Pubblicazione Trimestrale
ISSN: 2279-9737

Rivista di Diritto Bancario

dottrina
e giurisprudenza
commentata

Luglio/Settembre

2022

rivista.dirittobancario.it

Rivista di Diritto Bancario
dottrina e giurisprudenza commentata

2022 | 2023

Rivista di Diritto Bancario
dottrina e giurisprudenza commentata

NORME PER LA VALUTAZIONE E LA PUBBLICAZIONE

La Rivista di Diritto Bancario seleziona i contributi oggetto di pubblicazione sulla base delle norme seguenti.

I contributi proposti alla Rivista per la pubblicazione vengono assegnati dal sistema informatico a due valutatori, sorteggiati all'interno di un elenco di ordinari, associati e ricercatori in materie giuridiche, estratti da una lista periodicamente soggetta a rinnovamento.

I contributi sono anonimizzati prima dell'invio ai valutatori.

Le schede di valutazione sono inviate agli autori previa anonimizzazione.

Qualora uno o entrambi i valutatori esprimano un parere favorevole alla pubblicazione subordinato all'introduzione di modifiche aggiunte e correzioni, la direzione esecutiva verifica che l'autore abbia apportato le modifiche richieste.

Qualora entrambi i valutatori esprimano parere negativo alla pubblicazione, il contributo viene rifiutato. Qualora solo uno dei valutatori esprima parere negativo alla pubblicazione, il contributo è sottoposto al Comitato Esecutivo, il quale assume la decisione finale in ordine alla pubblicazione previo parere di un componente della Direzione scelto ratione materiae.

2022 | 2023

Rivista di Diritto Bancario
dottrina e giurisprudenza commentata

SEDE DELLA REDAZIONE

Università degli Studi di Trento, Facoltà di Giurisprudenza, via Verdi 53,
(38122) Trento – tel. 0461 283836

2022 | 2023

GIULIA TERRANOVA

Are stablecoins good money? Finding a balance between innovation and consumers' protection: the European and the United States' perspective

SOMMARIO: 1. Stablecoins: definition and taxonomy of a global phenomenon – 2. The means of payment: when is private money good money? – 3. Why is private money good money? The comparable solutions adopted by the European Union and the United States – 4. The case of Money Market Funds – 5. Are stablecoins good money? And can they be used as means of payment? – 6. The answer of the United States and the European Union – 7. Conclusions.

1. *Stablecoins: definition and taxonomy of a global phenomenon*

Stablecoins are a type of crypto-assets[1] that lack of an agreed definition[2]; their designs and features can vary greatly, the only element that is common to these digital assets is the use of stabilization mechanisms in order to minimize the fluctuations of their price. These mechanisms ensure that the value of the cryptocurrency is backed by reserve assets that can be either money (in one currency or a basket of

[1] Crypto-assets have been defined as «an asset that a. depends primarily on cryptography and distributed ledger technology (DLT) or similar technology as part of its perceived or inherent value; b. is neither issued nor guaranteed by a central bank or public authority, and c. can be used as a means of exchange and/or for investment purposes and/or to access a good or service»: European Banking Authority, *Report with advice for the European Commission. On crypto-assets*, 9 January 2019, 10; see also R. HOUBEN, A. SNYERS, *Crypto-assets. Key developments, regulatory concerns and responses*, *European Parliament Study,* 2020, 17, available at https://www.europarl.europa.eu/RegData/etudes/STUD/2020/648779/IPOL_STU(2020)648779_EN.pdf.

[2] D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, *European Central Bank, Occasional Paper Series*, no. 230, 2019. Some stableonis' definitions have been proposed as underlined by A. FERREIRA, *The Curious Case of Stablecoins-Balancing Risks and Rewards?*, in *Journal of International Economic Law*, 2021, 760.

different currencies[3]), or securities and commodities such as gold, or crypto-assets or even users' expectations about future purchasing power[4]. Stablecoins, as the word "stable" suggests[5], aim at differing from other cryptocurrencies that have no such stability mechanism and whose values fluctuate substantially[6].

Depending on the stabilization tool used in order to stabilize their value, stablecoins can be organized in different categories[7]: tokenized funds (also fiat-backed stablecoins) have a reference peg made by funds (i.e. commercial money, e-money or central bank money) hold by a custodian[8]; off-chain collateralized stablecoins are backed by other traditional assets (such as gold) hold by a custodian, as well; on-chain collateralized stablecoins, whose reference peg is made by crypto-assets, recorded in a decentralized manner, without a custodian[9], and

[3] D. AWREY, *Bad Money*, in *Cornell Law Review,* 106, 2020, 43, defines them as «financial instruments the value of which is contractually pegged to the value of another currency».

[4] EUROPEAN CENTRAL BANK, *Stablecoins: no coins, but are they stable?*, *In Focus*, no. 3, 2019, 2.

[5] Even if it has been concluded, as this paper will analyze more deeply, that stablecoins «are neither stable in absolute terms - they are too volatile - nor stable in relative terms - they are too volatile compared with stable benchmarks such as major fiat currencies»: L.T. HOANG, D.G. BAUR, *How stable are stablecoins?*, 2020, 17, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3519225 .

[6] Cryptocurrencies other than stablecoins are also called "non backed cryptocurrecies". See R. HOUBEN, A. SNYERS, *Crypto-assets. Key developments, regulatory concerns and responses*, *European Parliament Study,* 2020, 19; European Central Bank-Crypto-Assets task force, *Crypto-Assets: implications for financial stability, monetary policy and payments, and market infrastructures*, *Occasional papers Series*, no. 223, 2019, 14.

[7] Many other classification criteria have been proposed: G. HILEMAN, *State of Stablecoins*, 2019, 14, available at www.ssrn.com, distinguishes between assets-backed and algorithmic stablecoins; M. MITA, K. ITO, S. OHSAWA, H. TANAKA, *What is Stablecoin?: A Survey on Price Stabilization Mechanisms for Decentralized Payment Systems*, 2019, 49, available at https://arxiv.org/pdf/1906.06037.pdf, depending on the collateral, as well, distinguish stablecoins in four categories: fiat, crypto, commodity and non-collateralized.

[8] These stablecoins are called also fiat-backed stablecoins: Tether is the most famous example. D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, cit., 12.

[9] As, for example, Dai, that is backed by Ether, a crypto-asset on the Etherum blockchain. See EUROPEAN CENTRAL BANK, *Stablecoins: no coins, but are they stable?*, 3.

algorithmic stablecoins that do not use any reserve (they are non-collateralized) but include a working mechanism to retain the stable price (for example they refer to users' expectations about the future purchasing power of their holdings)[10].

Any type of stablecoins uses a distributed ledger technology (DLT)[11], since they are crypto-currencies, but depending on which of the above mentioned categories they belong to, their features change deeply. While tokenized funds and off-chain stablecoins must have a custodian and an issuer, for both the safekeeping of the collateral and for the redemption of the stablecoins, on-chain and algorithmic stablecoins do not need the collaboration of any other party: if the collateral is made by crypto-assets, it is recorded directly on a distributed ledger and in the custody of the network participant[12].

Another important difference between the four types of stablecoins relates to their process of issuance and redemption[13]. Fiat-backed stablecoins are issued after the transfer of funds by an user to the account of an issuer, opened with a custodian[14]. As soon as the funds have been received by the custodian, the issuer creates and transfers an equivalent amount of stablecoins through a smart contract. When the user requires redemption, he must transfer back the tokenized funds to the issuer or to the account opened with a custodian. When the

[10] D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, cit., 3. One example of these stablecoins is Nubits. Assets-backed stablecoins are the great majority: only 17% of all stablecoins are algorithmic. See G. HILEMAN, *State of Stablecoins*, cit., 14.

