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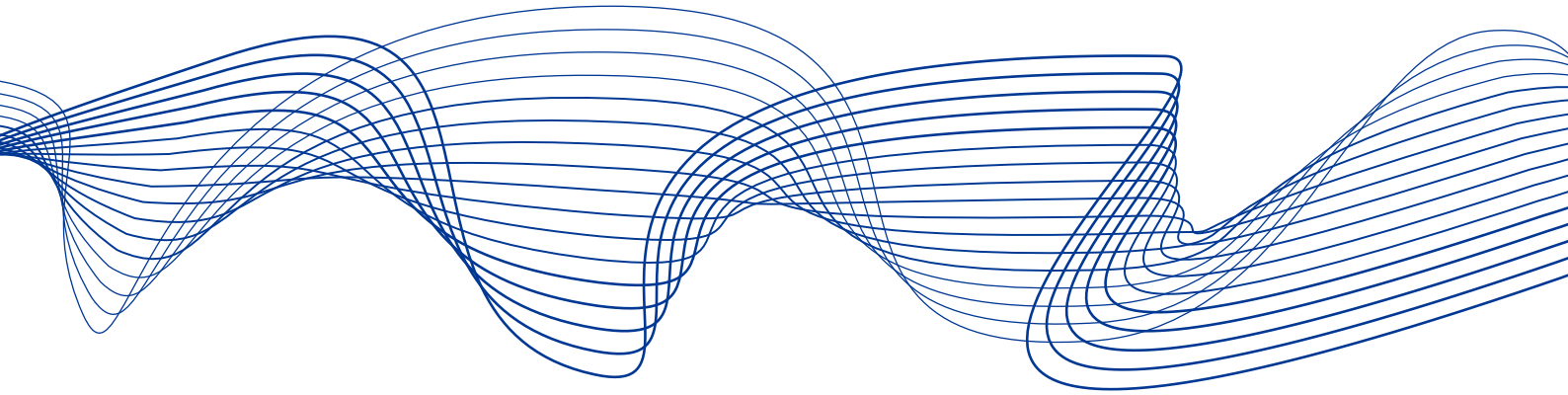
ESRB
European Systemic Risk Board
European System of Financial Supervision

Crypto-assets and decentralised finance

September 2025

Report on Stablecoins, Crypto-investment products and Multi-function groups

DRAFT - CONFIDENTIAL



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Executive summary

Financial stability risks are heightened as crypto-assets, including stablecoins, go mainstream in 2025, bolstered by strong U.S. policy measures. By mid-2025, the crypto-asset market reached record valuations, notably driven by U.S. pro-crypto policies aimed at boosting U.S. Treasury demand and reinforcing the dominance of the dollar. In this context, the ESRB General Board noted in June 2025 that the growing links between the crypto sector and the financial sector should be closely monitored. It also expressed concerns about rising financial stability risks from stablecoins, especially the fungibility of those issued in both the EU and in third countries, which can create contagion channels extending well beyond the risks anticipated in the Markets in Crypto-Assets Regulation (MiCAR).

Building on the insights provided in its 2023 report[1], the ESRB conducted in 2025 an in-depth analysis of three key topics chosen for their significance in the evolution of crypto-assets: stablecoins, crypto-investment products, and multi-function groups active in crypto-asset markets (MFGs). The three topics were chosen as they reflect key dynamics of the crypto-asset ecosystem. Stablecoins raise concerns about spillover risks due to their rapid growth, increasing ties to traditional finance via backing assets and the risks associated with a potential growing role in payment systems. Crypto-investment products highlight deeper integration into mainstream finance with increasing and easier accessibility to institutional and retail investors. MFGs may offer potential opportunities to address market demand, but the scale and concentration of their activities could give rise to risks that are significant from a macroprudential perspective.

Stablecoins

Stablecoins are crypto-assets that aim to maintain a stable value relative to a specified asset or basket thereof. While they claim to offer the benefits of reduced volatility, a key concern is whether they maintain sufficient liquid reserves to back their value and ensure timely redemption. This raises questions about their reliability and transparency.

Global stablecoin market capitalisation has more than doubled since the May 2023 ESRB report on crypto, while remaining a minor element of the global payment landscape. Total market capitalisation of stablecoins reached $300 billion by September 2025, representing around 7.5% of crypto-asset market capitalisation. The primary use case for stablecoins remains facilitating on- and off-ramping between fiat currencies and crypto-assets within the crypto ecosystem, as well as serving as collateral in decentralised finance applications. Authorities should continue to study the risks associated with a scenario where stablecoins would become more prominent in payment systems.

[1] ESRB, Systemic implications and policy options, 2023

Amid a fragmented global regulatory landscape, U.S. crypto policies seek to strengthen the dollar's dominance by promoting the development and adoption of USD stablecoins worldwide. USD-pegged stablecoins currently dominate, accounting for 99% of stablecoin market capitalisation and 70% of total off-chain spot crypto trading, while Euro-denominated stablecoins remain marginal. The U.S. introduced its first regulatory framework for stablecoins with the Guiding and Establishing National Innovation for U.S. Stablecoins Act (GENIUS Act), mandating a proportion of reserves to be held, inter alia, in U.S. Treasury securities, thereby channelling demand to the T-bill market. The pro-crypto policy drive of the U.S. authorities, which is likely to fuel stablecoin market growth, further increases the urgency of stablecoin-related risks. The growth of USD-backed stablecoins, possibly extending their reach beyond serving as the bridge into crypto-assets and into payment use, has the potential to extend the international role of the dollar even further. The global implementation of the G20's crypto-asset roadmap, including the Financial Stability Board's (FSB) regulatory recommendations and international cooperation, is essential due to the cross-border nature of crypto-assets.

MiCAR does not explicitly regulate the case of joint issuance of the same stablecoin by EU and third-country entities, a structure that has built-in vulnerabilities and heightens the EU's exposure to run risks[2]. A third-country multi-issuer stablecoin scheme involves an EU entity and a third-country entity partnering for issuing fungible stablecoins, technically the same and also legally indistinguishable. The reserves backing these stablecoins are distributed between jurisdictions. In observed market cases, the issuing entities have an ownership relationship, with the EU entity under the control of the non-EU company. This model raises financial stability risks, as a run on a third-country stablecoin issuer could prompt holders to redeem from the EU issuer, straining the EU stablecoin's reserves, delaying redemptions, and amplifying runs within the EU. Holders of tokens from third-country issuers, not bound by MiCAR-equivalent protections (including reserve requirements), may seek redemption in the EU in the event conditions are favourable (e.g. MiCAR ban on redemption fees), leaving EU holders vulnerable. Legal barriers, especially in stress scenarios, such as restricted reserve transfers, further amplify risks. A full-fledged run on the EU-issued coin could propagate instability. Additionally, third-country reserves are largely invested in dollar-denominated assets, undermining the EU's Savings and Investment Union goals. As MiCAR does not explicitly foresee this model, it does not provide dedicated and targeted tools, safeguards and common supervisory guidance to the specific risks introduced by this model. Nevertheless, unless and until multi-issuance stablecoins are banned, the existing generic provisions should be applied to the fullest extent practicable to address these risks, with an important role to be played by the European Supervisory Authorities (ESAs) in fostering convergence of supervisory practices. The limitations of the current framework, combined with evolving market dynamics, highlight the urgent need to introduce safeguards against financial stability risks through enhanced supervisory measures, legislative reforms, and strengthened international cooperation.

[2] Richard Portes, The stablecoin loophole that could expose the EU, Financial Times, 25 July 2025

Policy challenges also arise in ensuring that stablecoins issued outside the EU and non-compliant with MiCAR are not widely used in the EU. Non-compliant stablecoins, especially USDT (Tether) which is still traded by EU investors, may pose risks to EU financial stability through their global crypto market influence, and the possibility of reserve asset fire sales in case of a run. The possible impact of these shocks is growing in line with the growth of stablecoins in circulation. This chapter of the report concludes by identifying key areas for policy attention, including the need to clarify and strengthen the enforcement of MiCAR with respect to non-compliant stablecoins, and to monitor the use of large, systemic non-compliant stablecoins within the EU, as well as their role in global financial markets.

Crypto-investment products

Crypto-investment products, a collective term for products other than direct holding of the crypto-assets such as exchange-traded products, have experienced significant growth since January 2024, with traditional financial institutions becoming increasingly involved. As of July 2025, the global capitalisation of crypto-investment products reached $235 billion ($130 billion in December 2024), reflecting significant growth driven by institutional and retail interest. Albeit still at a low base, data show rapidly growing involvement of major financial institutions in these products. Custodians play a pivotal role in this space, offering storage solutions for crypto-assets, while facing risks such as theft and hacking.

The crypto-services market is highly concentrated, especially for custodians, increasing spillover risks into traditional finance, while the majority of crypto-investment product issuers are based outside the EU. The market for crypto-investment products (CIPs) is highly concentrated among custody providers, with the top three custodians managing 39% of all CIPs and 60% of the total market capitalisation for products with available data. This concentration is even greater for physically backed CIPs, where these custodians service at least 63% of products and hold 71% of the market capitalisation. While exposure to crypto derivatives is currently limited, the growing involvement of traditional financial institutions in CIPs has introduced new drivers for systemic risks and contagion, albeit current involvement of EU financial institutions is low.

Recent EU regulations, including MiCAR and measures implementing Basel Committee on Banking Supervision (BCBS) standards on banks' exposures to crypto-assets have placed the EU ahead of many other jurisdictions. To address systemic risk, however, greater transparency is needed regarding the connections between non-bank financial institutions and crypto firms. The report highlights key data gaps: insufficient reporting on leverage undertaken by financial institutions and trading platforms in the crypto industry, limited regulatory data on non-bank financial institutions' (NBFIs) crypto holdings and their interlinkages with the crypto sector, and insufficient information on counterparty risks associated with crypto-investment products, crypto derivatives, and services. These gaps limit the analysis of financial sector exposure to crypto risks.

Multi-function groups (MFGs) active in crypto-asset markets

Crypto-asset products and services in the EU may be offered by entities in the same group as other financial and non-financial firms. Such groups may be active only in the crypto-asset sector or may carry out a broader range of financial activities or other commercial activities. Sometimes such groups are referred to as "conglomerates". In this report, however, the term "conglomerate" is used strictly with regard to traditional financial conglomerates and their regulatory and supervisory treatment. Instead, the report uses the term "multi-function group" (MFG) to refer to those groups carrying out various crypto-asset activities in the EU. Many such groups may originate from, or be primarily active, outside the EU and combine multiple crypto-asset (and potentially other financial and non-financial) activities at scale, making them relevant from a macroprudential perspective.

The report proposes a taxonomy to classify MFGs carrying out crypto-activities in the EU, including traditional financial groups and newer entrants such as crypto-focused groups. MFGs operating in the EU can be grouped into three main categories based on their business models and regulatory status. Category 1 includes MFGs that exclusively conduct regulated crypto-asset activities, such as providing crypto-asset services or issuing crypto-assets. Category 2 consists of MFGs that engage in both regulated crypto-asset activities and other financial services; this category is further divided into those primarily focused on the crypto sector (Category 2a) and those primarily involved in traditional finance, such as banking and payments (Category 2b). Category 3 encompasses all other MFGs, including non-financial groups such as BigTechs. These categories are important for assessing potential risks and evaluating whether current regulatory and supervisory frameworks are adequate.

