, it still may be subject to payment services for all kinds of transactions by choice of parties of such transactions within the Eurozone. To this extend, the legal position of a non-legal tender digital euro would have to be clarified in alternative ways, specifically in the secondary law ruling a digital euro.

¹⁶⁶ “*Johannes Dietrich and Norbert Häring v Hessischer Rundfunk*, Cases C-422/19 and C-423/19“, Eur-lex, para.77, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62019CJ0422>.

2.3. Legal frameworks of a digital euro in AML/CFT legislative requirements

The ECB claims, that a digital euro would still be a euro: like banknotes but digital.¹⁶⁷ In the same vein, the ECB declares that a digital euro should allow citizens to proceed to make payments much as they do today with cash.¹⁶⁸ A generally known cash characteristic is anonymity since transactions with cash do not identify any data about a payer to a payee. Also, there is clear demand on a digital euro with a privacy characteristic, which is observed in the Report on a public consultation. From its questionnaire, the respondents want most from a digital euro is privacy, 43% chosen it from other 9 options.¹⁶⁹

Moreover, there are human rights framework, which enforce the fixing of privacy to a digital euro. In particular, Articles 8 of the Convention for the Protection of Human Rights and Fundamental Freedoms (hereinafter – ECHR), where the right to respect for private and family life is recognized,¹⁷⁰ and Article 7 of the Charter of Fundamental Rights of the European Union protects private and family life and Article 8 of the Charter, which settles the protection of personal data.¹⁷¹

Article 8 of the ECHR and Article 7 of the Charter have the same scope of application. Their provisions are referred to the respect for private life, which includes all areas of a person's life that do not affect society as a whole. The main objective of them is determined by individual's legitimate expectations of privacy. Article 8 of the Charter addresses the protection of personal data, whereby the collect, store, share or process of individual's private information by either public or private parties have to be protected against its effect on individual's rights. Consequently, the privacy is considered as core of data protection.

The reason for such assertive protection of privacy regarding payments transaction is the fact that by analysing them, third parties can reveal a lot about individuals financial and personal life and can utilize such data for various aims, particularly to better understand daily customer's operations, make more informed business decisions, etc. As it was mentioned earlier, human right law protects people from the exploitation of their private data against all business purposes. This

¹⁶⁷ “A digital euro”, European Central Bank[Eurosystem, Accessed 25 November 2021, https://www.ecb.europa.eu/paym/digital_euro/html/index.en.html.

¹⁶⁸ European Central Bank, *Report on a digital euro*, (Frankfurt am Main: ECB, October 2020), p. 11, Accessed 22 November 2021, https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf.

¹⁶⁹ European Central Bank, *Eurosystem report on the public consultation on a digital euro*, (Frankfurt am Main: ECB, April 2021), Accessed 22 November, 2021, https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf#page=11.

¹⁷⁰ “Convention for the Protection of Human Rights and Fundamental Freedoms”, ECHR, Accessed 25 November 2021, https://www.echr.coe.int/documents/convention_eng.pdf.

¹⁷¹ “Charter of Fundamental Rights of the European Union”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012P%2FTXT>.

justifies the request for digital euro with a privacy characteristic. What is more, the EU has a comprehensive legislation on the data protection, which comprise Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, targeting to facilitate people`s control and rights over their personal data across the EU and outside its borders.¹⁷²

The flip side is the fact that without sufficient control of anonymous payments, it could easily facilitate illicit activities. The illustrative example is an activity with a cryptocurrency, when one-quarter of all bitcoin`s users and close to one-half of transactions are connected with illegal activity, equating to around 27 million market participants with an illegal turnover of around \$76 billion per year in recent times.¹⁷³ This happens due to the anonymity of bitcoin transactions, so there is a tendency, that criminals adapt and use developing technologies in relation to electronic money. And without legal control over cryptocurrency, it is now linked to illegal trading, money laundering, fraud, and enrichment schemes. Apparently, there is the threat provided by anonymizing electronic money, which have to be prevented.

Moreover, nowadays the total anonymity in legal regime of money is vanished. As even transactions with cash are restricted by law precisely because of its anonymity characteristic. Merchants and financial intermediaries have mandatory duty to clarify and, under specific circumstances, report the economic background of a transaction¹⁷⁴, whereas regular cash holders are subject to tax self- declaration.¹⁷⁵ Also, as an example of the limitation on privacy with cash, according to Article 11 of the Directive 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, the large cash payments, which exceed EUR15 000, are banned, because of the rule, that they must be examined through the customer`s due diligence requirements.¹⁷⁶ What is more, the new Commission proposal to

¹⁷² “Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/eli/reg/2016/679/oj>.

¹⁷³ Foley , Jonathan R. Karlsen , Talis J. Putnin, “Sex, Drugs, and Bitcoin: How Much Illegal Activity Is Financed through Cryptocurrencies?”, *Oxford University Press Studies*, (2019): 1826, <https://www.gwern.net/docs/silk-road/2019-foley.pdf>.

¹⁷⁴ “Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU”, Eur-lex, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L0843>; “Regulation (EU) 2015/847 of the European Parliament and of the Council of 20 May 2015 on information accompanying transfers of funds and repealing Regulation (EC) No 1781/2006”, Eur-lex, Accessed 25 November 2021, Article 4, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32015R0847>.