[11] EUROPEAN BANKING AUTHORITY, *Report with advice for the European Commission. On crypto-assets,* cit., 8: «A distributed ledger can be described as a record of information or database, shared across a network, without the need for a central validation process»; see also BANK OF INTERNATIONAL SETTLEMENTS, COMMITTEE ON PAYMENTS AND MARKET INFRASTRUCTURES, *Distributed ledger technology in payment, clearing and settlement. An analytical framework*, cit., https://www.bis.org/cpmi/publ/d157.pdf.

[12] D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, cit., 4.

[13] K. GROBYS, J. JUNTTILA, W. KOLARI, N. SAPKOTA, *On the stability of stablecoins*, in *Journal of Empirical Finance,* 64, 2021, 209; M. MITA, K. ITO, S. OHSAWA, H. TANAKA, *What is Stablecoin?: A Survey on Price Stabilization Mechanisms for Decentralized Payment Systems*, 52; R. HOUBEN, A. SNYERS, *Crypto-assets. Key developments, regulatory concerns and responses,* cit., 35.

[14] The issuer may hold the funds also itself, without a custodian.

stablecoins are burnt, the custodian transfers an equal amount of fiat currency to the user[15].

Unlike tokenized funds, any collateralized stablecoin (off-chain and on-chain) is backed by assets whose value in the currency of reference can fluctuate over time. Off-chain collateralized stablecoins are issued by posting off-chain assets as collateral. Actually, holders do not transfer the collateral, they correspond fiat or crypto-currencies in an equal amount that are used by the issuer or the custodian to buy the collaterals. Since collaterals are physical assets, the custodian must hold it outside the network. After the purchase of the collateral, the custodian sends to the issuer a note confirming the purchase and the issuer records that note on the distributed ledger. In this way, there is proof of the custody of collateral and network is informed[16]. Off-chain asset-backed stablecoins entitle holders to redeem their stablecoins by obtaining the collateral value in fiat currencies or the posted collateral itself[17].

On-chain asset-backed stablecoins are entirely based on blockchain technology, they can be managed in a decentralized way through smart contracts and network nodes. To buy stablecoins, holders send crypto-assets directly to the smart contract governing the stablecoin initiative and then the smart contract issues back the corresponding stablecoins. Holders can redeem their stablecoins by sending them back to the smart contract. In exchange, they receive an amount of the crypto-assets initially posted as collateral equal to the value of the stablecoin in the currency of reference[18].

Stablecoins stand out from other crypto-assets for their purpose of value stabilization and became an important element of the digital asset

---

[15] D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, cit., 12.

[16] For example, for Digix, a stablecoin backed by gold, there is a third party acting as a custodian, who acquires and holds the necessary gold to back the stablecoins' value. When the stablecoins are sold, the necessary gold to back their value is bought from identified suppliers by the custodian. Once received the gold, the custodian provides Digix issuer with a delivery note confirming the receipt of gold. Then, within a timeframe of a few days, the delivery note is recorded on the distributed ledger by the issuer to inform Digix holders and ensure transparency.

[17] D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, cit., 17.

[18] D. BULLMANN, J. KLEMM, A. PINNA, *In Search for Stability in Crypto-Assets: Are Stablecoins the Solution?*, cit., 20.

ecosystem[19]. They are employed as a store of value and as investment, but there is an increasing trend to use them as a mean of payment, since their stabilization tool holds the potential to unlock their use for day-to-day payments as price stability is a key missing element for the adoption of cryptocurrencies by merchants and retailers all over the world[20]. The most important example of this trend is Diem (formerly Libra)[21], the global stablecoin that the Libra Association, formed by Facebook, announced in 2019. Libra has the capacity to function on a global scale and access billions of potential users, introducing a global, fast, cheap, easy, and seamless payment solution[22].

The employment of stablecoins as means of payment could have many pros[23], but it is relevant understanding whether there are also drawbacks and whether legal systems should allow these cryptocurrencies to function as means of payment. In the next paragraphs, the paper will try to answer to these questions, analyzing first the concept of official mean of payment under the current European and United States' legal systems and, secondly, the EU and the US' proposals to address the problem of the possible use of stablecoins as official means of payment.

2. *The means of payment: when is private money good money?*

To fulfill the functions of money, and to perform as an official mean of payment, an instrument must be trusted widely and consistently: in order to have moneyness and to be considered as good money, it must

[19] A. FERREIRA, *The Curious Case of Stablecoins-Balancing Risks and Rewards?*, cit., 767.

[20] G. HILEMAN, *State of Stablecoins*, cit., 18.

[21] For a detailed analysis see D.A. ZETZSCHE, R.P. BUCKLEY, D.W. ARNER, *Regulating Libra*, *Oxford Journal of Legal Studies,* 41, No. 1, 2021, 80. Libra is a stablecoin tied to a basket of major government-issued currencies, and for each Libra issued, an equal value of such currency or highly liquid government bonds, would be placed on deposit with a reliable repository.

[22] As D.A. ZETZSCHE, R.P. BUCKLEY, D.W. ARNER, *Regulating Libra*, cit., 92, underlined: «The most important function will be cash equivalence. Libra will be a mean of payment».

[23] Such as financial inclusion, especially in developing countries, and costs saving. See, referring to Libra, D.A. ZETZSCHE, R.P. BUCKLEY, D.W. ARNER, *Regulating Libra*, cit., 91.

be credible. Public money[24], meaning money issued by central banks, is good money by definition, since the law guarantees its value and enforces its use and acceptance as a mean of payment and as the only form of legal tender[25]. Private money, meaning money issued by private institutions, has always coexisted with public money, throughout history: the moneyness of private money comes from its capacity to ensure to its holders a right of redemption at par value[26]. Other means

[24] The means of payment that are directly issued by central banks are defined as public money, they are represented only by banknotes and coins. Public money is by definition good money since the law guarantees its value and enforces its use and acceptance as a mean of payment and as the only form of legal tender (The legal tender status of euro banknotes is laid down by Article 128 of the Treaty on the Functioning of the European Union. See also the European Commission recommendation 2010/191/EU. However, national arrangements relating to the legal tender status continue to apply and, in practice, each Member State determines the concrete effects of the legal tender in daily payment transactions).

[25] I.e. in the EU, they cannot be ordinarily refused by any person in the EU when they are offered in performance of a monetary obligation – equally, denominated in euro. The legal tender status of euro banknotes is laid down by Article 128 of the Treaty on the Functioning of the European Union. See also the European Commission recommendation 2010/191/EU. However, national arrangements relating to the legal tender status continue to apply and, in practice, each Member State determines the concrete effects of the legal tender in daily payment transactions.

With reference to the United States, 31 U.S. Code, §§5103 states that «United States coins and currency (including Federal reserve notes and circulating notes of Federal reserve banks and national banks) are legal tender for all debts, public charges, taxes, and dues. Foreign gold or silver coins are not legal tender for debts». For a detailed analysis, see C.P. GILLETTE, *American Legal Tender Rules and Risk Allocation*, in *The Euro as Legal Tender. A Comparative Approach to a Uniform Concept*, R. Freitag, S. Omlor (eds.), Berlin/Boston, 2020, 103; J. CHENG, J. TORREGROSSA, *What is Money? A Lawyer's Perspective on U.S. Payment System Evolution and Dollars in the Digital Age*, 2020, 4, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3885031.

