Global stablecoins in 2030: a European perspective

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(Preliminary version)

Abstract

This paper examines the implications of global stablecoin adoption for the monetary and financial architecture, with particular emphasis on the euro area perspective. It employs a flow-of-funds framework tracing sectoral and cross-border balance-sheet adjustments as a function of funding sources and reserve asset composition, operationalised through a calibrated three-region model (United States, euro area, rest of the world) embedding alternative stablecoin growth scenarios for USD and EUR stablecoins through 2030. The analysis finds that, even under high stablecoin growth assumptions, aggregate effects on the euro area financial system would likely remain manageable. The principal structural effect on banks is the conversion of stable, inexpensive retail deposits into more volatile and costly wholesale funding. Effects on securities markets, while meaningful in terms of demand reallocation toward short-term sovereign instruments, are likewise assessed as not creating unsurmountable challenges. Stablecoin-specific financial stability risks, though real, are not fundamentally novel and are amenable to standard regulatory mitigation tools. Stablecoins are best understood as part of a continuing evolution in monetary architecture whose ultimate significance will depend on the efficiency gains they ultimately offer and the adequacy of the regulatory environment. While financial stability and monetary architecture risks seem to be manageable, other important societal issues, like their significant use for illicit payments and regulatory arbitrage deserve more scrutiny.

Key words: stablecoins, flow of funds, financial intermediation, financial stability, financial regulation, monetary architecture, dollarization, international role of the euro, bank funding, digital money.

JEL Codes: E42, E44, G28, O33

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1. Introduction

While stablecoins have originated as niche innovation within crypto-asset markets, they are now often expected to develop into a generally used innovative instrument for payments, savings, and cross-border transactions, with the potential to reshape financial intermediation and market structure (Adrian et al. 2025; Shin 2025). Market projections suggest that their scale could expand substantially over the coming years, possibly by such an order of magnitude that they would raise more fundamental questions regarding their implications for financial markets, monetary systems, and financial stability (Citi 2025). At present, this development is asymmetric, with US dollar-denominated stablecoins dominating global circulation, while euro-denominated stablecoin circulation remains small. This asymmetry raises concerns in Europe (and elsewhere), relating to monetary sovereignty, financial structure, and the international role of the euro (Aerts, Lambert, and Reinhold, 2025; ESRB, 2025a).

Despite growing academic and policy attention on these ultimate implications of future stablecoin usage, and a variety of publications on stablecoins, much of the empirical literature has focused on short-term effects, such as the impact of past stablecoin flows on asset prices and yields on the same or subsequent days (Ahmed and Aldasoro 2025; Ante, Saggu, and Fiedler 2025), while largely neglecting the medium- to long-term structural implications of a substantially larger stablecoin sector. At the same time, policy-oriented contributions have emphasized financial stability risks, including run dynamics, reserve asset liquidation, and spillovers to traditional financial markets (ECB Crypto-Asset Task Force 2020; Adrian et al. 2025; Gross and Senner 2026). However, these strands of literature are rarely integrated into an analytical framework that simultaneously captures balance sheet adjustments, price effects, and systemic risk. Moreover, the predominance of US dollar stablecoins has led to limited attention to alternative scenarios, including the possibility of significant issuance and adoption of euro-denominated stablecoins. This paper seeks to address these gaps.

The core contribution of the paper is a medium- to long-term scenario analysis of stablecoin adoption, grounded in a flow-of-funds framework. Stablecoins are understood as balance sheet constructs embedded in the financial system, whose expansion necessarily implies corresponding adjustments across sectors and instruments. By embedding stablecoins into a consistent system of financial accounts, the analysis traces how issuance and reserve accumulation affect the balance sheets of households, banks, non-bank financial institutions, and the public sector. This approach allows for a structured assessment of how stablecoin growth reshapes funding structures, asset demand, and cross-sectoral linkages, complementing existing literature that focuses primarily on partial equilibrium effects. A three-country model with hierarchical cross-border circulation of stablecoins is calibrated using 2025 sectoral accounts data, which is then projected five years ahead, and into which assumptions on stablecoin growth are inserted. Building on this framework, the paper develops a set of forward-looking scenarios in which stablecoins reach substantial scale. These scenarios vary along key dimensions, including the overall size of stablecoin markets, their currency denomination, the geographical distribution of their circulation, and the composition of their reserve assets. Attention is paid to asymmetric configurations, such as the widespread use of US dollar stablecoins outside the United States, which may contribute to forms of digital dollarisation and affect international capital flows (FSB 2024; Graf von Luckner, Koepke, and Sgherri 2024).

At the same time, alternative scenarios are considered in which euro-denominated stablecoins achieve significant adoption, both within the euro area and internationally. The analysis examines the implications of these scenarios along three main dimensions. First, it assesses the impact on financial markets and financial structure, including effects on relative asset yields, demand for safe assets, and the pricing of short-term instruments (Ahmed and Rebucci 2024; Barthélemy, Gardin, and Nguyen 2026). Second, it evaluates the consequences for financial intermediation, in particular the potential substitution of bank deposits by stablecoins and the resulting effects on banks' funding models, liquidity ratios, and lending capacity (Coste 2024; Aldasoro et al. 2025; Altavilla et al. 2026). Third, it analyses financial stability risks, including both structural vulnerabilities and dynamic risks arising from large inflows into or outflows from stablecoins. These include run dynamics, fire-sale externalities, and increased sensitivity of financial markets to shifts in confidence (Gorton and Zhang 2023; Ma, Zeng, and Zhang 2025; Gross and Senner 2026).

Parts of the paper focus specifically on the euro area perspective. It has been argued that the widespread use of foreign currency stablecoins in the euro area could weaken monetary policy transmission, complicate liquidity management, and raise concerns related to monetary sovereignty. On the other side, a successful euro stablecoin ecosystem could support financial innovation, enhance the international role of the euro, and contribute to the demand for euro-denominated safe assets (Born et al. 2026). Attention is also given to regulatory issues specific to the euro area, including MiCAR, noting that the EU Commission (2026) launched in May 2026 a targeted review of MiCAR with several questions addressed to the regulation of EMTs. The paper revisits policy and regulatory considerations considering the scenario analysis. It evaluates how existing regulatory frameworks interact with different possible configurations of the stablecoin ecosystem and discusses potential policy responses aimed at mitigating financial stability risks while fostering efficient and competitive market development. These include questions related to reserve requirements, access to central bank facilities, and the broader interaction between stablecoins and the banking system (CPMI 2023; FSB 2020).

The remainder of the paper is structured as follows. Section 2 revisits the nature and defining characteristics of stablecoins, including their legal and economic properties and main use cases. Section 3 reviews the literature on the impact of stablecoins on financial markets and financial stability. Section 4 introduces the flow-of-funds framework that underpins the scenario analysis. Section 5 presents the 2030 scenario assumptions and design. Section 6 revisits the possible longer-term implications of stablecoins on euro area financial markets and financial stability in the year 2030 based on the scenario analysis. Section 7 concludes that even under a "bullish" scenario of stablecoin issuance, the impact of stablecoins on global financial markets will likely be moderate in view of the other ongoing significant financial developments expected over the next five years (such as growing debt levels), and the general elasticity of securities supply and balance sheets of financial intermediaries in a medium-term perspective. Financial stability implications can be contained with effective regulation and if central banks do not exclude the future access of stablecoins to a conservatively designed lender of last resort facility. At the same time the paper recalls the still unaddressed risks of stablecoins in the field of illicit payments (Chainalysis, 2026; Financial Action Task Force, 2026) and regulatory arbitrage.

2. The nature and use cases of stablecoins

2.1 Defining "stablecoins"

The nature of stablecoins has been rendered somewhat opaque by their technological origins and the difficulty authorities have faced in translating grassroots vocabulary and aspirations of Decentralised Finance (DeFi) into the conceptual frameworks of monetary and financial systems. The term stablecoin emerged on fora between 2011 and 2014 without yet a stable meaning[2]. As of 2014, the term would be used more consistently and would take shape, although neither the Tether (2014) nor the Libra (2019) White Paper yet use the term. Shaken by the Libra initiative, the Financial Stability Board (FSB) issued a consultative document in 2020 in which it provided official sector definitions that have influenced language and legislation until today: Digital assets were understood as "digital representation of value which can be used for payment or investment purposes". Crypto-assets were defined as "private digital assets that depends primarily on cryptography and distributed ledger or similar technology", and stablecoins were "crypto-assets that aim to maintain a stable value relative to a specified asset, or a pool or basket of assets". While the FSB definition of "Digital assets" is self-referential in terms of using the term "digital" again in the explanation, one can infer from the way the term "Crypto-asset" is subsequently defined by the FSB that the FSB meant with "digital" any form of "electronic" representation, which is inconsistent with the definition of "digital" appearing in the Genius Act and the standard use of "digital" in the crypto-industry (which already implies reliance on some DLT technology). Moreover, the formulation "distributed ledger or similar technology" raises conceptual difficulties as "similar technology" is indeterminate.

Stablecoins (E-money tokens) according to MiCAR (2020-2023)

Legislative initiatives have broadly followed the FSB logic. Article 3 (1), (2), (5), (7) of MiCAR propose the following terminology. Distributed ledger technology (DLT) would be "technology that enables the operation and use of distributed ledger", whereby such a ledger is an "information repository that keeps records of transactions and that is shared across, and synchronised between, a set of DLT network nodes using a consensus mechanism". Crypto assets are a "digital representation of a value or of a right that is able to be transferred and stored electronically using distributed ledger technology or similar technology". Instead of relying on the term "stablecoin", MiCAR refers to electronic money tokens (EMTs) which are a "type of crypto-asset that purports to maintain a stable value by referencing the value of one official currency". These definitions are partially internally and partially mutually circular.[3] The MiCAR definition of EMT keeps the vague FSB definition of stablecoins as a crypto-asset, although Recital 19 already states that "issuers of e-money tokens should ensure that holders of such tokens can exercise their right to

[2] See e.g. Bindseil, Coste, Pantelopoulos (2024, 24).

[3] According to ISO704 (2022, 42) circularity occurs if "one concept is defined using a second concept, and if that second concept is defined using the designation or elements of the designation representing the first concept, the resulting definitions are said to be circular. Circular definitions, sometimes called tautological definitions, make it impossible to understand the concept and shall be avoided." Circularity can occur within a single definition or within a system of definitions. "A definition is circular within a system of definitions when two or more concepts are defined by means of each other."

redeem their tokens at any time and at par value against the currency referencing those tokens." Art 49 (4) of MiCAR makes clear that "Upon request by a holder of an e-money token, the issuer of that e-money token shall redeem it, at any time and at par value, by paying in funds, other than electronic money, the monetary value of the e-money token held to the holder of the e-money token." The definition of EMTs in Art 3(7) of MiCAR should therefore not have relied on the vague idea of "purporting to maintain a stable value". MiCAR, by adopting the term "e-money token" relies on Directive 2009/110/EC, where "e-money" refers to electronic money issued by a non-bank payment services provider operating under a special license, with a narrow balance sheet, prohibited from granting credit, and required to hold highly liquid, short-term assets on the asset side. In any case, neither "e-money" nor "token" resolves the linguistic concerns raised by "stablecoin." The term "e-money" is itself potentially misleading and insufficiently self-explanatory, since commercial and central banks also issue electronic forms of money.

Stablecoins according to US Genius act

The US Genius Act of 2025 (Bill "Guiding and Establishing National Innovation for U.S. Stablecoins of 2025") specifies under Section 2 that a digital asset is "any digital representation of value that is recorded on a cryptographically secured distributed ledger", the latter being "technology in which data is shared across a network that creates a public digital ledger of verified transactions or information among network participants and cryptography is used to link the data to maintain the integrity of the public ledger and execute other functions". A payment stablecoin is "a digital asset that is, or is designed to be, used as a means of payment or settlement; and the issuer of which is obligated to convert, redeem, or repurchase for a fixed amount of monetary value."

Discussion

The term "stablecoin" is subject to several issues: First, the word "coin" may overemphasize the instrument's supposed bearer character[4]. Second, the qualifier "stable" is not distinctive[5]. Third, the technological structure of the ledger database, including its validation mechanism, is generally irrelevant to the legal and economic nature of the asset it records and should therefore not determine its name[6]. If a stablecoin circulates on a *private* multi-asset programmable ledger platform, whereby users are accepted only after identifying and demonstrating the fulfilment of access criteria in a formal procedure, it becomes

[4] In practice, these instruments are registered and transferred within a system-of-accounts database. Although access through public DLT networks may give them certain features resembling bearer instruments, legally and economically they function as account-based claims rather than physical or purely bearer objects.

[5] Private money is expected to be stable insofar as it is redeemable into other forms of public or private money denominated in the national unit of account (the numéraire). This characteristic is shared by other forms of private money. Without such redeemability, an instrument would lack convertibility and would instead constitute an idiosyncratic payment or investment asset falling outside the "singleness of money" - a concept that is widely referenced but still evolving (Garratt and Shin, 2023; Bidder, 2025; Coste and Pantelopoulos, 2025; BIS, 2015). Both MiCAR and the Genius Act confirm this logic by requiring that stablecoins (designated as "e-money tokens" and "payment stablecoins," respectively) be redeemable and fungible forms of private money.

[6] A bond, for example, remains a bond regardless of whether ownership is evidenced by (i) a paper certificate, (ii) a handwritten registry, (iii) a centralized electronic ledger maintained by a central securities depository (CSD), or (iv) a distributed ledger or blockchain system. The recording technology does not redefine the asset itself. (Bindseil, Coste and Pantelopoulos, 2024).

rather obvious that the reliance on "DLT or similar technology" is not too relevant for the functionality and usage of the stablecoin on this platform. The growing realisation of this seems to have led to a shift in emphasis between the BIS Annual Economic Report (AER) chapters 3 of 2022, 2023 and 2025, which each deal with the future of money. Chapter 3 of the 2022 AER refers 38 times to "DLT", while in 2023, only three such references are made (in the glossary). And finally, chapter 3 of the 2025 AER explicitly questions the relevance of DLT as definitory element of tokenisation, and thereby also of tokenised forms of private money:

> *"At the heart of this vision is the concept of tokenisation, the process of recording claims on real or financial assets that exist on a traditional ledger onto a programmable platform. Tokenisation […] enables the integration of messaging, reconciliation and asset transfer into a single, seamless operation. Its potential lies in its ability to knit together operations encompassing money and other assets that would reside on the same programmable platform. This could be made possible by a new type of financial market infrastructure – a "unified ledger" – which may or may not use distributed ledger technology (DLT)."*

At the core of stablecoins lies the "tokenisation" of a privately issued form of money, understood as its representation on a multi-asset programmable platform that enables atomic, straight-through processing (STP) of payment and settlement transactions. In the context of stablecoins, however, the term "tokenisation" may place undue emphasis on their prior existence on a traditional ledger, as both their representation and transferability are frequently native to the programmable platform itself. To be money, stablecoins would need to be redeemable into other forms of money, and ideally directly into the ultimate form of money – central bank money. To ensure distinguishability of stablecoins from commercial bank deposit tokens, the definition of the former must include the transferability of the stablecoins across the users of the platforms, beyond the users that have a depositor relationship with the entity issuing the stablecoins. Whitelisting may restrict this, but to preserve the nature of a private money token to be a stablecoin (and not a commercial bank money token), the whitelisting must not be equivalent to a limitation of holders to depositors of the issuing institution. On a permissioned platform, all parties having gained permission to access the platform would be assumed to be able to hold the stablecoin.

Based on the foregoing discussion, an appropriate definition of a "stablecoin" would be:

> *"Stablecoins are privately issued electronic monetary instruments represented on a multi-asset programmable ledger and transferable to parties with access to that ledger beyond those maintaining a direct contractual deposit relationship with the issuer. As monetary instruments, stablecoins must be redeemable at par into central bank money."*

Recently also public entities have issued money tokens (for circulation in public DLT networks, redeemable at par), such as the Frontier Stable Token issued by the State of Wyoming. If one would want to include these in the definition of stablecoins, one could modify the definition above by substituting "private" by "non-central bank". If one would like to avoid the term "stablecoins" because of its linguistic flaws, a term like "private electronic money tokens" could be used. Tokenised commercial bank deposits could be classified as a special case of stablecoins with whitelisting of the existing depositors of the relevant bank.

2.2 Typology of stablecoins

A. Legal/institutional status of SC issuer

The issuers of the by far largest global stablecoins USDT and USDC are non-bank financial entities not affiliated to a banking group. However, according to MiCAR and the Genius Act, banks can also issue stablecoins, directly or indirectly. Recital 19 of **MiCAR** refers to "*an obligation for e-money tokens to be issued either by a credit institution […] or by an electronic money institution*." There is therefore no need for a bank under MiCAR to establish a separate subsidiary for issuing a stablecoin. And indeed, according to the MiCAR White Paper[7] of ODDO BHF EURO STABLECOIN (EUROD), the bank ODDO BHF SCA is the direct issuer of the token. The issuer is not a newly established entity, but "*a family-owned business created in 1849, spanning five generations of stockbrokers*." The bank Banking Circle SA issues in Luxembourg a MiCAR compliant EMT called Eurite Euro Token (EURI), which is an ERC-20 token on the Ethereum Blockchain "backed 1:1 by cash in Euros", and redeemable at no fee. While this stablecoin is directly bank-issued, client funds would be segregated (different from the above-described case of EUROD): "*By segregating funds in another account, separate from Banking Circle's own assets, Banking Circle creates a legal structure that institutional clients can actually trust. Client funds remain segregated from the bank's balance sheet and protected from any potential issuer distress*." Other European banks, such as Societé Générale, have instead decided to create a fully owned non-bank subsidiary, in its case SG Forge which issues EUR COINVERTIBLE (EURCV). According to its White Paper[8], "SG-FORGE is a fully integrated and regulated subsidiary of the European bank Societe Generale, incorporated in France […]" SG-FORGE is a licensed investment firm under European MiFID regulation.[9] Also the planned Qivalis[10] stablecoin is an e-money institution fully owned by a consortium of European banks which plans to issue euro denominated stablecoins. The common ownership by banks would imply that their "*collective credibility anchors Qivalis as the neutral cornerstone of a global digital infrastructure*". Other MiCAR regulated stablecoins like Circle's EURSC (Paris), Malta-issued EURS issued by the e-money institution STASIS, and Island-issued EURe issued by the e-money institution Monerium are not bank-owned.

Under the **GENIUS Act**, only a PPSI ("Permitted Payment Stablecoin Issuer") may issue a payment stablecoin[11]. The Genius Act however allows FDIC-supervised banks to issue payment stablecoins through a PPSI subsidiary and to engage in related activities. Such a bank seeking to issue payment stablecoins

[7] https://www.oddo-bhf.com/app/uploads/sites/2/2026/01/2026-01-27-oddo-bhf-eurod-emt-whitepaper-mica.pdf?utm_source=chatgpt.com

[8] https://www.sgforge.com/wp-content/uploads/2023/04/SGF_Coinvertible_White-Paper-v1.0.pdf

[9] "Supervised by the Autorité de contrôle prudentiel et de résolution (ACPR) and controlled by the Autorité des marchés financiers (AMF)… For Digital Asset activities, SG-FORGE is registered as Digital asset service provider (Prestataire de services sur actifs numériques or PSAN) in France with the AMF on the assent of the ACPR".

[10] https://qivalis.eu

[11] Genius Act 139 STAT. 422: "Permitted payment stablecoin issuer.—The term "permitted payment stablecoin issuer" means a person formed in the United States that is—(A) a subsidiary of an insured depository institution that has been approved to issue payment stablecoins under section 5; (B) a Federal qualified payment stablecoin issuer; or (C) a State qualified payment stablecoin issuer."

through such a subsidiary is required to apply to the FDIC for the subsidiary to be approved as a permitted payment stablecoin issuer. "The GENIUS Act requires the FDIC to receive and review applications and to issue implementing regulations establishing the application process. The proposed rule would implement the requirements of section 5 of the GENIUS Act with respect to evaluating applications based on the statutory factors, processing applications within specified timeframes, and establishing an appeal process for denied applications." (FDIC Press release, 16/12/2025).

What are the comparative advantages and disadvantages of banks vs. non-banks in issuing stablecoins? Direct or indirect issuance by a bank has the advantage to grant direct or indirect access to the central bank (to deposit funds and to central bank credit). Banking regulation is extensive and can contribute to support trust of stablecoin holders. Also pledging the brand name value of a bank and facing the regulatory costs of a bank issuing stablecoins signals commitment and credibility of intentions. On the other side, banks can also suffer larger reputational or financial damage than a light separate entity when issuing a stablecoin and if it gets known that it is used for illicit activities and that the stablecoin issuer could have acted more forcefully against that. Moreover, banking regulation may not fit so well stablecoin issuance, which may lead to inefficiency in practice.[12]

Table 2-1: Relative advantages of three stablecoin issuer options, with respect to the breadth of the balance sheet of the issuer and its institutional format.

<table>
<tr><th>SC issuer⇓</th><th colspan="2">Advantages</th></tr>
<tr><td>(1) Existing "broad" bank (ODDO-BHF)</td><td rowspan="2">Direct or indirect central bank access (to CeB credit and to CeB deposits remunerated at the rate that banks obtain); Trust created by reputational incentives</td><td>No set up cost of new entity; rating; client base; synergies</td></tr>
<tr><td>(2) New, "narrow" non-bank subsidiary within banking group (SG-Forge, Qivalis)</td><td rowspan="2">Specialisation, simplicity, transparency</td></tr>
<tr><td>(3) Non-bank, "narrow" balance sheet (USDC, Tether, EURSC, Monerium)</td><td>More agile; avoids any reputation and legal risk for parent banks; No indirect burden relating to unsuitable banking regulation</td></tr>
</table>

B. Balance sheet: Narrow vs. broad

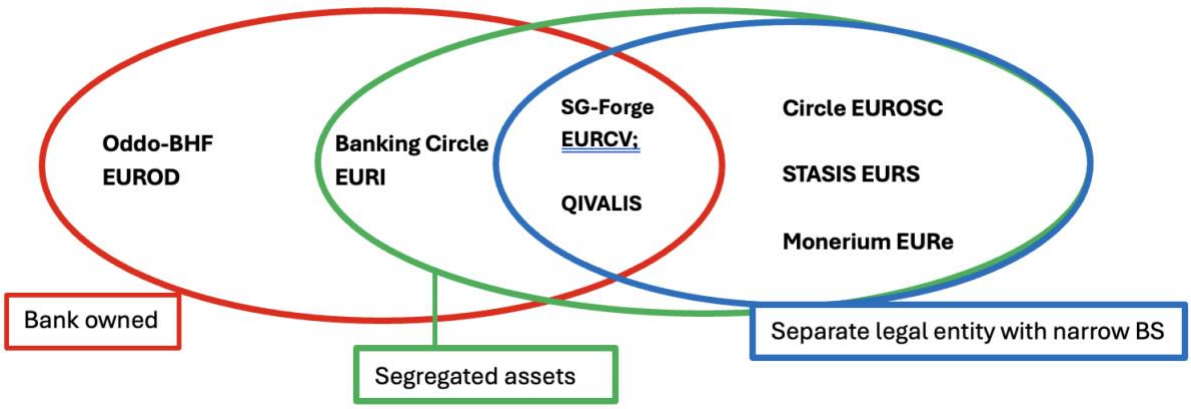
A narrow balance sheet of an issuer of monetary liabilities is one which focuses exclusively on issuing those and holding exclusively highly liquid assets to match such a particular maturity profile of liabilities. All the current large stablecoins are based on narrow balance sheet entities. The requirement under the Genius Act that the issuer must be a separate legal entity (a PPSI) implies, in conjunction with the reserve requirement, that it has a narrow separate balance sheet. MiCAR would instead also allow broad balance sheet issuance. A bank issuing under a narrow balance sheet subsidiary construct is Société Générale: the SG Forge CoinVertible White Paper (p. 13) explains that the "*full segregation of the assets backing the value of the stablecoin from SG-FORGE's and the fiduciary's own assets and activities and from the fiduciary's own assets and activities, so that they are only dedicated to such purpose, and they are*

[12] See also Sha and Nariyanuri (2026) for a discussion of current bank initiatives to integrate stablecoin issuance and the comparative advantages and disadvantages of banks in this context compared to independent entities.

bankruptcy remote in the event of an insolvency of SG-FORGE; - A direct recourse of the EUR CoinVertible holders on the collateral held through a fiduciary structure." In contrast, as mentioned above, the issuer of EUROD is not a newly established entity, but the ODDO-BHF bank itself. The EUROD White Paper also clarifies that the proceeds from issuing stablecoins would not be segregated: "The funds received in consideration for the issuance of EUROD are recorded on ODDO BHF's balance sheet and form part of the Bank's general assets." Although covered by MiCAR, this approach seems to be somewhat in contradiction to the philosophy of e-money and the general approach chosen in MiCAR and the Genius Act to define in essence stablecoins as e-money tokens, i.e. as narrow balance sheet constructs.