¹⁷⁵ “Regulation (EU) 2018/1672 of the European Parliament and of the Council of 23 October 2018 on controls on cash entering or leaving the Union and repealing Regulation (EC) No 1889/2005”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32018R1672>.

¹⁷⁶ “Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European

strengthen the EU's AML/CFT rules consists of the lower threshold for the large cash payments in EUR 10 000 limitation.¹⁷⁷ Subsequently, cash turns out in the peculiar situation, whereby *de facto* it still delivers its holder with full privacy, but in legal consideration privacy has been reduced by derogatory legal frameworks.

What is more, the electronic payments are traceable as well. They are mandatory tracking according to the AML/CFT law. Legal requirements include Know Your Customer and Customer due diligence procedures, which reveals risks and threats during the customer account opening stage, within their identification and verification; detection of suspicious customer's transactions via electronic means of payments.

Also, there is an evidence that society agrees with the need of the prevention of illegal activities in terms of a digital euro functioning.¹⁷⁸ The part of respondents agrees that intermediaries should be allowed to apply AML/CFT requirements, another part agrees to initial identification of users in this aim, also, they suggest that blockchain technologies, such as zero-knowledge proof or authentication measures, are capable to provide know your customer rules with a level of privacy protection. That, hopefully, shows people's consciousness of the importance of prevention of illicit activities.

As the result, the substantial part of payments has transferred to be audited for the purposes of combating illegal activities, which is not contested at principal, and require the proceeding of AML/CFT prevention activities.

2.3.1. Technical and legal solutions on how to preserve the balance between privacy and AML/CFT requirements

A digital euro needs to be compliant with AML/CFT regulations. AML/CFT requirements interfere with privacy, hence ruling out anonymous payments. Nevertheless, the balance between the interests of the digital euro customers and the aim of AML/CFT regulations has to be found, with the granting to the digital euro customers privacy to some extent.

Parliament and of the Council and Commission Directive 2006/70/EC", Eur-lex, Article 11, Accessed 25 November 2021, , <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L0849>.

¹⁷⁷ "Proposal for a Directive of the European Parliament and the Council on the mechanisms to be put in place by the Member States for the prevention of the use of the financial system for the purposes of money laundering or terrorist financing and repealing Directive (EU) 2015/849", Eur-lex, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021PC0423>.

¹⁷⁸ European Central Bank, *Eurosystem report on the public consultation on a digital euro*, (Frankfurt am Main: ECB, April 2021), Accessed 22 November 2021, p.4, 18-19. https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_consultation_on_a_digital_euro~539fa8cd8d.en.pdf#page=11.

To find the balance, it seems appropriate for a digital euro not to be designed in a completely anonymous way, but to repeat the status quo of cash through a digital euro's technical design.¹⁷⁹ To this extent, the Eurosystem experts adopted a solution, whereby transactions above a certain threshold can be monitored for illicit activities, while the limited sharing of information is maintained for transactions below.¹⁸⁰ Intermediaries will only know that a low value transaction has been made or received, but not know the identity of the counterparty involved in the transaction. Consequently, intermediaries will be unable to find out the purpose of the payment made or received for a low value transaction. Such proposal, also, was mentioned by Fabio Panetta, where he said that for very small amounts, we could permit really anonymous payments, but in general, confidentiality and privacy are different from anonymity.¹⁸¹ Also, he says that the involvement of the central bank in digital payments will reflect in a privacy better protection, because the ECB is not interested in commercial storing, analyzing and monetising the data of users as private companies do.¹⁸²

Additionally, it has to be ensured that the mere holding of a digital euro, regardless of thresholds, preserves the privacy of the holder, when only legislation specifies under what circumstances private information could be used. The data generated from the transactions must be restricted to information needed for compliance with AML/CFT requirements, under data minimization and data retention policies. It is possible that the EU could legally prohibit digital euro intermediaries from storing or transmitting transaction data related to the digital euro. Alternatively, this prohibition could be technically allowed. To find a technical solution, the members of the ECB and the Bank of Japan have provided researches. They figured out various solutions on how to balance the confidentiality and auditability of payments in distributed ledger environment, namely: segregation information about payments made and obtained by individual users; the transfer of such information in a hidden form through cryptographic techniques that make the details of a transaction not interpretable; and creating "noise" in the data that users and intermediaries exchange.¹⁸³ Those technical solutions would help to guarantee that customers' private information is incapable to be processed by private parties' intermediaries.

¹⁷⁹ Claudio Borio, et al., *BIS Quarterly Review March 2020 International banking and financial market developments*, (ISSN 1683-013X: BIS, 2020), https://www.bis.org/publ/qtrpdf/r_qt2003.pdf.

¹⁸⁰ ECB, "Exploring anonymity in central bank digital currencies", (In Focus No 4: ECB, 2019), <https://www.ecb.europa.eu/paym/intro/publications/pdf/ecb.mipinfocus191217.en.pdf>.

¹⁸¹ "Preparing for the euro's digital future", European Central Bank| Eurosystem, Accessed 25 November 2021, <https://www.ecb.europa.eu/press/blog/date/2021/html/ecb.blog210714~6bfc156386.en.html>.

¹⁸² Ibid.

¹⁸³ ECB and Bank of Japan, "Balancing confidentiality and auditability in a distributed ledger environment", (Frankfurt am Main, Tokyo: Project Stella, February 2020), <https://www.ecb.europa.eu/paym/intro/publications/pdf/ecb.miptopical200212.en.pdf>.