[26] T. ADRIAN, T. MANCINI-GRIFFOLI, *Public and Private Money Can Coexist in the Digital Age*, in *International Monetary Fund Blog,* 2021, available at https://blogs.imf.org/2021/02/18/public-and-private-money-can-coexist-in-the-digital-age/; J. CHENG, J. TORREGROSSA, *What is Money? A Lawyer's Perspective on U.S. Payment System Evolution and Dollars in the Digital Age*, cit., 3, with efficacy divide the US payment system into three levels: the first one consists of central bank money (public money); the second one of commercial bank money (private money), and the third one, whose legitimacy is under discussion in the paper, of non-bank payment companies, such as stablecoins issuers. D. GABOR, J. VESTERGAARD, *Chasing Unicorns: the European single safe asset project*, in *Competition and*

of exchange could coexist in some jurisdictions (e.g., regional or local currencies) but, according to European and United States' law, they cannot confer to their holder a redemption right at par value[27]. Furthermore, all official means of payment represent a direct claim on the balance sheet of the issuer – being either public or private – for their nominal value[28].

The requirement of the redeemability at par value is justified by two objectives: *i*) protecting consumers and *ii*) preserving monetary sovereignty. In relation to the first objective, consumers that seek to conclude a payment transaction need instruments that ensure the stability of their nominal value[29]. In relation to the second objective,

Change, 2018, 143: «Full moneyness captures the ability to convert an asset into higher money at par and on demand throughout financial cycles».

[27] «Member States shall prohibit persons or undertakings that are not credit institutions from carrying out the business of taking deposits or other repayable funds from the public» (Article 9, Directive 2013/36/EU). «Member States shall prohibit natural or legal persons who are not electronic money issuers from issuing electronic money» (Article 10, EMD2). For example, in France, complementary local currencies (CLMs) are to be indexed to the euro and convertible only from euro to CLMs but not from CLMs to euro. A. CARSTEN, *Money in the digital age: what role for central banks?*, Lecture at the House of Finance, Frankfurt, 6 February 2018, available at https://www.bis.org/speeches/sp180206.htm, cites one example of private money: the Mexican *túmin*, a local currency that circulated for sometimes around 2010 in the region of Espinal, and other historical examples of private moneys. The first one is the case of Germany, during the Thirty Years War (1618-1648); the second one is the United States period known as the Free Banking Era (1837-1863) and the third one occurred in Mexico at the beginning of the 20th century. The main reasons of their disappearance were their high instability, the lack of public trust and the fact that they were used mainly for illicit purposes.

[28] For a deep analysis about the difference between public money and private money and for a definition of the concept of moneyness see: A. NUSSBAUM, *Money in the Law National and International: a Comparative Study in the Borderline of Law and Economics*, Brooklyn, 1950, *passim*; B. INZITARI, *Moneta e valuta. La moneta*, in *Trattato di diritto commerciale e di diritto pubblico dell'economia*, F. Galgano (diretto da), Padova, *passim*, 1983; C.A.E. GOODHART, *The Development of Monetary Theory*, in *Reflections on Money*, D.T. Llewellyn (Ed.), London, 1989, 25 ss.; A. RAHMATIAN, *Credit and Creed. A Critical Legal Theory of Money*, 2021, London, *passim*.

[29] T. ADRIAN, T. MANCINI-GRIFFOLI, *Public and Private Money Can Coexist in the Digital Age*, cit. Redeemability at par value is needed to ensure the stability of monetary liabilities nominal value and the possibility for users to exit the payment scheme and obtaining an equal amount of legal tender in any time. Users should not

private official means of payment are always linked to a State-backed money and consequently to a State territory. In order to transfer a nominal, stable value (payment) and not an asset or a basket of assets (exchange) it is – and should ordinarily be – irrelevant to the payer and the payee the composition of the reserve or the underlying referenced assets that aims at stabilize/safeguard such value.[30] One-to-one convertibility is essential to allow consumer to exit the payment scheme at any moment and to redeem their sovereign money. Redeemability at par value also ensures that central bank money continues to perform its fundamental functions of setting a common unit of account and settling payments[31]. As such, concurrent privately issued means of payment can be interoperable. This feature reduces the risk that private money substitutes public money and it contributes to avoid lock-in situations that could likely occur when commercial money is issued by large and powerful networks.

3. *Why is private money considered as good money? The comparable solutions adopted by the European Union and the United States*

The ability to convert an asset into money at par and on demand depends on its regulation. Under the current EU legal framework, only banknotes, coins, scriptural money (i.e. bank deposits)[32] and electronic money[33] - as defined by the Second Payment Services Directive (PSD2)

---

have to question the value of the monetary liability or the soundness of the issuing entity; they should always be able to use the monetary liabilities as a mean of payment for its original nominal value and to exit the payment scheme receiving an equal amount of fiat currencies. To this purpose, under private money, holders should not bear the risk of value fluctuations and related losses.

[30] The payee shouldn't worry about scrutinizing which firm issued the instrument to assess the soundness of the underlying reserve.

[31] «Reserve accounts shall be denominated in euro» (Article 6, Regulation (EC) No 1745/2003).

[32] Scriptural money is money in book-entry form created by commercial banks and mainly represented by deposits.

[33] As defined in point (2) of Article 2 of Directive 2009/110/EC (Second Electronic Money Directive – EMD2). Article 11, EMD2 states that «Member States shall ensure that electronic money issuers issue electronic money at par value on the receipt of funds. Member States shall ensure that, upon request by the electronic money holder, electronic money issuers redeem, at any moment and at par value, the monetary value of the electronic money held».

- are acknowledged as official means of payment[34]. In the north American system, the great majority of good money issued by private institutions is made by bank deposits[35]. Only authorized firms could issue private money in the form of scriptural and electronic money (i.e., respectively, commercial banks and electronic money institutions). Authorization is envisaged to safeguard the one-to-one convertibility of the instrument into official currencies[36].

To ensure the moneyness of private money, the European Union and the United States adopted similar solutions: they implemented sound regulation and supervision and, when needed, they put in place backstops such as deposit insurance and accessibility to central bank liquidity, as well as partial or full backing in central bank reserves - which are denominated in the relevant official currency. Regulation (in particular, prudential), involvement of insurance schemes and central bank liquidity assistance should vary/apply depending on the risks posed by the issuer. Such risks depend mostly by the rules governing the management of the funds received by clients. Stricter these rules, lighter the prudential requirements. Overall, private providers of commercial money need to assure that they can meet the obligation to convert such money into fiat money at par and on demand so that households and businesses can have confidence in being able to regard different types of money as indistinguishable from cash and be able to change it one-to-one on demand.

With reference to bank deposits, one of the backstop in place is the accessibility that private banks in need for liquidity have to central banks, as lenders of last resort[37]. In ordinary circumstances, banks can

[34] Banknotes, coins, scriptural money and electronic money are defined as "funds" by Article 4, para. 1, n. 25, Directive (EU) 2015/2366 (PSD2).

[35] D. AWREY, *Bad Money*, cit., 3.

[36] Fiat money is central bank money (i.e. banknotes and coins - cash) denominated in the national currency. See Y. MERSCH, *Virtual or virtueless? The evolution of money in the digital age*, Lecture at the Monetary and Financial Institutions Forum, London, 8 February 2018, available at https://www.ecb.europa.eu/press/key/date/2018/html/ecb.sp180208.en.html, 3: the author underlines that «The implicit promise underlying bank deposits is that customers can redeem them whenever they wish and one to one with public sector cash, if they need a safe refuge in a time of crisis».