We summarise the different types of stablecoins determined by the institutional status of the issuer and the balance sheet type in the figure below and illustrate it with examples from MiCAR compliant European stablecoin projects. The Genius-Act compliant stablecoins all fall under the category "separate legal entity with narrow balance sheet".

Figure 2-1: Banks and non-banks as issuers of stablecoins under MiCAR - examples



C. Types of ledgers onto which stablecoin is issued: public or private.

Stablecoins can be issued for circulation onto public DLT networks (in line with the initial philosophy of DeFi) or be issued only specifically for the circulation onto certain private (permissioned) platforms, or onto both. It is also relevant what policies the stablecoin issuer chooses with regards to bridges between DLT networks: a liberal policy in which any party is allowed to build a bridge, or a conservative one in which such bridges are prevented and the stablecoin issuer strictly controls the "minting" and "burning" of coins separately on each DLT(s) it has decided to circulate its stablecoin on. As stablecoins have rather conventional balance sheets (at least the successful ones), and as their essence relates to the programmable multi-asset ledger on which ownership and transfers of ownership are registered, the choice of the DLT network must be an essential classificatory element for stablecoins. This is even more the case because of the rather fundamental differences across programmable platforms (private vs. public DLT networks). Some, like Malekan (2026) have expressed doubt on the value added of DLT in private (or permissioned) networks. Malekan (2026) argues that permissioned networks, where validation is

controlled by a central authority, do not qualify as true blockchains. Unlike permissionless systems such as Bitcoin or Ethereum, they lack decentralisation and independent consensus. Hashing in blockchains would ensure a collectively verified transaction history, but in permissioned systems it provides no real immutability since central authorities could alter records. As a result, such systems do not offer "endogenous property rights", since asset ownership depends on central control and thereby eliminate key blockchain features. Governance in permissioned networks remains hierarchical and subject to regulatory or institutional intervention. Claims of privacy or immutability rely on trust rather than cryptographic guarantees. Regulatory pressures would further reinforce central control, often requiring to identity verification and censorship capabilities. Overall, permissioned networks would be better understood as traditional databases with added complexity, rather than as true blockchains.

Others have continued to question the usefulness of blockchain technology in a broader way. Critics like Reed Stark (2026, section III) is aligned with Malekan when insisting on the various failed attempts to use blockchain technology in private platforms: "After almost two decades of promises, blockchain — crypto's underlying technology — has produced exactly one functioning use case, which is powering cryptocurrency itself. IBM and Maersk spent years and hundreds of millions of dollars on TradeLens, their celebrated blockchain shipping platform. They shut it down. Microsoft launched Azure Blockchain as a Service. They shut it down. The Australian Securities Exchange bet its entire clearing system on blockchain. They abandoned it after hundreds of millions wasted. Over 1500 engineers, scientists and programmers from Amazon, Apple, Google, Microsoft, Oracle, MIT, Stanford and Cornell signed an open letter to Congress concluding that blockchain is '*poorly suited for just about every purpose currently touted as a present or potential source of public benefit*.' … Amazon, Apple, Google, Microsoft and Oracle have collectively spent hundreds of billions of dollars figuring out how to store data and process transactions. If blockchain were genuinely revolutionary, these companies would be developing it aggressively. Instead, blockchain is essentially absent from their strategic priorities, their revenue streams, and even their casual conversation. For these companies Blockchain is gone by way of NFTs, the Metaverse and all of the other nonsensical blockchain-related absurdity." On public blockchains, Reed Stark (2026, section IV and V) is equally critical, insisting on its massive use for illicit purposes (Chainalysis, 2026; Financial Action Task Force, 2026) and for regulatory arbitrage. Farell (2026), like others before, have also expressed doubt that public blockchain architecture solves an important problem in payments: "Blockchain architecture was designed to solve a specific problem: how do you transfer value between parties who share no trusted institutional infrastructure? The distributed ledger is the trust mechanism. It replaces the intermediary when no intermediary exists or when existing intermediaries cannot be relied upon. That is a legitimate engineering solution [….] But the overwhelming majority of payments that occur every day do not have that problem. […] A trusted intermediary already exists. The bank is the trust infrastructure. It has been for centuries. It is regulated, supervised, capitalized, and accountable. Placing these transactions on a blockchain does not solve a trust problem. It adds a consensus mechanism on top of an institution that already provides consensus, introducing latency, complexity, and governance overhead that the transaction never required. The parties to the transaction are addresses, not relationships. The payment is an event on a ledger, not a confirmed agreement between known counterparties." Still, public blockchains, by disintermediating banks and other financial intermediaries and infrastructures, could achieve efficiency gains, and stablecoins could play an important role in this context. Private multi-asset

programmable platforms could also host stablecoins and be useful, although they would not need to be associated with DLT and blockchain (so that official definitions of "stablecoins" would need to be revisited). Budish and Sunderam (2026) review what value added blockchain may have for traditional finance and conclude that "*the potential gains are large if and only if there is a long tail of relatively low surplus, relatively infrequent transactions for which traditional forms of trust are insufficient*". Regarding stablecoins, gains "*for legal actors […] are most likely to come from stablecoins putting pressure on intermediation rents or inefficient regulation, or from the programmability of stablecoins facilitating a large number of small transactions that otherwise would not have been trustworthy*." On "putting pressure on inefficient regulation" it may be remarked that the first best solution in a democracy should be to amend inefficient regulation, and not to let regulatory arbitrage be the solution. Regarding facilitating "a large number of small transactions" the question arises if genuine level 1 blockchains are efficient enough to support small transactions, or to what extent the principles of DeFi need to be diluted for achieving transactional efficiency. As Budish (2025) notes, "*as expensive as traditional finance is, it is a bargain relative to the cost of Nakamoto-style trust at scale. The core problem is that Nakamoto trust relies on decentralized, anonymous majority voting*"

D. Whitelisting

Whitelisting is normally defined as a risk control measure in which only pre-approved devices, applications, or websites are granted access to specific systems or networks. In the case of stablecoins, the term has been used for pre-approval requirements for holders of stablecoins, regardless of whether they circulate on a public or private DLT networks. The standard case of the large stablecoins is the absence of any whitelisting, and a core initial idea of DeFi and thus at least initially of stablecoins was the openness of access for everyone via cryptography to "public" ledgers. But for example, SG Forge CoinVertible initially applied a whitelisting approach: "In order for stablecoin holders to benefit from the legally binding structure we put in place and to be protected by it, they all need to be known and onboarded by SG-FORGE at first. Therefore, only addresses that are whitelisted by SG-FORGE will be eligible to receive our stablecoins. Such whitelisting process based on the CAST Framework means that SG-FORGE has performed compliance controls (KYC, AML-CFT, sanctions and embargoes) according to Societe Generale Group policies and has duly onboarded the owner of such address." Whitelisting can in practice be done in a way to allow multiple users indirect access. For example, by whitelisting large wallet providers and exchanges (Coinbase, Binance, etc.), the clients of these firms can also hold the stablecoins via the omnibus accounts that the firms have on the base ledger.

E. Currency

Since stablecoins are usually understood as being denominated in an official currency and promising convertibility into such official currency, they can be classified according to their denomination. Several structural and functional explanations have been provided for the predominance of USD denominated stablecoins. So far, the primary use case of stablecoins has been as on- and off-ramps for crypto speculation. Because most major crypto trading pairs historically developed against the U.S. dollar, dollar-denominated stablecoins became the natural settlement asset within exchanges and decentralised finance protocols. This path dependence has been reinforced by network effects: liquidity concentrates where

other liquidity already exists. Beyond the crypto-native sphere, the global dominance of the dollar as invoicing currency, reserve asset, and safe collateral base further strengthens this equilibrium. The depth and perceived safety of U.S. Treasury markets facilitate reserve management for stablecoins, while dollarisation motives in high-inflation or capital-controlled economies increase demand for digital dollar claims.

F. Jurisdiction of issue

The place of issuance of stablecoins often diverges from the currency in which they are denominated, which may relate to regulatory arbitrage. Most major stablecoins are denominated in U.S. dollars, yet their issuers are partially incorporated in jurisdictions that are not the United States, such as offshore financial centres or countries with bespoke crypto-asset regimes. The denomination is typically chosen to maximise demand and liquidity, explaining the dominance of the dollar due to its global monetary role. The place of issuance is selected to optimise regulatory flexibility, capital requirements, disclosure obligations, and access to banking infrastructure. At the same time, choosing a jurisdiction associated with strict rules and supervision may signal credibility and reliability. If the stablecoin is widely used abroad, these regulatory authorities may assert extraterritorial oversight or impose access constraints, thereby influencing issuer location decisions ex ante. Under MiCAR, the possibility of multi-issuance, where multiple legal entities issue the same stablecoin across jurisdictions, raised concerns more recently[13]. While such arrangements were designed to combine global fungibility and compliance with distinct domestic regulatory frameworks, they fragment reserve management and complicate accountability. Divergent regimes with multi-issuance tend to create inconsistencies in enforcement and redemption rights, especially in stress scenarios. They may also weaken the clarity of the legal claim of holders against a specific balance sheet, which can negatively affect confidence. Moreover, multi-issuance increases coordination challenges among regulators and may amplify contagion risks if one issuing entity faces distress. A better alternative to multi-issuance may thus be to allow domestic circulation of foreign stablecoins fulfilling certain requirements of sufficient but not necessarily perfect equivalence.

G. Applicable regulatory framework

An issuer may decide to issue a token redeemable into money without claiming that it complies with a certain type of stablecoins defined and regulated through a specific law, even if the issuer is in a jurisdiction in which such a law has been issued. This would seem to be the case for example for FRNT (Frontier Stable Token) a "stable token" issued by the State of Wyoming. This would be "a virtual currency representative of and redeemable for one United States dollar held in trust by the state of Wyoming …. FRNT is designed to provide secure, transparent, and efficient digital transactions for individuals, businesses, and institutions - worldwide."[14] FRNT is thus not presented as a "payment stablecoin" falling under the Genius Act, although the redeemability feature seems to make it rather similar from a user perspective to a payment stablecoin. FRNT is a reminder that the existence of certain regulations, like MiCAR and the Genius Act, will not prevent other stablecoin-like crypto-assets not falling under any of these two to be issued and to circulate, if needed on non-hosted wallets or through wallets offered by offshore service

[13] https://data.consilium.europa.eu/doc/document/WK-4742-2025-COR-1/en/pdf
[14] https://stabletoken.wyo.gov/pages/FRNT

providers. Indeed, regulation in many jurisdictions (including the US and the EU) has been liberal towards crypto assets in general, like for example Bitcoin, hardly constraining them in any way. Therefore, the general presumption seems to prevail that "anything goes" in terms of crypto-assets outside the well-defined specific case of (payment) stablecoins. Practice will show how authorities will handle the tension between "anything goes" and well-defined stablecoin regulatory frameworks. In addition, as long as there are public DLT networks with pseudonymity and non-hosted wallets, any asset can be held on-chain. For example, EU residents are not prohibited from holding a non-MiCAR compliant stablecoin on chain. Only EU licensed service providers are prohibited from distributing such stablecoins to EU residents, at least if they are labelled as "EMTs". An EU citizen can also hold a non-MiCAR compliant stablecoin via e.g. an exchange or wallet-provider in a foreign jurisdiction, if the foreign laws do not prohibit the provider to serve non-residents. Under MiCAR, any crypto-asset service provider that offers services in the EU must be authorized in an EU Member State. If a foreign jurisdiction actively markets to, targets, or solicits EU residents, it would normally fall within the scope of MiCAR and require EU authorization. However, MiCAR does not criminalize the EU customer's use of a foreign platform per se. A non-EU exchange may still be used by an EU resident if the relationship qualifies as so-called reverse solicitation, meaning the EU client approaches the platform entirely on its own initiative. This is like the EU financial services law under MiFID II.[15]

H. Redemption mechanism

Regulatory redemption obligations on stablecoins have classificatory, prudential and protective objectives:

- **Classificatory:** they establish that SCs are intended to be money rather than investment products. A core attribute of money is on-demand face-value convertibility, ensuring absolute liquidity. The singleness of money is based on at-par convertibility of one form of money into the other, and ideally of all forms of private money directly into central bank money (the latter is neither explicitly stated in the Genius Act nor in MiCAR, i.e. convertibility of SCs into commercial bank money seems to be regarded as sufficient).
- **Prudential** in the sense that they anchor the price, impose on the stablecoin issuer balance-sheet discipline, and thereby also should mitigate run dynamics.
- **Protective** as they shield holders against unexpected liquidation losses.

[15] Under MiCAR, the territorial scope is defined in Article 3, which makes clear that the framework applies to CASPs providing services "in the Union," including when a third-country firm targets EU clients. Article 24 establishes the core requirement: CASP must be authorised in a Member State to provide crypto-asset services within the Union. Furthermore, Article 25 regulates the passporting regime, under which only EU-authorised CASPs may provide services across Member States, thereby excluding non-EU firms from benefiting from internal market access absent specific cooperation or equivalence arrangements. Although MiCAR does not contain an explicit reverse-solicitation clause, the concept is well established in EU financial law through Article 42 of Directive 2014/65/EU (MiFID II), which permits third-country firms to provide services at the exclusive initiative of the client, provided there is no active marketing or targeting of EU residents. In practice, supervisory interpretation of MiCAR's territorial scope, supported by ESMA guidance, draws on this MiFID II logic, meaning that non-EU exchanges may only lawfully serve EU residents without authorisation where the relationship genuinely results from unsolicited, client-initiated contact rather than targeted cross-border provision.

According to MiCAR, Recital 67, "*Holders of e-money tokens should be provided with a claim against the issuer of the e-money tokens. Holders of e-money tokens should always be granted a right of redemption at par value for funds denominated in the official currency that the e-money token is referencing*." (see also articles 48-50). According to the Genius Act - Sec 2, 22 (A) (ii) (I) the issuer "*is obligated to convert, redeem, or repurchase for a fixed amount of monetary value, not including a digital asset denominated in a fixed amount of monetary value*" and Sec 4. (B) states that the issuer must "*publicly disclose the issuer's redemption policy, which shall— (i) establish clear and conspicuous procedures for timely redemption of outstanding payment stablecoins, … and (ii) publicly, clearly, and conspicuously disclose in plain language all fees associated with purchasing or redeeming the payment stablecoins*". The Genius Act itself does not specify what "timely" redemption means but the OCC defines (12 C.F.R. Article 15.12(b))[16] that "timely redemption may not exceed two business days following the date of the requested redemption." This rule is consistent with the one set by the New York Department of Financial Services, in its 8 June 2022 stablecoin guidance[17]. This could raise the question if US Payment Stablecoins are actually "readily available money", for which we would normally assume an immediate issuer obligation of redemption in other forms of money, and ideally into central bank money. Moreover, the OCC proposal 12 C.F.R. Article 15.12(c) states that: "If a permitted payment stablecoin issuer faces redemption demands in excess of 10 percent of its outstanding issuance value in a single 24-hour period, the period for timely redemption … is immediately extended to seven calendar days" and this "applies to all redemption requests that are outstanding at the time the 10 percent threshold is met as well as any subsequent redemption requests."**I. Remuneration**

MiCAR, Art. 50(1) states that issuers of EMTs "*shall not grant interest in relation to e-money tokens*". Moreover, Art. 50(2): CASPs "*shall not grant interest when providing crypto-asset services related to e-money tokens*." So MiCAR already goes beyond "issuer only": it also directly prohibits CASPs from paying interest on these stablecoins. Interest is defined broadly. Article 50(3) contains a very wide definition of "interest": Any remuneration or other benefit related to the length of time the token is held "shall be treated as interest". This includes: "net compensation or discounts" with an "effect equivalent to that of interest", received directly from the issuer or from third parties and either directly associated with the ART/EMT or arising from the remuneration or pricing of other products. Recitals 68 (EMTs) explains the policy goal: to prevent these tokens from being used as a store of value by forbidding interest granted by both issuers and CASPs. The relevant GENIUS Act rule is Section 4(a)(11) – Prohibition on interest: "*No permitted payment stablecoin issuer or foreign payment stablecoin issuer shall pay the holder of any payment stablecoin any form of interest or yield […] solely in connection with the holding, use, or retention of such payment stablecoin*." Contrary to MiCAR, the text does not expressly extend this prohibition to crypto-asset service providers. Offshore regimes may allow for the remuneration of stablecoins, and anyway in the field of public DLT networks and crypto-assets, as noted beforehand, it is not possible to prevent the issuance and holding of tokens that are equivalent to remunerated stablecoins. Bindseil (2025)

[16] Department of the Treasury; Office of the Comptroller of the Currency; 12 CFR Parts 3, 6, 8, 15, and 19, Implementing the Guiding and Establishing National Innovation for U.S. Stablecoins Act for the Issuance of Stablecoins by Entities Subject to the Jurisdiction of the Office of the Comptroller of the Currency. P. 10271, p. 10291. https://www.govinfo.gov/content/pkg/FR-2026-03-02/pdf/2026-04089.pdf

[17] https://www.dfs.ny.gov/industry_guidance/industry_letters/il20220608_issuance_stablecoins

argues that prohibiting the remuneration of stablecoins is not a good tool for preventing flows from bank deposits into stablecoins, or more generally to achieve financial stability: since the level of interest fluctuates independently of this policy objective, also its effects do, with potentially large in- and outflows between remuneration-constrained (stablecoins) and unconstrained (e.g. money market funds, bank deposits) assets. Barbon et al (2025, 2) suggest that, in September 2025, USD 86 billion out of a total of USD 290 billion stablecoin volume would have been remunerated via lending protocols. The share of effectively remunerated stablecoins would thus be around 30%, while 70% would be unremunerated. The direct remuneration of stablecoins by the issuer via smart contracts would not have played a material role so far, although technically, this would be feasible. For example, USDY (US Dollar Yield Token) "*is a tokenized note secured by short-term US Treasuries and bank demand deposits. USDY holders receive yield generated from the underlying assets in the form of increasing redemption value (accumulating token). USDY contract is an upgradeable […] ERC-20 token*". By the same issuer, mUSD "*is the rebasing version of USDY, maintaining a consistent peg to $1. Interest is distributed via new token units. Users can swap freely between USDY and mUSD*."[18]

J. Backing by reserves

Most viable and relevant stablecoins today are backed by liquid reserves, while in the past also "algorithmic stablecoins" had reached significant market value, such as Terra and Luna[19]. Still today, there are algorithmic stablecoins, which however claim to be backed in one way or the other: For example, DAI is based on several eligible cryptocurrencies as collateral. Those which are backed by a more conventional reserve can be subdivided in two categories: purely backed by cash and fixed income (like also required by the Genius Act or MiCAR), and those also having other assets, like USDT, which is partially backed by gold and Bitcoin.

2.3 The moneyness of stablecoins and the singleness of money

Money is usually defined via its functions: medium of exchange (means of payment), unit of account, store of value. Consider briefly each of the three from the perspective of classifying assets as being money or not:

- **Medium of exchange and redeemability at par** (or means of payment): money should be something commonly and directly accepted "at par" in exchange, i.e. without the need to liquidate it first, i.e. to transform it via a pre-exchange into another asset which can be used as means of payment for directly obtaining the goods that are thought. Or at least, this pre-exchange needs to be always possible without a loss, i.e. without liquidity and market risk and without loss of time. Immediate convertibility of private forms of money into central bank money as ultimate anchor and legal tender is generally regarded as key to singleness of money.

[18] https://docs.ondo.finance/developer-guides/mantle-integration-guidelines?utm_source=chatgpt.com
[19] https://corpgov.law.harvard.edu/2023/05/22/anatomy-of-a-run-the-terra-luna-crash/

- **Store of value**: it should be possible to decide how much to hold of a monetary asset, and without legal or practical constraints, such as to make it an effective store of value. This does not imply that money is necessarily free of custody risk and that holders should not care on how much to hold of it in a certain way: both physical token money and electronically stored money can be destroyed or stolen. Moreover, private money can be lost through default of the issuer (money is not defined by being protected against issuer default).
- **Unit of account**: Money should be denominated in the one predominant "numéraire" on which the economy relies. However, "dollarisation" means that a foreign currency and thereby also the foreign numéraire is used in a domestic context. The choice of the unit of account is pervasive and goes beyond the role of money as store of value and means of exchange, as it also defines legally the accounting treatment of changes of relative prices. For a stablecoin to be money, it needs to be defined in terms of one official currency, and the redemption promise needs to be anchored in this official currency.

Non-remuneration should not be classified as a necessary criterion for money. For example, commercial bank money can be remunerated, although in many countries remuneration rates are low and do not follow short term capital market rates closely.

Relevance for monetary policy transmission and/or the current statistical treatment by central banks should also not be a decisive criterion for defining whether an asset is money or not. For examples, banknotes, wholesale central bank money, and the various components of monetary aggregates have very different properties from a monetary policy perspective. A 12-month term deposit would be classified as part of the monetary aggregate of M2, although it is obviously not a means of payment. In contrast, the classification of e-money tokens in the monetary and financial statistics would seem to depend on institutional factors and is likely to still evolve. E-money institutions issuing e-money tokens do not grant credit on their own account using deposit-like funding, and in this sense fail the intermediation criterion required for monetary financial institution (MFI) classification. Only sight deposits issued by MFIs would seem to be eligible to count for M1. This would however also imply that the stablecoins issued by BHF-Oddo would qualify for M1.

2.4 Stablecoins' neighbouring financial instruments

Financial instruments are often treated as clearly defined and mutually distinct. In practice, however, they frequently exist in hybrid and evolving forms, creating something closer to a continuum than a set of discrete types. This observation applies equally to stablecoins. Recognizing this fluidity and examining how changes in their design and parameters can gradually shift stablecoins toward the characteristics of other financial instruments helps clarify their nature and conceptual dimensions. It also highlights the degree to which stablecoins may substitute for adjacent instruments, and vice versa, which is important for assessing their implications for financial stability and the functioning of financial markets. Below, we will develop this perspective for four neighbouring financial instruments of stablecoins: money market funds, tokenised central bank money, e-money, and tokenised deposits.

A. (Tokenised) Money Market Funds

Fixed Net Asset Value (NAV) government money market funds (MMFs), that is MMFs which hold only government-related liquid assets (such as T-Bills and repos) and that always have a price of one, appear close to stablecoins holding T-Bills and repos and promising redeemability at par. The differences between the two vehicles appear on the liability side: (i) remuneration, (ii) redeemability at par. MMFs, which are usually considered investment vehicles, distribute a yield to the holders of their shares and specifically for fixed NAV MMFs, the yield is distributed by giving additional shares to holders therefore maintaining the price of one. On the other hand, stablecoin issuers do not directly remunerate the holders of their tokens (either because of regulation or because of the issuers' choice). Moreover, while both constant NAV money market funds and MiCAR-regulated e-money tokens provide investors with a direct claim and redemption rights at par, the robustness of these rights differs. Money market funds may, under certain circumstances, be subject to liquidity-management tools such as redemption gates, liquidity fees, or temporary suspensions of redemptions in periods of market stress. By contrast, MiCAR grants holders of e-money tokens an unconditional right of redemption at par vis-à-vis the issuer, reflecting the objective that such instruments remain continuously convertible into the referenced official currency. Accordingly, MiCAR does not envisage redemption gates as a normal liquidity-management tool. In this respect, MiCAR-compliant e-money tokens provide a stronger assurance of par convertibility than money market fund shares, even where the latter maintain a constant NAV under normal market conditions. The difference is less clear for US Payment Stablecoins, which as mentioned in section 2.2 are legally obliged to redeem only at T+2. In practice, NAV MMFs typically redeem T+1 at the latest, suggesting that the legal requirement applicable to US payment stablecoins would be less demanding than the current practice for NAV MMFs.