MFGs present both significant opportunities and material risks. Their ability to bundle multiple services, such as issuance, exchange, and custody can drive innovation, reduce costs, and enhance user experience. By leveraging economies of scale, integrating infrastructure, and accelerating product development, MFGs can respond rapidly to market demand and deliver efficiencies that benefit both firms and clients. On the risk side, the same structural features that offer these advantages can also give rise to serious macroprudential concerns. Financial dependencies, operational vulnerabilities, cyber threats, governance shortcomings, unmanaged conflicts of interest, and reputational risks may be amplified by the scale, centralisation, and interconnectedness typical of large MFGs. Moreover, opaque corporate structures and cross-border regulatory arbitrage can complicate effective supervision, particularly for groups based outside the EU, further heightening risks. The ability of supervisors to identify and mitigate macroprudential risk *ex ante* is undermined by the fact that group-wide regulatory and supervisory arrangements are largely non-existent for non-bank MFGs (e.g. no consolidated supervision or conglomerates supervision framework applies to such groups).

The report highlights key areas for policy attention, focusing on strengthening oversight and coordination, particularly for Category 1 and Category 2a MFGs which currently dominate the crypto-asset market. In the short term, the report emphasises the need to enhance supervisory dialogue and collaboration among

EBA, ESMA, NCAs, the ECB, the ESRB and other relevant authorities. In the medium term, it advocates a more formalised framework with clear objectives and the strengthening of the MiCAR policy framework to include group-level reporting requirements and formalised supervisory cooperation mechanisms for non-bank MFGs.

1 Stablecoins

Introduction

In recent years, various forms of "tokenised money", including stablecoins, central bank digital currencies (CBDCs), and bank-issued tokenised deposits, have emerged and gained significant traction, prompting public debate on which might ultimately take precedence in the evolving financial ecosystem. Stablecoins, privately issued tokens operating on public blockchains, are typically pegged to fiat currencies but do not hold the status of legal tender. CBDCs, on the other hand, are official digital representations of national currencies, issued and backed by central banks, with designs catering to both retail and wholesale use cases. Bank-issued tokenised deposits are digitally recorded customer deposits, facilitating real-time payments within permissioned networks. Collectively, these innovations reflect the broad range of private and public approaches being explored to create digital settlement solutions, each with distinct implications for financial stability, regulatory oversight, and potential applications. This section on stablecoins largely focuses on unregulated ones, while referring to those regulated in MiCAR as E-Money Tokens (EMTs)[3] and Asset-Referenced Tokens (ARTs)[4].

The rapid rise of stablecoins has introduced a wide array of challenges and risks. Some are particularly significant from a financial stability perspective. While stablecoins offer benefits for crypto-users such as reduced volatility and on/off ramp utility, the ambition of their promoters for broader use for payments outside the crypto-ecosystem raises fundamental questions about their ability to function as money. This echoes challenges from the 19th-century U.S. free banking era, where private banks issued currencies with no federal level oversight and lack of clarity about the adequateness of reserves, and echoes also to the Eurodollar system representing U.S. dollars held in offshore accounts outside the jurisdiction of U.S. regulatory oversight. The potential of stablecoins to disrupt existing financial systems intersects with concerns over their implications for the international monetary system, monetary policy transmission, and seigniorage. From a financial stability perspective, stablecoins are vulnerable to runs, with systemic consequences for markets in reserve assets such as U.S. Treasuries and possible broader contagion to the financial system. Stablecoins also carry operational risks, including exposure to cyber vulnerabilities, and raise concerns about illicit use, such as money laundering and sanctions evasion. Stablecoins present a significant challenge to traditional financial institutions, driving them to explore competitive solutions. For instance, they may introduce tokenised deposits, which are digital representations of

[3] E-Money Token (EMT): A type of crypto-asset defined under MiCAR as a digital token that is intended primarily to serve as a means of payment by maintaining a stable value, which is pegged to a single fiat currency (e.g., EUR or USD).

[4] Asset-Referenced Token (ART): A type of crypto-asset defined under MiCAR as a digital token that aims to maintain a stable value by referencing multiple assets, such as a basket of fiat currencies, commodities, or other crypto-assets. ARTs could be used as a store of value or medium of exchange.

fiat currency issued by banks and recorded on a blockchain, or offer services tailored to Central Bank Digital Currencies (CBDCs), such as the Digital Euro.

A key challenge lies in fostering effective international coordination, as the efforts of some countries to position themselves as crypto-friendly hubs could complicate the process of achieving a balanced assessment of risks and the enforcement of appropriate measures. This dynamic may create opportunities for stablecoin issuers to strategically select jurisdictions that align with their interests.

While this report acknowledges the broader context of these issues, it focuses on a selected number of topics relevant to financial stability and macroprudential considerations.

1. Stablecoin markets expand quickly, still serving overwhelmingly as a bridge between traditional finance and the crypto-ecosystem

1.1. Stablecoin markets grow fast, led by USD-pegged stablecoins

By September 2025, global stablecoin market capitalisation has more than doubled since the May 2023 ESRB report on crypto-assets. Stablecoin markets have reached a total market capitalisation of around $300 billion, representing 7.5% of the total crypto-asset market capitalisation. The market is primarily composed of reserve-backed stablecoins, with on-chain collateralised variants[5] making up just 12.8%[6] of market capitalisation (figure 1). 99% of total stablecoin market capitalisation is made of US dollar-based stablecoins that represent 70% of total off-chain spot crypto trading[7]. Tether (USDT) remains the market leader ($170bn, representing 57% of total market capitalisation), followed by USD Coin (USDC, issued by Circle) at $71bn (24% of total market capitalisation). Other stablecoins exhibit much smaller market capitalisation with the next largest one being the algorithmic stablecoin USDe[8] (Ethena) currently at $13bn. Euro-denominated stablecoins market capitalisation has reached €500 million (1% of the total). USDT and USDC represent together 81% of the total market capitalisation, reaching an unprecedented level of concentration within a financial market, resulting in the

[5] On-chain collateralised stablecoins are backed by crypto-assets or tokenised traditional financial instruments (sometimes called “real-world assets” in crypto market jargon) held directly in smart contracts on a blockchain. In contrast, off-chain collateralised stablecoins are backed 1:1 by fiat (e.g. bank deposits, short term debt traded directly in the traditional financial system) held by a custodian outside the blockchain, with trust relying on external audits of reserves. https://www.federalreserve.gov/econres/notes/feds-notes/the-stable-in-stablecoins-20221216

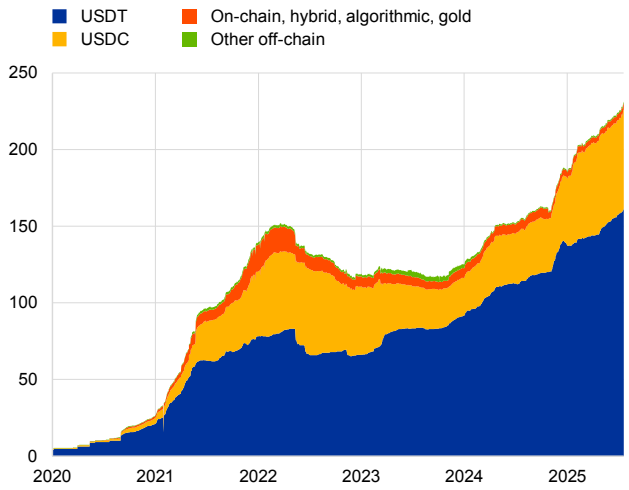
[6] Fiat-backed stablecoins currently comprise about 87% of the total circulating supply and algorithmic stablecoins less than 0.2%. https://www.brookings.edu/articles/what-are-stablecoins-and-how-are-they-regulated/?

[7] https://www.brookings.edu/articles/what-are-stablecoins-and-how-are-they-regulated/?

[8] “algorithmic” stablecoin, whose stable value is supposed to stem from an underlying price-neutral trading strategy.

market relying on very few actors, limiting the potential counterbalances in case of the failure of one of these companies. For comparison, Bitcoin represents (as of mid-September 2025) 56% of the entire crypto-asset market, Ethereum 13%, amounting to a smaller concentration for the whole market than for the stablecoins sub-market. Within the crypto-assets market, USDT ranks 4th with a market share of 4%, and USDC 7th (representing a market share of 1.75%).

Figure 1: Market capitalisation of selected stablecoins ($Bn)



Source: Crypto-assets Dashboard, June 2025

1.2. Stablecoins still serve as bridges to the crypto ecosystem and remain marginal for payments

Stablecoins are used mainly to access the crypto ecosystem and to trade other crypto-assets more easily[9]. Stablecoins are still primarily used as a bridge between fiat and crypto-asset trading, liquidity provision in decentralised finance[10] and lending[11]. They are essential to decentralised finance ecosystems such as decentralised exchanges and lending protocols, where they help users reduce their exposure to price volatility by providing a more stable settlement asset and are also used as collateral for loans. They are also key to fiat-crypto conversions on centralised platforms.

The growth of stablecoins seems linked to the trading volume of unbacked crypto-assets[12]. This suggests that as overall crypto trading increases, so

[9] BIS (2025): The next generation monetary financial system

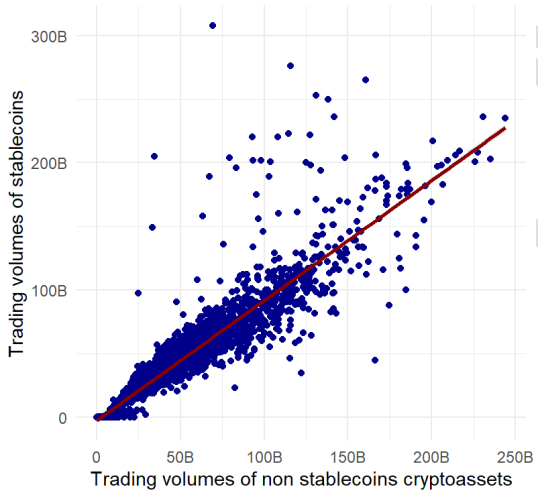
[10] Liquidity providers in DeFi either provide funds to be lent out (depositing them in lending protocols) or deposit both tokens of a trading pair (e.g. ETH and USDC) in a decentralised exchange protocol, thus enabling other users to exchange these tokens.

[11] See the January 2025 EBA ESMA report on recent developments in crypto-asset markets: https://www.eba.europa.eu/publications-and-media/press-releases/eba-and-esma-analyse-recent-developments-crypto-assets

[12] Unbacked crypto-assets is meant to designate crypto-assets other than stablecoins such as Bitcoin

does the demand for stablecoins as a medium of exchange and source of liquidity. The growth of stablecoin markets so far appears to be linked in large part to the growth of unbacked crypto-assets, because of their crucial role as a bridge between fiat currencies and the broader crypto ecosystem. As a result, rising crypto trading volumes are a good indicator of stablecoin trading growth and could serve as a predictor. This relationship (figure 2) was assessed using a Granger predictability framework[13]. The results indicate that past values of unbacked crypto-asset trading volumes help predict stablecoin volumes, and vice versa, suggesting strong bidirectional linkages. However, these tests only capture statistical predictability, not true causality, and the observed co-movement is best interpreted as mutual reinforcement rather than a one-way causal effect. The graph shows only a correlation that can be used for prediction purposes, suggesting that unbacked crypto-assets and stablecoin markets often move in tandem.