[37] See A. STEINBACH, LENDER OF LAST RESORT IN THE EUROZONE, in *Common Market Law Review,* 53, 2016, p. 361; S.E. DIETZ, *The ECB as Lender of Last Resort*

face withdraw requests by a limited percentage of their depositors thanks to the fractional reserve system: private banks set aside only a part of the collected savings as reserves and employ the remaining part to lend to the real economy. Since not all depositors need to withdraw simultaneously their savings, only a part of deposits are used to satisfy withdraw requests, whereas the rest can be employed conceding loans to the real economy. When stressed conditions occur, for example in the case of bank runs[38], one main function of the central banks lies in their capacity as emergency lenders for credit institutions[39]. In such a situation, central banks provide credit to solvent banks with liquidity problems. In the euro area, national central banks have the capacity of lenders of last resort under the European Central Bank (ECB) supervision[40]; in the United States, that role is performed by the Federal Reserve[41].

---

in the Eurozone? An analysis of an optimal institutional design of Emergency Liquidity Assistance competence within the context of the Banking Union, in *Maastricht Journal of European and Comparative Law,* 26(5), 2019, 628; R.M. LASTRA, *Legal Foundations of International Monetary Stability*, Oxford, 2006, 116; A. CAMPBELL, R.M. LASTRA, *Revisiting the lender of last resort*, in *Banking & Finance Law Review,* 24, 2009, 468.

[38] A bank run occurs when depositors "run" to withdraw their savings in the fear of an insolvency of their own financial institution. See G. HOGGART, P. JACKSON, E. NIER, *Banking Crises and the Design of Safety Nets*, in *Journal of Banking and Finance,* 20, 2005, 145.

[39] R. GROSSMAN, *Unsettled Account. The Evolution of Banking in the Industrialized World since 1800,* Princeton, 2010; A. STEINBACH, *Lender of Last Resort in the Eurozone,* cit., 363.

[40] A bank can receive emergency liquidity assistance under four conditions: (i) it must be solvent (ii) the central bank should lend without limitation, but charging a penalty rate, (iii) private banks should provide good collateral, and (iv) the central bank retains discretion as to whether or not to provide assistance on an individual case basis (constructive ambiguity). A. STEINBACH, *Lender of Last Resort in the Eurozone*, 364; S.E. DIETZ, *The ECB as Lender of Last Resort in the Eurozone? An analysis of an optimal institutional design of Emergency Liquidity Assistance competence within the context of the Banking Union*, cit., 632.

[41] D. DOMANSKI, R. MOESSNER, W. NELSON, *Central banks as lender of last resort: experiences during the 2007-2010 crisis and lessons for the future*, in *Finance and Economics Discussion Series Divisions of Research & Statistics and Monetary Affairs*, Federal Reserve Board, 2014. As under the European framework, only private banks that are solvent have the right to access the Federal Reserve as lender of last resort.

Another backstop is the deposit insurance, whose object is to ensure that all deposits are protected through deposits guarantees. Under the European Union framework the guarantee insures deposits up to 100.000 euros [42], and it is organized at a national level, although a minimum set of rules is envisaged at EU level with the Deposit Guarantee Scheme Directive (DGSD)[43]. In the north American framework, the deposit guarantee mechanism was introduced in 1933, by the Banking Act[44] that created the Federal Deposit Insurance Corporation (FDIC): today, the FDIC insures covered deposits up to a maximum of 250.000 dollars per depositor per bank[45]. Differently from the lender of last resort mechanism, the deposit guarantee does not operate when the bank is solvent, but when the bank is *not able to fulfil its obligations (...) because of a lack of available financial means*[46]. The protection set by the deposit insurance ensures that the crisis of a bank does not produce a potential impact on the macroeconomic health of the country where that credit institution operates and, secondly, discourages bank runs.

Finally, both systems provide for special resolution procedures that apply to banks in financial distress. In the European framework, banks that are determined to be failing or likely to fail[47] are submitted to a special resolution procedure, introduced through the *Bank Recovery*

[42] The original version of Directive 94/19, Article 7(1), fixed this threshold at 20.000 ECU (European Currency Unit), later converted into 20.000 euros. In the aftermath of the financial crisis of 2007/2008, the EU legislator increased the minimum limit of protection. Directive 2009/14 stipulated that the minimum limit should be 100.000 euros. See P. DE GIOIA-CARABELLESE, C. CHESSA, *The So-Called Pan-European Depositors' Protection Scheme: A Further Euro Own-Goal - A Critical Analysis of Directive 2014/49*, in *Maastricht Journal of European and Comparative Law* 23, no. 2, 2016, 246.

[43] Directive 2014/49/EU of the European Parliament and of the Council of 16 April 2014.

[44] Banking Act of 1933, Pub. L. No. 73-66, 48 Stat. 162.

[45] Federal Deposit Insurance Act, Pub. L. No. 81-797, 64 Stat. 873 (FDIA).

[46] Art. 12(1) Directive 2014/49/EU.

[47] Art. 32 (1)(a) Directive 2014/59/EU. There is public interest if the bank's failure and its following submission to insolvency proceedings can generate financial instability by impacting the system. M. BODELLINI, *To Bail-In, or to Bail-Out, that is the Question*, in *European Business Organization Law Rev,* 19, 2018, 370.

and Resolution Directive (BRRD)[48], if the handling of the crisis is deemed to be in the public interest[49] and there is no reasonable prospect that any alternative private sector measures would prevent the failure of the bank. The BRRD's aim is to ensure continuity of bank critical functions avoiding adverse effects on the financial system, protecting public, depositors and client funds through an adequate burden sharing among shareholders and creditors[50]. If the Authorities assess that the bank's crisis cannot generate financial instability by impacting the system, national ordinary insolvency procedures apply. In the north American framework, the same Banking Act that introduced the deposit guarantee scheme, established also a special resolution regime for failing banks giving to the FDIC the duty to maximize the value of the assets of a failed bank. The FDIC has several tools in pursuing this objective, such as the ability to write down a bank's liabilities, convert its outstanding debt into equity, repudiate its contracts, and transfer some or all of its assets to either a private sector purchaser or public sector bridge bank[51].

To complete the legal framework, the two legal systems provide for tight regulation and supervision of private banks in order to limit their potential too risky management. Indeed, one of the counterproductive effects of the backstops described (the central banks' role as lenders of last resort, the deposit insurance and the special resolution regimes)

[48] Directive 2014/59/EU. R. LOCATELLI, C. SCHENA, E. COLETTI, F. DABBENE, *Gestione e costi delle crisi bancarie dopo la BRRD*, in *Banca imp. soc.*, 2018, 27.

[49] Art. 32 Directive 2014/59/EU.

[50] Under Art. 2 para. 1(1) of the BRRD, "resolution" means «the application of a resolution tool or a tool referred to in Article 37(9) in order to achieve one or more of the resolution objectives» which, under Art. 31(2), are: «(a) to ensure the continuity of critical functions; (b) to avoid a significant adverse effect on the financial system, in particular by preventing contagion, including to market infrastructures, and by maintaining market discipline; (c) to protect public funds by minimising reliance on extraordinary public financial support; (d) to protect depositors covered by Directive 2014/49/EU and investors covered by Directive 97/9/EC; (e) to protect client funds and client assets». See G. RINGE, *Bail-in between liquidity and solvency*, in *University of Oxford Legal Research Paper Series*, no. 33, 2016, 3; L. PANCOTTO, O. AP GWILIM, J. WILLIAMS, *The European Bank Recovery and Resolution Directive: A market assessment*, in *Journal of Financial Stability*, 2019, 2; M. BODELLINI, *To Bail-In, or to Bail-Out, that is the Question*, cit., 369.