B. Tokenised central bank money

On-chain CBDC, i.e., tokenised *central bank* money, shares with stablecoins the feature of being electronic money on a DLT platform that can, in principle, be held by anyone with access to that platform. A gradual alteration of stablecoins towards tokenised central bank money is linked to the concept of "synthetic CBDC". If a stablecoin were fully backed by central bank money, i.e., 100 percent of its reserves consisted of central bank money (as proposed, for example, by the Bank of England, 2023), it would be free of market, credit, and liquidity risk. In that case, the stablecoin would effectively become a "pass-through" instrument with some essential properties like tokenised central bank money. However, stablecoin holders would still be exposed to operational risks, including legal and fraud risks by the stablecoin issuer. These could be further mitigated through strict requirements imposed by central banks on stablecoin issuers permitted to hold 100 percent of their reserves with them, combined with close supervision. Such requirements could also serve broader public policy objectives (beyond reducing operational risks) such as enhanced monitoring of illicit use and the implementation of related safeguards. Taken together, these measures would make such stablecoins increasingly like tokenised central bank money, both in terms of safety and in terms of design features aligned with the central bank's mandate to serve the public interest. At the limit, when central bank prescriptions and control of the stablecoin issuing vehicle backed 100% by central bank money are absolute, such stablecoin would have fully mutated into tokenised central bank money.

C. E-Money

The difference between e-money and e-money tokens (understood as defined by EU regulations) lies in the type of ledger through which they are distributed. E-money is assumed to be held and transferred via a conventional "central" ledger, typically that of the issuing institution, operating within a "closed loop" system such as PayPal. Transfers between commercial bank money and this ledger occur via the user's bank account (i.e. a person can transfer funds from her bank account to her account with the e-money institution and vice versa, but not directly from her e-money account to the commercial bank account of another person, nor vice versa). By contrast, stablecoins ("e-money tokens") are held and transferred between users on a distributed ledger technology (DLT) system. The distinguishing feature is therefore not the nature of the asset itself (money redeemable at par on demand, typically issued by a narrow balance sheet vehicle) but the ledger through which it is distributed. A continuum arises because DLT platforms can approximate conventional ledgers, departing from the original philosophy of decentralised finance. A private DLT platform with standard governance may bear little relation to decentralised finance, and the use of blockchain may be optional, driven by marketing or regulatory arbitrage. Nevertheless, unlike e-money, a stablecoin on a private programmable platform forms part of an open system with multiple tokenised assets, and its issuer will generally not operate the ledger (in contrast to e-money in closed-loop systems such as PayPal).

D. Tokenised deposit

In its report on tokenised deposits, the European Banking Authority (EBA 2025, 6) defines the concept briefly as "deposit balance recorded on a DLT or similar technology". The report also explains (p. 9) that "*excluded from the scope of MiCAR are […] financial product to which other regulation applies", which includes deposits with credit institutions, being defined for this purpose by reference to Article 2(1), point (3) of Directive 2014/49/EU (the Deposit Guarantee Schemes Directive; DGSD). Tokenised deposits are thus not regulated under MiCAR, but "the activity of accepting deposits from the public continues to be regulated by the CRD*" (p. 10). The report interprets the rules allowing in principle for a bearer-type tokenised deposit, although it acknowledges that the non-bearer type instrument seems more relevant and raises less questions:

> *"the claim of the deposit-holder is recorded on the DLT and bound to the identity of the account-holder, and, as a non-bearer instrument, the claim is not directly transferable to a non-client of the bank. However, a token-based model may also be contemplated, i.e. where the crypto-asset can be transferred from one person to another without the knowledge of the bank, akin to a bearer instrument. While the account-based model would resemble most conventional deposits recorded on traditional bank ledgers, the legal viability of a token-based model for deposits would need careful assessment against the applicable regulatory framework, and to determine its appropriate regulatory classification."*

The terminology proposed above of a "token based tokenised deposits" versus an "account based tokenised deposit" is confusing, and actually the essence of a tokenised deposit distinguishing it from a stablecoin issued out of a bank balance sheet (like the ODDO-BHF token EUROD) is that it is an instrument that can only be held by a deposit account holder of the bank. The closest variant of a stablecoin to a deposit token is thus the one issued by a bank without asset segregation, but the key difference is still the bearer nature or not of the monetary liability, and the applicable regulation which implies various disparities (deposit insurance, remuneration, compliance, treatment by liquidity regulation, etc.).

2.5 Use cases and adoption scenarios

Relying on an analysis of Citi, the US Secretary of the Treasury, Scott Bessent, stated on 17 June 2025 that "*Recent reporting projects that stablecoins could grow into a $3.7 trillion market by the end of the decade*." In a study published in November 2025, Citi adjusted its own forecast to a base case estimate of $1.9 trillion by 2030, a "bull case" of $4.0 trillion (the previous 3.7 trillion scenario that Scott Bessent had referred to) and a "bear case" of $0.9 trillion. In mid-2026, the market capitalisation of USD stablecoins fluctuated around 310 billion USD, showing no real trend growth since mid-October 2025. Euro-denominated, MiCAR compliant stablecoins have been growing more dynamically recently, although they remain at a low absolute level of less than EUR 1 billion, with EURSC, EURS and EURCV taking the top three places.

The **five** following **use cases** may contribute to these scenarios:

1. As **on and off-ramp for crypto-asset and in particular Bitcoin speculation**. This was the initial large-scale use-case of stablecoins. The not particularly favourable development of Bitcoin prices and thus of speculative interest in this peculiar asset may partially explain the moderation of stablecoin growth as of October 2025.
2. **Store of value and means of payment in less stable currency areas**, possibly also to circumvent capital controls. In jurisdictions applying capital controls (e.g. India), stablecoins may facilitate circumvention, which is of course to be seen negatively from a monetary sovereignty perspective. In countries with less stable currencies (e.g. Turkey), stablecoins denominated in stable currencies may be regarded as a better store of value than domestic money, even in comparison to remunerated domestic assets. Both cases may be considered problematic from a monetary sovereignty perspective, inter alia as they undermine domestic seignorage income.
3. For **merchant use**: the use of stablecoins for retail payments would imply broad anchoring in society as means of payment. Several firms have been working on this vision, although such payments will hardly ever consist in Layer 1 transfers of stablecoins, but on Layer 2 or central ledger transfers which then would question the classification of the transfers as true stablecoin payments.[20]
4. As **settlement asset (or vehicle) in global corporate and wholesale payments**, including FX settlement. Competing initiatives have recently been launched in this field.
5. In the context of the trend towards **tokenisation of securities and other financial assets**, stablecoins provide the payment leg in seamless on-chain financial operations with tokenised non-money assets. Stablecoins can also serve as collateral in on-chain financial market operations. A competition to stablecoins in this field could come from central banks who would provide central bank money-based solutions[21], and who argue that for wholesale transactions, settlement in

[20] See for example https://stripe.com/en-de/newsroom/news/bridge-partners-with-visa

[21] See for example ECB Press release, "ECB commits to distributed ledger technology settlement plans with dual-track strategy", 1 July 2025,

central bank money is preferable (as also stated in the Principles of Financial Market Infrastructures: CPSS-IOSCO, 2012).

The relevance of these use cases in five or ten years is difficult to predict, and moreover, except for (2), it is not clear to what extent a successful deployment of the respective use cases could support high stablecoin issuance volumes. Much will depend on whether stablecoins evolve primarily as niche instruments embedded in specific crypto-asset or wholesale financial infrastructures, or whether they achieve broader monetary functions comparable to those of bank deposits or electronic money. Regulatory treatment, the response of central banks (also in the context of wholesale central bank digital currency initiatives) and the macro-financial environment will further shape adoption. In this sense, projections of multi-trillion-dollar market capitalisations implicitly assume not only technological success, but also a shift in monetary preferences and institutional arrangements that is not assured.

3. Market and financial stability impact

3.1 Impact of stablecoins on financial markets and structure

Impact of stablecoins on financial asset volumes and prices

Barthélemy et al. (2026) and Kim (2025a) empirically study the effects of stablecoin inflows on commercial paper (CP) volumes and prices during 2020–2021. Barthélemy et al. (2026) treat increased stablecoin demand as a plausibly exogenous shock in the CP market and find that it significantly raised CP issuance but had no economically significant impact on CP rates once the risk-free rate is controlled for, concluding that CP issuers could anticipate and absorb additional demand through a more price-elastic supply response, lowering financing costs for firms but exposing them to rollover risk. Kim (2025a) confirms the positive impact on CP issuance and additionally finds a significant next-day reduction in CP yields: a one standard deviation increase in USDT and USDC issuance raises CP issuance by ten percent and lowers yields by eighteen basis points. These effects are attributed to the CP market's small size, maturity segmentation, and CP dealers' inability to anticipate stablecoin demand.

Since Circle and Tether both announced that they would move their reserves from the CP market to short-term Treasury markets and considering public pressure for more transparent disclosure, the attention of researchers and policy makers moved towards trying to understand potential spillovers from stablecoins issuers to US Treasury bills. Ahmed and Aldasoro (2026) use daily data from 2021 to 2025 and instrumented local projection regressions to isolate the impact of stablecoins flows on 3-month Treasury yields, addressing the endogeneity bias by using “crypto shocks” constructed with the unforecastable component of the Bloomberg Galaxy Crypto Index (BGCI). The authors show a significant stablecoin-driven yield compression: a 2-standard deviation inflow into the stablecoin sector in 5 days ($3.5 billion) lowers 3-month Treasury yields by 2 to 2.5 basis points within 10 days. Outflows raise yields by two or three times as much as inflows lower them, highlighting the fire-sale risks associated with “runnable” stablecoin liabilities. Kim (2025b) uses a high-frequency identification strategy by exploiting the precise timing of stablecoin issuance and redemption events and aligning them with intraday fluctuations in Treasury-linked asset prices. The author finds that large issuance events (top decile of absolute net flows) increase significantly the price of short-term Treasury instruments (BIL ETF) by 1.5 basis points in the hour following the event (temporary demand shock), whereas large redemption events produce no significant response in BIL prices. The author believes that this result is driven by the fact that stablecoin issuers may honour redemptions using internal cash or delayed reserve adjustments. The author focuses on mints and redemptions of USDT on the Ethereum blockchain, although around half of USDT supply comes from the Tron blockchain[22]. The author then provides a quantitative macro-finance model replicating the empirical findings and providing a structural evaluation of how the impact of stablecoin issuance scales with the expansion of the crypto market and identifies a highly nonlinear transmission mechanism: when the stablecoin sector crosses a critical threshold, further expansion generates disproportionately larger impacts on Treasury prices and credit provision. Ante et al. (2025) investigate how Tether’s market share of US Treasury bills influences its corresponding yields and find a non-linear impact on yields after a certain

[22] https://visaonchainanalytics.com/supply

critical market share of 0.973%. The authors do not check for the plausible reverse causality, namely that the short-term risk-free rate determines stablecoin volumes because the majority of stablecoins are unremunerated. Cerutti et al. (2026) construct high-frequency stablecoins shocks from daily stablecoin-related news from 2019 onwards using Google News and use those shocks to measure changes in market capitalization of USDC and USDT. They find that stablecoins shocks push short-term U.S. Treasury yields (1-month and 3-month) persistently downwards: a stablecoin shock corresponding to a 1 percent increase in USDC and USDT market capitalization lowers the 1-month T-bill yield by 1.9 basis points. Moreover, they also document spillovers to broader financial markets: the dollar index depreciates, the Bloomberg Galaxy Crypto Index (BGCI) increases, while equity prices have a more muted reaction.

Impact of stablecoins on the financial markets structure

Azzimonti and Quadrini (2025) develop a three-country general equilibrium model (United States, the rest of the world, and a distinct Digital Economy) to assess how stablecoin expansion could alter the structure of international financial markets. The paper concludes that stablecoins generate two competing forces on the global demand for dollar assets. Because stablecoins require reserve backing, their issuance mechanically increases demand for safe dollar-denominated instruments; at the same time, stablecoins can act as substitutes for traditional reserve assets, potentially eroding that demand. In the long run, the reserve-demand channel would dominate the substitution effect, and stablecoin growth pushes U.S. interest rates lower and expands U.S. foreign borrowing.

Aldasoro, Beltran, and Grinberg (2026) study the parallel crypto-based foreign exchange ecosystem created by dollar-pegged stablecoins and document large and persistent gaps between the cost of acquiring dollar exposure through stablecoins and through traditional FX markets, driven by the balance-sheet constraints of arbitrageurs bridging the two ecosystems. An increase in stablecoin demand cannot be absorbed in isolation: it depreciates the local currency and raises the cost of obtaining dollars through FX swaps, with spillovers amplified when intermediary capital is depleted. The results are especially pronounced for emerging market currencies and suggest that stablecoins offer a relatively frictionless route for residents to shift savings into dollar-denominated instruments outside traditional regulated channels.

The resemblance of stablecoins issuers to money market funds (MMFs) (and their direct connectedness through reserves holding) sparked some interest in showing the similarities and differences in their behaviours. Aldasoro et al. (2025b) shows that while stablecoin market capitalization reacts to both crypto and monetary policy shocks, MMFs only react to the latter: when a monetary policy shock hits, stablecoins market capitalization declines, while prime-MMF assets rise. While the authors remain silent on the possible underlying reason, one plausible explanation could be the non-remuneration of stablecoins, whereas MMFs remuneration closely tracks short-term risk-free rates. Anadu et al. (2025) show that in times of stress, both stablecoins and MMFs are subject to similar flight-to-safety dynamics: when the crypto market is under stress (drop in Bitcoin price) or when other stablecoins are facing difficulties, stablecoin investors run from riskier and affected stablecoins to safer ones. Moreover, an additional parallel between the MMFs and stablecoin investors relates to the pattern of flows: the flow from riskier to safer stablecoins tend to occur on the same blockchain if the blockchain is large and less risky, whereas

if the blockchain is small and risky, the flow from riskier stablecoins also correspond to an outflow from the blockchain.

3.2 Impact of stablecoins on financial and monetary stability

Most risks discussed in the literature, such as spillovers to sovereign bond markets, pressures on bank funding or impact on the monetary policy transmission (detailed below), are primarily linked to the aggregate size of stablecoin issuance. Other types of risks arise from how stablecoins are used. For instance, if stablecoins are mainly used for everyday transactions by households, it will raise the volume and frequency of on- and off-ramping activity, which in turn could increase intraday liquidity needs and settlement volatility in payment systems, thus heightening operational and liquidity management challenges for banks. By contrast, corporate treasury management and FX-related use cases, including remittances, primarily transmit risks through their impact on banks' profitability via lower fee income from payment and FX services, rather than through funding stress. While such effects are unlikely to pose acute risks in the near-term, they could weaken banks' business models and hence their resilience over time (Cheng and Finesi, 2026). In the rest of this section, we systematically review the findings of the literature on stablecoins' impact on financial stability and monetary policy.

The risk of runs on stablecoins and effects of rapid stablecoin asset liquidation on financial markets

The ECB Crypto-Asset Task Force (2020) provides an early assessment of the monetary policy, financial stability, payments, and supervisory implications of stablecoins. A central risk identified is their vulnerability to liquidity runs if the issuer's ability to redeem at par is called into question. In such a scenario, the issuer could default or be forced to meet redemptions through rapid liquidation of reserve assets, thereby transmitting stress to other financial assets, possibly impairing market functioning. Aerts et al. (2025) warn that these risks can be amplified by the high concentration of issuance among a small number of dominant stablecoin issuers. Born et al. (2026) further note that in the case of the euro area, diversified holdings of sovereign bonds are warranted to mitigate issuer-specific shocks. Gross and Senner (2026) further highlight that the risk of spillovers from fire sales is amplified by a structural mismatch: stablecoins can face redemption pressure 24/7/365, while bond and repo markets are not continuously liquid (overnights/weekends), potentially concentrating asset sales when markets reopen.

Beyond run-driven fire sales, a large-scale adoption of stablecoins may structurally affect sovereign bond markets through changes in demand for high-quality liquid assets. Aerts et al. (2025) emphasise that the largest fiat-backed stablecoins (e.g., USDT and USDC) hold reserve assets comparable in size to major money market funds and rank among the significant holders of U.S. Treasury bills. While the market for euro-denominated stablecoins is still very small. Born et al. (2026) estimate that their growing market capitalisation could translate into sizeable sovereign bond holdings, either directly through reserve assets or indirectly through banks' liquidity management responses (i.e. to keep their LCR constant). However, the scale of this pass-through depends on the stablecoin issuer type (banks versus e-money institutions), the stablecoin issuer reserve composition, banks' liquidity preferences, but also the source of the funds used to acquire the stablecoin.

Aldasoro et al. (2025) and Altavilla et al. (2026) argue that stablecoin reserve investment behaviour may influence yields and thereby the transmission of monetary policy. Altavilla et al. (2026) also investigate the impact of broader stablecoin adoption on banks' lending and deposit rates- the two channels of monetary policy transmission. They find a stronger lending channel and weaker deposit channel, for banks relying more on wholesale funding, and conclude that the net effect of these opposing forces on loan supply is ultimately an empirical question. The authors further argue that the deterioration of LCR and NSFR associated with greater reliance on wholesale funding has direct implications for bank lending as banks may have to rebalance their assets away from illiquid, long-maturity loans, toward liquid assets or tighten lending standards by reducing loan volumes, shortening maturities or increasing loan pricing. Finally, Altavilla et al. (2026) highlight the risk of spillovers across the banking system if the withdrawal of stablecoin issuers' deposits from banks are not compensated by corresponding inflows into retail deposits. This effect may be amplified if monetary tightening leads to a sharp repricing of the yield curve, causing valuation losses on stablecoin issuers' holdings of sovereign bonds.

Negative implications of stablecoins on bank funding

Especially retail-oriented banks are concerned that stablecoins constitute a destination for structural (and stress-related) deposit outflows, and they particularly worried about direct and indirect forms of remuneration of stablecoins (e.g. BPI, 2025). Liao and Caramichael (2022) model the risks that SCs create for bank funding as they facilitate deposit outflows. Given the reserve requirements of MiCAR, stablecoin issuers will redeposit part of their reserves with banks, which are then considered as 'wholesale deposits - a shift that worsens banks' liquidity metrics. Coste (2024) explores the relationship between banks and stablecoins and their issuers, focusing on the mechanical effects on banks' capital and liquidity ratios. He shows that converting retail deposits into deposits from stablecoin issuers weakens banks' liquidity coverage ratio (LCR), effectively transforming a retail deposit into wholesale funding even if reinvested into high-quality liquid assets. If a credit institution issues its own stablecoins, the impact on LCR depends on whether stablecoin holders can be identified; unknown holders tend to weaken the LCR, which could incentivise banks to issue stablecoins only when they can continuously identify holders to obtain more favourable regulatory treatment. Aldasoro et al. (2025) extend this by emphasising reserve-management channels that deepen interconnections: stablecoin issuers may use reverse repos and hold deposits at banks due to regulatory requirements in some jurisdictions. This can pool dispersed (often insured) retail funds and re-channel them back to banks as uninsured wholesale deposits or through repo transactions, potentially amplifying funding fragility under stress. Besides the LCR, the shift from retail to wholesale deposits also worsens banks' net stable funding ratio (NSFR) as wholesale deposits have lower available stable funding weights, given their greater sensitivity to market stress and shorter maturities. Nigrinis (2025) argued in a study sponsored by the US association of consumer banks that the negative effects of stablecoins on bank funding and thus also on bank lending would be enormous: risks would be significant even with non-remunerated stablecoins, and if remuneration would be permitted in the US, deposit losses would be 25.9% of total bank deposits, "erasing roughly $1.5 trillion in lending". The Council of Economic Advisers (2026) objects against these conclusions and argues that eliminating stablecoin yield would increase bank lending in the US only by a negligeable $2.1 billion. Bindseil and Senner (2023, sections 4 and 5) discuss stablecoins and other non-bank payment service providers (PSPs) as destination of deposit outflows of banks, explaining the relevance for aggregate sectoral financial accounts of whether the

destination has itself access to central bank deposits or not. Adrian et al. (2025) similarly argue that stablecoin growth can change deposit composition and intermediation chains, making it important to assess banking-sector spillovers and liquidity dynamics, not just "crypto market" volatility. Altavilla et al. (2026) for instance highlight the risk of spillovers across the banking system if the withdrawal of stablecoin issuers' deposits from banks are not compensated by corresponding inflows into retail deposits. This effect may be amplified if monetary tightening leads to a sharp repricing of the yield curve, causing valuation losses on stablecoin issuers' reserve assets. Altavilla et al. (2026) also note that a broad adoption of non-euro pegged stablecoins in the euro area will complicate banks' liquidity management, given MiCAR's requirement to hold reserve assets in the same currency as the stablecoin. Banks would have to match the USD-denominated stablecoin deposits with USD-denominated assets or do FX hedging.

Cross-border payments, EMDE-specific risks and monetary sovereignty

Both the CPMI (2023) and the IMF (2025) point to potential efficiency gains from stablecoins in payment, including cross-border transactions, but stress that such gains are conditional on proper design, robust regulation and governance. Beyond payment efficiency considerations, the literature identifies various channels through which foreign-currency-pegged global stablecoins can generate macro-financial risks in emerging markets and developing economies (EMDEs), including currency substitution/dollarisation risks; weaker monetary policy control; challenges to capital flow management (including via pseudonymous channels); bank disintermediation and potential increases in credit costs; heightened systemic vulnerability to external shocks; and leakage of seigniorage to -often foreign- private issuers and constraints for the central bank's ability to act as lender of last resort (Sankar, 2025, Kendrick and Jha, 2025, Graf von Luckner et al, 2024, Adrian et al., 2025). Aldasoro et al. (2026) further note that the rise of foreign-currency pegged stablecoins effectively increases the degree of financial openness of the economy and thereby intensify the trade-off between exchange rate stability and monetary autonomy, even without formal changes to capital account policy. In addition, widespread adoption risks eroding monetary sovereignty by enabling rapid currency substitution that is difficult for authorities to monitor or control.

Operational risks

Public crypto networks and the decentralised applications that operate on top of them have specific operational risks. Both the Basel Committee on Banking Supervision (2024) and the Committee on Payments and Market Infrastructure (2024; section 4) have discussed operational risks relating to public blockchains, the latter focusing on tokenisation.

- Legal risks arise when tokenised assets lack clear legal equivalence to their traditional forms, especially in insolvency cases. Cross-border transactions further complicate enforceability, as ownership spans multiple jurisdictions. The bearer-like nature of crypto assets creates conflicts with established property rights, particularly in theft scenarios.
- Governance in decentralised systems is fragile, facing issues like low participation, collusion, and slow crisis response.
- Technological risks include bugs, hacks, and oracle problems, making DeFi systems frequent attack targets. Blockchain networks also face consensus and uptime risks, though large-scale attacks remain costly and rare. Institutional adoption is hindered by custody challenges and regulatory constraints

around key management.

- Finally, crypto's pseudonymity enables illicit activities, raising AML/CFT concerns despite increasing regulatory efforts (Chainalysis, 2026). Stablecoins have become a dominant vehicle in illicit on-chain transactions[23], reflecting their widespread availability, global reach and relative ease of transfer. Their use is facilitated by structural features of public blockchain environments, including pseudonymous peer-to-peer transfers via non-hosted wallets and the possibility to obscure transaction chains across multiple intermediaries. The Financial Action Task Force (2026) highlights that the effectiveness of existing regulatory frameworks is weakened by two factors. First, the intrinsically cross-border nature of stablecoin activities enables issuers to operate internationally while locating in jurisdictions with comparatively weaker regulatory regimes, limiting supervisory oversight. Second, peer-to-peer transfers via non-hosted wallets may fall outside the scope of standard AML/CFT obligations, making them inherently difficult to monitor and control. As a result, illicit activity risks not only raise concerns related to financial integrity, but may also amplify operational, legal and reputational risks for stablecoin ecosystems and associated intermediaries.