Figure 2: Impact of unbacked crypto-asset trading volumes on stablecoins trading volumes



Source: ESRB Secretariat calculations based on Coingecko data for the 12 unbacked crypto-assets with highest volumes and the 12 stablecoins with highest volume, 2015/01/01-2025/07/08

The estimates show a strong and statistically significant relationship between unbacked crypto-asset trading volumes and stablecoin trading volumes, with a slope coefficient close to 0.94. This implies that, on average and all else equal, one additional dollar of trading in non-stablecoin crypto-assets is associated with almost one additional dollar of trading in stablecoins. This analysis focuses on the 12 largest unbacked crypto-assets and 12 largest stablecoins in terms of trading volume, thereby capturing the most active segments of the market without loss of generality. These findings suggest that the stablecoin market tends to expand in close step with the broader crypto-market, making unbacked crypto-asset trading a useful proxy when stablecoin data are missing.

[13] Statistical test used for determining whether one time series is useful in forecasting another.

Figure 3a : Predictive effect of an increase of 100 dollars in stablecoins trading volumes on the trading volumes of selected crypto-assets

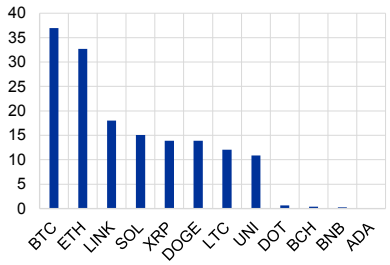
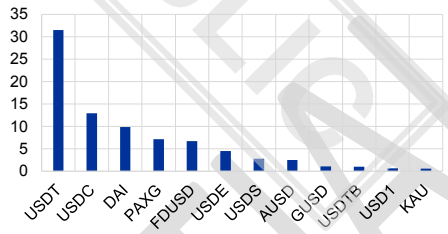


Figure 3b : Predictive effect of an increase of 100 dollar in unbacked crypto-asset trading volumes on the trading volumes of selected stablecoins



Source: ESRB Secretariat calculations based on Coingecko data for the 12 unbacked crypto-assets with highest trading volumes and the 12 stablecoins with highest trading volumes, 2015/01/01-2025/07/08. The results are computed using a vector autoregressive (VAR) model.

The estimates presented in Figures 3a and 3b are obtained from a Granger causality framework applied to trading volume data of stablecoins and unbacked crypto-assets. Estimation is performed on vector autoregressive models[14] including both groups of assets and their response functions to shocks are calculated. They reflect predictive relations between the series. Figure 3a shows the effect of a shock to stablecoins trading volumes on the trading volumes of selected unbacked crypto-assets. Conversely, Figure 3b shows the predictive effect of shocks to unbacked crypto-assets trading volumes on stablecoins.

However, the estimates may be affected by a two-way relationship, as stablecoin trading might also influence crypto trading volumes. To address this issue, an instrumental variable[15] (IV) strategy is used with the overall crypto market capitalisation as the instrument for unbacked crypto-asset trading. This choice is justified because crypto market size primarily reflects price movements and valuations, directly affecting trading activity, and thus indirectly influencing simultaneous volumes of stablecoin transactions. While traders often hold stablecoins to facilitate crypto trading, complicating the exclusion assumption, the IV approach offers a more credible estimate of the causal effect.

The results (table 1) suggest that the positive link between unbacked crypto-asset trading and stablecoin activity is not merely mechanical correlation but reflects a causal relationship. Importantly, the explanatory power of the regressions highlights the extent of this link: the specification accounts for about 86% of the variation in stablecoin volumes, while the IV specification still explains about 73%. In other words, between 14% and 27% of stablecoin activity remains unexplained by crypto trading, which could be attributed to alternative uses such as

[14] A vector autoregressive (VAR) model is a statistical model that explains how several variables change over time by expressing each variable as a linear function of its own past values and the past values of the other variables.

[15] An instrumental variables (IV) regression is an econometric method used to estimate the causal effect of one variable on another when the relationship is potentially biased by unobserved factors, by using an external variable (the instrument) that influences the explanatory variable but is otherwise unrelated to the outcome.

remittances, payments, or off-chain settlement. The results therefore suggest that while the bulk of stablecoin volume is mechanically tied to crypto trading, a non-negligible fraction reflect uses outside of pure crypto-to-crypto transactions.

Table 1: Comparison of the Ordinary Least Squares (OLS) and instrumental variable (IV) regressions

Comparison of OLS and IV Regression

	Dependent variable:	
	Total Market Volume	
	OLS	instrumental variable
	OLS	IV
	(1)	(2)
Non-Stablecoin Trading Volume	0.943***	1.174***
	(0.006)	(0.028)
Observations	3,606	1,742
R2	0.865	0.725
Adjusted R2	0.865	0.725
Residual Std. Error	14,419,160,031.000 (df = 3604)	20,266,329,274.000 (df = 1740)
F Statistic	23,060.810*** (df = 1; 3604)	
Note:		*p<0.1; **p<0.05; ***p<0.01

Source: ESRB Secretariat calculations based on Coingecko data for the 12 crypto-assets non stablecoins with highest volumes and the 12 stablecoins with highest volume, 2015/01/01-2025/07/08. IV regression uses market capitalisation of stablecoins based data from ECB Crypto-assets dashboard

Despite the widespread attention, stablecoins continue to play a limited role in the global payment landscape (figure 4), athough their presence is steadily expanding. According to Worldpay's 2025 Global Payments Report[16], stablecoins accounted for just 0.2% of global e-commerce transaction value in 2024. While initiatives such as PayPal's USD stablecoin via Xoom[17] show rising interest, adoption as a means of payment remains limited. A 2024 BIS survey[18] found that over half of central banks viewed stablecoin use in their jurisdictions as negligible, mainly serving niche remittance and retail users. Although Coinbase reported stablecoins settling $10.8 trillion in 2023, with $2.3 trillion tied to payments[19], independent analysts estimate that less than 10% of these transfers were for real-world purchases rather than trading or internal transfers[20]. Still, Visa/Allium data[21] shows proxies of payment-linked stablecoin volumes grew from $1.6 trillion in 2023 to $2.4 trillion in 2024[22]. The widespread use of foreign-currency-pegged stablecoins, such as those issued by big tech firms[23], could undermine monetary sovereignty and disrupt domestic monetary policy in regions outside the stablecoin's

[16] The 2025 Global Payments Report by the acquiring company Worldpay states that all crypto-assets, including stablecoins, accounted for approximately 0.2% of global person-to-business e-commerce transaction value in 2024 (see Global Payments Report | Payment Insights | Worldpay)

[17] https://www.pymnts.com/news/cross-border-commerce/cross-border-payments/2024/xoom-users-can-now-make-transfers-with-paypal-stablecoins/

[18] https://www.bis.org/publ/bppdf/bispap159.htm

[19] https://www.coinbase.com/en-pt/institutional/research-insights/research/market-intelligence/stablecoins-new-payments-landscape?

[20] https://www.bloomberg.com/news/articles/2024-05-05/more-than-90-of-stablecoin-transactions-aren-t-real-study-finds

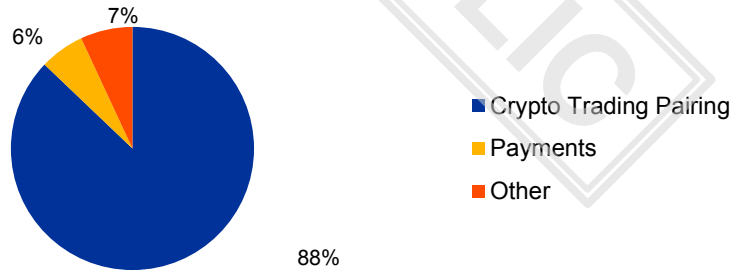
[21] https://visaonchainanalytics.com/transactions

[22] This estimate strips out the following transactions from the total value of stablecoin transfers: deposits and withdrawals of stablecoins to and from labelled centralised and decentralised exchange accounts, other labelled categories that represent organic stablecoin activity, such as lending, investment funds, minting & burning, ramps, internal smart contract transactions, intra-exchange transactions, MEV bots transactions and unlabelled addresses that exceed the threshold of 1,000 monthly transactions or $10m monthly volume (an approximation of high-frequency traders and unlabelled bot activity).

[23] https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211008~3c37b106cf.en.html

reference currency. Authorities should continue studying the financial stability implications of this scenario.

Figure 4 : Stablecoin transaction breakdown (2024)



Source: Apollo Global Management

Notes: "Payments" include P2P, C2B/B2C and B2B payments. "Other" include On/Off-Ramping and Tokenized RWA Settlements.

Authorities should prepare for risks from potential disruptive use of stablecoins in financial markets, as illustrated by tender offer scenarios. As an illustration, if a controlling shareholder sells a significant stake of a listed company, the buyer might want to use stablecoins as payment (provided that the seller is willing to accept stablecoins as means of payment), requiring an equivalent offer to all other shareholders when there is an obligation for the buyer to launch a tender offer. In EU countries where the principle of freedom of contract is recognised, parties to a financial market transaction are free to negotiate terms under the relevant applicable provisions, including the civil and the commercial code, and the financial market regulator cannot outright prohibit the use of stablecoins or unbacked crypto-assets as a means of payment between a buyer and a controlling shareholder. To address these challenges and protect market integrity, it would be beneficial that EU rules exclude crypto-assets as means of payment in financial markets.

If stablecoins and wider crypto-assets were recognised as legal tender under commercial law, they could be used for major financial transactions such as M&A settlements, raising significant risks. Firms might exploit crypto to circumvent AML/FT and securities regulations, while the volatility of crypto-assets could destabilise deal valuations. A poorly regulated crypto-capital market may distort financial metrics, complicating risk assessments for investors. Additionally, cross-border use of crypto introduces legal challenges, including ownership disputes, contract enforcement, and taxation complexities.

Box 1: Stablecoins and CBDCs

Stablecoins and central bank digital currencies (CBDCs) differ significantly. This box highlights stablecoins tied to a single official currency (EMT in MiCAR), as they closely resemble other payment instruments in that currency.

EMTs are a type of crypto-asset (a digital representation of value or a right that can be stored or transferred using Distributed Ledger Technology, DLT) that purports to maintain a stable value by referencing the value of one official currency. As they are issued by credit institutions or e-money institutions, and not a liability of the central bank, they are a form of private money. The stability of the value of an EMT is to be ensured by quality of the reserve assets backing the EMT, permitting only low risk assets with minimal credit, concentration and market risk. This – combined with limits to asset maturity at portfolio level - aims to reduce the risk of the EMT issuer being unable to meet the redemption demands of EMT holders. However, there is always a residual credit risk of the issuer borne by the holders because there is no zero-risk asset. EMTs, by being hosted on a DLT network, can take advantage of the programmable features (atomic settlement, programmable transactions through so-called smart contracts). As long as no restrictions are made with respect to who can hold EMTs, they can be used for cross-border transactions.