[51] D. AWREY, *Bad Money*, cit., 29. See FDIA, § 8, 11.

could be to encourage banks in taking excessive risks (moral hazard)[52]. The two systems seek to address the potential moral hazard deriving from the safety net provided by the abovementioned four mechanisms through bank regulation, in three principal ways. The first one is liquidity regulation that ensures that banks hold sufficient reserves[53]; the second is minimum capital requirements[54] and the last one is the intensive prudential supervision that banks are subject to[55].

With reference to the second category of private money that have been abovementioned (electronic money), the European regulatory framework[56], in order to guarantee holders with a redemption right at par value against the issuer, provides for different requirements. First of all, only authorized institutions can issue electronic money: credit institutions; the European central bank and national central banks; post office giro institutions according to what envisaged by national law and public authorities[57]. According to the European regulatory framework on electronic money, the safeguards are different from the ones of banking deposits because the underlying activity is substantially different. Institutions that issue electronic money only favor the circulation of funds, while banks, through banking deposits, create

[52] Referring to the deposit insurance, see: A. DEMIRGÜC-KUNT, E.J. KANE, *Deposit Insurance Around the Globe: Where Does It Work?*, in *Journal of Economic Perspectives* 16, no 2, 2002, 176. The ceiling of the compensation's amount (100.000 euros) was provided mainly for the mitigation of the moral hazard problem: C. GORTSOS, *The role of deposit guarantee schemes (DGSs) in resolution financing*, *EBI working paper series* 37, 2019, 5. For an overview of alternative means for reducing the moral hazard problem in general see P. GARONNA, S. CROSETTI, A. MARCELL, *Deposit insurance in the European Union: in search of a third way, Working Paper Series, Luiss,* 2021.

[53] For a detailed analysis, see J. ARMOUR, D. AWREY, P. DAVIES, L. ENRIQUES, J.N. GORDON, C. MAYER, J. PAYNE, *Principles of Financial Regulation,* Oxford, 2016, 316.

[54] J. ARMOUR, D. AWREY, P. DAVIES, L. ENRIQUES, J.N. GORDON, C. MAYER, J. PAYNE, *Principles of Financial Regulation,* cit., 290.

[55] D. AWREY, *Bad Money*, cit., 31.

[56] Directive 2009/110/EC of the European Parliament and of the Council of 16 September 2009 (EMD2). For a general overview see N. VANDEZANDE, *Virtual currencies. A legal framework*, Cambridge, 2018, 171.

[57] Article 1, EMD2.

money[58]. This is clear from the fact that, to receive electronic money, users must already hold and transfer the corresponding monetary value. Only once the issuing institution receives funds, electronic money is issued, as the result of an exchange (between funds and electronic money)[59]. Raised resources can only be invested in circulating and existing instruments. Consistently, institutions cannot grant interests or other benefits on electronic money issued, as electronic money pursues solely a payment purpose rather than a saving purpose. Consequently, as their activity is different, the safeguards that ensure that electronic money is good money are also different. Stricter safekeeping rules on client funds are in place for electronic money institutions[60]: firstly, electronic money institutions must insulate client funds from other creditors' claims, depositing client funds in a separate account within a credit institution or invest them in secure, liquid, low risk assets[61]. Moreover, electronic money institution must protect client funds with an insurance policy[62]. As previously highlighted, stricter are the rules governing management of funds, lighter is the prudential regime. Accordingly, electronic money institutions have a lighter prudential supervisory regime than banks[63]. Initial and ongoing capital

[58] As deeply analyzed by M. MCLEAY, A. RADIA, R. THOMAS, *Money creation in the modern economy Commercial*, in *Quarterly Bulletin,* 1, 2014, 16. The authors underline that: «banks create money, in the form of bank deposits, by making new loans. When a bank makes a loan, for example to someone taking out a mortgage to buy a house, it does not typically do so by giving them thousands of pounds worth of banknotes. Instead, it credits their bank account with a bank deposit of the size of the mortgage. At that moment, new money is created». See also R.H. WEBER, *Legal issues in mobile banking*, in *Journal of Banking Regulation,* 11, 2010, 135.

[59] Under Article 2(2) EMD2, "electronic money" means «electronically, including magnetically, stored monetary value as represented by a claim on the issuer which is issued on receipt of funds for the purpose of making payment transactions […], and which is accepted by a natural or legal person other than the electronic money issuer». N. VANDEZANDE, *Virtual currencies. A legal framework*, cit., 213.

[60] These rules are the same of payment institutions and are stated in art. 10 Directive (EU) 2015/2366 as envisaged by art. 7 of EMD2.

[61] In accordance with art. 10, par. 1, lett. a) of Directive (EU) 2015/2366, national competent authority must identify the secure, liquid and low-risk assets in which electronic money institutions can invest client funds.

[62] Art. 10, par. 1, lett. b) of Directive (EU) 2015/2366.

[63] In EU, the prudential regime for electronic money institutions is the same of payment institutions, as it is stated in art. 3, EMD2.

requirements are limited than the ones of banks and so are the internal risk management and corporate governance rules. All the mentioned safeguards and measures aim at ensuring electronic money moneyness in a going-concern perspective[64].

4. *The case of Money Market Funds*

In order to understand the concept of moneyness and the requirements that are needed to qualify an instrument as good money, it is useful analyzing the case of Money Market Funds (MMF), whose shares' moneyness has been debated for long.

MMF are an example of the shadow banking system[65] and have been in the center of the 2007-2008 economic crisis. They are collective funds that invest in short-term instruments and promise redemptions at any time at a stable Net Asset Value (NAV)[66], allowing investors to withdraw their investment at a pre-established and fixed value[67]. Therefore, they are typically used for cash management purposes or as a short-term funding option: investors, especially institutional ones, see them as an equivalent of cash.

The moneyness of MMF has been identified as their weakness because, even if they aim at guaranteeing the redeemability at par value, they are not adequately protected from the risk of runs, as in other form of money (such as bank deposits). If investors start to mistrust MMF's capacity to maintain the value of shares unchanged, they will be

[64] R.H. WEBER, *Legal issues in mobile banking*, cit., 136.

[65] F. FORNASARI, *L'organizzazione dei fondi comuni monetari*, in *Banca borsa tit. cred.,* 2021, 97.

[66] Net Asset Value is equal to the difference between MMF total assets minus and its total liabilities.

[67] F. FORNASARI, *De-Moneynising MMF Shares: Third Party Support in the United States and the European Union*, in *New York University Journal of International Law and Politics* 51, no. 4, 2019, 1315; J. MORLEY, *The Regulation of Mutual Fund Debt*, in *Yale J. On Reg.,* 2013, 343, («One of mutual funds' key features is that they allow their shareholders to "redeem" their shares. In other words, shareholders can turn over their shares to the funds and receive cash in exchange. The cash amount is equal to the value of the portion of a fund's net assets (i.e., its assets minus its liabilities) that corresponds to each share. This amount is known as a fund's "net asset value", or "NAV". Mutual funds typically allow their shareholders to redeem every day»).

incentivized to redeem their units as soon possible to benefit from the first mover advantage[68]. Investors' requests of redemption force MMF to sell their assets. Asset sales could lead to a dumping effect on the market, thus inducing more investors to redeem their shares and potentially giving rise to runs on MMF[69]. That is what happened during the crisis of 2007-2008. MMF benefit from safeguards that work in ordinary circumstances, such as portfolio and liquidity restrictions, but they are not covered by mechanisms that enable them to face market stressed conditions. In particular, in case of liquidity shortage due to a massive selling of assets, MMF do not benefit from central bank liquidity support (as lender of last resort). They could receive a financial support (liquidity put) from external sponsors[70] that, however, are not contractually obligated: they are not obliged to put aside reserves to provide eventually financial support to MMF. Therefore, as the need arouses, sponsors may not have the necessary resources to save MMF from runs.