Carapella et al. (2026) further highlight two main structural weaknesses in the stablecoin ecosystem. First, the involvement of multiple intermediaries in providing services creates both contagion risks and a lack of transparency. When several third parties are part of a stablecoin's operational structure, it becomes difficult for market participants to pinpoint the origin of financial stress, which can intensify panic during crises. For example, some crypto wallet providers issue stablecoins that depend on external digital asset firms for infrastructure, sometimes even embedding another firm's stablecoin within their own product, creating layered dependencies and unclear fallback mechanisms. Second, risks would arise from vertical integration, where a single entity performs multiple roles within the stablecoin value chain. If counterparties lack full insight into the breadth of such entities' activities, they cannot effectively hedge against risks, which may worsen shocks. For example, crypto exchanges build their own Layer 2 networks, payment companies and venture capital firms develop new blockchains, and stablecoin issuers construct dedicated infrastructure.

Regulatory and other policy measures to address the financial stability concerns raised by stablecoins

A growing body of formal modelling work deepens the analysis of run dynamics and implications on prudential design. Gross and Senner (2026) model how stablecoin redemptions deplete reserves, prompt asset sales, depress bond prices, erode the issuer's solvency, and thereby amplify further redemptions. Their framework links key design parameters—capital and liquidity buffers, reserve composition, redemption gates, and related features—to outcomes such as run frequency, fire-sale intensity, and bond market volatility. The economic discussion and model analysis conclude that robust prudential design can stabilise both stablecoins and their surrounding market environment. Ahmed et al. (2024) examine how public information and learning shape coordination failure risk among stablecoin holders. Using a global games framework, they argue that reserve characteristics are key and show that the impact of disclosure on run risk is ambiguous: greater transparency may increase run risk when expectations are pessimistic,

[23] According to Chainalysis (2026), stablecoins now account for 84% of all illicit transaction volume on public DLT networks.

yet strengthen the peg when priors are favourable. They also predict inertia and path dependence in aggregate behaviour, whereby small public shocks induce reversion to historical outcomes, while large negative (positive) shocks can trigger widespread runs (recoveries). Adrian et al. (2025) similarly stress that stablecoin stability is highly confidence-sensitive and that disclosure and governance arrangements must be designed with run dynamics in mind. The U.S. Treasury (2021) likewise treats run risk as a core vulnerability requiring prudential regulation and strong reserve and redemption requirements. The broader problem of stablecoin runs and contagion is further analysed by Gorton and Zhang (2023), Goel et al. (2025), Ma et al. (2025), and Anadu et al. (2025).

Bindseil (2025,) Gross and Senner (2026) and Gersbach et al (2026) discuss regulatory approaches and tools for addressing financial stability implications of stablecoins. Gross and Senner (2026) consider capital buffers and cash reserve requirements as preventive stabilisers, reducing the likelihood and severity of stress episodes, while redemption gates and shorter reserve duration would mitigate market spillovers once stress materialises. We briefly review ten possible regulatory measures below. The first five instruments can be considered to reduce the risks of runs on stablecoins and the severity and negative effects of those, while the other measures are more about protecting banks from the consequences of too successful stablecoins. Regulatory policies regarding stablecoins remain dynamic as of June 2026, with the EU Commission (2026) "Targeted consultation on the review of Regulation on the Markets in Crypto-Assets (MiCA)" launched in May 2026 and the US Clarity Act ("Digital Asset Market Clarity Act" H.R. 3633) still not having passed the US Senate.

1) Capital requirements. Capital protects the solvency of the stablecoin against operational risks and losses arising in case of the need to fire-sell assets, making runs on the stablecoin less likely. Goel, Lewrick and Agarwal (2025) provide an analytical framework to calibrate regulatory capital and liquidity requirements for stablecoins[24]. Based on US stablecoins and Treasury market data, they find that "*combining a 1% capital requirement with a 30% liquidity requirement can reduce default probabilities to about 0.2% and cap the expected price impact of bond sales.*" Liao, Fishman, and Fox-Geen (2024), introduce a "Token Capital Adequacy Framework (TCAF)", which is a risk-based approach on assessing capital adequacy of stablecoins. Goel et al (2025) analyse both capital and liquidity (see next point) requirements on stablecoins and conclude that both liquidity and capital requirements address are useful, although not with identical effects: "liquidity requirements are more effective in curbing market spillovers, while capital requirements are better suited to lowering default probabilities". Based on US data, they reach the conclusion that "combining a 1% capital requirement with a 30% liquidity requirement could limit an issuer's default probability to around 0.05 basis points per year and restrict the expected price impact of bond sales in the Treasury market to around 65 basis points.

2) Requirements regarding the stablecoin's reserve holdings (liquidity requirements). A high degree of liquidity of reserves (i) makes runs on the stablecoin less likely, and if nevertheless holders would for good or bad reasons initiate a run, the consequences are milder since (ii) fire sale losses for the stablecoin issuer

[24] They rightly cover jointly liquidity and capital requirements, i.e. point 1) and point 2) in our list of regulatory approaches. Indeed, capital and liquidity jointly determine the stability of the balance sheet structure of any entity engaged in liquidity transformation.

will be lower (iii) the likelihood of insolvency of the stablecoin issuer will be lower; (iv) there will be less fire sale externalities or other negative externalities. Rules can include: (a) minimum share in the form of very short-term deposits with financial institutions and granularity, maximum maturity, and rating requirements with regards to deposits with banks, such as to make less likely that the withdrawal of the funds by the stablecoin issuer from the banks could cause any secondary issue; (b) Minimum share in the form of deposits with the central bank (and, first of all, allowing access to central bank deposits): withdrawing funds from the central bank does not cause any financial stability issues since the central bank is never liquidity-constrained and does not have to react to such withdrawals by having itself to liquidate assets; (c) Eligibility criteria for securities holdings and portfolio constraints: granularity, maximum maturity, issuer rating requirements, etc. Short term and highly rated securities tend to remain liquid in financial turmoil situations, so that fire sales *ideally* do not lead to strong negative price effects and contagion. The MiCAR requirement that a significant share of the issuer's reserve assets must be held as bank deposits (30% for regular issuers and 60% for systemic ones) has been criticised as counterproductive for financial stability (Gersbach et al, 2026, Bofinger, 2025). Views of central banks on granting access to stablecoins to central bank deposits as reserve assets widely diverge. The Bank of England (2023) initially expressed a preference for 100% reserve holdings with the central bank, while the ECB excluded safeguarding of stablecoin client funds in the form of central bank deposits. In December 2025[25], the Fed opened a public consultation on offering "skinny" accounts to e.g. stablecoin issuers which would not be interest bearing, be subject to balance caps, and would not be associated with access to any form of central bank credit. The notice explains that "The Board is considering setting the overnight balance limit at the lesser of $500 million or 10% of the Payment Account holder's total assets", implying that central bank deposits would remain a small reserve class, in particular for large issuers.

3) Access to central bank lender of last resort (LOLR). The LOLR avoids fire sales in situations of market turmoil. Thanks to the properties of the modern central bank to (i) never be liquidity constrained and (ii) to be risk free from the perspective of borrowers having to provide collateral, the central bank can make a large difference in available liquidity in crisis situations without taking material risks for the taxpayer. A critical perspective is taken by Bidder (2025) and Gersbach et al (2026), both emphasizing the global nature of stablecoins and the moral hazard implications of an access to the LOLR. On the other side it could be argued that (i) stablecoins could create significant monetary income to a jurisdiction, in particular in case of large scale foreign circulation, justifying efforts to consider granting them access to the LOLR; (ii) LOLR facilities for high quality assets can be designed to imply almost no financial risk for the central bank; (iii) the LOLR is not about helping the respective issuer, but about preventing negative externalities on others.

4) Applying a deposit insurance scheme on stablecoins. Deposit insurance has been accepted as key remedy to bank runs and it might be argued that in analogy, it should apply to stablecoins. However, for stablecoins the pseudonymity of holdings on public blockchains would cause some additional challenges. Moreover, such a system has administrative costs, and it distorts incentives, like any insurance scheme.

[25] See press release of 19 December 2025, December 19, 2025, "Federal Reserve Board requests public input on "payment account," which eligible financial institutions could use for the limited purpose of clearing and settling their payments".

Therefore, nobody is seriously proposing a deposit insurance scheme on stablecoins.

5) Redemption obligations on stablecoins. Private money is typically defined by the redemption promise: the issuer (be it a commercial bank issuing sight deposits, an e-money institution issuing e-money, or a stablecoin issuer issuing an e-money token or a payment stablecoin) promises at any time to redeem the funds in central bank money at par, or at least into other forms of private money. In contrast, highly liquid assets such as short-term sovereign debt instruments or money market funds must be liquidated first to generate money and are subject to market and liquidity risk. Regulatory redemption obligations on stablecoins can have classificatory, prudential and protective objectives: Classificatory: redemption obligations can establish that stablecoins are intended to be money rather than investment products. A core attribute of money is on-demand face-value convertibility, ensuring absolute liquidity. The singleness of money is based on the at-par convertibility of one form of money into the other, and ideally all forms of private money directly into central bank money. Gernsbach et al (2026) review regulatory rules on redemption and note that the direction of travel would be clear: "Conditioning market access on enforceable redemption rights and robust legal structures" would rightly be recognized as a key building block for credibly establishing stablecoin par convertibility. Garratt and Shin (2023) argue that private tokenised money should not replicate the arrangements of the free banking era, when clearing houses emerged to support par exchange among members' notes in the absence of central bank settlement assets.

6) Limiting and/or disincentivizing access of stablecoin issuers to central bank deposits. This would have two advantages from the perspective of banks: first, it avoids that bank deposits are absorbed ultimately by the central bank, and second, if central bank deposits are a large share of stablecoin reserves, that stablecoin issuers are perceived to be as secure as central bank money. This measure is in opposition to one option under point 2 above, namely, to allow or encourage stablecoins to deposit client funds with the central bank to avoid secondary repercussions of asset liquidation when stablecoins suffer from a run.

7) Specific provisions to address significant (large) stablecoins. Additional regulatory requirements on very large stablecoins can aim at disincentivizing such large stablecoins, or to address the potential additional negative externalities of such stablecoins (in principle like in the case of systemic global banks). A more granular market structure of stablecoins reduces negative repercussions of a run *on one* stablecoin and may also appear positive in terms of preserving competition. At the same time, means of payment benefit from network effects, and fragmentation therefore also reduces their utility.

8) Imposing limits on stablecoin holdings. Only the Bank of England has considered per person limits to stablecoins. Implementation appears challenging because of the vision that stablecoins would continue to be available via *anonymous* (non-KYCed) wallets. The idea to prohibit anonymous wallets has been fiercely combatted by crypto lobbyists, and legislators have ultimately not dared to pursue it.

9) Prohibit the remuneration of stablecoins. Traditionally, payment instruments have been assumed to be non-remunerated. This assumption is largely inspired by the technical difficulties involved in remunerating paper-based means of payment such as banknotes. However, in reality, today many monetary assets are

not subject to remuneration constraints: both sight deposits with banks and wholesale deposits of banks with the central bank can be remunerated. Currently only e-money and stablecoins are subject to legal remuneration constraints. Overall, regulatory remuneration constraints on means of payments in a market-oriented and electronic world could appear anachronistic and to deserve reconsideration. Why would holdings of means of payments be unremunerated regardless of the short-term treasury market rate? The main reason why regulations prohibit remunerating stablecoins would be the fear of structural disintermediation of banks. Bindseil (2025) argues that remuneration constraints can actually undermine financial stability because they create unintended flows of funds when interest rates change. Assets of highest liquidity will have lower yields than other assets, but not zero ones regardless of the interest rate level. Reichlin et al (2026) also support allowing to remunerate EU stablecoins. Gersbach et al (2026, 10-11) take the opposite view and contend that stablecoins offering remuneration increases financial stability risk.

4. Flow of funds modelling of stablecoins

4.1 Why flow-of-funds?

A global flow-of-funds representation of stablecoins provides an analytical foundation for a structural scenario analysis of how stablecoin (SC) growth may affect the totality of the financial system. Global flow-of-funds analysis has been developed as a tool linked to international statistics and balance of payment analysis with a view to understand how the international use of financial instruments and the implied capital flows affect the financial positions and vulnerabilities of economic and financial sectors. For example, Errico et al. (2014) develop an IMF Global Flow of Funds (GFF) framework to map the shadow banking system through sectoral and cross-border financial linkages. Zhang and Zhao (2018) extend the GFF concept by proposing a comprehensive statistical framework integrating multiple international datasets to construct "from-whom-to-whom" matrices capturing bilateral financial positions across countries and instruments, enabling detailed analysis of global financial interconnectedness. They demonstrate how GFF matrices can reveal structural imbalances, transmission channels, and systemic risks. By embedding stablecoins into a consistent global financial accounts framework, we can trace how balance sheets adjust across sectors as stablecoin issuance expands and reserves accumulate. This approach builds on and extends the stylised framework developed in Bindseil (2025), refining it to capture cross-sectoral and cross-border interlinkages more systematically. While Bindseil (2025) provided financial accounts both for the one- and two country case, we provide here a slightly modified one- and then a three-country model as we consider the US, the euro area and the rest of the world in our empirical specification. The starting point is a stylised flow-of-funds model that simplifies by aggregating sectoral accounts: identifying the funding choices for stablecoin purchases, how reserve assets are invested, and which balance sheet positions expand or contract as a result.

To move from a stylised to an empirical model, the framework must be mapped into observable data. This requires embedding stablecoins and their reserve portfolios into actual sectoral financial accounts statistics, complemented by additional data sources such as detailed issuance and reserve disclosures from major issuers. The aim is to construct a closed and internally consistent system of financial accounts in which stablecoins appear explicitly as liabilities of the issuing sector and reserves as corresponding assets in relevant instrument categories. Once such a system is established, scenario-based flow-of-funds analysis becomes feasible. One can impose alternative growth trajectories for stablecoins and specify assumptions about (i) the sources of inflows (e.g. substitution from bank deposits, money market funds, or cross-border capital inflows), and (ii) the composition of expanding reserve assets (e.g. sovereign bonds, central bank reserves, or other short-term instruments). The resulting balance sheet adjustments across sectors and countries can then be traced consistently, allowing for a structured assessment of financial stability, monetary policy transmission, and cross-border effects.

4.2 One country model

Stablecoins are created through some "flows of funds", i.e. shifts between financial assets and liabilities that must be mutually consistent (e.g. Jacewitz, 2025; Ahmet et al 2025, p. 33, p. 50). We need to parametrise certain assumptions on the flows of funds originating from stablecoins. First, we consider

the case of a single country. We assume that households and non-bank financial institutions (NBFIs, which we treat together as one sector) finance SC purchases potentially in three ways:

- share $\beta \in [0,1]$ of their stablecoin investment by reducing sight deposits with banks,
- share μ in $[0,1-\beta]$ in the form of banknotes
- share $\mathbf{(1-\mu-\beta)}$ by reducing their holdings of debt instruments.

We moreover assume that that the stablecoin's reserve is held in the following three forms:

- share $\alpha \in [0,1]$ is held in the form of commercial bank deposits.
- share $\delta \in [0,1-\alpha]$ is held in the form of deposits with the central bank
- share $\mathbf{(1-\alpha-\delta)}$ is held in the form of bonds. In the stylized model in which we had aggregated households and NBFIs, the bonds can only come from banks.

Letting the total amount of stablecoins created be SC, the following system of financial accounts (Figure 1) shows how, with these parameters, funds flow across the financial system and change the financial accounts of sectors when stablecoins of a value C are created. In case the financing sources and the investment destinations of stablecoins are identically distributed ($\beta = \alpha$ and $\mu = \delta$) then, in the one country model displayed above, the emergence of SCs seems fully neutral. However, some negative effects on banks could still apply: Households and NBFIs will on average hold longer duration and lower credit quality bonds than those that SCs will voluntarily or mandatorily hold. This means that a rise in SC volumes increases market and credit risks for some other sector. Moreover, deposits of SCs with banks are concentrated (both in terms of depositors, and in terms of banks where they are deposited), unstable and expensive relative to deposits of households. This also means that funding costs of banks will increase – not only because the average deposit remuneration rate will go up, but also because they need to increase the share of stable long-term funding to compensate for the less stable deposit mix. These implications on banks result both from economic and regulatory factors (which ideally are partially aligned).

Households could also fund their purchases of stablecoins by selling money market funds' shares. Money market funds themselves invest into the same asset categories as stablecoins: short term government debt, bank deposits (or short-term bank paper) and potentially central bank deposits (like in the case of the US Fed reverse repo facility to which also money market funds can participate). In our stylised flow of funds model, we address this point by consolidating the household and NBFI sector – i.e. implicitly we already considered the possible selling of MMF shares in financing SC, and the parameters (μ, b) can be interpreted accordingly. Separating the NBFI sector explicitly would allow distinguishing four sources of households' financing of SCs and incorporate the three investment options of MMFs with respective parameters (share the MMF invests into bank debt/deposits, non-bank debt, and secured central bank deposits, the latter illustrated by the Fed reverse repo facility). One could then calculate how these parameters in the disaggregated model (the one distinguishing households and NBFIs, and in which there are in total 5 parameters, namely the three of the households for the four asset options, and the two of the MMFs for the 3 asset options) translate into the parameters of the aggregate model (two parameters for three assets that can be the funding sources).

Figure 4-1: Sectoral accounts and flows of funds from stablecoin-creation, single country case

Households and NBFIs			
Sight deposits	-β SC	Other net liabilities	
Stablecoin	SC		
Banknotes	- μ SC		
Bonds	– (1-μ-β) SC		
Stablecoin issuer			
Deposits with banks	α SC	STC issued	SC
Deposits with CeB	δ SC		
Bonds	(1-α-δ) SC		
Commercial Banks			
Bonds	(α + δ - μ - β) SC	Sight deposits.	-β SC
		Stablecoin deposits	α SC
		Central bank credit	(δ - μ) SC
Central Bank			
Credit to banks	(δ-μ) SC	Banknotes issued	- μ SC
		Stablecoin deposits	δ SC

4.3 Three country model

In view of the current global predominance of USD stablecoins, the flow-of-funds need to be understood also in an asymmetric two or three country model. While a two-country model had been provided by Bindseil (2025), we present here instead an asymmetric three country model, which will be used later in our empirical calibration. For example, Kendrick and Jha (2025) predict that around one trillion USD of deposits will leave emerging market banks in the medium term and flow into US stablecoins. Graf von Luckner et al (2024) and Cardoso et al (2024) discuss the potentially large impacts of crypto-assets for international capital movements. Rey (2025, 25) sees pros and cons of such a roles of stablecoins: "*On the negative side are dollarization and its side effects, financial stability risks, potential hollowing out of the banking system, currency competition and instability, money laundering, fiscal base erosion, privatisation of seigniorage, and intense lobbying. On the positive side, cross-border payments may be quicker and cheaper, which matters especially for remittances. And citizens of countries with poor governance would have access to more stable and convenient means of payment and store of value than their domestic currency*." We assume a hierarchy as summarized in the Figure 4-2, whereby for country C, we assume no domestic stablecoin issuance at all (we skip the case in which country C issues stablecoins which are used in C, although this is of course also a possible constellation; In annex 1, we also show a case in which country B stablecoins circulate in country A.).

Figure 4-2: Hierarchy of stablecoin issuance assumed in this section.

	Held in		
	Country A	Country B	Country C
Country A issued SCs	Yes	Yes	Yes
Country B issued SCs	No	Yes	Yes
Country C issued SCs	No	No	No

We denote the cross-border stablecoin circulation by for example $\mathbf{SC_{AB}}$ being the A-issued stablecoins is circulating in country B. We assume for presentational simplicity that the exchange rate between the currencies is one. For country B we now need the following additional parameters:

- share $\beta^* \in [0,1]$ of stablecoin investment by reducing sight deposits with banks,
- share μ^* in $[0,1-\beta^*]$ in the form of (domestic) banknotes
- share $(1-\mu^*-\beta^*)$ by reducing their holdings of (domestic) debt instruments
- demand of country B for stablecoins issues in country B: $\mathbf{SC_{BB}}$
- share $\alpha^* \in [0,1]$ is held by SC issuer B in the form of commercial bank deposits.
- share $\delta^* \in [0,1-\alpha]$ is held by SC issuer B in the form of deposits with the central bank
- share $(1-\alpha^*-\delta^*)$ is held by SC issuer B in the form of (domestic) debt instruments.

For country C we need the following parameters:

- demand of country C for stablecoins issued in A: $\mathbf{SC_{AC}}$
- demand of country C for stablecoins issued in B: $\mathbf{SC_{BC}}$
- demand of country B for stablecoins issued in B: $\mathbf{SC_{BB}}$
- share $\beta\# \in [0,1]$ of stablecoin investment by reducing sight deposits with banks,
- share $\mu\#$ in $[0,1-\beta^*]$ in the form of (domestic) banknotes
- share $(1-\mu\#-\beta\#)$ by reducing their holdings of (domestic) debt instruments

Figure 4-3 shows the implied flow of funds. It is noteworthy that in country B, the aggregate dependence of banks on central bank credit declines with the circulation of A-country stablecoins, to the extent that households reduce their holdings of banknotes to finance their stablecoin purchases. In this sense, the aggregate liquidity position of the banking system improves. However, if one zooms into the liquidity situation of individual banks, negative effects will likely prevail for most of them. Like in the domestic case, the newly gained (wholesale) deposits, in this case from A-country banks, are likely to be more expensive, more concentrated, and less stable than the previous sight deposits from households. Most banks will only experience outflows from household deposits, and no inflows from A-country banks.

Figure 4-3: Financial account representation of flows of funds from stablecoin-creation, three-country case in which A-stablecoins circulate globally, B-stablecoins only in B and C, and C is a pure user country

Country A (in currency A)	
Households and NBFIs	
Sight deposits $-\beta\ SC_{AA}$ Stablecoin SC_{AA} Banknotes $-\ \mu\ SC_{AA}$ Bonds $-(1-\mu-\beta)\ SC_{AA}$	Other net liabilities
Stablecoin issuer	
Deposits with banks $\alpha\ (SC_{AA}+SC_{AB}+SC_{AC})$ Deposits with CeB $\delta\ (SC_{AA}+SC_{AB}+SC_{AC})$ Bonds $(1-\alpha-\delta)(SC_{AA}+SC_{AB}+SC_{AC})$	STC issued $SC_{AA}+SC_{AB}+SC_{AC}$
Commercial Banks	
Bonds $(\alpha+\delta-\mu-\beta)\ SC_{AA} - (1-\alpha-\delta)(SC_{AB}+SC_{AC})$ Claims Banks in B SC_{AB} Claims Banks in C SC_{AC}	Sight deposits $-\beta\ SC_{AA}$ SC issuer dep. $\alpha\ (SC_{AA}+SC_{AB}+SC_{AC})$ CeB credit $(\delta\mu)\ SC_{AA} + \delta\ (SC_{AB}+SC_{AC})$
Central Bank	
Credit to banks $(\delta\mu)SC_{AA} + \delta\ (SC_{AB}+SC_{AC})$	Banknotes issued $-\ \mu\ SC_{AA}$ Stablecoin issuer deposits $\delta\ (SC_{AA}+SC_{AB}+SC_{AC})$
Country B (in currency B; exchange rate 1:1)	
Households and NBFIs	
Sight deposits $-\beta^*(SC_{AB.}+SC_{BB})$ A-SCs SC_{AB} B-SCs SC_{BB} Banknotes $-\ \mu^*(SC_{AB.}+SC_{BB})$ Bonds $-(1-\mu^*-\beta^*)(SC_{AB.}+SC_{BB})$	Other net liabilities
Stablecoin issuer	
Deposits with banks. $\alpha^*(SC_{BB}+SC_{BC})$ Deposits with CeB $\delta^*(SC_{BB}+SC_{BC})$ Bonds $(1-\alpha^*-\delta^*)(SC_{BB}+SC_{BC})$	SC issued $SC_{BB}+SC_{BC}$
Commercial Banks	
Bonds $(1-\mu^*-\beta^*)(SC_{AB.}+SC_{BB})-(1-\alpha^*-\delta^*)(SC_{BB}+SC_{BC})$ C-country banks SC_{BC}	Sight deposits. $-\beta^*\ (SC_{AB.}+SC_{BB})$ SC issuer deposits $+\ \alpha^*\ (SC_{BB}+SC_{BC})$ CeB credit $-\ \mu^*(SC_{AB.}+SC_{BB})+\delta^*(SC_{BB}+SC_{BC})$ A-country banks SC_{AB}
Central Bank	
Credit to banks $-\ \mu^*(SC_{AB.}+SC_{BB})+\delta^*(SC_{BB}+SC_{BC})$	Banknotes issued $-\ \mu^*(SC_{AB.}+SC_{BB})$ SC deposits. $\delta^*(SC_{BB}+SC_{BC})$
Country C (in currency C; exchange rate 1:1)	

Households and NBFIs			
Sight deposits	$-\beta\#(SC_{AC} + SC_{BC})$	Other net liabilities	
A-Stablecoin	SC_{AC}		
B-stablecoins	SC_{BC}		
Banknotes	$-\ \mu\#(SC_{AC} + SC_{BC})$		
Bonds	$-(1-\mu\#-\beta\#)(SC_{AC}+SC_{BC})$		
Commercial Banks			
Bonds	$(1-\mu\#-\beta\#)(SC_{AC}+SC_{BC})$	Sight deposits.	$-\beta\#\ (SC_{AC}+SC_{BC})$
		A-country banks	SC_{AC}
		B-country banks	SC_{BC}
		Central bank credit	$-\ \mu\#(SC_{AC}+SC_{BC})$
Central Bank			
Credit to banks	$-\ \mu\#(SC_{AC}+SC_{BC})$	Banknotes issued	$-\ \mu\#(SC_{AC}+SC_{BC})$

In annex 1 we examine some **further specific flow-of-funds issues**:

(1) **Bitcoin**: The largest use case for stablecoins still appears to be as a means of payment in 24/7 crypto speculation, primarily for buying and selling Bitcoin. Unbacked crypto-assets, despite recent valuation losses, still have a market capitalisation of more than USD 2 trillion - around seven times larger than that of stablecoins. It is therefore plausible that significant structural flows from Bitcoin to stablecoins could materialise.