Experiments on the technical feasibility of a privacy of a digital euro show that from the technological perspective privacy model for a digital euro is possible.¹⁸⁴ From the legal side, mentioned technical tools could be used to proceed AML/CFT auditability with the maintaining the user's confidentiality. Also, as it was already mentioned, a solution of the equilibration of the privacy of a digital euro and AML/CFT requirements, could be found in hybrid solution, where the low value transactions are not identified and verified, but high value transaction fall under AML/CFT legislation.

A digital euro has to be insert in a robust EU'S legislation of AML/CFT. It includes **Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing; Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing; Regulation (EU) 2015/847 on information on the payer accompanying transfers of funds – makes fund transfers more transparent, thereby helping law enforcement authorities to track down terrorists and criminals.** Directives and Regulation are based on the 2012 recommendations of the Financial Action Task Force (hereinafter – FATF).

Thus, a digital euro shall be subject to the same AML/CFT requirements as all other electronic payments, but with a digital euro technical design solution. In particular, an activities with a digital euro should be conducted with a prohibition of anonymous accounts, which implies customer due diligence requirements identifying and verifying customer identity by his/ hers documents, identifying the beneficial owner, conducting ongoing monitoring of the business relationship to ensure that the transactions being conducted are consistent with the obliged entity's knowledge of the customer ensuring that the documents, data or information held are kept up-to-date;¹⁸⁵ reporting regarding suspicious transactions, namely informing the Financial Intelligence Units, when the obliged entity knows, suspects or has reasonable grounds to suspect that funds, regardless of the amount involved, are the proceeds of criminal activity or are related to terrorist financing.¹⁸⁶ Also, payment service provider of a digital euro holder shall ensure the traceability

¹⁸⁴ European Central Bank, *Digital euro experimentation scope and key learnings*, (Frankfurt am Main: ECB, 2021), 5-6, Accessed 22 November 2021, <https://www.ecb.europa.eu/pub/pdf/other/ecb.digitaleuroscopekeylearnings202107~564d89045e.en.pdf>.

¹⁸⁵ “Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European Parliament and of the Council and Commission Directive 2006/70/EC”, Eur-lex, Article 10,13, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L0849>.

¹⁸⁶ “Directive (EU) 2015/849 of the European Parliament and of the Council of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, amending Regulation (EU) No 648/2012 of the European Parliament and of the Council, and repealing Directive 2005/60/EC of the European

of payment transactions, by accompanied transfer of a digital euro with the specific information mentioned in the Regulation 2015/847 in regard payer and payee.¹⁸⁷

The potential AML/CFT strategy with a digital euro could be similar to that for the other digital currencies, such as electronic money and virtual money. Like, the most recent Directive 2018/843 expands the scope of EU's AML/CFT law to a virtual currency, as a means of payment, certain level anonymity of which could be used for illicit activities to conceal money transactions. The Directive 2018/843 lifts the limit of virtual currency anonymity functioning when the customers use their prepaid instrument directly in the shop for a transaction amount of which exceeds EUR 150; when customers carry out an online transaction with a prepaid instruments for the amount higher than EUR 50.¹⁸⁸ Additionally, the providers of a virtual currencies are included in the list of subjects, who are obliged to identify customers and report in regard the suspicious activities they performed to the Financial Intelligence Units.

Similarly, to the insertion of a virtual currency in the scope of the AML/CFT legislation, a digital euro has to be added there, this would require updating the text of these Directives and Regulations. For example, Article 2 of the Directive 2015/849 should be amended by the list of entities who will be engaged in providing a payments services of a digital euro, in Article 3 Directive 2015/849 should be added with the definition of a digital euro as an electronic form of money issued by the ECB or NCBs and accessible to the general public, or it could be linked with the specified legislation that will define the notion and the scope of a digital euro, also this Article may be added with another terms related to a digital euro functionalization; in Article 11 Directive 2015/849 should be additional option added "when establishing an digital euro possessing relationship".

In the Regulation 2015/847 further amendments, in order to add under its provisions, the regulation of a digital euro, should be added. To expand the definitions of "funds" with a digital euro category mentioned in Article 3, which links it with the Directive 2007/64/EC, where it is limited to banknotes and coins, scriptural money or electronic money as defined in point (2) of Article 2 of Directive 2009/110/EC. Additionally, since the Directive 2007/64/EC is no longer in force, and the valid notion of "funds" is now mentioned in the Directive (EU) 2015/2366 of the

Parliament and of the Council and Commission Directive 2006/70/EC", Eur-lex, Article 33, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L0849>.

¹⁸⁷ "Regulation (EU) 2015/847 of the European Parliament and of the Council of 20 May 2015 on information accompanying transfers of funds and repealing Regulation (EC) No 1781/2006", Eur-lex, Article 4, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32015R0847>.

¹⁸⁸ "Directive (EU) 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, and amending Directives 2009/138/EC and 2013/36/EU", Eur-lex, Accessed 25 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32018L0843>.

European Parliament and of the Council of 25 November 2015 on payment services in the internal market, it is this document that should be changed by adding a digital euro category to the definition of funds in its Article 4 (25).