To overcome the MMF's vulnerabilities emerged from the crisis, and to make them safer, some regulatory reforms have been enacted in the EU and in the US, with the aim of depriving them, at least partially,

[68] The investor that redeems his shares first can obtain a higher price than their real value, especially if their price is likely to decrease further. Federico Fornasari, "L'organizzazione dei fondi comuni monetari," *Banca borsa titoli di credito* (2021): 104.

[69] T. ADRIAN, A. ASHCRAFT, *Shadow banking regulation*, in *Federal Reserve Bank of New York Staff Report* 46, https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr559.pdf.

[70] H. MAY, Money Market Funds-An Economic Perspective: Matching short term investments and funding needs, 2015, 5, available at https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000441776/Money_market_funds_–_an_economic_perspective:_Matc.pdf?undefined&realload=4SIOgAm33/LkEVTv4ZnDwgQwm2KOQoQghANmXzcXqy95Im63MW8MvtKEVgh1aH6V: «The term "sponsor" is used for an affiliated or parent company of the money market fund's manager. This will usually be an asset management firm running various funds or a bank. A sponsor is not legally or contractually obligated to support its money market fund in case of financial stress, but might do so in order to avoid reputational damage and to prevent a loss of investor confidence from spilling over to its other lines of business».

of their moneyness (de-moneynising)[71]: MMF's moneyness, from the one hand, could increase the risk of runs, and, from the other hand, could alter the perception of investors, considering MMF's shares as substitutes of bank deposits.

In 2017 the EU issued its final Regulation on MMF (the Regulation)[72], whose core element is to restrict the cases of redemption at par value. Under the Regulation, three types of MMF are envisaged according to the assets in which they must invest and the NAV accounting method employed: only two of them seek to maintain an unchanged NAV and, as a consequence, aim at guaranteeing their shares redeemability at par value. The first one is the Constant Net Asset Value MMF (CNAV)[73], that invests mostly in public debt and can pursue NAV stability by adopting the amortized cost accounting method[74]. The second one is the Low Volatility Net Asset Value MMF (LVNAV), that invests a specific percentage of the portfolio in short-term assets, and, unlike CNAV, can also invest in instruments issued by private entities[75]. The third type of MMF, the Variable Net Asset Value (VNAV), cannot redeem the shares at par value: it has been completely deprived from its moneyness. Even if CNAV and LVNAV can pursue principal stability, however, they cannot guarantee a stable value of the investment, regardless of the safeguards they benefit from, they can only seek to pursue principal stability as an objective[76].

In the US, the reform was enacted by Rule 2a-7, whose final version was adopted on July 23, 2014, and officially entered into force in

[71] F. FORNASARI, *De-Moneynising MMF Shares: Third Party Support in the United States and the European Union*, in *New York University Journal of International Law and Politics* 51, no. 4, 2019, 1314: «Two potential solutions were posed: Recognize that MMFs provide services that are functionally equivalent to bank deposits, and therefore align, at least partially, MMF regulation to bank regulation; or implement reforms that would make MMF shares different than bank deposits, thereby depriving them of their "moneyness"».

[72] Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017.

[73] Art. 2, n. 11) Reg. 2017/1131.

[74] Art. 29, par. 6 Reg 2017/1131.

[75] LVNAV may value their assets using the amortized cost accounting method if the assets have a residual maturity of up to 75 days as long as their price does not deviate from the market price by more than 10 basis points (Art, 29, par. 7 Reg. 2017/1131).

[76] Recital 16, Regulation (EU) 2017/1131.

November 2016[77]. For the purpose of this paper, suffice it to say that the Rule requires prime institutional MMF to implement a floating NAV, but it exempts retail and government funds from this requirement: as in the EU, the NAV has been limited only partially. Retail funds are defined as funds that have "policies and procedures reasonably designed to limit all beneficial owners of the fund to natural persons", while Government money market fund means a money market fund that invests 99.5 percent or more of its total assets in cash, government securities, and/or repurchase agreements that are collateralized fully[78].

The second core element of the reforms was the regulation of the financial external support: while both systems recognized that external support to MMF was one of the main factors that induced investors to misunderstand the risks associated with MMF, the solutions adopted in this field by the EU and the US differ greatly.

The EU approach was to ban the financial external support (Article 35 of the Regulation)[79]: one of the reason of this prohibition is identified in the fact that the sponsor is not obliged to put aside reserves to provide the liquidity put to MMF and, as a consequence, support could exceed the available reserves of the sponsor (Recital 5 of the Regulation). Moreover, as underlined by Recital 49, the external support could increase the contagion risk between the MMF sector and the rest of the financial sector, and the uncertainty over the amount and the extent of the amount of the support could fuel rather than stop a run[80].

The US, on the contrary, did not prohibit the external support, underling that the main problem during the crisis was the lack of transparency, rather than the support per se; therefore, the reform imposed some strict transparency requirements against the opacity of

[77] F. FORNASARI, *De-Moneynising MMF Shares: Third Party Support in the United States and the European Union*, cit., 1318.

[78] For a deep analysis see J.E. FISCH, *The Broken Buck Stops Here: Embracing Sponsor Support in Money Market Fund Reform*, in *North Carolina Law Review* 93, no. 4, 2015, 935.

[79] For a description of the external support see supra note n. 69. Article 35 of the Regulation defines very broadly the external support and raised many interpretative issues: see F. FORNASARI, *De-Moneynising MMF Shares: Third Party Support in the United States and the European Union*, cit., 1323.

[80] F. FORNASARI, *De-Moneynising MMF Shares: Third Party Support in the United States and the European Union*, cit., 1322.

sponsor support[81], in order to avoid the misunderstanding of the risk associated with MMF[82]. Specifically, each money market fund is required to disclose any occasion during the last ten years on which a sponsor provided any form of financial support to the fund, allowing investors to understand better whether a particular fund has required financial support in the past and the extent of sponsor support across the fund industry. MMF are required to describe some details of the support, such as the identity of the sponsor, the relationship between the sponsor and the fund, the amount of support, the security supported and its value on the date support was initiated, the reason and the term of support, and any contractual restrictions relating to support[83].

The case of MMF is useful to the purpose of this paper because it shows clearly how the moneyness of an instrument depends on the presence of two core elements[84]: the redeemability at par value and the mechanisms that guarantee that convertibility (first of all the role of central banks as lenders of last resort). The process of de-moneynising of MMF's shares derives from the limitation of cases of redeemability at par (by implementing the cases of floating NAV) and the intervention on the external support. Even if the external support is allowed, as in the US, it must be clear to the investors that it differs from the public guarantee of central banks.

Therefore, the promise of an instrument's redeemability at par cannot per se makes it comparable to money because in case of stress conditions it wouldn't be protected from the risk of runs. These principles are particularly important for means of payment because, as already underlined, consumers that seek to conclude a payment transaction need instruments that ensure the stability of their nominal value: these rules must be applied to address the question if stablecoins can or should be used as official means of payment.

---

[81] F. FORNASARI, *De-Moneynising MMF Shares: Third Party Support in the United States and the European Union*, cit., 1321.

[82] SEC, Amendment to Form PF, available at https://www.sec.gov/rules/final/2014/33-9616.pdf, 23.