(2) **Substituting foreign assets with foreign stablecoins**: If, for example, USD-denominated stablecoins become widely used in Argentina, the accumulation of such positions can also occur through the exchange of USD cash, USD deposits, or USD-denominated securities into USD stablecoins (i.e. not only through the conversion of domestic currency assets). This makes a difference in terms of balance of payment and exchange rate effects.

(3) **Eligible vs. non-eligible securities:** In the financial accounts above, we considered only one category of securities assets per sector. In practice, however, stablecoins can invest only in high-quality, short-term debt instruments. As a result, flows from securities into stablecoins, and back from stablecoins into securities, even if equal in size, are not neutral.

4.4 Sectoral account data for US and euro area for an empirical model

To empirically estimate the impact of stablecoins' growth on the financial system, we need to gather data not only for the three separate countries of interest (U.S., Euro Area, and Rest of World), but also for cross-country exposures. In this section, we explain the process of gathering the needed data, the assumptions we take when data is missing, and how we build a compact, but representative three-country financial system including the now missing stablecoin issuers.

A) United States

To build the representative U.S. financial system, we use the "From-Whom-to-Whom" data[26] published by the Fed as part of their quarterly "Z.1 Financial Accounts" release. The data contains relationships between sectors at the instrument level: for each instrument part of the financial accounts (e.g. currency and deposits, debt securities, loans, etc.), we can see how much of the total is issued by which sectors (e.g. private depository institutions, NBFIs, government, households, etc.) and who are the holders of such issuance. We aggregate the raw data to get a matrix that contains the sector-instrument breakdowns needed for our analysis: when a sector is issuing various instruments that are not directly relevant to our analysis, we only show the aggregated issuance for that sector without having an instrument breakdown (e.g. for households and non-profit organisations, non-financial businesses, central bank), whereas whenever we are interested in a specific instrument, such as treasuries, bank deposits, etc., we create a separate account for each of the sectors issuing that specific instrument (e.g. we have a separate account for bonds issued by the government, deposits issued by banks, and repo financing of banks and NBFIs). Through this process we eventually obtain the US financial accounts in Table 4-1. In our U.S. financial accounts matrix we make the following approximations: (i) the instrument "Monetary Gold and SDRs" is not included as these are mostly financial assets with no corresponding liability; (ii) "Currency" and "Checkable deposits" are not two separate instruments in the raw data, but we assume that when banks are the issuers, the value corresponds 100% to deposits and when the central bank is the issuer and households / nonfinancial businesses are the holders, then the value corresponds 100% to banknotes. The approximation on the circulating banknotes seems to realistically represent what is reported by other Fed statistics[27]: in 2025, the total value of circulating banknotes was around $2.4 trillion and our accounts show a total approximated value of $2.1 trillion, of which $1 trillion held domestically by households and non-financial businesses and $1.1 trillion held in the rest of world; (iii) "Deposits" issued by banks include checkable, time, savings, other deposits, and interbank deposits; (iv) the "Banks" sector include: U.S.-Chartered Depository Institutions, Foreign Banking Offices in the U.S. , Banks in U.S.-Affiliated Areas, and Credit Unions; (v) the "NBFIs" sector includes: Property-Casualty Insurance Companies, Life Insurance Companies, Private and Public Pension Funds, Retirement Funds, Money Market Funds, Mutual Funds, Closed-End Funds, ETFs, Government-sponsored Enterprises, Agency- and GSE-Backed Mortgage Pools, Issuers of Asset-Backed Securities, Finance Companies, mREITs, Security Brokers and Dealers, Holding Companies, and Other Financial Business.

[26] The data is available at: https://www.federalreserve.gov/releases/efa/fwtw.htm
[27] https://www.federalreserve.gov/paymentsystems/coin_data.htm

The missing piece in the current U.S. financial accounts are USD-denominated stablecoins. To insert them in the current financial accounts, we look at the two major USD-denominated stablecoins (USDC issued by Circle and USDT issued by Tether) and assume that those are representing the entire universe of USD-denominated stablecoins. In Q3 2025 Circle issued about $74 billion USDC tokens and held $74 billion in assets of which $64 billion were in the Circle Reserve Fund (a Money Market Fund managed by BlackRock, which invested about 35% in short-term U.S. Treasury securities and the rest in U.S. Treasury Reverse Repurchase Agreements with banks) and $10 billion were in the form of deposits at regulated financial institutions. For simplicity, we are going to use the following total asset distribution: 15% in bank deposits, 55% in repos, and 30% in Treasuries. Given that the Circle Reserve Fund is a regulated MMF, the current U.S. financial accounts already contain the assets held by that fund under the "NBFI" sector. Therefore, when adding the assets of the "stablecoin issuers" sector, we reduce by the same amount the corresponding holdings of the NBFI sector. Tether is a more complicated case as the parent company of the USD-denominated USDT is Tether International S.A. de C.V., a company located in El Salvador, thus falling under the "Rest of World" sector in the U.S. financial accounts. In Q3 2025 Tether issued about 174 billion USDT tokens and had $181 billion in assets of which $112 billion in U.S. Treasury Bills, $21 billion in U.S. Reverse Repurchase Agreements, $6 billion in money market funds, $0.3 billion in cash and bank deposits, $0.5 billion in non-U.S. Treasury Bills, and the remaining $41 billion in other miscellaneous investments such as loans, bonds, gold, and bitcoin. Given the embeddedness of USDT in the U.S. financial system, we treat Tether as if it were a USD-stablecoin issuer and not a rest-of-the-world-stablecoin Issuer. For simplicity, we assume that the net worth of Tether is 0, meaning that (i) the number of tokens equals the value of the assets, being$174 billion. We also replicate Circle's total asset distribution allocated in U.S.: 15% in bank deposits, 55% in repos, and 30% in Treasuries. Even though this assumed distribution does not match the current distribution, we believe this will not impact our analysis when looking at the impact of stablecoins' growth on the financial system in the future (see Section 5.1 for further details). Our underlying assumption is that Genius Act compliant stablecoins will predominate in the future and that the distribution of their reserve assets will be close to the one of USDC. We add the relative asset holdings of Tether to the "stablecoin issuers" sector in the U.S. (summed to Circle's) and reduce by the same amount the corresponding rest of world sector.

Finally, we create a row for stablecoin issuers issuing stablecoin tokens as a liability. For this we treat Circle and Tether as similar and assume that 25% of the supplied tokens are held in the U.S. by U.S. households (Reuter, 2025 provides estimates of where USD stablecoins are held; see section 5.1). We deduct the amount of stablecoin holdings from the amount of other instruments issued by NBFIs and held by households (for domestic stablecoin holdings it will be deducted from the domestic households and non-profit organisations, while for the rest of world holdings, it will be deducted from rest of world households and non-profit organisations).

Table 4-1: Modified U.S. financial accounts, Q3 2025 (Billions of U.S. dollars).

Holders: → / Issuers/debtors:	Households & non-profits	NFCs	Govt	Central Bank	Banks	NBFIs	Stable-coins	Rest of world	Totals
Households and non-profits	344	463	1902	0	6915	11591		47	21262
NFCs	47000	21139	2011	29	7147	37650		35939	150915
Government: Treasuries	2890	220	1574	3831	1940	8325-**22**	**+74**	9249-**52**	28029
Government: Other	2411	1545	235	5	424	8328		443	13391
Central bank	768	281	889	0	3083	486		1085	6592
Banks: Deposits	13983	4266	748	7	109	1349-**11**	**+37**	3055-**26**	23517
Banks: Fed funds / Repos	0	7	22	0	75	538-**41**	**+137**	292-**96**	934
Banks: Other	45	806	196	2	39	3974		750	5812
NBFIs: Fed Funds / Repos	0	29	101	6	267	2003		1311	3717
NBFIs: Other	67475-**62**	5338	1273	1806	4620	29405		11620-**186**	121537-**248**
Stablecoins	**+62**							**+186**	**+248**
Rest of world	6333	10685	601	19	4153	16010			37801
Totals	141249	44779	9552	5705	28772	119659-**74**	**+248**	63791-**174**	

Sources: U.S. Financial Accounts; Authors' calculations.

B) Euro Area.

To build the Euro Area financial accounts we need to take additional assumptions, since the available data is less granular than the U.S. data. We start with the ECB quarterly sector accounts (QSA), which provide euro area financial stocks by instrument and institutional sector. In contrast to the U.S. "From-Whom-to-Whom" accounts, the QSA data only provides bilateral holder–issuer matrix at the level of detail needed for deposits, debt securities, listed shares, and investment funds. Therefore, we use QSA as the main sector-by-instrument benchmark and reorganise it into the simplified matrix structure used in this paper. We use sectors provided by QSA (households and non-profit organisations, non-financial corporations, general government, MFIs, central bank, Other MFIs[28]), and we aggregate other non-bank financial institutions into one sector[29]. Instruments are selected based on relevance for the stablecoin flow-of-funds exercise: currency, deposits, debt securities, loans, equity, MMF shares, non-MMF shares and residual "other" positions[30]. Where QSA gives both sectoral asset positions and corresponding liability positions, we use these to populate the issuer–holder matrix in a way that preserves instrument-level totals and keeps each sector's financial assets and liabilities internally as consistent as possible. Where the QSA information is insufficient to identify the full counterparty split, we allocate the missing positions

[28] We use all three as depending on instrument, sometimes clean breakdown is not available.
[29] Specifically, we use S124, S12O, and S12Q to denote NBFI.
[30] This instrument category contains Insurance, pension and standardized guarantee schemes, Financial derivatives, and Other accounts receivable.

proportionally using the available sectoral distribution for the same instrument and then apply a small number of manual adjustments described below to align the matrix with the categories used in the model. From the aggregated data, we manually adjust the following accounts: (i) the reported data on bank deposits does not disclose all the sectoral breakdowns (households, non-financial businesses, and NBFIs are not available), and we therefore take values from key figures of bank balance sheets reported by the ECB[31]; (ii) as for the U.S. data, we exclude the instrument "Monetary gold and SDRs" since it is an asset without a corresponding liability; (iii) the reported data on loans does not differentiate between loans issued by the central bank, banks, and MMFs, so we take the assumption that all loans are issued by banks; (iii) we exclude the following instruments because no breakdown of the issuers is available: Investment fund shares, equity, Insurance and Pension Schemes, Financial Derivatives and other accounts receivable[32]; (iv) we assume that the reported data on currency refers to the domestic holdings of banknotes and coins by the household and the non-financial business sectors (a total of €1.1 trillion representing about 70% of the total €1.6 trillion outstanding EUR banknotes[33] in Q3 2025 and the remaining 30% is assumed to be held by rest of world households. We take the deposits of banks with the Eurosystem from the Eurosystem's published weekly financial statement of 25 September 2025. Additionally, we convert € values in $ values by using the exchange rate of 1.174 USD per euro (as reported by the ECB on 30 September 2025). The resulting EA financial accounts in Q3 2025 are shown in Table 4-2. Like for the U.S., we include a "stablecoin issuer" sector. Due to the small amounts of circulating EUR-denominated stablecoins and the regulation in place in the euro area (EA), we assume that the stablecoins in circulation in September 2025 ($300 million) are backed by reserves held 60% in bank deposits in the EA and 40% in public debt securities. Moreover, we assume that 60% of the total amount of EUR-denominated stablecoins are held by EA households, while the rest is held by the rest of world (excluding U.S.). We deduct the stablecoin amounts (both on the liability and on the asset side) from the 'other NBFIs' sector.

[31] https://data.ecb.europa.eu/key-figures/money-credit-and-banking/bank-balance-sheets/deposits?tab=Corporations

[32] The sizes of these accounts held by the household sector are 4 trillion (investment fund shares), 8 trillion (equity), and 10 trillion (insurance and pension schemes, financial derivatives and other accounts receivable).

[33] https://www.ecb.europa.eu/stats/policy_and_exchange_rates/banknotes+coins/circulation/html/index.en.html

Table 4-2: Modified EA financial accounts, Q3 2025 (Billions of U.S. dollars).

Holders: → Issuers/debtors:	Households & Non-profits	NFCs	Govt	Central Bank	Banks & MMFs	Other NBFIs	**Stable -coins**	Totals
Households and nonprofits	31	38	100	0	8004	1103	0	9276
NFCs	159	6870	358	237	10144	3469	0	21237
Government: Debt Securities	486	143	441	3345	2232	3722-**0.12**	**+0.12**	10369
Government: Other	2	142	1908	154	2312	223	0	4742
Central bank	1088	185	36	0	2785	0	0	4094
Banks & MMFs: Deposits	11327	4262	287	3712	8982	3062-**0.18**	**+0.18**	31632
Banks & MMFs: Debt Securities	389	84	109	486	1488	1425	0	39821
Banks & MMFs: Other	150	180	14	0	0	583	0	927
Other NBFIs	4678-**0.18**	1576	664	181	6311	13731	0	27141-**0.18**
Stablecoins	**+0.18**	0	0	0	0	0	0	**+0.18**
Totals	18310[34]	13480	3917	8115	42258	27318-**0.3**	**+0.3**	

Sources: QSA; ECB; Authors' calculations.

C) Rest of world and cross-country exposures

Since our analysis is centred on the effects of stablecoins' growth on the U.S. and EA financial systems, we do not need to populate the complete rest of world financial accounts, which would anyway be challenging. Instead, we are only interested in the relative cross-country exposures needed to translate the theoretical flow-of-funds model into an empirical exercise: (i) Holdings of U.S. banks in EA and rest of world banks, (ii) Holdings of EA banks in rest of world banks, (iii) Holdings of USD-denominated stablecoins by EA and rest of world households, (iv) Holdings of EUR-denominated stablecoins by rest of world households. To obtain (i) holdings of U.S. banks in EA and rest of world banks, we combine data from different ECB datasets: Balance of Payments Statistics (BPS) are used to introduce the bilateral country dimension that is missing from the domestic QSA matrix. The starting point is the total position of U.S. residents vis-à-vis the euro area by broad instrument. Where BPS provides the required bilateral instrument directly, the observed bilateral total is used. Where only a broader bilateral aggregate is available, it is split using rest of world vis-à-vis the euro area sectoral weights derived from QSA. For debt securities and investment fund shares, ECB Securities Holdings Statistics (SHSS) is used because it provides a more granular holder-sector distribution. In general terms, for country c, sector s, and instrument i, the bilateral position is obtained as $X(c,s,i) = X_{BPS}(c,S1,i)\ \omega_{W1}(s,i)$ where $\omega_{W1}(s,i)$ is the relevant sector share from QSA or SHSS vis-à-vis the rest of the world. On the liability side, this corresponds to asking which foreign sectors hold euro area-issued instruments. On the asset side, the same logic is mirrored by using euro area asset positions vis-à-vis the relevant foreign counterpart. A specific assumption is needed for direct investment debt instruments. Foreign direct investment (FDI) debt is not an additional

[34] As explained above, some instruments are excluded from the analysis because of missing granularity from the raw data on the issuer side. The size of the household sector is therefore underestimated by about 22 trillion. Since the US data did not require a similar exclusion, the difference in household financial assets between the two currency areas is overstated in the matrices.

instrument in the flow-of-funds matrix, but a BPS functional category that must be mapped back into QSA instruments. In BPS, FDI debt instruments are recorded as a functional-category item, while in QSA the empirical flow-of-funds matrix is organised by instrument. We therefore do not keep FDI debt as a separate instrument. Instead, we reallocate it into the three QSA instrument categories into which FDI debt can economically fall: loans (F4), debt securities (F3), and trade credit/other accounts (F8). We assume that the composition of FDI debt vis-à-vis the U.S. can be inferred from the euro area rest of world relationship between QSA instrument positions and the corresponding BPS items in case bilateral instrument composition vis-à-vis the U.S. is not available. In other words, the W1 structure is used as the benchmark for decomposing the bilateral U.S.–Euro area FDI debt total. The decomposition is implemented sequentially. First, the loan component is identified. For each sector, we compare the QSA loan position vis-à-vis the rest of the world with the loans already observed in BPS under other investment. The positive difference is interpreted as the loan-like part of FDI debt. This amount is bounded between zero and the total FDI debt position, so that the procedure cannot create a negative loan component or allocate more loans than the available FDI debt envelope. Formally, the calculation note defines this as $gap_{F4}^{X}(s) = QSA_{W1,X}(F4, s) - BPS_{W1,X}(OI\_loans, s)$, with the loan-like share of FDI debt capped at the available BPS FDI debt amount. The resulting loan share is then applied to the bilateral U.S. FDI debt position. The remaining FDI debt position is treated as a residual to be allocated between debt securities and trade credit/other accounts. The assumption here is that, after the loan component has been removed, the residual FDI debt reflects the remaining QSA gaps in F3 and F8. The residual is therefore split according to their relative weights: the debt-security share is given by the relative F3 gap, and the trade-credit/other-accounts share is the remaining part. Specifically, $FL_{resid,US}^{X}(s)$ is allocated using $\omega_{F3}^{X}(s) = gap_{F3}^{X}(s)/(gap_{F3}^{X}(s) + gap_{F8}^{X}(s))$, with the complement allocated to trade credit/other accounts F8. Hence, the observed bilateral BPS total is preserved, while the final matrix remains consistent with the QSA instrument classification needed for the empirical flow-of-funds exercise. The resulting matrix is displayed in Table 4-3 Panel A, which is a matrix showing how much U.S. sectors are holding in EA-issued instruments. This matrix allows us to know, for instance, how much assets issued by EA banks are held by U.S. banks. Once we have that information, we can combine the information from the U.S. "From-Whom-to-Whom" matrix (interbank deposits of U.S. banks as holders and total rest of world as issuers) with the information from the cross-country exposure of U.S. banks vis-à-vis EA banks and obtain an estimate for the cross-country exposure of U.S. banks vis-à-vis rest of world banks. In our case, the interbank deposits of U.S. banks as holders and total rest of world as issuers in Q3 2025 are $1390 billion, the cross-country exposure of U.S. banks vis-à-vis EA banks is $639 billion, so the resulting cross-country exposure of U.S. banks vis-à-vis rest of world banks is $1390 billion - $639 billion = $751 billion. We follow a similar process to obtain (ii), that is the holdings of EA banks in rest of world banks by building the relative cross-country exposure matrix as in (shown in Table 4-6 Panel B) and obtaining a value of $1988 billion. For (iii) and (iv) , we assume that EA households hold 7.5% of the total circulating USD-denominated stablecoins, equivalent to $19 billion, and rest of world households hold 67.5% of the total circulating USD-denominated stablecoins, equivalent to $167 billion, and 40% of the total circulating EUR-denominated stablecoins, equivalent to $120 billion (see Section 5.1 for a motivation of these assumptions).

Table 4-3: Cross-country exposures, Q3 2025 (Billions of U.S. dollars).

Panel A: U.S. holders and EA-issued instruments.

U.S. holders: → / EA instruments:	Households & non-profits	NFCs	Govt	Central Bank	Banks & MMFs	Other NBFIs	Totals
Currency	10	10	10	10	10	29	78
Deposits	0	0	8	38	639	0	684
Debt Securities	0	21	350	0	174	218	763
Loans	3	375	27	0	0	865	1270
Equity	530	530	0	0	530	1591	3182
Investment fund shares	0	0	0	314	0	1672	1986
MMF shares	0	0	0	993	0	0	993
Non-MMF shares	0	0	0	0	0	993	993
Others	110	156	116	110	116	481	1090
Totals	653	1092	511	1465	1469	5849	

Panel B: EA holders and Rest of world-issued instruments.

EA holders: → / RoW instruments:	Households & Non-profits	NFCs	Govt	Central Bank	Banks & MMFs	Other NBFIs	Totals
Currency	0	0	0	0	0	1	1
Deposits	84	107	23	44	1988	531	2777
Debt Securities	2	127	103	357	1685	3127	5401
Loans	3	803	85	0	1882	1697	4470
Equity	1618	1618	0	0	1618	4854	9708
Investment fund shares	30	7	4	0	12	374	427
MMF shares	0	0	0	0	0	0	0
Non-MMF shares	0	0	0	0	0	0	0
Others	91	91	91	91	89	262	715
Totals	1828	2816	306	492	5656	10846	

Sources: BPS; QSA; SHSS; Authors' calculations.

When putting together all the elements discussed in the previous sub-sections, we obtain Table 4-4, which is a matrix representing country and cross-country exposures in Q3 2025, i.e. a sufficient empirical specification of our three-country model, allowing us to extrapolate numbers into 2030 assuming certain universal nominal growth rates, and then embedding various assumptions on stablecoin growth and distribution into the scaled 2030 financial accounts. This version of the matrix only displays the sectors which are going to be impacted by the growth in stablecoins following the flow of funds model, whereas the other sectors are left out to have more compact tables.

Table 4-4: Selected country and cross-country exposures, Q3 2025 (Billions of U.S. dollars).

Issuers:	Holders:→	U.S.				EA				RoW
		Households & non-profits	Central bank	Banks	Stable-coins	Households & non-profits	Central bank	Banks	Stable-coins	Households & non-profits
U.S.	Government: Treasuries	2890	3831	1940	74					
	Central bank	768	0	3083	0					1085
	Banks: Deposits	13983	7	109	37					
	Bank: Repos	0	0	75	137					
	Stablecoins	62	0	0	0	19				167
EA	Government: Debt					486	3345	2232	0.12	
	Central bank					1088	0	2785	0	317
	Banks: Deposits			639		11327	3712	8982	0.18	
	Stablecoins					0.18	0	0	0	0.12
RoW	Banks			751				1988		

Sources: U.S. Financial Accounts; BPS; QSA; SHSS; ECB; Authors' calculations

5. Scenario assumptions and output

This section discusses the main assumptions regarding the future growth and adoption of stablecoins (Section 5.1) and analyses the effects of a "baseline" scenario on the financial accounts constructed in the previous section (Section 5.2).

5.1 Scenario assumptions

The stylised flow-of-funds analysis in section 4.3, together with the discussion in section 4.4 on its mapping to a real-world system of sectoral financial accounts, provides the foundation for adopting the alternative assumptions needed to construct our scenario analysis. An overview of all the different scenarios is shown in Figure 5-1 and each assumption is explained below. The structure of our scenarios is based on a distinction between one "baseline scenario" (Scenario B) and variations of individual parameters from this core scenario, which we call "sensitivity scenarios" (Scenarios C – I). Scenario A is the scenario of no stablecoin growth.