Important is to include the derogation provisions about low-value transactions in the Directive 2015/849 and Regulation 2015/847, which will set the threshold a transaction with a digital euro would be excluded from the scope of AML/CFT requirements. The occurrent threshold for a digital euro low-value transactions have to be specified by law-makers by accessing risks and benefits of a digital euro specifications.

Interestingly to point out, that a digital euro could serve as a new opportunity for old or new treats regarding AML/CFT. Programmable feature of a digital euro could become a tool with which money that are transferred to terrorist or sanctioned individuals could be programed to not be exploited by them, which will open new horizons in the area of fighting illicit activities.¹⁸⁹ The emerge of digital money will allow authorities to track, race, and even seize assets, so that the illicit transfer of money will be reduced. Such opportunity innovation was stressed by FATF as well. FATF emphasizes, that new technologies can help the regulation and supervision to cowork on the AML/CFT standards.¹⁹⁰ As they can facilitate data collection, processing and analysis and help actors identify and manage money laundering and terrorist financing risks more effectively and closer to real time. Faster payments and transactions, more accurate identification systems, monitoring, record keeping and information sharing between competent authorities and regulated entities also offer advantages.¹⁹¹ According to FATF the new technologies, such as public blockchains, digital identifying solutions, natural language processing, artificial intelligence and machine learning, can provide automagical monitoring, processing and analyzing suspicious transactions and other illicit activity, distinguish it from normal real-time activity, while reducing the need for initial direct human control, also, could generate more accurate and complete assessments of customer`s due diligence that can be updated to account for new and emerging threats in real time.

To summarize, privacy cannot come at the expense of security. A digital euro cannot be designed in a completely anonymous way, but its technical design could help to replace anonymity and traceability with confidentiality and auditability. In particular, the hybrid solution could be applied. It means that low-value transactions would be monitored for illicit activities, with the

¹⁸⁹ Tim Cooper, "Central Digital Currencies Create Risks, But Could Crush Crime", AML Right Source, Accessed 25 November 2021, <https://www.amlrightsource.com/news/central-digital-currencies-create-risks-but-could-crush-crime>.

¹⁹⁰ FATF, *Opportunities and Challenges of New Technologies for AML/CFT*, (Paris: FATF, 2021), <https://www.fatf-gafi.org/publications/fatfrecommendations/documents/opportunities-challenges-newtechnologies-aml-cft.html>.

¹⁹¹ Ibid p. 5.

limited sharing of information only to install the correspondence to the threshold, whereas high-value transactions would be subject to the EU's AML/CFT requirements, but only to the extent of data monitoring restricted to information needed for compliance with AML/CFT requirements, under data minimization and data retention policies, which is guaranteed either by law provisions or by technical solutions or simultaneously. For this, the amendments to the Directive 2015/849 and the Regulation 2015/847 have to be made with the clauses concerning a digital euro. Moreover, a digital euro could in the future introduce new ways of dealing with the AML/CFT.

2.4. Economic Law and the freedom of banks to conduct a business

The introduction of the digital euro would help the Eurosystem to solve several important problems. Including the facilitation of the digital economy, the solution of the problem arising from the cash decline, the maintenance of the monetary sovereign from the dominant non-European payments providers and private electronic money solutions, threatening to overflowing the monetary system of the EU. However, with addressing those problems by the possible launching of the ECB's CBDC – digital euro, as the cheap, secure, riskless, efficient liability of the ECB available for retail payments for the general public, other possible risks arise, that adversely affect the overall financial system stability, in particular the negative effect of a digital euro on current banking business activities and the unpredictable consequences triggered by it. The ECB should find a solution to avoid destabilization effect on the banking system stability. A digital euro should be secure, easy to access and use, and adapted to the general public while respecting existing banking and payment systems.

As Fabio Panetta mentioned, the paradoxical too successful effect of a digital euro could be detrimental, as it will cause the structural disintermediation with its effect on the banking system.¹⁹² A digital money could be treated by customers as the substitution for their bank's deposits, as digital euro's advantageous features could prompt people to transfer large amounts of deposits from commercial banks to the ECB.¹⁹³ The EU banking system is based on the deposits, and the decline in the number of bank deposits will cause negative effect on the Liquidity Coverage Ratio and the Net Stable Funding Ratio of banks. Those impact will lead to the reduction of bank's

¹⁹² "Evolution or revolution? The impact of a digital euro on the financial system", European Central Bank| Eurosystem, Accessed 24 November 2021, <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp210210~a1665d3188.en.html>.

¹⁹³ Committee on Payments and Market Infrastructures, *Central bank digital currencies*, (ISBN 978-92-9259-143-4: BIS, March 2018):11, <https://www.bis.org/cpmi/publ/d174.pdf>.

related revenue and customer data.¹⁹⁴ Such will lead to the commercial bank's lower profitability with the less stable and more costly funding. This shortening of the banking sector's balance sheet is called as "disintermediation". And the disintermediation could lead to the situation, when commercial banks will be constrained to provide lower level of lending with their increased rates, which will affect the entire financing of the economy system. However, the exact outcomes of the disintermediation are unknown, as there is no jurisdiction that already launched its CBDC.