[83] SEC, Amendment to Form PF, available at https://www.sec.gov/rules/final/2014/33-9616.pdf, 317.

[84] The moneyness ultimately depends on the State. See D. GABOR, J. VESTERGAARD, *Chasing Unicorns: the European single safe asset project*, cit., 143.

5. *Are stablecoins good money? And can they be used as means of payment?*

As it was underlined in the first paragraph of this paper, stablecoins stand out from other crypto-assets for their purpose of value stabilization: they provide for some mechanisms that aim at minimizing the fluctuations of their price, backing their value by reserve assets. Stablecoins' stability contributed to increase the willingness of their private issuers to use them as a common means of payment: this can have many pros, making payments easier, cheaper, faster, and easily accessible. However, it is crucial to verify if they enjoy the features needed to have moneyness and if they can be qualified as official means of payment: the answer to the question is different depending on the category of stablecoins considered.

Stablecoins backed by a single fiat-currency that guarantee their redeemability at par (equal to the funds received in exchange) can be qualified as good money[85], and, particularly, a new form of private money. These stablecoins are representation of monetary value and are issued on receipt of banknotes, coins, or scriptural money, meaning that the crypto currency has a "prepaid" nature and grants holders a redemption right at par value against the issuer[86]: they would substantially be a new representation of a national currency[87]: potentially, this cryptocurrency can be used as an official mean of payment.

Stablecoins of these kinds present a different shortcoming: they could be considered in conflict with the prohibition to persons or entities that are non-bank institutions to carry on the business of taking deposits. In the US, under section 21 of the Glass-Steagall Act[88], it is

[85] Examples are Terra stablecoins or Tether stablecoins.

[86] M. SOKOLOV, *Are Libra, Tether, MakerDAO and Paxos Issuing E-Money? Analysis of 9 Stablecoin Types Under the EU and UK E-Money Frameworks*, 2020, 33, available at SSRN: https://ssrn.com/abstract=3746250 or http://dx.doi.org/10.2139/ssrn.3746250

[87] G.B. GORTON, J. ZHANG, *Taming Wildcat Stablecoins*, in *University of Chicago Law Review* 90, 2021), 5, available at https://ssrn.com/abstract=3888752.

[88] 12 U.S.C. § 378(a)(2). Interestingly, one of the applications of this provision occurred in the late 1970s and it concerned MMFs: federal authorities took up the question of whether MMFs should be considered Glass-Steagall deposits governed by section 21. Assistant Attorney General Philip Heymann concluded that Section 21 of

unlawful for a non-bank entity to engage in deposit-taking, and in the EU, under Article 9 of the Directive 2013/36/EU, "the Member States shall prohibit persons or undertakings that are not credit institutions from carrying on the business of taking deposits". Stablecoins backed by single fiat currency that gives a right of redemption is a deposit-like product and their holders are creditors for the depository, and, consistently, stablecoins' issuers -i.e., non-banking institutions- take deposits, potentially violating the above-mentioned provisions[89].

With reference to the other types of stablecoins, both off-chain (backed by different fiat currencies or other assets), on-chain[90] (backed by cryptocurrencies) and algorithmic[91] the answer to the question should be negative: they cannot be considered as good money and, consequently, cannot be used as official means of payment. Even if they aim at guaranteeing the maintenance of their value, they do not guarantee the redeemability at par because the value of the assets that form the reference peg can fluctuate and any actual redemption at par based on the price of that assets would be purely coincidental. Therefore, stablecoins could be prone to the risk of runs if token holders expect a decrease of the value of the reference peg assets and therefore of the redemption price or perceive the issuer as incapable of honoring his obligations. This would force stablecoins' issuer to liquidate the assets to raise resources, thus potentially generating destabilizing

---

the Glass-Steagall Act had not been violated, opining instead that a holder of money market mutual funds was "a holder pro tanto of the fund" subject to market fluctuations, based on the performance of the underlying assets. See H.E. JACKSON, M. RICKS, *Locating Stablecoins within the Regulatory Perimeter*, in *Harvard Law School Forum on Corporate Governance*, 2021, https://corpgov.law.harvard.edu/2021/08/05/locating-stablecoins- within-the-regulatory-perimeter/.

[89] G.B. GORTON, J. ZHANG, *Taming Wildcat Stablecoins*, cit., 34.

[90] Holders of on-chain asset-backed stablecoins do not have a proper redemption claim against an accountable subject, since smart contracts operate redemption in a decentralized way. However, even if there was a responsible party managing the stablecoin initiative in a centralized way, on-chain asset-backed stablecoins would still not be considered as money or as a proper payment instruments as they do not ensure convertibility into fiat currencies. In case of redemption, holders receive crypto-assets initially posted as collateral, not the corresponding amount in fiat currencies. They could obtain that only turning to an external provider offering exchange services.

[91] For a definition of these types of stablecoins see above under paragraph n. 1.

effects on the crypto-asset market or in the traditional financial system, depending on the investment policy employed by the issuer[92]. Effects of such kind could be worse than the ones of MMF, since stablecoins issuers have no obligations to set aside reserve assets or invest in specific instruments.

Moreover, transactions and in general legal contracting would become very difficult because consumers could not know in advance the value of the stablecoins and would have to engage in due diligence about it every time they need to execute a payment [93]. Consequently, the economic system would be inefficient[94].

For the abovementioned reasons, stablecoins should only have the capacity to serve as a store of value or as a mean of investment, that can be less risky than other crypto-assets due to their stabilization mechanisms, however, since they do not guarantee redeemability at par, they could not be considered akin to official means of payments.

6. *The answer of the United States and the European Union*

The willingness to use stablecoins as means of payment is growing and evolving, as the example of Diem demonstrates, but neither the EU, nor the US provided for a regulation on them, yet. The main question is how policymakers will adjust the regulatory framework to handle their growth and evolution in the coming years[95].

The problem is not straightforward because it involves different and contrasting interests: from the one hand, stablecoins, as the cryptocurrency system in general, have the capacity to provide a faster, more convenient, and cheaper payment system that leverages technological innovation; from the other hand, if not properly regulated, they can pose systemic risk. Policymakers can address the issue putting the fewest limitations on it, giving to stablecoins the possibility to expand and improve their capacities. A reason that can motivate this choice could be also the fear that banning the use of stablecoins would bring the enormous capitals invested in cryptocurrencies to other legal systems that likely will adopt less severe legislations to attract those

[92] G.B. GORTON, J. ZHANG, *Taming Wildcat Stablecoins*, cit., 7.
[93] See above under paragraph n. 2.
[94] G.B. GORTON, J. ZHANG, *Taming Wildcat Stablecoins*, cit., 29.
[95] G.B. GORTON, J. ZHANG, *Taming Wildcat Stablecoins*, cit., 4.

capitals, used also for illicit activities. The opposite option is to prohibit the use of stablecoins that do not guarantee the redeemability at par as means of payment, as suggested in the previous paragraph, to avoid the risk of systemic crisis.

Even if the US and the EU have not provided yet for a regulation on this problem, some official documents from the authorities and a proposal of a directive are in place and can furnish some clues on the attitude of the two regulators.