Figure 5-1: Summary table of baseline and sensitivity scenarios. Scenario B is the "baseline" scenario. Highlighted in grey the assumptions deviating from the "baseline" scenario assumptions.

Parameters	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Total USD SC circulation	248 bn	1.9 tn	4 tn		1.9 tn	4 tn	1.9 tn		
Total EUR SC circulation	0.3 bn	0.5 tn			1 tn				
Geography of USD SC	25% (U.S.) 7.5% (EA) 67.5% (RoW)			25% (U.S.) 15% (EA) 60% (RoW)	25% (U.S.) 7.5% (EA) 67.5% (RoW)				
Geography of EUR SC	0% (U.S.) 60% (EA) 40% (RoW)						0% (U.S.) 25% (EA) 75% (RoW)	0% (U.S.) 60% (EA) 40% (RoW)	
Investments of USD SC	15% (Bank Deposits); 55% (Treasury Reverse Repurchase Agreements); 30% (Treasury Bonds)[35]; 0% (Central Bank Reserves)								
Investments of EUR SC	60% (Bank Deposits) 40% (Government Debt)[36]							30% (Bank Deposits) 70% (Gvt Debt)	25% (Bank Deposits) 25% (Gvt Debt) 50% (Central Bank Res.)
Exchange rate	€1 = $1.174								
Sourcing factors	60% (Bank Deposits); 30% (Government Debt); 10% (Banknotes)								
Geography of USD currency	50% (U.S.); 0% (EA); 50% (RoW)								
Geography of EUR currency	0% (U.S.); 70% (EA); 30% (RoW)								
Sectoral accounts growth	Identical nominal growth rate for all regions and sectors of 4% per year								

[35] Residual maturity of maximum 93 days.

[36] In the absence of clear rules under MiCAR on maximum maturity, we would assume the same as applicable to the Genius Act, i.e. maximum residual maturity of 93 days.

Global USD stablecoin circulation. A key assumption underpinning all scenarios concerns the projected size of USD and euro area stablecoin markets. For USD-denominated stablecoins, we rely on the scenario analysis presented by Citi (2025)[37], which forecasts a base case of USD 1.9 trillion in stablecoin circulation by 2030, alongside a "bull case" of USD 4.0 trillion and a "bear case" of USD 0.9 trillion. Our baseline scenario adopts Citi's central estimate of USD 1.9 trillion, with end-September 2030 defined as the reference date across all scenarios, i.e. five years after the sectoral financial accounts snapshot. This choice does not imply that the Citi baseline necessarily represents the most accurate forecast. Indeed, developments in total stablecoin volumes since the publication of Citi's analysis in late 2025 have been somewhat weaker than anticipated, suggesting that the baseline could plausibly be revised downward. However, by incorporating Citi's bull and bear cases as sensitivity scenarios, we ensure coverage of a sufficiently broad and relevant range of potential outcomes. Should actual developments fall below even the bear-case scenario, this would imply a comparatively limited impact of stablecoins on the financial system, rendering such an outcome less relevant for the purposes of this analysis.

Global EUR stablecoin circulation. With respect to EUR-denominated stablecoins and given their currently very limited circulation (below EUR 0.5 billion), we consider a range of scenarios spanning EUR equivalents of USD 0, 0.5, and 1.0 trillion. These are labelled as "low," "medium," and "high" scenarios, respectively, with the USD 0.5 trillion equivalent serving as the baseline.

Geographical distribution of USD stablecoins. A key modelling question concerns the allocation of USD and EUR stablecoin circulation across the three regions in our framework (United States, euro area, rest of the world). Reuter (2025, 4)[38], based on Ethereum blockchain data, estimates stablecoin outflows from North America to other regions at USD 54 billion in 2024. Given that total stablecoin volumes increased from approximately USD 130 billion to USD 200 billion over the same period (i.e. by USD 70 billion), this implies that roughly 77% (54/70) of incremental issuance was held outside the United States. This magnitude appears plausible, as USD stablecoins are widely used globally for crypto trading, corporate payments, illicit transactions, and in particular as a vehicle for circumventing capital controls or accessing a stable store of value in jurisdictions with weaker monetary stability. Accordingly, we assume in the baseline that approximately 75% of USD stablecoins circulate outside the United States. The regional

[37] Citi (2025) models stablecoin demand in 2030 as equivalent to 2.5% of U.S. bank system deposits, driven by the expansion of digitally native firms—particularly in e-commerce—that promote stablecoins as both a payment method and an in-platform token. Assuming total bank deposits grow in line with nominal GDP between 2025 and 2030, this 2.5% substitution corresponds to roughly half a year's deposit growth in 2030 (and twice that share in a bull-case scenario). The analysis also incorporates a shift of international deposits and liquidity into stablecoins held outside the U.S., denominated either in USD or USD-linked currencies such as HKD and AED. On a global scale excluding the U.S. and China, stablecoin issuance is assumed to reach 0.75% of deposits—approximately matching onshore demand. The base case further includes a 10% substitution of U.S. banknotes held overseas into stablecoins, alongside a 2.5% substitution of domestically held U.S. banknotes. Outside the U.S. and China, 0.5% of local currency banknotes are assumed to transition into stablecoins, implying a comparable share of global stablecoin demand to the proportion of U.S. banknotes held abroad (8%). Finally, projections of the 2030 stock of monetary aggregates (cash in circulation, M0, M1, and M2) are based on nominal GDP growth, with regional variation in adoption: the Euro Area and the United Kingdom could see local-currency stablecoin issuance, while China would more likely rely on a sovereign CBDC rather than foreign privately issued stablecoins.

[38] Other studies of the international circulation of stablecoins are Cardozo (2024), von Luckner (2024), and Auer (2025).

allocation of this external circulation remains uncertain. Reuter (2025) provides indicative evidence from centralized exchange flows, showing USD 54 billion in outflows from North America distributed across regions as follows: USD 8.6 billion to Africa and the Middle East, USD 20.8 billion to Asia-Pacific, USD 25.0 billion to Europe, and USD 10.6 billion to Latin America and the Caribbean. In addition, an estimated USD 8.3 billion flowed from Asia-Pacific to Europe, likely also USD-denominated and thus relevant for assessing European holdings. For self-custodial wallets, the same source reports USD 21 billion in outflows from the United States and between USD 7.18 billion and USD 8.42 billion in inflows to Europe, depending on the treatment of intra-regional flows. However, the definition of "Europe" in Reuter (2025) follows IMF classifications and includes non-euro area economies such as Russia, Ukraine, Turkey, and the United Kingdom, which are likely to account for a substantial share of USD stablecoin usage in the region. Given these limitations and considering that key use cases (particularly store-of-value demand and transaction anonymity) are likely to be more prominent outside the euro area, we assume that only a relatively small share of global USD stablecoin circulation is held within the euro area. In the baseline scenario, global USD stablecoin circulation is therefore distributed as follows: United States 25%, euro area 7.5%, and rest of the world 67.5%. As a sensitivity scenario (Scenario D), we consider a higher euro area share of 15%, with a corresponding reduction of the rest of the world share to 60%.

EUR stablecoin circulation outside the euro area. The geographical distribution of a potential future EUR stablecoin market is subject to considerable uncertainty, as current circulation levels are negligible and, to date, no empirical research has been published on the regional distribution of EUR-denominated stablecoins. Moreover, the dominant future use cases remain unclear. In the absence of more direct evidence, our baseline scenario therefore draws on the observed geographical distribution of euro banknotes, of which approximately 60% circulate within the euro area and 40% outside. It is further assumed that EUR stablecoins would not circulate in the United States, or only in negligible amounts, consistent with the limited use of euro cash in that jurisdiction. As a sensitivity scenario (Scenario G), and by analogy with the more globally distributed pattern observed for USD stablecoins, a more outward-oriented configuration is considered, in which only 25% of EUR stablecoins circulate within the euro area and 75% in the rest of the world.

Reserve assets of USD stablecoins. The reserve composition of USD stablecoins is assumed to follow that of Circle's USDC, which appears most representative of stablecoins expected to comply with emerging U.S. regulatory frameworks such as the GENIUS Act and is therefore likely to dominate future growth. While it cannot be excluded that alternative models, such as Tether (USDT), will remain significant, their less standardized and evolving reserve structures make forward-looking assumptions more difficult. As described in Section 4.4, Circle's approximated reserves distribution as of September 2025 follows the following percentages: 15% in bank deposits, 30% in short-term U.S. Treasury securities, and 55% in reverse Treasury repurchase agreements. Depending on the analytical perspective, repurchase agreements may be treated as broadly equivalent to short-term sovereign securities in terms of liquidity and risk characteristics. No additional sensitivity scenarios are specified for USD-denominated stablecoins' reserve composition.

Reserve assets of EUR stablecoins. For EUR-denominated stablecoins, it is assumed that, if they become quantitatively significant, most would qualify as "significant" e-money tokens under Markets in Crypto-

Assets Regulation (MiCAR). This would imply a reserve structure with 60% held in bank deposits and 40% in securities. Within the euro area, further assumptions are required regarding the allocation of these securities across sovereign issuers; proportional allocation across eligible public debt instruments is adopted as the baseline. As a sensitivity scenario (Scenario H), a potential legislative adjustment to MiCAR requirements is considered, reducing the minimum share of bank deposits for significant EMTs from 60% to 30%, with a corresponding increase in securities to 70%. The maturity limits applicable to EUR-denominated reserve assets remain insufficiently specified in the current regulatory framework[39]. For simplicity, and by analogy with U.S. proposals such as the GENIUS Act, a maximum maturity of 93 days is assumed. In any case, the maturity structure is not central to the core scenario design and becomes relevant only in subsequent analysis, particularly with respect to yield curve effects. Moreover, we also explore as another scenario (Scenario I), the possibility of EUR-denominated stablecoins to hold their assets directly at the central bank. In this specific scenario, we assume a 50% share of assets in central bank reserves, 25% in bank deposits, and 25% in government debt.

Exchange rate. An unchanged USD/EUR exchange rate is assumed across all scenarios, based on the rate observed on 30 September 2025, namely 1 USD = 0.852 EUR and 1 EUR = 1.174 USD, using the European Central Bank reference rates.

Sources of stablecoin inflows. In the baseline specification, inflows into stablecoins are assumed to be proportional across all eligible funding sources. This assumption ensures internal consistency, as it corresponds to a linear adjustment process in which inflows scale proportionally with the available stock of assets up to their theoretical exhaustion. In our setting we translate this into one set of simplified numerical assumptions for the three areas we consider (US, EA, RoW): 60% bank deposits, 30% government debt, and 10% domestic banknotes. [40]This applies regardless of whether domestic or foreign

[39] MiCAR establishes that reserve assets backing e-money tokens (EMTs) must be invested in "secure, low-risk assets that qualify as highly liquid financial instruments," without specifying an explicit maximum maturity at Level 1 (European Union 2023, Art. 54). This qualitative standard is complemented by requirements to ensure redemption at par at all times, thereby implicitly constraining duration and market risk. The European Banking Authority operationalizes these principles through regulatory technical standards mandated under MiCAR, introducing explicit liquidity buckets that require a significant share of reserve assets to mature within one and five working days (EBA 2024). These provisions align the reserve composition broadly with the concept of high-quality liquid assets under the liquidity coverage ratio framework, while imposing even shorter effective liquidity horizons. Supervisory guidance from authorities such as the CSSF reinforces that reserve portfolios should exhibit minimal market and interest rate risk, effectively resembling or exceeding the conservatism of money market fund portfolios (CSSF 2025). Stress-testing requirements over one-, five-, and thirty-day horizons further anchor this interpretation by necessitating immediate or near-immediate liquidity under adverse conditions. In practice, this framework implies a strong preference for central bank deposits, overnight instruments, and highly liquid short-term sovereign securities, while discouraging longer-duration or illiquid assets. Although MiCAR does not prescribe a fixed maturity cap, the combined effect of Level 1 principles, Level 2 technical standards, and supervisory expectations results in a de facto restriction to very short-term instruments. European Union. 2023. Regulation (EU) 2023/1114 on Markets in Crypto-Assets (MiCAR); European Banking Authority (EBA). 2024. Regulatory Technical Standards on Liquidity Requirements for Asset-Referenced Tokens and E-Money Tokens under MiCAR; Commission de Surveillance du Secteur Financier (CSSF). 2025. Circulars and Guidance on MiCAR Implementation.

[40] One could also infer the weights from the composition of households' existing asset portfolio. The proportions would then be for US households 80% in bank deposits, 16% in treasuries, and 4% in banknotes, while for the EA households the weights would be 88% in bank deposits, 4% in government debt, and 8% in banknotes.

issued stablecoins are purchased. In a more sophisticated version of this analysis, one could use the exact rations of all eligible funding sources. As part of the sensitivity analysis, alternative assumptions may be considered, such as higher substitution rates from specific asset classes (for example, a stronger substitution of USD cash into USD stablecoins relative to domestic currency cash). However, such alternative specifications introduce non-linearities, as the relative importance of different funding sources would change once those with higher substitution rates become depleted. In the currently analysed scenarios we are not considering a higher rate of substitution from EUR banknotes held by RoW households as they represent a negligible share with respect to the total financial assets of RoW households.

The role of existing dollarisation. The presence of dollarisation—manifested in USD cash, deposits, and U.S.-issued securities held outside the U.S.—raises important modelling considerations. Distinguishing these external USD positions from domestic financial assets is relevant for two reasons. First, the substitution of an existing USD-denominated asset held abroad (e.g. in Argentina) into a USD stablecoin does not constitute an international capital flow and therefore does not require an offsetting financial flow between countries, unlike the conversion of a domestic-currency asset into a USD-denominated instrument. Second, foreign USD positions may be closer substitutes for USD stablecoins, potentially implying higher substitution rates compared to domestic assets. While this argument is conceptually plausible, it is not incorporated in the baseline scenario for reasons of simplicity. Instead, substitution is assumed to occur proportionally across all funding sources, implying that in highly dollarised economies, USD cash and deposits would naturally play a larger role in financing stablecoin acquisition. At the aggregate level of the rest of the world, however, dollarisation remains a relatively limited phenomenon, and its explicit treatment is therefore of secondary importance in the present three-region framework. It would become more relevant in a more granular setting - for example, if a highly dollarized economy such as Argentina were modelled separately. Empirical estimates suggest that approximately 30–50% of euro banknotes circulate outside the euro area (Lalouette et al., 2021), consistent with the empirical result obtained in Section 4.4 when building the EU financial accounts for which a share of 30% of euro banknotes is allocated to the rest of world households. For the U.S., Judson (2024) estimates that "half or a bit more" of US dollar cash circulates abroad. Accordingly, we find a similar distribution in section 4.4 when building the U.S. financial accounts. Therefore, a value of 50% is assumed, again fully attributed to the rest of world households rather than the euro area. For USD- and EUR-denominated deposits and securities held abroad refer to Section 4.4.

Growth of sectoral accounts between 2025 and 2030. We need to fit the stablecoin issuance assumptions into end Q3 2030 sectoral accounts, which need to be derived from the Q3 2025 ones. For that, we would simply let all 2025 positions of all regions grow by an annual growth rate of 4%.

5.2 Scenario output

This section presents the results of the "baseline" scenario (Scenario B in Figure 5-1) applied to the empirical financial accounts derived in Section 4.4 and following the theoretical model introduced in Section 4.3. Table 5-1 shows the compacted version of the financial accounts grown from Q3 2025 to Q3 2030 using the nominal growth rate of 4% per year and the relative changes in the accounts due to

stablecoins' growth. This compacted version of the financial accounts is reduced to display only the changing accounts when accounting for stablecoins growth (for example, households and non-financial businesses are two sectors that do not present any changes on their liability side, so they will not be displayed in the matrix, or also the "Other" liabilities that the government issues are not affected, so only the "Treasuries" component of the government's liabilities will be displayed). For this reason, the totals of sectors' assets and liabilities in this compacted matrix will not be consistent with the totals of the more granular versions of the country-specific matrices derived in Section 4.4 and will not be displayed here to avoid confusion. Instead, we care about the net change in the positions of each sector: if the part of the financial accounts which is not changing is not displayed and the part of the financial accounts which is changing because of stablecoins' growth has changing positions on the assets and liabilities side which cancels out, then the total balance sheets are also not changing.

Table 5-1: Financial accounts in the "baseline" scenario (Scenario B, billions of US dollars).:

Holders:→ / Issuers:		U.S.				EA				RoW	Total Δ
		Households	Central Bank	Banks	Stable-coins	Households	Central Bank	Banks	Stable-coins	Households	
U.S.	Government: Treasuries	3516 **-124**	4661	2361 **-372**	74 **+496**						**0**
	Central bank	934 **-41**	0	3752	0					1320	**-41**
	Banks: Deposits	17013 **-248**	9 **-41**	133	37 **+248**						**+867**
	Bank: Repos	0	0	92	137 **+908**						
	Stablecoins	62 **+413**	0	0	0	19 **+124**				167 **+1115**	**+1652**
EA	Government: Debt					592 **-127**	4069	2716 **-73**	0.12 **+200**		**0**
	Central bank					1324 **-43**	0	3388	0	343	**-43**
	Banks: Deposits			777 **+124**		13781 **-254**	4517 **-43**	10928	0.18 **+300**		**+127**
	Stablecoins					0.18 **+300**	0	0	0	0.12 **+200**	**+500**
RoW	Banks			914 **+1115**				2419 **+200**			**+1315**
Total Δ		**0**	**-41**	**+867**	**+1652**	**0**	**-43**	**+127**	**+500**	**+1315**	**+4377**

Sources: Authors' calculations

United States. A projected size of USD-denominated stablecoins of 1.9 trillion in the baseline scenario translates into an increase of 1652 billion of USD-denominated stablecoins in addition to the 248 billion outstanding in Q3 2025, of which 413 billion additional stablecoins held by U.S. households. To purchase stablecoins, U.S. households reduce their positions in Treasuries, banknotes, and bank deposits respectively by $124, $41, and $248 billion. Even though banks' liabilities suffer from decreased households bank deposits, stablecoin issuers deposits at banks increase by $248 billion and reverse repo transaction with banks increase by $980 billion. Moreover, U.S. banks strengthen their cross-country

positions by experiencing an increase in bank deposits of $124 billion at EA banks and of $1115 billion at RoW banks. The sell-off of Treasuries by U.S. households is completely neutralised by purchases of Treasuries by stablecoin issuers to back their tokens. The U.S. central bank's balance sheet shrinks by $41 billion, which is the amount of banknotes reduced by households to purchase stablecoins.

Euro Area. A projected size of EUR-denominated stablecoins of $500 billion in the baseline scenario interacts in the euro area with the increase supply of USD-denominated stablecoins. Therefore, there are now two forces at play: (i) the increased supply of USD-denominated stablecoins held by EA households (+ $124 billion); (ii) the increased supply of EUR-denominated stablecoins held by EA households (+ $300 billions). EA households finance their purchase of USD- and EUR-denominated stablecoins by reducing EUR-denominated instrument holdings. Accordingly, EA households will decrease their government debt holdings, banknotes, and bank deposits respectively by $127, $43, and $ 254 billion. As for the U.S. case, household deposits with EA banks decline, but EUR-denominated stablecoin issuers replace these deposits. EA banks experience an inflow of capital through U.S. banks' deposits (+ $124 billion), but, at the same time, experience an outflow of capital to RoW banks (-$200 billion). The EA central bank's balance sheet shrinks by $43 billion, which is the amount of banknotes reduced by households to purchase stablecoins.

6. Implications for euro area financial markets and stability

Focusing mainly on scenarios developed in section 5, this section assesses financial market and stability implications for the euro area (section 6.1) and discusses possible policy implications (section 6.2).

6.1 Impact on key euro area financial metrics

Table 6-1 summarizes the impact of the stablecoin scenarios presented in section 5 on the euro area in terms of changes of eleven selected key financial metrics. The effects on these metrics are subsequently discussed from a monetary sovereignty, financial structure and financial stability perspective.

Table 6-1: Impact of eight stablecoin scenarios on 11 euro area financial system metrics; In billions of US dollars (rounded) or %. Fields in grey are the value of the metrics in the respective row that show the biggest deviation from scenario A (no stablecoin growth scenario)

		A. No SC growth	**B.** SC baseline scenario	**C.** High USD SC (4 tn)	**D.** 15% EA circul. of High USD SC	**E.** High EUR SC (1 tn)	**F.** High EUR SC & High USD SC	**G.** 75% RoW EUR SC circ & high EUR SC	**H.** EUR SC 70% in Secur. for EUR SC High	**I.** EUR SC 50% in CeB reserves; EUR SC High
1.	USD SC held in Europe	19	143	300	600	143	300	143	143	143
2.	EUR SC circulating abroad	0	200	200	200	400	400	750	400	400
3.	Total SC circulating in Europe	19	443	600	900	743	900	393	743	743
4.	Total EUR SC circulation	0	500	500	500	1,000	1,000	1,000	1,000	1,000
5.	HHs deposits at banks	13,781	13,526 (- 2%)	13,432 (- 3%)	13,263 (- 4%)	13,346 (- 3%)	13,252 (- 4%)	13,556 (- 2%)	13,346 (- 3%)	13,346 (- 3%)
6.	Total deposits at banks	39,318	39,445 (+0.3%)	39,492 (+0.4%)	39,576 (+0.7%)	39,535 (+0.6%)	39,582 (+0.7%)	39,780 (+1.2%)	39,235 (-0.2%)	39,685 (+0.9%)
7.	Share SCs in bank deposits	-	1%	1%	1%	2%	2%	2%	1%	1%
8.	Share HHs fin. assets in SCs	-	2%	3%	4%	3%	4%	2%	3%	3%
9.	Δ size of CeB balance sheet	-	- 42	- 58	-86	- 72	- 88	- 37	- 72	427
10.	Share short-t. Gvt debt held by SCs	-	11%	11%	11%	21%	21%	21%	37%	13%
11.	X- border capital outflow euro area	-	76	-82	-363	276	118	626	276	276

The most extreme values of the metrics are highlighted in Table 6-1 in grey. A similar analysis could be done for the U.S. Below we explain the relevance of each of the 11 metrics and provide an interpretation of the numbers in the table and what they may imply for financial stability. For the baseline scenario, table 6-2 had shown comprehensively the changes to the financial accounts in a simplified version of the three-country model. Table 6-2 shows the same numbers as table 5-1 but focusing exclusively on the euro area. Table 6-3 shows scenario F in the same format, and similar tables could be made for any scenario of course. In these tables, we show the U.S. and the RoW only as far as cross-border positions towards the

euro area are affected by stablecoin issuance and cross border circulation.

Table 6-2: Euro area sectoral financial accounts, as impacted by stablecoin issuance and circulation under the baseline scenario B. All numbers in USD billion

Holders: → Issuers:	U.S. Banks	EA Households	EA Central bank	EA Banks	EA Stablecoins	RoW Households	Total Δ
U.S. Stablecoins		19+124					+124
EA Gov.		592-127	4069	2716-73	0.12+200		+0
EA CB		1324-43	0	3388	0		-43
EA Banks	777+124	13781-254	4517-43	10928	0.18+300		+127
EA SCs		0.18+300	0	0	0	0.12+200	+500
RoW banks				2419+200			+200
Total Δ	+124	+0	-43	+127	+500	+200	+908

Sources: Authors' calculations.

Table 6-3: Euro area sectoral financial accounts, as impacted by stablecoin issuance and circulation under the baseline scenario F ("high USD and EUR stablecoin circulation") all numbers in USD billion

Holders: → Issuers:	U.S. Banks	EA Households	EA Central bank	EA Banks	EA Stablecoins	RoW Households	Total Δ
U.S. Stablecoins		19+281					+281
EA Gov.		592-264	4069	2716-136	0.12+400		+0
EA CB		1324-88	0	3388	0		-88
EA Banks	777+281	13781-529	4517-88	10928	0.18+600		+264
EA SCs		0.18+600	0	0	0	0.12+400	+1000
RoW banks				2419+400			+400
Total Δ	+281	+0	-88	+264	+1000	+400	+1857

Sources: Authors' calculations.