CBDC is defined by the BIS as a new form of digital money, denominated in the national unit of account, that is a direct liability of the central bank. If the CBDC is intended for use by households and firms for everyday transactions, it would be referred to as a retail CBDC. An example of a prospective retail CBDC is the digital euro, which aims to provide a uniform public retail payment instrument in central bank money across the eurozone. In contrast to a retail CBDC, a wholesale CBDC is meant for use in transactions between banks, central banks and other financial institutions. A wholesale CBDC would serve a similar role as today's reserves or settlement balances held at central banks, but with added functionalities enabled by DLT, such as composability and programmability. The ECB has recently decided to further develop its work on using central bank money for settlement of wholesale transactions using DLT.

The digital nature of both EMTs and digital euro prompts the question of whether they could compete in some use cases. In the area of retail payments, stablecoin usage is currently low. The introduction of the digital euro (or an EU private sector solution competing with global card schemes) would diminish any market needs in terms of retail payments that could be served by stablecoins in eurozone (a uniform, EU-headquartered, eurozone-wide retail payment instrument). The scope for stablecoins to fill market needs for cross-border payments in EU between the eurozone and non-eurozone Member States would also be greatly reduced due to the Instant Payments Regulation, which requires that payment services providers from non-eurozone MS that offer standard euro credit transfers, must also offer instant euro credit transfers from 2027. EMTs could however find a market niche in transfers between EU MS and third countries, as long as the traditional financial intermediaries do not provide solutions which can compete on speed, price and useability.

For wholesale transactions, EMTs could hypothetically compete with central bank money as settlement asset for markets in tokenised securities. The main advantage of EMTs would be the ability to offer atomic – i.e. simultaneous and possibly instant – settlement as well as programmability of transactions, especially if both the EMT and the tokenised security reside on the same DLT network. However, it is far from clear whether wholesale market participants would be willing to forgo liquidity management benefits stemming from netting transactions. Furthermore, wholesale market participants may be unwilling to accept the credit risk of EMTs (compared to the lack of credit risk of central bank money) in a settlement asset.

Finally, central bank money can be flexibly created to meet short-term liquidity needs of eligible wholesale market participants (through central bank intraday credit facilities), as long as they hold eligible collateral. EMTs, which are created on a cash-in-advance basis, may not be available as easily[1]. These factors suggest that if DLT-based financial infrastructure develops, it will be more likely to gain widespread adoption if it is based on central bank money (possibly deployed on a technological platform enabling programmability of transactions for increased efficiency) as a settlement asset.

1.3. MiCAR licences and non-compliant stablecoins

MiCAR-authorised stablecoins

By mid-September 2025, 14 entities issue 23 EMTs pursuant to MiCAR (table 2). Since 30 June 2024, stablecoin issuers in the European Economic Area (EEA) are required to be appropriately authorised (e.g. for EMTs as credit institutions or electronic money institutions acting in full conformity with Title IV MiCAR), with capital, governance, risk management, and transparency obligations. Leading in market capitalisation for USD-stablecoins are Circle's USDC and Paxos' USDG, both operating under a multi-issuance scheme. For EUR-stablecoins, the leaders are Circle's EURC, followed by Société Générale's EURCV and Banking Circle's EURI.

Table 2: MiCAR-authorised 23 stablecoins (EMTs) issued by 14 entities (as of 15 September 2025)

Stablecoin Name	Issuer	Market Capitalization as of 15 September 2025 (in USD)	Variation since 10 June 2025 (over three months)	Comment
		USD pegged stablecoins		
USDC	Circle	$73.1 billion	+36%	multi-issuance with U.S. Circle LLC
USDG	Paxos Issuance Europe	$592 million	n/a (new EMT)	multi-issuance with Paxos Singapore
USDCV	Société Générale – Forge	$32 million	n/a (new EMT)	
USDQ	Quantoz Payments	$6.6 million	n/a (new EMT)	
USDR	StablR Ltd	$5.2 million	-13%	
USDSM	Stable Mint	$5 million	n/a (new EMT)	
eUSD	Paxos Issuance Europe			being withdrawn after Paxos acquired Membrane, focusing on USDG.
USDE	Eurodollar			n/a (Not yet operational)
		EUR pegged stablecoins		
EURC	Circle	$238 million	+20%	
EURCV	Société Générale – Forge	$66 million	+37%	
EURI	Banking Circle	$56 million	+22%	
EURAU	AllUnity	$21 million	n/a (New EMT)	
EURR	StablR Ltd	$13 million	+8%	
EURQ	Quantoz Payments	$5.5 million	+44%	
EURØP	Schuman Financial	$4.1 million		Not enough data
EURD	Quantoz Payments	$949 thousand		Not enough data
EUROe	Paxos Issuance Europe	$183 thousand		being withdrawn after Paxos acquired Membrane, focusing on USDG.
EURSM	Stable Mint			n/a (Not yet operational)
ENEUR	Fiat Republic			n/a (Not yet operational)
Ambr EMT	Ambr Payments			no data available
BLUEUR	Blue EMI LT			no data available
		GBP stablecoin		
ENGBP	Fiat Republic			n/a (Not yet operational)
		CZK stablecoin		
CZKI	Payment Corporation SE			no data available

Source: ESRB CATF, based on the ESMA MiCAR Register, as of 15 September 2025. Market cap data from CoinGecko, CoinMarketCap, Coinbase, blockchain explorers.

Non-authorised stablecoins under MiCAR

On 17 January 2025, the European Securities and Markets Authority (ESMA) issued a statement[24] requiring crypto-asset service providers (CASPs) to cease trading and brokerage services involving non-compliant stablecoins by the end of January 2025. To facilitate an orderly transition, CASPs could offer "sell-only" services until end-Q1 2025 to allow conversion of the affected holdings.

Major CASPs began delisting non-MiCAR compliant stablecoins accordingly. Binance removed nine stablecoins, including Tether (USDT), TrueUSD (TUSD), and Dai (DAI), for EEA users, effective 31 March 2025[25]. Crypto.com[26] and Coinbase[27] took similar steps. In contrast, some services such as custody are still offered by certain CASPs (e.g., Binance[28] and the crypto-asset arm of Revolut[29]). Most MiCAR-authorised CASPs do not offer trading of non-compliant stablecoins as of September 2025, while the remaining ones – some of which have recently acquired their licenses – should be required by NCAs to adjust their services accordingly. Likewise, entities which currently provide crypto-asset services on the basis of grandfathering provisions in MiCAR, would be expected to adjust their operations once they become licensed under MiCAR at the latest. Convergence of supervisory practices in this respect is crucial to reducing the transmission of risks from non-compliant stablecoins to the EU market.

Binance and Kraken convert stablecoins to MiCAR-compliant USDC, while Tether remains non-compliant in the EU. Exchanges such as Binance and Kraken have announced an automatic conversion of non-compliant stablecoins into compliant ones in the EEA (e.g., USD Coin -USDC), accelerating the shift toward MiCAR alignment. To date, the issuer of Tether has not sought MiCAR compliance, making it unavailable through EU-licensed platforms. However, data suggest EU investors still use non-MiCAR compliant stablecoins, notably USDT.

While MiCAR enforcement will not affect USDT's global dominance, its importance in European crypto trading is expected to decline. USDC, due to its high liquidity and widespread adoption, is the main alternative for EU-based users of centralised platforms. Its usability in the EU, in particular for transactions with non-EU counterparts, relies on the unconfirmed assumption that the token issued in the EU is legally fungible with the one issued in the United States. Users seeking non-compliant stablecoins can still access them through decentralised finance protocols,

[24] https://www.esma.europa.eu/sites/default/files/2025-01/ESMA75-223375936-6099_Statement_on_stablecoins.pdf

[25] https://www.binance.com/en/support/announcement/detail/bcaa1f68d6a6450099056ff694ad6c46

[26] https://cryptoslate.com/crypto-com-to-delist-usdt-and-other-tokens-to-comply-with-mica/

[27] https://www.reuters.com/technology/coinbase-delist-some-stablecoins-europe-ahead-new-regulations-2024-10-04/

[28] https://www.binance.com/en/support/announcement/detail/bcaa1f68d6a6450099056ff694ad6c46

[29] As of 15 September 2025, Revolut continued to allow EU customers to buy and sell USDT. https://www.revolut.com/pl-PL/crypto/buy-tether/. Revolut's crypto-asset services arm (Cyprus-based Revolut Digital Assets Europe Ltd) had not received a CASP license as of that date.

such as decentralised exchanges, or via third-country CASPs under the reverse solicitation exemption[30].

Non-compliant stablecoins, especially USDT, may pose risks to EU financial stability through their global crypto market influence, and the possibility of reserve asset fire sales in case of a run. Although issued outside the EU, USDT is still used by EU investors, and a sharp drop in its value could destabilise the crypto ecosystem, impacting crypto-asset prices, stablecoin issuers, and exchanges reliant on USDT trading pairs. Tether's reported $150 billion[31] reserves include nearly $120 billion in US Treasury bills and reverse repo transactions backed by US Treasury securities but also contain less transparent and less liquid assets, including $7.6 billion in Bitcoin[32]. In case of a run, forced asset sales could ripple into global financial markets, indirectly affecting the EU. Other large non-compliant stablecoins, such as Ethena USDe, USDS, and DAI, are on-chain collateralized, often using MiCAR-licenced assets like USDC. Additionally, Sky (formerly MakerDAO) is exploring investments in tokenised real-world assets, such as tokenised money market funds, further intertwining decentralised finance with traditional finance[33].

The continued use of non-compliant stablecoins in the EU will depend on two key factors: (i) the advantages they offer users, such as higher liquidity, lower transaction costs, or greater yields provided by decentralised finance applications, and (ii) the ease of access through decentralised finance platforms or reverse solicitation. There is currently no evidence of these stablecoins gaining broader adoption beyond the crypto ecosystem, particularly for payments or as a store of value within the EU. It is worth noting that rising interest rates could incentivise holding stablecoins via third-country CASPs, as they are not bound by the interest payment prohibition outlined in Article 40 of MiCAR.

The widespread use of non-MiCAR-compliant stablecoins would undermine the achievement of MiCAR's objectives and could warrant the introduction of specific measures. Beyond direct enforcement, further regulatory action or guidance may be relevant, such as banning custody services or other crypto-asset services tied to non-compliant tokens. To achieve this goal, competent authorities should make full use of powers available under Article 94 of MiCAR to prohibit authorised crypto-asset service providers from offering any regulated services related to crypto-assets that violate MiCAR rules.

To minimise regulatory arbitrage, exemptions, such as for reverse solicitation and fully decentralised services, should be interpreted narrowly, potentially via strict enforcement of relevant ESMA guidelines. A future revision of MiCAR could

[30] Where a client established or situated in the EU at its own exclusive initiative requests the provision of a crypto-asset service or activity, the third-country firm contacted by the client may provide the cryptoasset service or activity requested without being in breach of the authorisation requirement established by MiCA. (ESMA guidelines on reverse solicitation under MiCAR)

[31] Tether Approaching $120B in U.S. Treasuries, Confirms Quarterly Operating Profit Over $1B, and Strengthens Global USD₮ Demand in Q1 2025 - Tether.io

[32] ISAE_3000R_-_Opinion_Tether_International_Financial_Figures___Reserves_Report_31.03.2025_RC187322025BD0040.pdf

[33] EXCLUSIVE. BlackRock among winners of Sky's (ex-MakerDAO) $1 billion tender

also consider clarifying the treatment of decentralised stablecoins and tokens without identifiable issuers, to ensure greater legal certainty and consistent application across the EU. At the same time, the development of attractive private or public alternatives to non-compliant stablecoins could help limit their use.