With reference to the US, on November, 1st 2021, the President's Working Group on Financial Markets (PWG)[96], joined by the Federal Deposit Insurance Corporation (FDIC) and the Office of the Comptroller of the Currency (OCC), released a report on stablecoins[97] that addresses also the problems related to payment stablecoins. The report takes into consideration only stablecoins backed by a single fiat currency that guarantee redeemability at par and it is favorable to the use of these stablecoins as means of payment. In the document it is recommended that Congress act promptly to ensure that payment stablecoins are subject to appropriate federal prudential oversight on a consistent and comprehensive basis, to address prudential risks, and particularly risks of run, that could be associated with the use of stablecoins as means of payment. The three agencies underline that legislation should limit the issuance of payment stablecoins (and the activities of redemption and retaining of reserve assets) to entities that are insured deposit institutions[98]. Like other insured depository institutions, the ones that issue stablecoins would be subject to supervision and regulation at the depository institution level by a

[96] Executive Order 12631 of March 18, 1988 (Working Group on Financial Markets) established the President's Working Group on Financial Markets, which is chaired by the Secretary of the Treasury, or their designee, and includes the Chair of the Board of Governors of the Federal Reserve System, the Chair of the Securities and Exchange Commission, and the Chair of the Commodity Futures Trading Commission, or their designees.

[97] PRESIDENT'S WORKING GROUP ON FINANCIAL MARKETS (PWG), THE FEDERAL DEPOSIT INSURANCE CORPORATION (FDIC) AND THE OFFICE OF THE COMPTROLLER OF THE CURRENCY (OCC), *Report on Stablecoins*, November 2021, available at https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf.

[98] 12 U.S.C. § 1813(c)(2) defines a insured deposit institution as «any bank or savings association the deposits of which are insured by the Corporation pursuant to this chapter».

federal banking agency and consolidated supervision and regulation by the Federal Reserve at the holding company level. Moreover, they would be subject of special resolution regimes, would have access to the Federal Reserve as lender of last resort, and would benefit from deposit insurance, as others bank institutions[99]. The report recommends, then, that also other entities[100] - different from the issuers -, that perform activities that are critical to the functioning of the stablecoin arrangement, should be subject to a prudential framework that would include compliance with appropriate risk-management, liquidity, and capital requirements. All these measures would protect users and the economic system in general, preventing stablecoins from the risk of runs and from systemic risks.

The European Union has taken the initiative to regulate and supervise this emerging crypto assets market through a Proposal for a Regulation on Markets in Crypto-assets ("MiCa")[101]. Throughout the proposal, the Commission emphasized the intention to proceed cautiously so as to not hinder innovation in a still emerging field of technological development. The European Council, in November 2021, adopted its position on the Commission's Proposal (the "Council General Approach")[102].

As in the United States, the European authorities recognized that stablecoins backed by a single fiat currency must be admitted under the legal framework also as a valid mean of payment. The European Commission and the Council underlined that asset-referenced tokens (such as stablecoins) backed with a single existing fiat currency are substantially alike electronic money, as regulated under 2009/110/EC (EMD2), and should fall under that legal framework. As a consequence, such e-money tokens must be issued either by a credit institution as defined in Regulation n. 575/20138 of the European Parliament and of the Council, or by an electronic money institution authorized under

[99] PRESIDENT'S WORKING GROUP ON FINANCIAL MARKETS (PWG), THE FEDERAL DEPOSIT INSURANCE CORPORATION (FDIC) AND THE OFFICE OF THE COMPTROLLER OF THE CURRENCY (OCC), *Report on Stablecoins*, cit., 16, available at https://home.treasury.gov/system/files/136/StableCoinReport_Nov1_508.pdf.

[100] Such as custodial wallet providers.

[101] Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets, COM(2020) 593 final, 24 September 2020.

[102] Available at https://www.consilium.europa.eu/media/53105/st14067-en21.pdf.

Directive 2009/110/EC. Issuers should also grant the users with a right to redeem their crypto currency at any moment and at par value against the currency referencing those tokens[103].

Unlike the American report on stablecoins, the Commission and the Council addressed also the problem of stablecoins backed with multiple fiat currencies (such as Diem) or other assets: they can fall under the definition of the asset-referenced tokens («a type of crypto-asset that is not an electronic money token and that purports to maintain a stable value by referencing to any other value or right or a combination thereof, including one or several official currencies of a country»[104]). For the purpose of this paper, it is relevant noting that the European authorities did not ban the use of these stablecoins as means of payment, fixing only some restrictions on their use as such. In particular, article 19b of the General Approach of the Council states that «if the estimated quarterly average number and value of transactions per day associated to uses as means of exchange is higher than 1.000.000 transactions and euro 200 million respectively» the issuer shall (i) stop issuing the asset-referenced token and (ii) must present a plan to the competent authority to ensure that the number and value of transactions per day associated to uses as means of exchange within a single currency area is kept below that threshold. The competent authority may allow the issuer to issue again asset-referenced tokens if there is evidence that it is respecting the fixed threshold. The possibility to use stablecoins as means of payment, however, is not followed by the right of the users to redeem at par value the asset-referenced tokens[105]; moreover, the traditional backstops provided for other forms of issuers of private money, such as the deposit guarantee and the role of the central banks as lender of last resorts, are not in place for the issuers of stablecoins[106].

[103] Article 44 Mica and Principle 10 and article 44 of the Council General Approach.

[104] Article 3(1) (3) Council General Approach.

[105] Article 35 Council General Approach provides only for a right to redemption at the market value: Upon request by the holder of asset-referend tokens, the respective issuer must redeem at any moment by paying in funds the market value of the asset-referenced tokens held or by delivering the referenced assets.

[106] Article 19b has not been modified in its essential elements by the agreement on the Regulation on Markets in Crypto-assets reached by the EU Trilogue negotiators on June 30th 2022.

7. *Conclusions*

The willingness to use stablecoins as a mean of payment is a global phenomenon and must be addressed by the regulators that have the arduous duty to find a balance between the innovation, represented by stablecoins, and the protection of the economic system that this cryptocurrency may threaten. Innovation can bring many positive effects, especially in the field of the means of payment, making payment easier, more accessible, and cheaper. As analyzed in the paper, an instrument different from public money can be used as an official mean of payment only if it has moneyness and, as a consequence, if it can be considered good money. The moneyness of an instrument depends basically on its capacity to be redeemed at par, and its redeemability is guaranteed by its regulation. This is how some types of private money, such as banks deposit and electronic money, are recognized as official means of payment under the EU and the US' legal systems: they have the capacity to be redeemed at par and the legislators provided for some backstops that aim at guaranteeing that redeemability. Recognizing moneyness to instruments that do not have the two abovementioned requirements can cause systemic crisis, as it happens with MMF: this is why regulators decided to de-moneynize them. For these reasons, stablecoins that do not guarantee their redeemability at par cannot have moneyness and should not be considered as a valid mean of payment.

The US and the EU seem to be consistent to these principles with reference to the case of stablecoins backed by a single fiat currency that guarantee redeemability at par: both systems concluded that these cryptocurrencies can be used as means of payment but they must be subject to appropriate prudential oversight on a consistent and comprehensive basis. The PWC proposal recommends to extend to these stablecoins' issuers the rules provided for insured deposit institutions; the European Commission and Council qualify these stablecoins as electronic money and suggest to extend to them the regulation already in place for e-money.

Different proposals have been adopted with reference to the stablecoins that cannot guarantee the redeemability at par. While the US did not mention these stablecoins among the ones that could be used as official means of payment, the EU seems to be more open to this

innovation, allowing their employment as means of payment -only- under certain limits of number and value of the transactions, but without guaranteeing their redeemability at par. Even if those thresholds on the use of stablecoins can have a strong impact on their diffusion, the possibility to employ them as official means of payment could still cause systemic crisis: in this case the balance between innovation and protection of the consumers and the economic system should be revisited and the solution proposed in the US could be used as a model.