1. **The circulation of USD stablecoins in the euro area** is a potential policy issue from the perspective of monetary sovereignty (including monetary policy, control of illicit payments, and seignorage income) and could also be relevant from an exchange rate perspective as large scale European demand for U.S. stablecoins could in an extreme scenario weaken the EUR relative to the USD. The most hawkish scenario from this perspective would be the one in which 15% of USD 4 trillion of USD stablecoins are held in Europe (scenario D.), i.e. USD 600 billion, which assuming a 3% seignorage income would translate into a gain of monetary income by the U.S. of 18 billion USD per year. To the extent that U.S. stablecoins held by European households would substitute previous retail deposits and banknotes, this would translate into a loss of European monetary income. In the case of financing through retail deposits (the predominant form of financing, as we assume proportionality of financing sources relative to initial stocks), these are transformed into more expensive wholesale deposits, the spread between the two

representing loss of European monetary income (that had been generated in this case by banks through deposit issuance). Monetary policy transmission would be affected somewhat, although not fundamentally since the ratio of USD stablecoin circulation in the euro area relative to M1 would be only in the order of magnitude of 4%. To what extent a total circulation or USD 600 billion could serve more to facilitate illicit payment than today's much lower stablecoin holdings is difficult to say. Generally, a large amount of stablecoin circulation should also relate to a high penetration rate (i.e. a high share of people holding some USD stablecoin) including on non-hosted wallets, and therefore network effects also in illicit usages. Still, the use of stablecoins for illicit activities does not require particularly high volumes per se.

2. The circulation of EUR stablecoins abroad may generally be considered positive by EU policymakers: it can generate additional euro area (private) seignorage income and it could contribute to strengthen the international role of the EUR, being complementary to other EUR denominated financial instruments. It needs to be acknowledged that some effects on third countries may be negative, such as the transfer of seignorage income, which in the previous paragraph was discussed from the perspective of USD stablecoin circulation in the euro area. In a scenario of stablecoins developing legitimate use cases, a circulation of EUR stablecoins abroad could however also be positive for user countries, in particular if European stablecoins are encouraged or eventually mandated to be particularly ambitious in preventing illicit use cases (such ambitions will of course reduce, everything else equal, the "competitiveness" of EUR stablecoins). Under scenario G, foreign circulation of EUR stablecoins is highest, with 75% of USD 1 trillion, i.e. USD 750 billion, generating (private) seignorage income (assuming 3% interest) of USD 22.5 billion.

3. **Total stablecoin circulation in Europe** would be highest under scenarios D and F, with a total of USD 900 billion, and a share of 200 and 400 billion of euro stablecoins, respectively. This metric is relevant from the perspective of the re-allocation of financial assets of households, including for example the loss of cheap and stable retail deposits by banks, and the loss of household income from substituting remunerated securities holdings with unremunerated stablecoins. From these perspectives, it does not matter if stablecoins are USD or EUR denominated, as we assumed that household purchases of the two are financed with asset liquidations (banknotes, bank deposits, securities) of identical proportions.

4. Total EUR stablecoin circulation is directly implied by the EUR stablecoin scenario considered – either 500 billion (main scenario, see columns B,C,D in table 6-1) or 1000 billion (high scenario, see columns E,F,G,H,I) in total. It is the metric for the possible run-risk on EUR stablecoins, i.e. the negative externalities of a run of stablecoin holders on the stablecoin, implied liquidation needs for the stablecoins' reserves, and thus possibly destabilisation of bank funding through stablecoin deposits and disruption of securities markets through asset fire sales. It could be argued that risks of banks relying disproportionally on unstable wholesale short term funding sources is not a phenomenon linked specifically to stablecoins and that banks have economic reasons to not do so, and that liquidity regulation has also not overlooked the issue and addresses it anyway. In terms of possible repercussion on EUR securities markets in case of a run on stablecoins, the most demanding scenario would be H, which combines a USD 1 trillion volume of EUR SCs with a changed regulation in which 70% of reserves would be in the form of securities, i.e. EUR 700 billion.

5. and 6. - Impact of stablecoins on deposits with banks. The main structural negative impact of stablecoins on banks is associated with the loss of granular, cheap and stable deposits, which are typically the household deposits subject to deposit insurance up to EUR 100,000. Stablecoins transform such deposits into unstable and expensive wholesale deposits with a worse liquidity coverage ratio (LCR). In the EU, retail deposits have LCR run-off ratios of 3% or 5%, while NBFI and correspondent banking deposits have assumed run off ratios of 100%. One should assume that the LCR regulation is well calibrated and that assumed run-off rates are aligned with the economics of such deposits, including pricing: close to zero (in the current rate environment) for stable retail deposits, and close to short-term risk-free capital market rates for financial wholesale deposits. The transformation of household deposits into wholesale deposits thus provides guidance both on the deterioration of the LCR and on the increase of funding costs of banks under various scenarios. Total deposits with euro are banks increase under all scenarios except scenario H where we assume that euro stablecoins invest 70% of their assets into securities, and only 30% into deposits. However, household deposits decrease proportionally to the total amount of stablecoins circulating in Europe and the decline is thus highest under scenarios D and F, in which banks lose 4% of their deposits, slightly more than USD 500 billion. If funding costs of wholesale deposits are 2 percentage points above those of retail deposits, this would cost banks USD 10 billion interest rate income per year. USD 500 billion is also the order of magnitude of stable funding lost from the LCR perspective. What the aggregate numbers do not show is that the effects will depend strongly on the type of banks. Savings banks with retail-deposit oriented business model can lose significantly more than the 4% of retail deposits indicated above, while other banks with fewer, wealthier household and more corporate clients will see more marginal effects and larger net positive effects in terms of total deposits than indicated in row 6.

Table 6-4: LCR run-off rates for deposits according to Articles 24-32 of the LCR delegated regulation[41].

Deposit / Funding Type	EU LCR Run-off Rate	Explanations
Stable retail deposits	5% or 3%	Covered by EU dep. guar. scheme
Other retail deposits	10%	Retail deposits not qualifying as “stable”
Higher-risk retail deposits	10–20%	High-value, rate-sensitive, FX, internet deposits, wealthy clients
SME deposits treated as retail	5-10%	SME relationship operationally similar to retail banking
NFCs, sovereigns, CeB, PSEs, etc.	20-40%	Excess treasury balances, investment cash
Oper. deposits from financial inst.	25%	Only where strictly tied to operational services
Non-operational deposits from banks and NBFIs deposits	100%	Unsecured interbank and financial-sector funding; NBFIs

The impact on euro area banks of the more bullish stablecoin issuance scenarios is non-negligible,

[41] Commission delegated regulation (EU) 2015/61 of 10 October 2014 to supplement Regulation (EU) No 575/2013 of the European Parliament and the Council with regard to liquidity coverage requirement for Credit Institutions. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0061

although not raising obvious public policy issues. Slightly higher overall funding costs of banks may be compensated by a higher willingness of investors (including households) entering direct more risky exposures (higher shares of equity and longer maturity bonds, etc.) because of the assumed favourable safety and liquidity properties of stablecoins that were the initial reasons of these investors to shift a part of their financial funds into stablecoins. We must assume that if a new liquidity transformation technology is "invented" and becomes available to the market and is relied upon, the total liquidity transformation capacity of the financial system improves. Only if we have very specific reasons to doubt on such a positive effect, and we can articulate these reasons for example in the form of some externality, we should worry that the total intermediation capacity and efficiency declines through the advent of a new solution.

7. Share of stablecoins in total bank deposits. The size and total share of stablecoin deposits with banks in total bank deposits is another measure of the financial stability risk that could result from quick liquidation of stablecoins by their holders and thus by stablecoins of their deposits with banks. The most relevant scenarios in this respect are scenarios E, F, G, where the share of stablecoin deposits are 2%. First, one could however question whether this figure is not redundant relative to what was in metrics 5 and 6, i.e. the substitution of retail through wholesale deposits. Indeed, it should not fundamentally matter for a bank if a wholesale deposit is directly from a European stablecoin issuer, or whether it is a cross-border bank deposit resulting from the circulation of USD stablecoins in Europe. Both wholesale deposits should have rather similar properties (being relatively unstable and expensive). For all of these metrics, one can moreover argue that the need for a sound bank liquidity management is addressed anyway in the LCR requirements (beyond the fact that the banks should anyway aim at a stable balance sheet for economic reasons), and that therefore increasing stablecoin deposits should not raise fundamental problems of financial stability per se, but only imply a need for banks to do structural adjustment of their balance sheets that preserve a stable asset-liability structure. These adjustments imply a certain degree of loss of competitiveness of banks relative to other forms of financial intermediation, but this fact per se is not a reason for a public policy intervention.

8. Share of household financial assets held in stablecoins. This metric may be interesting from the perspective of monetary policy transmission because stablecoin remuneration does not react to changes of ECB interest rates (EUR stablecoins are strictly unremunerated, and US stablecoins are anyway not denominated in EUR). It also provides a general further perspective on the relative importance of stablecoins amongst financial assets. The numbers in this row are proportional to the total stablecoin circulation in the euro area, i.e. row 3, and therefore again scenarios D and F lead to the largest effects with in each 4% of households' financial assets taking the form of (non-remunerated) stablecoins. This matters somewhat for household income and dependence of household income on the interest rate level (and associated incentives), but neither the effectiveness of monetary policy nor the general income situation of households are fundamentally affected. Regarding the latter, it should be noted that the households' shift into stablecoins (which are low risk and highly liquid) could affect the rest of their portfolio. For a given level of liquidity and risk preferences, households may reallocate the rest of their financial assets towards higher-risk, higher-yield assets. A partial analysis focusing only on stablecoins would therefore be misleading.

9. Size of central bank balance sheet. In all scenarios except scenario I, the rise of stablecoins impacts the size of the central bank balance sheet mainly through the assumed use of banknotes to fund stablecoin holdings. This means that the size of the central bank balance sheet shrinks, even though this is only by a relatively small amount, since the role of banknotes in financing stablecoin purchases is low (proportional to the absolute size of banknotes vs. deposits vs. securities in household portfolios). Scenario F leads to the largest decline of banknotes in circulation, and thus to the largest shrinkage of the Eurosystem balance sheet (- 88 billion euro). Currently, banknotes in circulation amount to around 1500 billion euro. Assuming an annual growth of 4% until 2030, this stock would rise to about 1850 billion. A decline of EUR 88 billion corresponds to a shrinkage of around 5% and a loss of seignorage income of around EUR 2-3 billion per year, depending on the euro interest rate level. In practice, other factors could weigh more heavily on banknote demand and thus on central bank seignorage income, such as a further decline of the use of cash in point-of-interaction (POI) and peer-to-peer (P2P) payments, or more effective measures against the use of cash for tax evasion. A successful and not overly constrained digital euro could counterbalance this.

Scenario I is fundamentally different from the others in its impact on the size of the Eurosystem balance sheet because euro stablecoin issuers would deposit 50% of their reserves (of EUR 1 trillion) with the Eurosystem. As a result, the balance sheet increases by EUR 427 billion, which already accounts for a reduced volume of banknotes in circulation. The structural position of banking system vis a vis the central bank changes similarly to the size of the central bank balance sheet. Scenario I is therefore the only scenario under which banks become more dependent on Eurosystem credit and under which collateral scarcity could increase. However, the Eurosystem could reverse this increased dependence by purchasing securities (such that the increase of central bank liabilities in the form of stablecoin deposits is exactly matched by an increase in the central bank securities portfolios). Currently, European banks still have a significant liquidity surplus towards the Eurosystem resulting from past asset purchase programs which were much larger than EUR 427 billion. Central banks, including the Eurosystem, have the tools and a suitable operational framework to react to changes of autonomous liquidity factors.

10. Share of short government debt held by stablecoins. This metric is determined by the issuance of EUR stablecoins (regardless of where they circulate). Scenarios E, F, G would lead to a share of short-term euro area government debt held by stablecoin issuers of 21% and even 37% in scenario H. We assume that short term debt (i.e. debt with a residual maturity of one year or less) is around 15% of total outstanding debt in the euro area[42] and calculate thus the absolute value of short-term euro area debt by applying that percentage to the total outstanding government debt. Stablecoin holdings of short-term euro area government debt would be particularly large under scenario H, which assumes high issuance and regulatory change such that stablecoin issuers would allocate 70% of their reserves to short term euro area government debt.

This can be assessed from different perspectives:

- Impact on **steepness of yield curve:** Assuming sovereigns do not adjust their issuance patterns, the yield curve would become steeper in the 1-2 years segment. This effect would likely be contained by

[42] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Structure_of_government_debt#Breakdown_by_financial_instrument

opportunistic investors who would then avoid to a larger extent the short end of the curve, which is where stablecoin issuers tend to concentrate their investments.

- Impact after considering possible **adjustments of issuance patterns:** Higher demand in the short-term segment would reduce issuance costs for short-term debt, making it more attractive for sovereign issuers, which could adjust their issuance plans to offset any impact on the steepness of the yield curve. Of course, such adjustments could increase roll-over risks, as highlighted by Borensztein et al (2004): "*reliance on short-term […] debt is associated with a higher frequency of debt crises [….] Short-term debt […] is associated with vulnerability to sudden changes in market sentiment: worsening perceptions of the country's creditworthiness can quickly feed into higher interest costs, often leading to vicious circles*." (p. 6-7)
- **Portfolio preferences of stablecoins issuers**. SC issuers may favour higher yielding or higher rated sovereign issuers and may prefer a high degree of diversification. One reason for a bias towards highly-rated government bonds is reputational. As stablecoins cannot compete via the remuneration of their monetary liabilities, issuers may instead want to compete via signals regarding the perceived safety of their reserve assets. The average rating of their assets may be considered important in this respect. Stablecoin issuers will also likely prefer more liquid sovereign bonds, but it is unclear whether this preference is stronger than for other market participants. Generally, it remains difficult to predict at this stage the future portfolio management preferences of significant euro stablecoin issuers and how their attitudes towards liquidity, credit quality, yield and diversification will evolve.
- **(In)stability of stablecoin issuers as investors:** Stablecoin issuers may be more "erratic" in rebalancing their portfolios across sovereign issuers, contributing further to roll-over risk. One possible reason is that stablecoin issuers are subject to greater scrutiny and run-risk relative to other institutional investors like pension funds or sovereign wealth funds. Moreover, the demand for stablecoins may itself be unstable, leading to fluctuations in their aggregate investment volumes and therefore creating demand shocks to the entire short term euro area sovereign bond market. Overall, stablecoin issuers could be less stable investors than other non-bank financial institutions, both in terms of aggregate investment levels and portfolio allocation.

11. Cross border capital flows and exchange rate implications: The net capital flows created by stablecoins can be positive or negative, depending on the balance between the usage of USD stablecoin in the euro area and the holdings of EUR stablecoin in the rest of the world. Among the scenarios described above, the largest capital outflow relating to stablecoins occurs in scenario D, which combines high USD stablecoin (USD 4 trillion) issuance with a large share of that circulating in the euro area (15%). In this case, total capital outflows amount to USD 363 billion, which need to be counterbalanced by opposite flows from other parties, such as banks, and could exert some pressure on the exchange rate. The scenario with the largest capital inflow due to stablecoins occurs in scenario G, which combines the USD 1 trillion circulation of euro stablecoins with the 75% of it circulating outside the euro area. In this case, net inflows amount to USD 626 billion and could create some appreciation pressure on the euro. However, even these extreme capital flow scenarios appear moderate considering the scale of the euro area's balance of payments. The euro area runs a large current account surplus vis-à-vis the rest of the world, of around EUR 420 billion (about 2.8 % of GDP), while its current account with the U.S. is broadly balanced. Therefore, net capital flows of USD 363 or 626 billion within five years are still moderate, and unlikely to

have a major impact on exchange rates.

6.2 Policy and regulatory implications

The value added and potential risks of stablecoins for society have been extensively discussed. Legislators in major jurisdictions, notably the European Union and the United States, have concluded that well-regulated stablecoins should be permitted and have enacted comprehensive regulatory frameworks (MiCAR in the EU and the Genius Act in the U.S.). From a European perspective, however, two concerns remain. First, MiCAR may not fully capture certain risks. Second, MiCAR may be over-ambitious on some aspects, particularly given the global nature of the stablecoin market. From this perspective, even our USD 500 million baseline scenario of EUR stablecoin circulation may look optimistic. The worst outcome is presumably one where stablecoins are generally successful as implied by the baseline of high USD stablecoin circulation assumptions, while MiCAR-compliant stablecoins remain marginal, as is currently the case. Given the path dependencies and network effects associated with the broader dominance of the US dollar, euro-denominated stablecoins may in any event struggle to gain market share. This would imply not only that MiCAR's domestic public policy objectives for e-money tokens (EMTs) are not achieved, but also that the income generated by stablecoin issuance accrues largely outside Europe. At the same time, it would expose Europe to the risk of 'infrastructure dollarisation' (Reichlin et al., 2026) and limit Europe's ability to shape global standards in the emerging digital finance ecosystem. The structural framework developed in this paper provides a useful starting point for reconsidering these policy issues from a European perspective. In particular, the three-country flow-of-funds framework shows, among other things, that foreign-currency stablecoins circulating in Europe do not mechanically reduce bank deposits. Instead, they transform granular, stable, and inexpensive retail deposits into concentrated, potentially unstable, and more costly wholesale deposits.

Euro-denominated stablecoins have similar, although not identical, effects on the deposit base of European banks. From a European policy perspective, however, they appear preferable for several reasons. First, as MiCAR-compliant instruments, reflect the preferences of the European legislator. Second, they generate monetary income within Europe. Third, they may strengthen demand for European safe assets, in particular if held abroad., Fourth, they may support the international role of the euro and complement broader policy efforts in that direction. Whether euro stablecoins circulate primarily within the euro area or abroad is of limited importance from the perspective of European financial stability, since neither the deterioration of banks' funding conditions nor the risk of sudden outflows from stablecoin holders depend, a priori, on the geographical distribution of stablecoins' use. However, net cross-border flows of stablecoins, defined as inflows of foreign stablecoins into Europe minus outflows of euro stablecoins to the rest of the world, could affect the exchange rate. By combining a five-year projection of sectoral financial accounts with a range of stablecoin scenarios over the same horizon, the analysis focuses on a realistic setting in which stablecoins become materially more important than they are today and in which their structural and financial stability effects become economically significant.

In reconsidering MiCAR and the broader regulation of stablecoins, EU legislators should first reaffirm their

general policy stance and the preference for the development of euro-denominated stablecoins embedded in MiCAR. At the same time, several critical perspectives, beyond the scope of the flow-of-funds analysis of this paper, should not be dismissed entirely. Stablecoins continue to be used extensively for illicit transactions (Chainalysis, 2026; Financial Action Task Force, 2026). Public blockchains remain subject to unresolved governance and regulatory issues, while international institutions such as the Bank for International Settlements continue to highlight risks to monetary integrity and financial stability. Moreover, the efficiency gains often attributed to stablecoins in cross-border payments may largely reflect an uneven regulatory playing field between the traditional banking system and public blockchains. If robust and well-regulated blockchain infrastructures were to emerge, central bank money available on-chain may become the preferred settlement asset. In permissioned, private blockchain environments, the incremental value of blockchain and distributed ledger technology may in any case be limited. In addition, the international circulation of euro stablecoins could be seen as undermining the monetary sovereignty of other jurisdictions and therefore to be inconsistent with the European Union's values and its broader commitment to international cooperation. From this perspective, alternative approaches to strengthening the international role of the euro might be preferable.

A more affirmative view would start from the premise that stablecoins may support productive use cases and that these should be given an opportunity to emerge in Europe. Such an approach would recognise the potential benefits to Europe if stablecoins deliver on their promises and develop broadly in line with the more optimistic scenarios for euro stablecoins explored in the five-year structural analysis presented in this paper. It would also be more time-consistent, as it aligns with the apparent intentions of the legislator when adopting MiCAR. On this basis, both the MiCAR provisions governing e-money tokens (EMTs) and related policies, such as the Eurosystem's approach to granting stablecoin issuers access to its balance sheet, could be revisited with the aim of increasing the likelihood that euro stablecoins ultimately assume a meaningful scale.

Policy options to strengthen euro-denominated stablecoins

Several measures could improve the attractiveness and competitiveness of euro-denominated stablecoins (e.g. Bindseil and Voloder, 2026; Reichlin et al, 2026):

- First, while prudential safeguards relating to liquidity, capital, and governance should remain stringent, the current prohibition on remunerating EMT holders lacks a compelling economic rationale and could be reconsidered.
- Second, the requirement to hold a large share of reserves as bank deposits could be replaced by a principle-based approach allowing issuers to allocate reserves across a diversified pool of high-quality liquid assets. This would reduce concentration risk and limit the risk of negative feedback loops between banks and stablecoins. In this context, the set of eligible reserve assets could be broadened and aligned more closely with the logic of the LCR as applicable to banks, including the possible inclusion of selected Level 2A euro-denominated assets.
- Third, the transparency regime could be made more proportionate and risk-based. Significant EMT issuers could face more frequent and standardised disclosures, like those required for asset-referenced tokens, while smaller issuers could continue to face lighter reporting obligations to preserve contestability and innovation. At the same time, it is not obvious why significant EMTs are

subject to higher capital charges than non-significant ones (Reichlin et al, 2026).

- Fourth, the framework could place greater emphasis on diversification, stress testing, and liquidity management by requiring issuers to demonstrate their ability to withstand severe redemption scenarios and by introducing concentration limits and explicit liquidity buffer arrangements.
- Fifth, EMT issuers could be granted carefully calibrated access to central bank settlement infrastructure for liquidity and risk management purposes, potentially subject to quantitative limits and tiered remuneration to safeguard the implementation of monetary policy.
- Sixth, allowing EMT issuers to hold reserves at the ECB could strengthen trust in stablecoins. This, in turn, would reduce the risk of runs, de-pegging and fire-sales of reserves assets. Finally, the European Commission could provide clarity and establish a coherent framework for cross-border stablecoin use that reconciles territorial supervision with the inherently global nature of digital payment systems. Ultimately, multi-issuance[43] frameworks appear inefficient relative to a simple equivalence regime that would allow some international stablecoins to be directly distributed by crypto asset service providers (CASPs) in the euro area. If all jurisdictions adopted strict multi-issuance rules, including segregated domestic reserves for foreign stablecoins, the cross-border use of stablecoins would become significantly less viable. The EU approach also seems inconsistent, when looking at the relatively light treatment by MiCAR of Bitcoin and other unbacked crypto-assets, despite their lack of intrinsic value.

The five-year structural scenarios analysed in this paper suggest that, from a strict financial stability and monetary policy perspective, even high levels of stablecoin circulation, do not raise fundamental

[43] Under MiCAR, multi-issuance refers to a structure in which an EU-authorized issuer of an EMT issues a token that is economically and technologically fungible with a token issued by an affiliated or partner entity in a third country. In such arrangements, holders cannot distinguish whether a specific token unit was issued inside or outside the Union and may seek redemption from the EU issuer even when the corresponding reserves are held outside the EU. The European Central Bank and the European Systemic Risk Board have argued for a more restrictive interpretation or legislative amendment, warning that EU issuers could face global redemption claims without holding the associated reserves within the Union. In a period of stress, third-country authorities might ring-fence assets while non-EU holders could redeem through the EU entity because MiCAR provides stronger redemption rights and prohibits redemption fees. Two broad approaches can be considered. One would establish an equivalence regime under which multi-issuance remains permissible. The other would abandon multi-issuance and instead allow the direct distribution in Europe of foreign stablecoins under an equivalence regime. In the flow-of-funds model used in this paper to analyze the circulation of US dollar stablecoins in Europe, multi-issuance was not modelled explicitly, because from a macro-financial perspective a segregated reserve located in Europe and invested in US dollar assets makes little difference. Such reserves ultimately remain claims on US counterparties, as European banks receiving US dollar deposits from local EMT reserves would typically channel these funds back to the United States rather than maintain unhedged foreign currency positions. If anything, multi-issuance appears to add complexity, costs, and potentially additional vulnerabilities. More fundamentally, an equivalence regime combined with multi-issuance does not resolve the arbitrage problem created by maintaining multiple reserve pools for a single globally fungible token. Only perfectly identical legal and regulatory rules could eliminate this problem, and no practical equivalence framework is likely to achieve such uniformity in the stablecoin context. Given the leading role of the US dollar in global stablecoin issuance, the only conceivable way for the European Union to eliminate this arbitrage entirely would be to adopt exactly the same reserve rules as the Genius Act, which appears unlikely. From an economic perspective, the most coherent solution therefore seems to be to permit the distribution in Europe of foreign stablecoins under an equivalence regime. This assumption is, in effect, already embedded in the flow-of-funds framework used in this paper to analyze the circulation of US dollar stablecoins in Europe.

concerns. This holds even under bullish assumptions in which the circulation of euro stablecoins reaches EUR 1 trillion. The flow-of-funds analysis also shows that similar structural effects, most notably the transformation of granular household deposits into concentrated wholesale deposits, also arise when US dollar stablecoins circulate in Europe. Actively limiting the development of euro stablecoins through policy choices, would therefore not shield Europe from these effects. From the perspective of European sovereign and supranational debt markets, an expansion of euro stablecoins could be beneficial. Additional demand for debt securities would be welcome in an environment of rising public debt. While some argued that stablecoin related demand could tilt sovereign debt issuance towards shorter maturities, sovereigns not compelled to reduce the average maturity of their liabilities simply because short-term funding costs decline. It remains their responsibility to manage rollover risk and preserve a robust maturity structure. Greater diversification of stablecoin reserves across securities issuers may also be desirable. It could improve the functioning of securities markets, strengthen the resilience of stablecoin issuers, and reduce risks for banks holdings these reserve assets. At the same time, given the uncertainty around the behaviour of future large stablecoin issuers, it may be premature to introduce highly prescriptive new rules.