In fact, as alternative banks will be induced to find another funding solutions to address possible funding deficit, the way probably will be fined in the referring to the long-term the ECB's funding. They need to be installed to compensate: temporary top losses that may arise in crisis situations, and constant loss of funds on bank deposits.¹⁹⁵ The ECB will be responsible to organize long-term funding in a stable form, and as cheap as retail deposits for banks are. In such situation, the ECB will take on an even larger role in the financial system. With the current wide range of ECB powers, such as controlling interest rates on large amounts of loans and bank reserves, and further managing the yield curve when buying significant assets, the ECB plays a substantial role in financial system. The added power to influence on lending capacity, lending sectors and rate setting in the system, with the introduction of a digital euro, would profoundly increase the ECB role. And this, in turn, casts doubt on the ECB's compliance with the EU legislation frameworks, since the centralized allocation of credit by the ECB will put the ECB in breach of Article 127(1) TFEU.

According to Article 127(1) TFEU, the ECB is obliged to act respecting **the principle of an open market economy with free competition**, favoring an efficient allocation of resources, and in compliance with the principles set out in Article 119 TFEU.¹⁹⁶ This Article mentions key principle of the EU Economic Law. The EU Economic Law covers dimensions of the common market, the economic and monetary union and several common economic policies of the EU. Where the common market is an economic environment, where the fair rivalry exists, thus prices for goods and services are determined by the shifts in supply and demand, with limit intervention of public bodies in its case, only in public interests reasoning. Like in the banking sector, when the activities of banks cannot be totally free and needs state control based on political reasons.

¹⁹⁴ European Banking Federation, "EBF contribution to the ongoing debate on a Central Bank Digital Euro", (Frankfurt am Mein: EBF, March 2021): 2-3, https://www.ebf.eu/wp-content/uploads/2021/06/EBF_045159-EBF-Considerations-on-Digital-Euro-2-Impact-on-Bank-Funding.pdf.

¹⁹⁵ European Banking Federation, "EBF contribution to the ongoing debate on a Central Bank Digital Euro", (EBF_045159: EBF, March 2021): 4, https://www.ebf.eu/wp-content/uploads/2021/06/EBF_045159-EBF-Considerations-on-Digital-Euro-2-Impact-on-Bank-Funding.pdf.

¹⁹⁶ "Treaty on European Union", Eur-lex, Accessed 24 November 2021: Article 127, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012M%2FTXT>; "Treaty on the Functioning of the European Union", Euro-lex, Article 119, Accessed 23 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT>.

However, still banking sector needs the competition abundance, arises as a result of a contest between suppliers.

The EU establishes its freedoms: free movement of goods (arts. 30, 34, 100 TFEU), capital, services (arts. 57–62 TFEU) and persons (arts. 45, 49, 54 TFEU), however the EU does not expressly constitute the freedom of market economy in its legislation. Nevertheless, Article 3 (3) Treaty of the European Union (hereinafter -TEU) sets that EU installs an internal market and Article 119 (1) TFEU mentions that economic policy is based on the internal market and the monetary policy should be conducted with the principle of an open market economy with free competition.¹⁹⁷ Those fundamental freedom is explicitly governed in **Article 16 Charter of Fundamental Rights of the European Union** (hereinafter -Charter), where it **enshrines the rule to conduct business with a principle of an open market economy with free competition.**¹⁹⁸

The freedom to conduct business could be impaired with the introduction of a digital euro, since commercial banks could potentially lose their market power in the business of providing deposits, which could be substituted by a digital euro. That freedom is fundamental under the practice of the CJEU, the scope of which is disclosed in the case *UPC Telekabel Wien GmbH v Constantin Film Verleih GmbH, Wega Filmproduktionsgesellschaft mbH*, where “...the right of every person and entity to run a profit-seeking activity without being discriminated or imposed disproportionate restrictions from the EU institutions or MS authorities is interpreted.”¹⁹⁹ The interpretation of the freedom to conduct business consolidates the two aspects - freedom to contract against public interference and freedom to exercise an economic or commercial activity. However, that freedom is not absolute right, it could be limited under Article 52 (1) of the Charter “...by reasons of the general interest and the protection of the rights and freedoms of others.”²⁰⁰

Mentioned constitutional provisions impose external restrictions on the action of the ECB. The disintermediation of commercial banks, because of the introduction of a digital euro, which because of its advantageous features would become a substitute for banks deposits, could prescribe the distortion of competition from the ECB. Consequently, the ECB should refrain from the policy that would unreasonably disrupt the normal functioning of markets or unreasonably restrict

¹⁹⁷ Ibid Article 3.

¹⁹⁸ “Charter of Fundamental Rights of the European Union”, Eur-lex, Article 16, Accessed 21 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012P%2FTXT>.

¹⁹⁹ “*UPC Telekabel Wien GmbH v Constantin Film Verleih GmbH, Wega Filmproduktionsgesellschaft mbH*, Case C-314/12”, Curia, para 47, Accessed 24 November 2021, <https://curia.europa.eu/juris/document/document.jsf?jsessionid=63DF0B86414876D1A0CC04ECFE7AE6B2?text=&docid=149924&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=1059126>.

²⁰⁰ “Charter of Fundamental Rights of the European Union”, Eur-lex, Article 52, Accessed 21 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012P%2FTXT>.

competition.²⁰¹ All of this justifies, that, it is significantly important to the ECB to refrain from the distortion of competition in the banking sector.