1.4. The impact of stablecoin growth on banks

A significant rise of the stablecoin capitalisation raises concerns about their potential impact on the traditional banking system and its capacity to support the real economy. When clients move funds from insured bank deposits to purchase stablecoins, issuers redeposit part of these funds into banks in amounts that exceed deposit insurance limits. In the U.S., an example occurred when Circle, the issuer of USDC, held reserves at Silicon Valley Bank above the Federal Deposit Insurance Corporation deposit insurance limits. In the EU, MiCAR requires stablecoin issuers to hold a large portion of their reserves in EU-regulated banks, (again, potentially above DGS insurance thresholds). As the stablecoin market grows, the increase in uninsured deposits represents a vulnerability, the current extent of which is illustrated in Figure 5.

A significant outflow of deposits to stablecoins could force banks to rely on costlier, less stable funding, reducing their capacity to lend to the economy. A large shift of banking deposits to stablecoins could push banks to rely on costlier funding. The risk of destabilising the banking system by draining deposits has led the Bank of England to suggest ownership limits on systemic stablecoins, defined as those widely used or likely to be used for payments[34]. Under MiCAR, the ECB can issue binding opinions to the competent authority for i) withdrawal of an authorisation of an issuer of ART[35] (Article 24(2)) or ii) issuance limitations or minimum denomination of an ART or on an EMT[36] denominated in a currency that is not an official currency of a Member State (Articles 24(3) and 58). These opinions require a threat (ii) or serious threat (i) to (a) the smooth operation of payment systems, (b) monetary policy transmission or (c) monetary sovereignty. However, these opinions would not allow to address other concerns that may arise from multi-issuance schemes, such as those related to i) financial stability, ii) weakened safeguards for EU holders, and iii) the prudential regime for the issuer. However, the MiCAR reporting framework does not provide the ECB with sufficient data to develop timely evidenced-based risk analysis, especially in case of multi-issuance schemes. Moreover, such ECB interventions would constitute ex-post measures, addressing risks only after they materialise, for instance in case a large non-euro denominated EMT already reached a large size and poses a threat to monetary sovereignty.

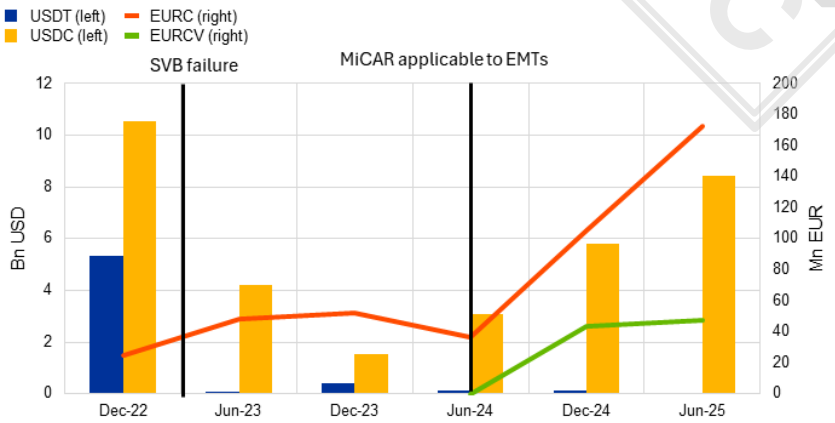
[34] Crypto groups hit out at Bank of England plan to limit stablecoin ownership, Financial Times, September 2025.

[35] The opinion obliges the competent authority to withdraw the authorisation of the issuer of the ART.

[36] The opinion obliges the competent authority to limit the amount of an ART to be issued or impose a minimum denomination amount in respect of the ART. Article 58(3) extends the provisions on issuance limits to EMTs denominated in a third-country currency.

If an EU bank issues its own EMT, customer funds would remain partly within the bank. However, due to the higher Liquidity Coverage Ratio (LCR) outflow factor assigned to EMT liabilities, these funds are treated as less stable from a liquidity perspective. This limits the bank's ability to rely on such liabilities for funding loans to clients, as it would need to hold a larger reserve of high-quality liquid assets to meet potential outflows, reducing the funds available for lending.

Figure 5 : Reserves of selected stablecoins placed as bank deposits



***Source: Tether Holdings ltd. (*Financial Figures and Reserves Reports), Circle Internet Group, Inc. (USDC and EURC Reserve Reports), CoinGecko, ESRB calculations.**

***Note: as EURCV is 100% backed by cash held in accounts opened at* Société Générale[37], reserves placed as bank deposits for EURCV are proxied by market cap.**

Stablecoins are likely to drive major banks and asset managers to develop competitive products, such as tokenised deposits and money market funds, to protect or expand their market share. Tokenised deposits, as highlighted by Cecchetti and Schoenholtz[38], leverage blockchain technology to enable programmability through smart contracts, offering a compelling alternative to stablecoins. Unlike stablecoins, tokenized deposits are offered by credit institutions that benefit from deposit insurance and lender of last resort (LoLR) backing, making them less susceptible to sudden outflows driven by market volatility and ensuring greater resilience. By combining this enhanced stability with improvements in efficiency and accessibility, tokenised deposits are well-positioned to emerge as a dominant solution in the evolving digital payments ecosystem. Additionally, tokenised deposits could be remunerated while neither in the EU nor in the US, stablecoin issuers are permitted to pay any yield to token holders. In December 2024, the EBA released a report[39] outlining opportunities from tokenised deposits to improve the efficiency of fund transfers between on-chain deposit accounts, particularly through programmability features. The report also highlighted potential challenges, such as issues related to regulatory classification and operational risks.

[37] Coinvertible Stablecoins, Forge, 2025

[38] Cecchetti, S and K Schoenholtz (2025), Policy Insight 146: Crypto, tokenisation, and the future of payments, CEPR Policy Insight No 146, CEPR Press, Paris & London

[39] EBA, Report on tokenised deposits, December 2024

Against the narrative that Europe is culturally driven by "risk aversion and fear"[40] and should "embrace stablecoins" that are now 99% USD-denominated, Europe is instead charting its own course—working toward strategic financial autonomy, to be guided by careful stability analysis and a clear-eyed view of dollar dominance. The intention of MiCAR is to ensure well-regulated stablecoins. This is why this regulation should be enforced in this spirit and not authorise interpretations that allow models that circumvent the safeguards foreseen by MiCAR (EU/Third-country multi-issuer stablecoins). In this context, private actors have the opportunity to develop euro-denominated stablecoins that address the needs of users who wish to benefit from the Euro currency while leveraging the advantages of the underlying technology. Users would also benefit from private pan-European initiatives (e.g., a multi-issuer model among EU-based firms) and public initiatives to develop interoperability with other solutions. Such initiatives would help the growth of the market for EUR-denominated stablecoins and address several financial stability issues highlighted in the report, including challenges posed by U.S. policies, such as the risk of euro-area deposits migrating outside the EU. The digital euro project led by the ECB would serve as a secure means of payment and a unified, open-standards infrastructure, driving cross-border integration and reducing dependence on foreign payment systems. Finally, as highlighted by Cecchetti and Schoenholtz[41], market competition will likely see banks creating tokenised deposits in currencies where they see lending opportunities.

In these debates, the EU regulatory approach is technology neutral, enforced by the neutrality of public institutions. This leads financial stability authorities to independently assess financial stability risks regardless of private interests, lobbying or media coverage. Citizens and established legislation have entrusted public servants of central banks to maintain price stability and thereby also to defend the public good that is money. Their responsibility is to raise awareness and take action where necessary to protect also the mandate of financial stability. A complete privatisation of money without any oversight of authorities may appeal to some, but this does not correspond to the general interest.

[40] Financial times, Europe needs to shrug off fear and embrace stablecoins, JUL 4 2025.

[41] Cecchetti, S and K Schoenholtz (2025), Policy Insight 146: Crypto, tokenisation, and the future of payments, CEPR Policy Insight No 146, CEPR Press, Paris & London

2. The characterisation of stablecoins highlights their lack of key attributes for large-scale payments and the inherent risk dynamics in their design.

2.1. The characterisation of stablecoins points to some shared traits with narrow banks and MMFs and underscores their inability to support payments at scale.

2.1.1. Stablecoins do not appear to possess the appropriate features to perform payments on the scale enabled by fiat money

The industry narrative often presents stablecoins as digital "currencies" intended to function similarly to traditional money with the intentions to replace it for payment transactions. Stablecoin advocates argue that these crypto-assets could not only compete with fiat money but also significantly challenge their dominance for payment use. They claim stablecoins can make payments faster, cheaper, and more accessible worldwide. Supporting this perspective, news outlets frequently report on new stablecoin payment initiatives. While stablecoins are already being marginally used for payments, an important question is whether they possess the necessary properties to scale significantly.

According to the Bank for International Settlements (BIS), stablecoins lack the fundamental features of sound money, making them unfit for payments to the scale of current money[42]. The BIS highlights three key limitations of stablecoins relative to fiat money: they lack singleness, elasticity, and integrity.

• Singleness means for example that one USD-backed stablecoin should always be reliably exchangeable for one real dollar and for another USD-backed stablecoin. This is a level of trust and universal acceptance that only central bank money can guarantee.

• Elasticity refers to the ability to expand the money supply through credit. Stablecoins do not possess this property because every transaction must be backed by existing reserves, limiting their flexibility within the financial system.

• Integrity means that stablecoins are vulnerable to be used for illicit activities and lack the same level of regulatory safeguards as traditional finance.

For these reasons, stablecoins fall short as viable and scalable alternatives to compete on a large scale with traditional money.

[42] BIS Annual Economic Report 2025

2.1.2. Stablecoins share some features with narrow banks and MMFs, but key differences remain.

Stablecoins can be compared both to narrow banks and money market funds (MMFs). Narrow banking refers to a model where banks' activity is limited to accepting deposits and investing only in safe, highly liquid assets such as government bonds or reserves at the central bank, not engaging in private lending and riskier activities. This stands in contrast to traditional fractional reserve banking, where banks lend out a portion of deposits. Like narrow banks, MiCAR stablecoins operate on a model where every token is fully backed by low risk, liquid assets, avoiding riskier lending or investment activities and aiming to guarantee the safety and liquidity of users' funds. This 100 percent liquid reserve approach is designed to reduce the risk of "runs" and separates the lending function from deposit-taking, just as narrow banking does.