7. Conclusions

This paper has examined the possible medium- to long-term implications of large-scale stablecoin adoption for financial markets, financial intermediation, monetary architecture, and financial stability, with particular attention to the euro area. While stablecoins are often defined in terms of a specific technological innovation (being recorded and transferred on distributed ledgers), they are ultimately balance-sheet instruments embedded in the broader financial system. To capture this, the paper uses a flow-of-funds framework that traces the sectoral and cross-border adjustments implied by their issuance and circulation., These adjustments depend on the sources of funds invested into stablecoins and on the composition of their reserve assets. The analysis is based on a three-region model comprising the United States, the euro area, and the rest of the world. By combining this structure with alternative assumptions for stablecoin growth through 2030, the paper assesses how stablecoins may affect funding structures, demand for reserve assets, capital flows, and financial stability risks.

The analysis suggests that even if stablecoins were to expand substantially over the coming five years, their aggregate effects on the euro area financial system would remain manageable. While stablecoins would induce meaningful reallocations within the financial system, we believe that they would not necessarily induce strong changes in relative asset prices, nor create financial stability risks of unprecedented nature or scale in the euro area. Their growth would transform portions of household deposits, cash holdings, and securities into new forms of privately issued money backed by reserve assets which are often similar, although not identical to those funding sources. This transformation would affect the composition of financial intermediation, but not so as to exceed the adaptive capacity of markets, governments, and central banks over a medium-term horizon.

The main structural effect of stablecoins (USD or EUR) on banks is not the disappearance of deposit funding but the conversion of granular, stable, and inexpensive retail deposits into more concentrated, expensive, and volatile wholesale deposits. This change may increase average funding costs and worsen certain liquidity metrics if not addressed by banks through additional balance sheet adjustments. The retail-oriented banks will be losing a valuable source of stable funding that support their business model. At the same time, banks receiving wholesale deposits must avoid becoming overly dependent on them because of their instability, as reflected in their less favourable LCR treatment. At the aggregate level, however, these effects still appear moderate relative to the size of the euro area banking system, and they should be absorbable through balance-sheet adjustments and revised funding strategies. Nevertheless, from a funding perspective banks will still prefer a world without stablecoins. Existing prudential regulation would also be expected to ensure that banks adjust adequately to the new situation. Some retail-oriented banks may lose a part of their competitive advantage relative to other financial intermediaries. In any case, such an adjustment does not imply a market failure requiring regulatory intervention. The conclusion, that stablecoins would raise funding costs for the real economy is likely pre-emptive and based on a partial analysis. The deployment of stablecoins adds a new form of financial intermediary and should thereby strengthen the overall financial intermediation capacity of the economy. A priori, and in the absence of identifiable market failure, stablecoins could improve and not undermine the ability of the real economy

to obtain long-term stable funding, even if it leads to some adjustments of the overall structure of financial intermediation.

The implications for securities markets could likewise be relevant but not destabilizing in structural terms. Large-scale stablecoin issuance would increase demand for short-term sovereign debt, repurchase agreements, and bank deposits. In the United States, this would reinforce demand for Treasury bills and related instruments. In the euro area, also depending on the scale of foreign circulation, the emergence of sizable euro-denominated stablecoins could create a new investor base for sovereign and supranational short-term securities. In an environment of rising public debt and increased financing needs, a stable source of demand may be beneficial as it would tend to lower yields at the short end of the curve. This could, in turn, alter issuance incentives and lead to more short-term issuance and thus higher roll-over risks. However sovereign issuers are aware of such risks and retain broad discretion over maturity structures to balance the desire to benefit from lower short-term funding costs against the risks of overexploiting this in a way to deteriorate their funding stability.

From the perspective of financial stability, the paper does not question that stablecoins embody vulnerabilities analogous to those associated with money market funds and other maturity transformation vehicles. Sudden losses of confidence could trigger large-scale redemptions, forcing reserve liquidation and transmitting stress to banking systems and securities markets. Yet these risks are not fundamentally novel. Even under the scenarios of high stablecoin issuance, they could be mitigated through robust reserve requirements, diversification, stress testing, disclosure, and, where appropriate, access to carefully designed central bank facilities. The analysis therefore supports the view that from a financial stability perspective, the existence of stablecoins per se is not a fundamental problem, but the quality of their liquidity and capital regulation and ultimately, should they become large, also their possible access to a lender-of-last resort without compromising strict central bank risk management.

Another conclusion concerns the distinction between foreign-currency stablecoins circulating in Europe and euro-denominated stablecoins issued under European regulation. The widespread use of US dollar stablecoins in the euro area could raise concerns relating to monetary sovereignty, seigniorage, and the international role of the euro. However, the quantitative scenarios suggest that effects would remain modest compared with the scale of euro area monetary aggregates and would therefore have only limited effects on monetary policy transmission and exchange rate dynamics. Still, if stablecoins become an important component of the future monetary landscape, Europe has a strong interest in ensuring that euro-denominated alternatives play a meaningful role. The potential development of a substantial euro stablecoin ecosystem appears economically feasible and, under plausible assumptions, compatible with financial stability. The scenarios considered in this paper suggest that euro stablecoins could reach significant scale, including extensive circulation outside the euro area, without generating structural effects that would be materially more problematic than those associated with foreign stablecoins already accessible to European users. At the same time, successful euro stablecoins could strengthen the international role of the euro, generate seigniorage and related economic benefits within Europe, and help ensure that European firms and consumers participate fully in innovations in digital payments and tokenised finance.

From a global perspective a consistency issue occurs. Europe's reluctance to accept the dollarisation of its economy through the circulation of USD stablecoins must be assessed alongside its possible aspiration to benefit from a widespread international use of euro-denominated stablecoins abroad. European values emphasize mutual benefit and international cooperation, grounded in the conviction that such cooperation ultimately yields benefits for all parties. From this perspective, Europe may legitimately seek to promote the international use of euro stablecoins, while at the same time considering which regulatory parameters are necessary to ensure that such use is beneficial to all jurisdictions involved. The objective should be to foster an ecosystem in which the global circulation of euro stablecoins is not a zero-sum game through the redistribution of seigniorage income, nor should it facilitate illegal activities in other jurisdictions.

From a European perspective, the preferred approach is a regulatory framework that combines strong user protection with sufficient flexibility to allow euro stablecoins to become competitive. This is obviously preferable to a framework that unintentionally relegates Europe to a passive consumer of foreign stablecoins. In this regard, certain aspects of the current framework, such as the prohibition of remuneration and the prescriptive requirement that significant e-money tokens hold a large share of reserves as bank deposits, warrant reconsideration. Adjustments that preserve prudential safeguards while improving operational efficiency and economic attractiveness could materially enhance the prospects for a viable euro stablecoin market. More broadly, the paper suggests that stablecoins should be viewed as part of a continuing evolution in the architecture of money and financial intermediation. Like earlier innovations in money market funds, electronic payments, and wholesale funding markets, they reallocate liquidity creation and transform existing institutional arrangements rather than overturning the fundamental economic functions of money. Their ultimate significance will depend on whether they deliver genuine efficiency gains and whether public authorities provide an appropriate regulatory environment.

The ultimate usefulness of stablecoins for society remains uncertain. Critics typically emphasise two principal arguments. First, they consider that much of the use of stablecoins outside the sphere of crypto-asset speculation (which is itself not enhancing societal welfare) reflects regulatory arbitrage rather than genuine technological efficiency. This applies, for example, to claims that stablecoins offer superior solutions for cross-border payments. Second, critics argue that the broader concepts of decentralised finance (DeFi) and distributed ledger technologies (DLT) on which they are based, are intellectually intriguing but of limited practical relevance. In real-world financial systems, the rule of law rather than the rule of code, together with accountability and robust governance arrangements, must necessarily prevail. At the same time, centralised ledger systems continue to demonstrate superior efficiency. From this perspective, programmable multi-asset platforms, combined with legally robust forms of tokenisation, may indeed improve financial efficiency by replacing a fragmented landscape of partially interoperable ledgers. However, they do not need to rely on the principles or technologies associated with DeFi. Accordingly, privately issued forms of money operating on these platforms, for example, liabilities of narrowly structured balance-sheet vehicles, might not appropriately be described as "stablecoins," unless the concept of stablecoins is broadened and conceptually detached from its current association with DLT-based architectures.

Most experts, as well as European legislators, take a more favourable view. They see well-regulated stablecoins, together with the DLT infrastructures that record their ownership and facilitate their transfer, constituting a promising financial innovation that primarily requires an appropriate regulatory framework to realise its potential safely. Proceeding from this premise, the scenario analysis developed in this paper suggests that, even under relatively optimistic growth assumptions, stablecoins, whether denominated in US dollars or in euro, are unlikely to disrupt the European financial system. Their effects on banks, securities markets, and central bank balance sheets appear overall moderate when considered against the scale and adaptive capacity of the European financial system. More generally, the analysis identifies no compelling reason why Europe should not seek to strengthen the role of euro-denominated stablecoins within the evolving global monetary landscape.

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Annex 1: Further flow-of-funds analysis

A. Symmetric three country model

In section 4, we had shown a three countries flow-of-funds model whereby only stablecoins issued in country A circulated globally, while stablecoins issued in country B only circulated in countries B and C. Finally, we can also show the flows of funds if countries A and B are symmetric in terms of mutual use of stablecoins, i.e. if country A households and NBFIs also invest into country B stablecoins. We do not need to replicate once more country C in this case as it remains unchanged. We must add to the previous case the amount of stablecoins issued in B and held in A, which we call SC_{BA}.

Figure A1-1: Flows of funds from stablecoin-creation, three-country case in which A- and B-stablecoins circulate globally and C is a pure user country (country C identical to figure 4-3)

Country A (in currency A)			
Households and NBFIs			
Sight deposits	$-\beta\ (SC_{AA}+SC_{BA})$.	Other net liabilities	
Stablecoin A	SC_{AA}		
Stablecoin B	SC_{BA}		
Banknotes	$-\ \mu\ (SC_{AA}+SC_{BA})$		
Bonds	$-(1-\mu-\beta)(SC_{AA}+SC_{BA})$		
Stablecoin issuer			
Deposits with banks	$\alpha\ (SC_{AA}+SC_{AB}+SC_{AC})$	STC issued	$SC_{AA}+SC_{AB}+SC_{AC}$
Deposits with CeB	$\delta\ (SC_{AA}+SC_{AB}+SC_{AC})$		
Bonds	$(1-\alpha-\delta)(SC_{AA}+SC_{AB}+SC_{AC})$		
Commercial Banks			
Bonds	$-(1-\alpha-\delta)(SC_{AA}+SC_{AB}+SC_{AC})+(1-\mu-\beta)(SC_{AA}+SC_{BA})$	Sight deposits	$-\beta\ (SC_{AA}+SC_{BA})$
Claims Banks in B	$SC_{AB}-SC_{BA}$	SC issuer dep.	$\alpha\ (SC_{AA}+SC_{AB}+SC_{AC})$
Claims Banks in C	SC_{AC}	CeB credit	$-\mu(SC_{AA}+SC_{BA})+\delta(SC_{AA}+SC_{AB}+SC_{AC})$
Central Bank			
Credit to banks	$-\mu(SC_{AA}+SC_{BA})+\delta\ (SC_{AA}+SC_{AB}+SC_{AC})$	Banknotes issued	$-\mu(SC_{AA}+SC_{BA})$
		Stablecoin issuer deposits	$\delta\ (SC_{AA}+SC_{AB}+SC_{AC})$
Country B (in currency B; exchange rate 1:1)			
Households and NBFIs			
Sight deposits	$-\beta^*\ (SC_{AB.}+SC_{BB})$	Other net liabilities	
A-SCs	SC_{AB}		
B-SCs	SC_{BB}		
Banknotes	$-\ \mu^*(SC_{AB.}+SC_{BB})$		
Bonds	$-(1-\mu^*-\beta^*)(SC_{AB.}+SC_{BB})$		
Stablecoin issuer			
Deposits with banks	$\alpha^*\ (SC_{BA}+SC_{BB}+SC_{BC})$	SC issued	$SC_{BA}+SC_{BB}+SC_{BC}$
Deposits with CeB	$\delta^*\ (SC_{BA}+SC_{BB}+SC_{BC})$		
Bonds	$(1-\alpha^*-\delta^*)(\ SC_{BA}+SC_{BB}+SC_{BC})$		
Commercial Banks			

Bonds $(1-\mu^*-\beta^*)(SC_{AB.}+SC_{BB})-(1-\alpha^*-\delta^*)(SC_{BA}+SC_{BB}+SC_{BC})$ C-country banks SC_{BC}	Sight deposits. $-\beta^*(SC_{AB}+SC_{BB})$ SC issuer deposits $\alpha^*(SC_{BA}+SC_{BB}+SC_{BC})$ CeB credit. $-\mu^*(SC_{AB.}+SC_{BB})+\delta^*(SC_{BB}+SC_{BC})$ A-country banks $SC_{AB}-SC_{BA}$
Central Bank	
Credit to banks $-\mu^*(SC_{AB.}+SC_{BB})+\delta^*(SC_{BA}+SC_{BB}+SC_{BC})$	Banknotes issued $-\mu^*(SC_{AB.}+SC_{BB})$ SC deposits. $\delta^*(SC_{BA}+SC_{BB}+SC_{BC})$

A) Bitcoin (and other unbacked crypto-assets)

The largest use case for stablecoins still appears to be as a means of payment in 24/7 crypto speculation, primarily for buying and selling Bitcoin. Unbacked crypto-assets, despite recent valuation losses, still have a market capitalization of more than USD 2 trillion - around seven times larger than that of stablecoins. It is therefore plausible that significant structural flows from Bitcoin to stablecoins could materialize. However, as long as these transactions take place within a country and within the household/NBFI sector, they remain invisible in our sectoral accounts. Flows of funds between Bitcoin and stablecoins do not, in themselves, cause the total value of either to increase or decrease. It is important to distinguish between two issues, whereby let $\mathbf{BTC_A}$ be the value of Bitcoin circulating in country A, and $\mathbf{BTC_B}$ be the value of Bitcoin circulating in country B. First, if many investors wish to exit Bitcoin and instead hold stablecoins, this will reduce the price of Bitcoin, leading to a contraction in the net wealth of Bitcoin holders. In the simple two-country model below, this is captured by $qBTC_A$ and $qBTC_B$, where, in the case of a value increase (decrease) in Bitcoin, **q** is positive (negative)[44]. Second, flows become relevant if we observe that one country develops a relative preference for Bitcoin over time, while another favours stablecoins. In such a case, cross-border flows of stablecoins may emerge, with Bitcoin flowing in the opposite direction. This is illustrated by the flow **w** in the figure below. These flows matter for estimating the stocks of stablecoins held across countries. In our empirical flow-of-funds model, however, we abstract from these effects for the sake of simplicity, particularly since such cross-country flows are difficult to predict.

Figure A1-2: Two country model to illustrate flows from unbacked crypto-assets into and out of stablecoins

Country A (in currency A)			
Households and NBFIs			
Financial assets Stablecoin Bitcoin	$-SC_{AA}$ $SC_{AA}+w$ $(1+q)\,BTC_A-w$	Net wealth	$qBTC_A$
Country B (in currency B; exchange rate 1:1)			
Households and NBFIs			
Financial assets A-Stablecoin Bitcoin	$-SC_{AB}$ $SC_{AB}-w$ $(1+q)\,BTC_B+w$	Net wealth	$qBTC_B$

[44] Bitcoin mining could also be added here.

B) Substituting foreign assets with foreign stablecoins

If, for example, USD-denominated stablecoins become widely used in Argentina, the accumulation of such positions can also occur through the exchange of USD cash, USD deposits, or USD-denominated securities into USD stablecoins (i.e. not only through the conversion of domestic currency assets). This implies that no cross-border capital flow is generated that would need to be intermediated by the banking sector, as households and NBFIs are simply reallocating their existing foreign assets. As a result, there is less downward pressure on the exchange rate, leading to different macroeconomic effects overall. Households and NBFIs in Argentina may hold USD assets either directly in the United States or, in the case of deposits with Argentine banks, indirectly - assuming that these banks maintain corresponding deposits (or liquid USD securities) in the United States. For simplicity, we assume below that USD asset holdings of Argentine households and NBFIs are held directly with US counterparties. This is illustrated in the two-country model of Figure A1-3. We assume that households in Country B (say, Argentina) split their sourcing of USD stablecoins into domestic and foreign assets at a ratio (b, 1-b) with b in [0,1]. The parameter b could either assume proportionality of domestic versus USD denominated financial assets, or the sourcing from USD assets may be assumed to be over-proportional because of the closer substitutability (or the opposite). One could also assume different b*, μ* for domestic and foreign assets (not done in the figure below).

Figure A1-3: Flows of funds from stablecoin-creation, two-country case with B-country households holding A-country stablecoins and in which partially the funding of A-country stablecoins by B-households relies on previous foreign asset holdings

Country A (in currency A)	
Commercial Banks	
Bonds $(\alpha+\delta-\mu-\beta)\ SC_{AA} - (1-\alpha-\delta)\ SC_{AB} + (1-b)(1-\mu^*-\beta^*)\ SC_{AB}$	Sight deposits $-\beta\ SC_{AA} - (1-b)\ \beta^*\ SC_{AB}$ SC issuer deposits $\alpha\ (SC_{AA} + SC_{AB})$
Claims Banks in B $b\ SC_{AB}$	CeB credit $(\delta-\mu)SC_{AA} + \delta SC_{AB} - (1-b)\ \mu^* SC_{AB}$
Central Bank	
Credit to banks $(\delta-\mu)SC_{AA} + \delta(SC_{AB}+ SC_{AB}) - (1-b)\ \mu^*\ SC_{AB}$	Banknotes issued $-\ \mu\ SC_{AA} - (1-b)\ \mu^*\ SC_{AB}$ SC issuer deposits $\delta\ (SC_{AA} + SC_{AB})$
Country B (in currency B; exchange rate 1:1)	
Households and NBFIs	
Sight deposits $-b\beta^*\ SC_{AB}$ Banknotes $-\ b\mu^*\ SC_{AB}$ Bonds $-\ b(1-\mu^*-\beta^*)\ SC_{AB}$ A-Sight deposits $-\ (1-b)\ \beta^*\ SC_{AB}$ A -Banknotes $-\ (1-b)\ \mu^*\ SC_{AB}$ A-Bonds $-\ (1-b)(1-\mu^*-\beta^*)\ SC_{AB}$ A-Stablecoin SC_{AB}	Other net liabilities
Commercial Banks	
Bonds $b(1-\mu^*-\beta^*)\ SC_{AB}$	Sight deposits. $-b\beta^*\ SC_{AB}$ A-country banks $b\ SC_{AB}$ Central bank credit $-b\mu^* SC_{AB}$
Central Bank	
Credit to banks $-b\mu^*\ SC_{AB}$	Banknotes issued $-\ b\mu^* SC_{AB}$

C) Eligible vs. non-eligible securities

Stablecoins can only invest in high-quality, short-term debt instruments. As a result, flows from securities into stablecoins, and back from stablecoins into securities, even if equal in size, are not neutral. Someone must hold a larger share of the securities that are not eligible as stablecoin reserves. One possibility is that households and NBFIs absorb these securities themselves. As they increase their holdings of stablecoins, they should, if maintaining an unchanged overall tolerance for market and liquidity risk, be willing to let their remaining securities portfolios become less liquid, more exposed to credit risk and have longer maturity bonds than beforehand. Indeed, if stablecoin technology enhances the overall liquidity transformation capacity of the financial system[45], these investors may effectively face lower liquidity risk than before, even with a higher share of less liquid assets. Alternatively, banks may need to accommodate a shift in their securities portfolios toward a less favourable composition, with greater duration and liquidity risk. In this case, relative financial asset prices would be expected to adjust to compensate banks for being pushed out of their preferred habitat (which may include having to take other costly balance sheet measures to preserve their compliance with capital and liquidity regulation). Overall, the first scenario (in which investors absorb the riskier security mix and banks do not need to) appears economically more plausible. We illustrate both cases below. We start with the less plausible scenario in which households sell proportionally both type of bonds. The factor v in [0,1] would be proportional to the share of securities eligible as a stablecoin reserve in the entire holdings of household/NBFI securities. Banks need to compensate by accepting the higher share of non-SC eligible bonds.

Figure A1-4: Differentiating between stablecoin reserve eligible and non-eligible securities - the case that households and NBFIs sell both types of securities proportionally.

Households and NBFIs			
Sight deposits	$-\beta$ SC	Other net liabilities	
Stablecoin	SC		
Banknotes	$-\mu$ SC		
Bonds SC eligible	$-v(1-\mu-\beta)$ SC		
Bonds SC non-eligible	$-(1-v)(1-\mu-\beta)$ SC		
Stablecoin issuer			
Deposits with banks	α SC	STC issued	SC
Deposits with CeB	δ SC		
Bonds SC eligible	$(1-\alpha-\delta)$ SC		
Commercial Banks			
Bonds SC eligible	$(\alpha + \delta - v\mu - v\beta)$ SC	Sight deposits.	$-\beta$ SC
Bonds SC non eligible	$(1-v)(1-\mu-\beta)$ SC	Stablecoin deposits	α SC
		Central bank credit	$(\delta - \mu)$ SC
Central Bank			
Credit to banks	$(\delta-\mu)$SC	Banknotes issued	$-\mu$ SC
		Stablecoin deposits	δ SC

[45] Stablecoins contribute to liquidity transformation, since they transform a portfolio or relatively liquid assets (including liquid securities) into something with absolute liquidity – money. If they have value added and contribute something valuable, they must add to the total capacity of the financial system to improve liquidity transformation. Otherwise, they would seem to be redundant in some sense.

The economically more plausible scenario is that households sell only bonds that SC issuers can purchase, since even in doing so they enhance the overall liquidity of their portfolios and reduce aggregate market and credit risk, reflecting the additional liquidity transformation capacity introduced by stablecoins.

Figure A1-5: Differentiating between stablecoin reserve eligible and non-eligible securities

Households and NBFIs			
Sight deposits	$-\beta$ SC	Other net liabilities	
Stablecoin	SC		
Banknotes	$-\mu$ SC		
Bonds SC eligible	$-(1-\mu-\beta)$ SC		
Bonds SC non-eligible	(unchanged)		
Stablecoin issuer			
Deposits with banks	α SC	STC issued	SC
Deposits with CeB	δ SC		
Bonds SC eligible	$(1-\alpha-\delta)$ SC		
Commercial Banks			
Bonds SC eligible	$(\alpha + \delta - \mu - \beta)$ SC	Sight deposits.	$-\beta$ SC
Bonds SC non eligible	(unchanged)	Stablecoin deposits	α SC
		Central bank credit	$(\delta - \mu)$ SC
Central Bank			
Credit to banks	$(\delta-\mu)$SC	Banknotes issued	$-\mu$ SC
		Stablecoin deposits	δ SC