2.4.1 Solutions of the ECB on how to avoid disintermediation of commercial banks and their legal considerations

The ECB provides their conceptual solutions to a digital euro to appear as an innovative and efficient means of payment, but not become an investment tool with the substitution of commercial banks deposits and further disrupt bank`s business conduct with a principle of an open market economy with free competition and financial stability. The volume of the disintermediation will be lower if the digital euro has less convenience and functionality compared to commercial bank`s deposits for the purpose of using it as a store of value. The ECB furnishes two design variants of a digital euro in this regard.

The first one is limits of an amount of a digital euro for one customer, which means that customers can not possess that amount of a digital euro, which exceeds the established threshold. Nowadays the proposal for an appropriate threshold above which customers can not possess a digital euro is EUR 3000. This figure is based on the average amount of cash held by an ordinary European and on average EU income of people across the EU. The European Saving Banking Group argues that that threshold is too big and should be reduced, because still give possibility to the excessive accumulation of liquidity in accounts or wallets of a digital euro, and thus will still cause a massive withdrawal from banks, facilitated by the digital euro, which can affect the transmission of monetary policy through credit channel, as well as raise problems of financial stability.²⁰² They suggest to lower it to the maximum of €1,500 per person, according to their analysis of monthly salaries and the amount of cash that citizens in the euro area use monthly for transactional purposes.²⁰³

The second variant is to penalize by applying negative interest rate holdings of a digital euro, which exceed a threshold. Pursuant to this proposal, the amount of a digital euro up to the threshold will never be remunerated and will possess zero interest rate, while the amount above the threshold will be subject to a negative interest rate, which will be set by the ECB and

²⁰¹ Michael Ioannidis et al., *The mandate of the ECB: Legal considerations in the ECB's monetary policy strategy review*, (Occasional Paper Series No 276: ECB, September 2021): 27-28, <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op276~3c53a6755d.en.pdf>.

²⁰² European Saving Banking Group, *Bank funding, caps to holdings, competition, user perspective, cross-border payments, and a selection of use cases*, (Brussels: ESBG, June 2021): 5, <https://www.wsbi-esbg.org/SiteCollectionDocuments/ESBG%20high-level%20paper%20on%20a%20digital%20euro%20July%202021.pdf>.

can be changed in crisis situations. From the ECB's point of view, such measures would prevent the digital euro from being permanently used as a form of investment and would preserve the role of commercial banks as deposit providers and their intermediary function, thereby preventing financial stability in general.

In addition, the preference of a digital euro supply has to be made in the solution of the models in which the ECB merely provides the core supervisory function and a minimum necessary functionality for payments infrastructure. The ECB claims that it does not intend to be in competition with the activities of commercial banks, but it struggles to cooperate with them within the framework of a two-tier digital euro distribution system, where external front-end services of the digital euro will be provided by authorized intermediaries. Since maintaining the current intermediary role of commercial banks is beneficial to the ECB from the point of view of: no need to create infrastructure for the ECB from scratch; using the existing experience in the provision of payment services created by banks, where they already have a system of customers onboarding, monitoring AML/CFT, providing customer support, administrative management, etc.; promoting the emergence of innovative solutions in the framework of competition between intermediaries for the digital distribution of the euro, which will provide customers with the most efficient services. Thus, a model **whereby the private sector**, including commercial banks and other financial and non-financial companies, **will offer digital euro facing services to customers and create additional functionalities**. While the ECB will ensure safety, sustainability and interoperability through standard setting and regulation, the private sector could continue to innovate its services in a competitive environment and take on functions such as compliance, which the ECB should refrain from.

From the legal perspective, mentioned design peculiarities should be properly rooted in the legislative frameworks. The specialized legislation on the legal framework and regulation of a digital euro, analogically to those of other electronic means of payment, such as Directive (EU) 2015/2366 on payment services in the internal market,²⁰⁴ and Directive 2009/110/EC on the taking up, pursuit and prudential supervision of the business of electronic money institutions.²⁰⁵

In that law, all design considerations of a digital euro should be addressed, including the rule of holding limitation of a digital euro, the set threshold of possible holdings of a digital euro,

²⁰⁴ “Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32015L2366>.

²⁰⁵ “Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 on the taking up, pursuit and prudential supervision of the business of electronic money institutions amending Directives 2005/60/EC and 2006/48/EC and repealing Directive 2000/46/EC”, Eur-lex, Accessed 24 November 2021, <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32009L0110>.

and the consequences of the receipt of funds in excess of the established threshold or the rule of penalization of holding of a digital euro above a certain threshold with the establishment of the amount of possible negative rate of exceeded holdings and the conditions under which such rate can be set higher or lower; as well as the rules regarding possible intermediaries who will perform the front-end services of the digital euro, a set of conditions that these entities must comply with, the rights and obligations of intermediaries, and the procedure for their authorization and the supervision of the ECB.

As it was mentioned earlier, the power of the ECB to issue an interest-bearing digital euro under Article 128(1) TFEU as a tool of maintaining the monetary stability of the EU goes beyond the ECB competence. Since, the issuance of the digital euro as banknotes following Article 128(1) TFEU, would require the limitation of the design functioning of a digital euro to those, that do not go beyond the boundaries of the three money functions. This means that a digital euro, if it is issued under Article 128(1) TFEU, has to operate in the same way as banknotes used to operate, which is compatible with the non-remunerated digital euro scenario. The solution is to issue an interest-bearing digital euro as an implied power of the ECB under Article 127 TFEU.