At the same time, stablecoins share features with MMFs, as both hold high-quality liquid assets and offer users a way to store value with reduced risk of loss. Detailed disclosure and regular audits are often required of all three structures. But past incidents, such as the USDC depegging during the March 2023 collapse of Silicon Valley Bank (SVB), USDT depegging in June 2023 and vulnerabilities in money market funds (MMFs) during the 2008 and 2020 crises, highlight their susceptibility to market shocks. Following SVB's collapse, USD Coin (USDC) temporarily lost its US dollar peg after it was revealed that Circle, its managing company, held USD 3.3 billion of reserves with the bank, leading to USD 3.0 billion in net redemptions over three days. Similarly, during the 2007–2008 financial crisis, MMFs faced stress due to exposure to subprime-linked commercial paper, with some sponsors intervening to stabilize funds, while central banks launched emergency facilities to stem outflows. The March 2020 MMF stress, which also led to central bank intervention further demonstrated their persistent structural vulnerabilities despite regulatory reforms[43]. These events raise concerns about stablecoins and MMFs relying on implicit government support during periods of instability and highlight the risk that the authorities may be drawn into intervening to stabilise markets, raising concerns about the potential for stablecoins to develop an implicit reliance on government support (bail-out).

Despite these structural similarities, key differences distinguish stablecoins from both narrow banks and MMFs. Under the GENIUS Act, stablecoin issuers in the U.S. are prohibited from paying interest, although the American Bankers Association (ABA) has voiced concerns[44] about loopholes in the GENIUS Act regarding the ability of crypto exchanges to offer interest on stablecoins. By contrast, narrow bank deposits and MMFs can pay interest. Stablecoins are unregistered bearer instruments that can be held in noncustodial wallets and transferred directly on blockchains, whereas narrow bank deposits and MMF shares are registered and must be held with intermediaries. A further distinction is programmability: stablecoins claim to be programmable for automated and complex transactions (smart

[43] ESMA Report on Trends, Risks and Vulnerabilities, Vulnerabilities in money market funds, 2021

[44] Joint ABA and State Bankers Associations Letter Regarding Market Structure Recommendations

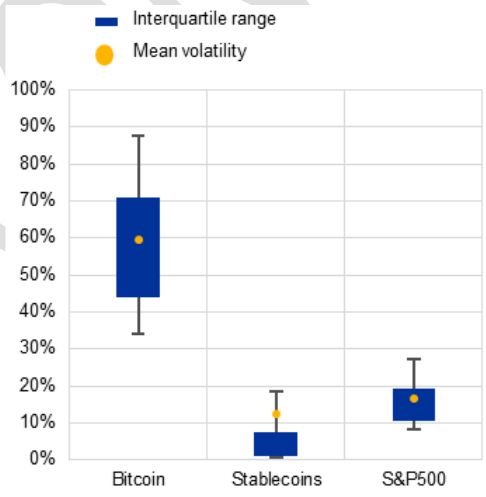
contracts), unlike traditional narrow bank deposits and MMFs, unless those are tokenised. Regulatory regime also varies as narrow banks are subject to prudential supervision benefit from explicit central bank access and deposit insurance, and MMFs seem to have implicit government guarantees, while stablecoins are subject to a patchwork of regulatory approaches, often operating outside the traditional financial system. Furthermore, while narrow banks and MMFs are fully integrated into the broader financial infrastructure, stablecoins function in a parallel digital ecosystem, raising questions about universal acceptance and interoperability.

2.2. The design of stablecoins involves inherent risks

2.2.1. Despite promising a stable value, stablecoins can fluctuate in value

Fiat-backed stablecoins, though less volatile than other types, still fluctuate in price and lack the reliability of traditional money, raising concerns about their use for payments. Fiat-backed stablecoins, which are the least volatile type of stablecoins, rarely maintain across-time an exact one-to-one parity with their underlying unit of account in secondary markets, even during periods of market calm, as shown in Figure 6. Minor volatility is often seen by users as tolerable in stablecoins, especially for short-term transactions, though it might limit their perceived reliability compared to traditional fiat money. This contrasts sharply with traditional forms of money, such as bank deposits, which are used for everyday transactions and consistently maintain their value, raising doubts about stablecoins' reliability as a means of payment.

Figure 6: Annualised standard deviation of daily returns – 21 day moving window (Percentage Points)



Source: ECB Crypto-assets Dashboard, Bloomberg, ESRB calculations, August 2025

Note: 21-days rolling standard deviation, annualised dividing by squared number of working days in a year. Stablecoin computed using average returns of Stablecoins backed by USD-denominated assets only (BUSD, GUSD, PYUSD, TUSD, USDC, USDP and USDT). Data from 01 Jan 2019 to 13 August 2025. Black bars indicate 10th and 90th percentile respectively.

Reading note : The interquartile range, which measures the range within which the middle 50% of data points lie (between the first and third quartiles), represents the most common situations. The mean volatility of stablecoins falls outside this range, suggesting that extreme events (e.g., depegging) are significant enough to skew the mean upward. Therefore, such events must be considered as non-negligible factors when making investment or regulatory decisions.

2.2.2. The run risk in stablecoins reflects patterns seen in Money Market Fund crises.

Due to the nature of their liabilities, stablecoins are generally vulnerable to the risk of a run. Stablecoin issuers promise to keep the token's value pegged to the referenced official currency, and to redeem tokens in funds at sight and at par. The closest analogy is with a pegged exchange rate regime, where the value of a currency is maintained at a fixed level relative to another. This arrangement, like stablecoins, can come under pressure if confidence in the backing is in doubt, and it may be vulnerable to speculative attack. Stablecoins also show some similarities with money market funds operating on a constant net asset value model (CNAV MMFs)[45] and, to some extent, with bank deposits. Recognising the existence of a run risk, CNAV MMF regulations are very restrictive in terms of asset composition. The stability of banks, given their central role in financial intermediation, is supported by wide-ranging regulation, as well as (public) guarantees for eligible deposits and access to central bank liquidity. Similarly to CNAV MMFs and other pegs, however, EMT holders' doubts concerning the adequacy of the reserves could induce a run where they try to redeem their holdings 'en masse'. As neither EMT issuers nor EU CASPs can offer interest, there is little incentive for holders to wait before seeking redemption if negative news emerges[46]. Even if asset liquidity and maturity transformation as well as credit risk taking performed by EMT issuers are limited by regulation, they can be still subject to liquidity shocks that may be triggered by either idiosyncratic or market-wide events. Such triggers might include:

• doubts about the solvency of the bank(s) taking deposits from an EMT issuer (as happened in March 2023 when USDC broke its peg in the wake of the Silicon Valley Bank crisis). This could be exacerbated by market concentration. In the EU a limited number of small banks currently take deposits from stablecoin issuers CASPs. As long as banks have concerns about the issuers/CASP's compliance with AML/CFT regulation, the concentration of this market is unlikely to decrease;

• changes to market perceptions about the credit risk of the securities included in the reserve of assets, increasing their risk premium (even if they are still classified as

[45] The definition and specific requirements for CNAV MMFs in the EU (which can take the form of public debt CNAV MMFs or low volatility NAV MMFs) are laid down in Regulation - 2017/1131 - EN - EUR-Lex.

[46] EMT and ART issuers can pause, limit or impose liquidity fees on redemptions only as part of a recovery plan. As the goal of a recovery plan is to restore compliance with the requirements on the reserve of assets imposed by MiCAR, its activation signifies a stress episode for the issuer.

high quality liquid assets) - as an example, the depegging of DAI in March 2023 (see figure 7a, 7b);

• large redemption requests if an EMT is used to settle e.g. capital market transactions, with the receiving counterparty unwilling to hold the EMT and thus requesting reimbursement;

• increases in interest rates for the currency referenced by the EMT, which changes the opportunity cost of holding EMTs. Given the dominant role of USD-linked tokens, changes in US interest rates would have the largest impact.

A run on a stablecoin classified as significant in the EU would have as a direct consequence a large deposit withdrawal from EU banks (at least 60% of reserves to be held in deposits) and the early termination of reverse repo with banking counterparties. Taking into account that a limited number of small banks engage in taking deposits from stablecoin issuers, although the size of withdrawal could not be of systemic relevance at EU level, it could nevertheless cause shocks to such credit institutions and, if they are significant from the point of view of their national banking systems, the countries in which host them. Through confidence channels and wealth effects, a shock could propagate to other credit institutions serving the crypto-asset industry, similar to the developments during the 2023 regional bank stress events in the U.S.

Depegging occurs when a stablecoin significantly deviates from its intended referenced asset(s). Depegging typically involves larger and more prolonged deviations from the peg compared to the usual low volatility. Depegging risk refers to the likelihood of such events occurring, which can undermine confidence in the stablecoin's stability. Depegging risks pose a significant threat to the stablecoin's role as a reliable store of value or medium of exchange. Severe depegging events can lead to investor losses and erode trust in the stablecoin and the broader crypto-asset ecosystem.

Figure 7a: Annualised return volatility of selected stablecoins

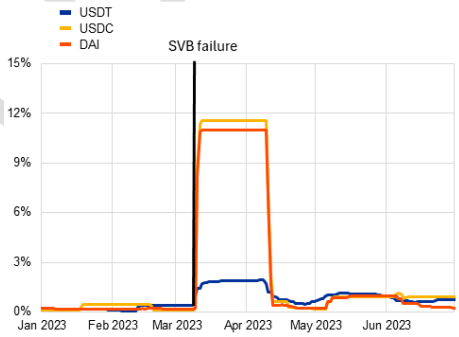
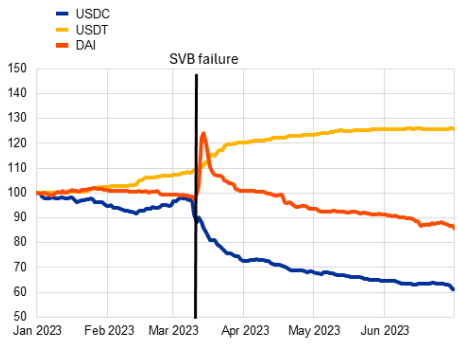


Figure 7b: Market capitalisation of selected stablecoins (01 Jan 2023 = 100)



Source: ECB dashboard and Cryptocompare

Notes ***(fig. 7a)*****: *30-days rolling standard deviation of daily returns, annualised dividing by squared number of working days in a year.***

***Reading note: When Circle depegged in the aftermath of SVB failure,* some on-chain collateralised stablecoins using it as collateral (such as DAI, which collateral reserves were constituted by over 50% of USDC and related instruments[47]) also broke their peg in result. Other off-chain collateralised stablecoins, such as Tether, experienced opposite (albeit more limited) price fluctuations, absorbing demand from Circle in a flight-to-safety fashion.**

2.2.3. Macroprudential considerations in stablecoin reserve regulation

A key aspect of MiCAR's regulation of EMTs concerns the composition of reserve assets[48], which can be viewed from two main perspectives. First, reserves must fully back EMTs in circulation and ensure that issuers can redeem tokens promptly on demand, at par. Second, holding bank deposits and securities as reserves creates links between EMTs and the traditional financial system, as flows into and out of EMTs may affect asset prices and bank liquidity. This section assesses the macroprudential implications of these regulations, with more detail provided in Annex 2.