To sum up, paradoxically, an efficient digital euro could be a nightmare for the current banking system, which generates part of its profits through debits from the public. The possibility of replacing banks' deposits with a digital euro will lead to a decrease in their profit and the need to search for other resources, such as recourse to the long-term funding facilities of the ECB. This will lead to the violation of the ECB's obligations under Article 127(1) TFEU and Article 16 of the Charter, which adheres to the principle of a market economy with the freedom of banks to conduct a business. These potential costs of disintermediation indicate the need to establish mitigation measures through the design of a digital euro in a way that makes the its demand *vis-à-vis* bank deposits, manageable. It could be either limit of a digital euro holdings or reward ownership that exceeds a set threshold, with a two-tier digital euro distribution system with financial or non-financial intermediation. A secondary law on a digital euro has to be framed that will rule all of the listed design features of a digital euro.

CONCLUSIONS

The digital era yields electronic money to society, which, due to its advantageous characteristics, attracts and changes the public's preferences on how to make payments. However, this, in turn, possesses threats for the fulfillment of the ECB's objectives confined by the law. In near future, the possible disappearance of cash and the threat to the monetary sovereignty of the EU from the side of non-European dominant payments providers and the private electronic money solutions may lead to the ECB's inability to perform its tasks under TFEU. Aforementioned dictates conditions to the ECB to rethink and update the monetary object it provides. The solution could be found in the issuance by the ECB of its own CBDC – a digital euro.

A digital euro is a secure, riskless, efficient electronic monetary object, which is the liability of the ECB available for retail payments for the general public. A digital euro would have excellence to other electronic money, such as stablecoins. These advantages of the digital euro lie in the fact that it is backed by the ECB as a direct claim on the ECB, hence free of liquidity, credit, and market risk digital euro. Therefore, a digital euro would find the balance between efficiency and security. Additionally, the success of a digital euro will be provided by its design functionalities, which are deliberated and estimated by the ECB now, as the ECB has launched the project of a digital euro on 14 July 2021. Nowadays, there is an investigation phase of a digital euro project, the aim of which is to address the key issues of a digital euro design and distribution. Simultaneously, significantly important is to appreciate the compliance of a digital euro with the current EU legislative framework.

The European Central Bank Law assessment shows that the issuance of a digital euro falls under the ECB constitutional competence. Even though the European Central Bank Law expressly does not provide such power, the issuance of a digital euro could be integrated into the existing provisions of the TFEU and the Statue. There are three possible options in that regard.

The first is to treat the issuance of a digital euro as the issuance of banknotes under Article 128 (1) TFEU. Since, according to the functional assignment of the banknote as the monetary object (either tangible or intangible), which serves as the risk-free means of payment and store of value accessible to the public, a digital euro fits given interpretation and could be integrated within the framework of Article 128(1) TFEU. However, this Article limits the design of a digital euro, which must be equal to its cash counterpart, which excludes a remunerated digital euro. The second option of integration of issuance of a digital euro under Article 128 (1) TFEU as to fulfill tasks of the ECB provided in Article 127 (2) TFEU cannot be employed, because the issuance of a digital euro would be the indispensable precondition of the monetary policy, but not its instrument. The third option is to issue a digital euro as an implied power of the ECB, meaning that a digital euro

is not a banknote, but serves as the tool of the ECB to preserve its performance of the conferred tasks. In this case, a digital euro could obtain additional design options, which have to be needed and appropriate to achieve the ECB's objects.

The Monetary Law issue is addressed to the possibility to grant a digital euro the legal tender status. The definition of the legal tender status is not mentioned in the legislation, thus the CJEU in the case *Dietrich and Häring v Rundfunk*, explains that the definition has to be extracted from the Treaties. Consequently, if a digital euro would be issued under Article 128(1) TFEU, it will receive the status of a legal tender by definition. But, if a digital euro, as a monetary object without its qualification as a banknote will be issued by the ECB or NCBs, it could obtain the status of a legal tender based on secondary law, if later will be adopted for this purpose. A digital euro issued by non-Eurosystem entities, such as commercial banks or other financial or non-financial institutions, cannot be given the status of legal tender.

The legal tender status of a digital euro would grant it advantageous characteristics for its employment in the society, however, there is the obstacle regarding the operation of a digital euro as the legal tender in the EU, which is the public technical equipment inclusion in this process, which might be hard and costly to fulfill. To avoid that, a digital euro may still be subject to payment services for all kinds of transactions by choice of parties of such transactions within the Eurozone, if it would function without the status of legal tender i.q. commercial bank's money, e-money does. To this extent, the legal position of a non-legal tender digital euro would have to be clarified in the secondary law ruling a digital euro.

Regarding the AML/CFT digital euro legal frameworks, important is to appreciate, that privacy cannot come at the expense of security. A digital euro cannot be designed in a completely anonymous way, but its technical design could help to replace anonymity and traceability with confidentiality and auditability. In particular, the hybrid solution could take place. It means that low-value transactions would be monitored for illicit activities, with the limited sharing of information only to install the correspondence to the threshold, whereas high-value transactions would be subject to the EU's AML/CFT requirements, but only to the extent of data monitoring restricted to information needed for compliance with AML/CFT requirements, which is guaranteed either by law provisions or by technical solutions or simultaneously. For this purpose, the amendments to the Directive 2015/849 and the Regulation 2015/847 have to be made with the clauses concerning a digital euro.