MiCAR sets several rules for EMT reserves[49]: The key rules include a minimum share of bank deposits in reserves (30% for non-significant EMTs and 60% for significant EMTs) and permit only high-quality liquid assets as other components of EMT reserves. In addition, concentration limits apply: the value of deposits accepted by a bank from a particular EMT issuance cannot exceed 1.5% of that bank's total assets, and reserves must be distributed across at least two banks for non-significant EMTs and at least three banks for significant EMTs[50].

These policy choices involve trade-offs. From a holder protection standpoint, reserves must support prompt, at-par redemption. A higher share of bank deposits in reserves may help match EMTs' liquidity profile and reduce disintermediation pressures, but also increases interconnectedness. As stablecoin issuance grows, a macroprudential view must consider that EMTs "free ride" on the safety of bank deposits, which benefit from strict regulation and public guarantees. If EMT reserves represent a significant share of bank deposits, banks may shift their assets towards more marketable securities to manage greater liability volatility, potentially reducing lending to the real economy. An optimal balance would combine a minimum share of bank deposits in reserves with caps on the share of EMT reserves relative to bank liabilities.

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[47] Stablecoins: A Deep Dive into Valuation and Depegging (S&P Global, 2023)

[48] art. 54 MiCAR (funds to be deposited in a separate account in a credit institution or invested in secure, liquid low-risk assets as defined by EBA regulatory technical standards issued on the basis of art. 38(1) of MiCAR)

[49] This assessment is based on rules set in art. 36, art 38 and art 54 of MiCAR and on EBA final report on draft RTS to further specify the liquidity requirements of the reserve of assets under Article 36(4) of Regulation (EU) 2023/1114. See Annex 3 for a broader description of regulation of reserves of ARTs and EMTs under MiCAR

[50] The share of deposits placed at a single bank cannot exceed 25% of an EMT's reserves if that bank is a G-SII or and O-SII, 15% for other large banks (with assets exceeding EUR 30 bn or a top 3 bank in an EU Member State that is not an O-SII) and 5% for other banks. Since issuers of non-significant EMTs must place at least 30% of reserves in deposits and issuers of significant EMTs must place at least 60%, it follows that they must place them at least at two and three banks, respectively.

The current value of EMT denominated in euro (below EUR 300 million) is very small when compared to bank deposits in the euro area or euro area debt securities markets. Consequently, in order to gauge the impact, the analysis below considers a hypothetical scenario where the Euro EMT sector increases in size to 1.25% of euro M1 money supply, which is the ratio between the value of USD stablecoins outstanding and USD M1 money supply at the end of 2024. Under such assumptions, EMT supply would reach EUR 130 bn[51].

Even if 100% of these reserves were to be placed as bank deposits, this would not materially affect the aggregate Liquidity Coverage Ratio (LCR) of the Significant institutions (SIs) supervised by the ECB. The liquidity buffer for SIs at 2024 end amounted to EUR 4,950 bn and the average LCR of SIs was 158%. Assuming that EMT reserves enter bank liabilities as deposits with high (100%) runoff rate, replacing deposits with a low (5%) runoff rate, the average LCR for SIs would decrease to 154%. As the LCR is a measure of a bank's resilience to short-term liquidity outflow shocks, the results above suggest that euro area SIs could absorb even a significant liquidity outflow related to EMT redemptions in a scenario where the size of the EMT sector reaches EUR 130 bn.

The aggregate picture can mask vulnerabilities at the level of individual banks, but concentration limits set out in the draft EBA RTS should indirectly ensure that individual bank's funding profiles do not become reliant on deposits from a single EMT issuer. Nevertheless, there is no limit on the total share of deposits that a bank can accept from multiple EMT issuers, requiring supervisors to monitor this risk. Currently it appears that taking deposits from stablecoin issuers and crypto-asset service providers is limited to few and relatively small banks, in most cases in the category of less-significant credit institutions and thus subject to national supervision. Supervisory scrutiny should be increased if there were clusters of banks significantly involved in crypto-activities at country level, in which case ensuring adequate supervision may stretch supervisory resources.

EMT issuers can elect to hold part of the reserves in high quality liquid assets (HQLA). In this case, a redemption shock can lead to forced sales of such securities in the market. In the scenario under consideration, where the size of the euro EMT sector reaches 130 bn EUR, no more than 91 bn EUR (70%) can be held in HQLA.

Eligible reserve assets in the EU must remain truly high quality and liquid in alignment with existing practices in the EU. Some jurisdictions designate investments in some types of money market funds as "highly liquid" assets (or otherwise permit such investments as part of reserves). However, clear evidence from periods of market stress[52], including in the context of the COVID19 crisis, demonstrates that, notwithstanding post-global financial crisis regulatory reforms, MMFs do not necessarily meet this standard. For instance, MMF redemptions can be subject to fees and gates and other restrictions in times of market stress and, even

[51] This analysis abstracts from the question of treatment of the multi-issuer scheme of stablecoins. The EUR 130 bn value could be interpreted as the value of EMT reserves that has to be absorbed by the euro area banking sector and financial markets.

[52] ESRB recommends increasing the resilience of money market funds

on a business as usual basis, can be subject to long processing periods. Should issuers find challenging the liquidation of a specific type of reserve asset, they may prioritise the withdrawal of funds held in accounts with depository institutions, elevating contagion risk to banks. Moreover, the ESRB has identified a need for material improvements to the EU regulatory framework for MMFs which, as at the date of this report, have not been acted upon by the European Commission[53]. Furthermore, allowing MMF units to be used as reserve assets will increase the interconnectedness within the financial system generated by the growth of stablecoins. With MMFs as an additional layer of intermediation, the opacity of the cross-sectoral links will also grow. For these reasons, the EU should avoid departures from the concept of HQLA used for the purposes of EU banking regulation and ensure issuers of ARTs and EMTs can redeem tokens on a prompt basis without undue stress on the EU banking system.

The possible scale of such impact can be gauged from the studies on investment fund behaviour. A recent study by Sowiński (2024)[54] estimates the price impact of forced sales of sovereign bonds (driven by outflows from investment funds) on market yields. In a scenario where 10% of net asset value of investment funds flows out in one day, the impact on sovereign bond yields is not material (ca 55 bp). In addition, estimates show that yield impact at a 5-day liquidation horizon is 1/3 of the one corresponding to 1-day horizon (ca. 18 bp). As the assets of euro area investment funds are much larger than those of the hypothetical EMT sector[55], this suggests that fire sales driven by EMT redemptions in the considered scenario should not lead to meaningful market impact.

3. Regulatory Fragmentation, U.S. Policies, and EU Financial Stability Risks

3.1. Overall U.S. policy strategy regarding crypto-assets

The U.S. has introduced significant measures aimed at positioning itself as a global leader in crypto-assets, particularly in the domain of USD-denominated stablecoins. An Executive Order was issued on 23 January 2025[56], aiming to promote USD-backed stablecoins. In response, regulatory agencies and lawmakers have taken coordinated steps to introduce new rules and supervisory practices aligned with pro-crypto objectives. Legislative measures, such as the adopted

[53] Recommendation ESRB/2021/9 - Compliance Report

[54] The potential impact on the euro area bond market of forced asset sales by euro area investment funds

[55] Assets of euro area bond funds amount to around EUR 4.3 trn at the end of Q1 2025. Euro area investment funds hold around EUR 1 trn of euro area sovereign bonds at the end of Q1 2025.

[56] Strengthening American Leadership in Digital Financial Technology, Executive Order 14178.

GENIUS Act[57] and the proposed CLARITY Act[58], have further solidified this direction.

The U.S. President's Working Group released on 30 July 2025, a report[59] outlining recommendations to bolster U.S. leadership in crypto-assets, including stablecoins. The report contains key recommendations for stablecoins and payments. It calls for the full implementation of the GENIUS Act, which sets standards for stablecoin issuance. To provide legal clarity, stablecoins would be explicitly defined as neither securities nor commodities under federal law. Additionally, the report recommends banning the issuance of a U.S. central bank digital currency (CBDC) to preserve the private sector's role in payments and protect individual privacy. It further directs U.S. authorities to engage with international standard setters (FSB, BCBS, IOSCO) to promote adoption of rules in line with U.S.' interest[60]. Finally, it emphasises U.S. leadership in setting global standards for digital payments, promoting private-sector innovation in cross-border transactions, and reinforcing the dominance of the U.S. dollar in international finance.

3.2. The new U.S. crypto regulatory framework aligns with overall U.S. economic policy

The U.S. GENIUS Act enacted in July 2025 creates a federal regime for the issuance and regulation of payment stablecoins. Stablecoins have until now lacked a unified federal regulatory framework in the U.S. The GENIUS Act introduces significant changes, exempting banks from leverage ratio and risk-based capital requirements for stablecoin activities. Unlike the EU's MiCAR framework, the Act permits redemption fees and explicitly restricts interest payments only for issuers, potentially allowing crypto exchanges to offer yield or "rewards". This regulatory divergence could incentivise investors to hold stablecoins with US-based crypto exchanges offering yield while redeeming them in the EU, where fees are banned. Furthermore, the GENIUS Act provides also for a very wide definition of stablecoins which includes cases where issuers merely 'create the reasonable expectation that [the stablecoin] will maintain, a stable value relative to the value of a fixed amount of monetary value'. Such a definition-related divergence may give rise to regulatory arbitrage initiatives.

The GENIUS Act allows foreign stablecoins under strict conditions. Both the GENIUS Act and MiCAR impose clear requirements for entities providing custody services for reserve holdings of domestically issued stablecoins, but the GENIUS Act uniquely allows foreign-issued stablecoins to be registered and offered in the U.S. Section 10(a) mandates that only entities under U.S. supervision may provide

[57] The "GENIUS Act" was signed into law in July 2025 (S.1582 - 119th Congress (2025-2026): GENIUS Act | Congress.gov | Library of Congress).

[58] Digital Asset Market Clarity Act of 2025 adopted by the U.S. House of Representatives, awaiting consideration in the Senate.

[59] https://www.whitehouse.gov/wp-content/uploads/2025/07/Digital-Assets-Report-EO14178.pdf

[60] For instance it is set that 'Additionally, the United States should advocate that the BCBS revisit the cryptoasset standards to ensure similar treatment to U.S. capital requirements'.

custodial services for reserves, collateral, or private keys, similar to MiCAR's Article 37(3). However, Section 18 permits foreign-issued stablecoins to distribute in the U.S. if the Secretary of the Treasury determines the foreign regulatory regime is comparable. The Treasury may also establish reciprocal or bilateral arrangements with other jurisdictions, though foreign issuers must hold sufficient reserves in U.S. financial institutions to meet U.S. customer liquidity needs unless a reciprocal arrangement states otherwise. The possibility that the Secretary of Treasury establishes that MiCAR is comparable to the GENIUS Act, does not however imply that the operation of a multi-issuer scheme between the two sides of the Atlantic poses lesser risk to the EU. Indeed, the GENIUS Act and MiCAR diverge on certain areas (permissibility of redemption fees, composition of reserve, crisis management regime) and the former is still without requirements about solvency level, therefore it is hardly possible to affirm that for a token holder is equivalent to file a redemption request with the EU firm or the US firm.