Lastly, an efficient digital euro could be a nightmare for the current banking system, because the possibility of replacing banks' deposits with a digital euro will lead to a decrease in their profit. The disintermediation will lead to the violation of the ECB's obligations under Article 127(1) TFEU and Article 16 of the Charter, which adheres to the principle of a market economy

with the freedom of banks to conduct a business. These potential costs indicate the need to establish mitigation measures through the design of a digital euro in a way that makes the demand for its *vis-à-vis* bank deposits, manageable. It could be either limit of a digital euro holdings or reward ownership that exceeds a set threshold, with a two-tier digital euro distribution system with financial or non-financial intermediation. A secondary law has to be framed by lawmakers that will rule all of the listed design features of a digital euro.

The above leads to the conclusion, that the broad interpretation of primary legislation empowers the ECB to issue a digital euro and can grant it legal tender status. Therefore, there is no need to amend TFEU. However, depending on the option of the integration of a digital euro in TFEU, the restrictions and mandatory requirements for the possible design characteristics of the digital euro have to be taken into account and implemented. Moreover, to avoid the lack of exhaustive regulation on a digital euro, the respective secondary legislation on a digital euro needs to be adopted and certain amendments to the existing directives and regulations have to be done.

RECOMMENDATIONS

On the basis of this research the EU lawmakers can be recommended to take the following steps, which are targeted to put a detailed legal framework in place to address both practical and legal matters arising from the introduction of a digital euro:

1. To adopt a secondary legislation on a digital euro. The secondary law provisions shall include such provisions about: the granting the status of a legal tender; the rule of holding limitation of a digital euro; the set threshold of possible holdings of a digital euro; the consequences of the receipt of funds in excess of the established threshold; the rule of penalization of holding of a digital euro above a certain threshold with the establishment of the amount of possible negative rate of exceeded holdings and the conditions under which such rate can be set higher or lower; the rules regarding possible intermediaries who will perform the front-end services of the digital euro; the set of conditions that these entities must comply with; the rights and obligations of intermediaries; and the procedure for their authorization and the supervision of the ECB.

2. To make amendments in AML/CFT legal framework. In the Directive (EU) 2015/849 of 20 May 2015 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing should be made such amendments: to add the list of entities who will be engaged in providing a payments service of a digital euro; to mention the definition of a digital euro or link it with the secondary law on a digital euro, add other terms related to a digital euro functionalization; to specify the derogation provisions about low-value transactions with setting the threshold for them, below which a transaction with a digital euro would be excluded from the scope of AML/CFT requirements. The Regulation 2015/847 on information on the payer accompanying transfers of funds – makes fund transfers more transparent, thereby helping law enforcement authorities to track down terrorists and criminals the amendments regarding the expanding of the definitions of “funds” with a digital euro category should be made.

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ABSTRACT

This research represents the analysis of the phenomenon of a digital euro as the type of electronic money and its legislative frameworks and regulations, by studying current legislative constitutional frameworks of the EU and by examining the compliance of a digital euro with the European Central Bank Law, the Monetary Law, by finding the balance between privacy and the AML/CFT requirements, and by legally managing possible risks to the freedom of banks to conduct a business.

As the result, the legality of the issuance of a digital euro by the ECB is explored and the recommendations about the legal framework addressing both practical and legal matters arising from the introduction of a digital euro are delivered.

Keywords: European Central Bank, central bank digital currency, digital euro, European Central Bank Law, Monetary Law, privacy, Anti Money Laundering and Countering the Financing of Terrorism requirements, the freedom of banks to conduct a business.

SUMMARY

DIGITAL EURO: ISSUES IN CREATION OF LEGAL AND REGULATORY FRAMEWORK

Digitalization has touched every corner of people`s lives, and money is not an exception. Since the changing of people`s preferences of how to make payments, the ECB contemplates introducing the ECB`s CBDC – a digital euro. Which would be an electronic counterpart to euro cash with the same level of security, but with a higher level of efficiency and more responsive to the society`s demand.

The key aim of the research is to find out whether the issuance of a digital euro falls under the current legislative frameworks and to figure out what kind of amendments or changes is needed to the legally effective introduction of a digital euro.

To achieve that, firstly, attention is drawn to the phenomena of electronic money and particularly to one of its types – the CBDC. Thereafter, the reasons for the introduction of the EU`s CBDC – a digital euro in the EU are discussed and the comparison between a digital euro and stable coin –Libra is produced. Furthermore, the chronological development of a digital euro project is listed with the reporting on the already established by the ECB general principals and conceptual design options of a future digital euro.

Having outlined the scope of a digital euro, secondly, the research analyzes four dimensions of the EU legislation to the issue of the accordance of a digital euro to them. The competence of the ECB to issue a digital euro is explained according to the European Central Bank Law. In the light of the Monetary Law, with its interpretation by the CJEU, given in its recent decision, the issue of granting a digital euro the status of a legal tender is deduced. The balance between privacy and the AML/CFT requirements, as well as the maintenance of the freedom of banks to conduct a business, is carried out through the use of technical solutions and legal measures.

The above considerations lead to the conclusion, that a digital euro is legal under the constitutional frameworks of the EU. However, with the restrictions and requirements for the possible design options of a digital euro. Additionally, it is proposed to avoid the lack of exhaustive regulation on a digital euro by adopting secondary legislation in that regard and amending existing directives and regulations.