The CLARITY Act, if approved, would complement the GENIUS Act by clarifying the oversight responsibilities of crypto-assets in the U.S. The CLARITY Act may complement the GENIUS Act to create a comprehensive regulatory framework for crypto-assets in the U.S. While the GENIUS Act focuses on stablecoins, the CLARITY Act would establish oversight for unbacked crypto-assets, defining boundaries of the Commodity Futures Trading Commission (CFTC) and the Securities and Exchange Commission (SEC). The CLARITY Act and the GENIUS Act would provide a cohesive structure for regulating US crypto-assets.

U.S. fiscal deficits and associated issuance of U.S. Treasuries are projected to continue at high levels. The GENIUS Act, which supports the use of USD-backed stablecoins backed 1:1 by high-quality liquid assets (HQLA) like Treasury bills, reverse repos, and bank deposits, indicates a deliberate strategy to expand the investor base for U.S. Treasuries through their integration into the stablecoin ecosystem.

3.3. Impact analysis of USD-stablecoins on treasury market

As of mid-2025, USD denominated stablecoin issuers - primarily Tether (USDT) and Circle (USDC) - have become significant participants in the US Treasury bill (T-bill) market. Their growing market share will most likely be strengthened by the GENIUS Act, which restricts stablecoin reserve investments to US Treasury securities with a maximum remaining maturity of 93 days. This regulatory environment channels stablecoin reserve demand almost exclusively to the T-bill segment of the Treasury market. As of mid-2025, stablecoin issuers collectively hold between $150 billion and $200 billion (values vary according to different sources) in U.S. government debt, with the vast majority in short-term T-bills[61]. Tether and Circle, which together account for over 90% of the stablecoin market, held about

[61] See, e.g., Forbes or Reuters.

$98–$120 and $28 billion in Treasuries respectively as of end-May 2025[62]. The total outstanding US Treasury securities amount to roughly $29 trillion. Of this, Treasury bills constitute around $6 trillion. Therefore, the share of these two issuers in T-bills outstanding is around 2.1%-2.5%. This makes stablecoin issuers one of the top private holders of T-bills, comparable to large sovereign investors and government money market funds (MMF)[63]. Overall, stablecoin issuers currently hold about 0.5%–0.6% of the total US Treasury debt.

Stablecoin market projections for the next 3–5 years vary widely, reflecting regulatory uncertainty and divergent options of analysts with respect to adoption. Most forecasts (table 3) expect significant growth, with estimates of total market capitalisation ranging from $500 billion in 2028 to $3.7 trillion in 2030.

Table 3: Stablecoin Market Size Projections

Source / Institution	Projected Market Size (Year)	Notes / Scenario
Citigroup (Citi)[64]	$1.6 trillion (2030, base)	Base case, assumes regulatory support and integration
Citigroup (Citi)	$3.7 trillion (2030, bull)	Bullish scenario, mainstream adoption
Standard Chartered[65]	$2 trillion (2028)	Industry estimate; aligns with US Treasury
JPMorgan[66]	$500 billion (2028)	Downward-revised, skeptical of mainstream use

Source: ESRB CATF

These projections imply a massive accumulation of U.S. Treasuries by stablecoin issuers. Based on the projections for stablecoin growth from Citigroup (figure 8), and taking into account projections for the future size of the US Treasury debt market, one can project the potential share of stablecoin issuers in the US Treasuries market. The projections presented in figure 8 refer to the year 2030. Given the projected range of stablecoin market capitalisation between $1.6 trillion and $3.7 trillion and projected total US Treasury debt of $47.6 trillion, and assuming

[62] 2025 USDC_Examination Report May 25.pdf

[63] https://www.bis.org/publ/arpdf/ar2025e3.htm

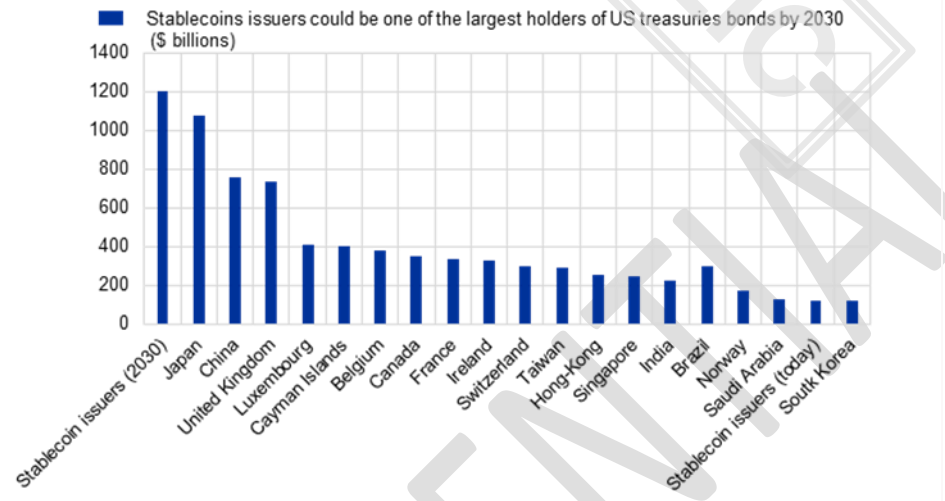
[64] Citigroup (2025): Digital Dollars

[65] https://www.theblock.co/post/350851/standard-chartered-stablecoin-supply-2-trillion-2028

[66] https://www.reuters.com/business/finance/jpmorgan-wary-stablecoins-trillion-dollar-growth-bets-cuts-them-by-half-2025-07-03/

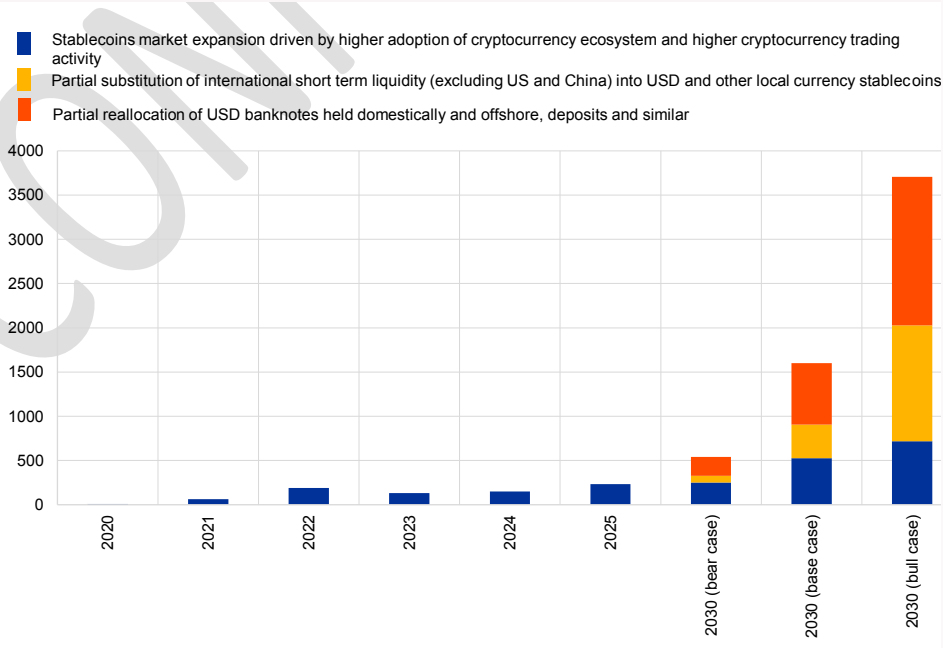
that stablecoin issuers continue to back their tokens primarily (70% of their assets) with U.S. Treasuries, this would result in a potential share of stablecoin issuers in the U.S. Treasury market between 2.4% and 5.4% (figure 9). This percentage would be less than 1%, however, in the more sceptical scenario by JPMorgan for 2028.

Figure 8: Projection of the holdings of US treasuries by stablecoins issuers by 2030



Source of the data : City Institute, Fed, Bank of England, European Central Bank

Figure 9: Drivers of the expansion of the increase in stablecoins issuers market share in US treasuries



Source of the data : City Institute, Fed, Bank of England, European Central Bank

The GENIUS Act's push for stablecoins to use U.S. Treasuries as backing assets could lower Treasury yields while incentivising stablecoin issuers to pursue riskier investments, potentially increasing systemic financial risks. The implementation of the GENIUS Act could have profound implications for both the sovereign debt and risky asset markets. By directing stablecoin issuers toward U.S. Treasuries as a "natural" backing asset and granting institutional legitimacy to stablecoins, the act is likely to generate significant demand for these public debt instruments, as anticipated by the U.S. Treasury secretary[67]. This influx could absorb a substantial portion of U.S. Treasuries, though an estimated $2 trillion would still remain on the market, exerting downward pressure on interest rates. But this increase in demand may have systemic ripple effects. The reduced profitability of holding U.S. Treasuries as a backing asset could push stablecoin issuers to seek higher returns by diversifying into potentially riskier, more lucrative investments. Such shifts could alter the composition of risky asset portfolios not only for stablecoin issuers but also for other market participants, potentially heightening volatility and systemic risk across financial markets.

In a scenario where stablecoins suddenly collapse—issuers quickly selling large portions of their reserves—a wave of U.S. Treasuries could hit the market, overwhelming demand. If stablecoins issuers were to sell rapidly most of their reserves, a massive volume of U.S. treasuries might flow to the market, exceeding the demand for this asset. Such a situation could result in an increase of the interest rate on short term U.S. treasuries, with global systemic implications.

Whether a widespread adoption of USD stablecoins may also have impacts on monetary sovereignty would very much depend on the concrete design and use case. For instance, if the stablecoin is used solely for cross-border transfers and is immediately exchanged into local fiat currency before and after the transaction - a practice often referred to as the "stablecoin sandwich model" - the impact on monetary sovereignty is likely to be limited. If the adoption of foreign-denominated stablecoins for cross-border payments were to expand into domestic payments or their use as a store of value, this could undermine the euro’s function as a unit of account. Such developments might increase the euro area's exposure to foreign monetary policies and external economic shocks, thereby posing greater risks to monetary sovereignty.

A growing use of USD stablecoins for cross-border payments could affect global currency demand and increase the spillover effects on the European financial system if instability arises. If the US strategy were successful, it could weaken the role of other currencies including the euro in international finance and trade. In addition, the business models of incumbent cross-border payment service providers, such as providers of correspondent banking services, could come under pressure. The impact on financial stability would largely depend on how resilient and credible these stablecoins remain, especially under stressed conditions - a factor that will be shaped by the enforcement of the U.S. regulation. Should the regulatory framework for stablecoins in the U.S. prove robust, structural vulnerabilities of

[67] Financial Times, Scott Bessent bets on stablecoins to bolster demand for Treasuries, August 2025

stablecoins such as maturity and liquidity mismatches could be contained. If not, instability in USD-backed stablecoins could spill over into European markets.

If euro-denominated stablecoins were to grow significantly, matching the same ratio to the money supply (M1) as USD stablecoins currently have, their impact on the euro area government debt market would be measurable but not systemically disruptive. In this scenario, we assume that euro-denominated stablecoins were to reach the same ratio to EUR M1 as USD stablecoins currently have to US M1 and ask what their potential impact on the euro area government debt market would be (assuming all stablecoin reserves were held in euro area government debt). As of May 2025, Euro Area M1 stood at €10.79 trillion[68]. Euro Area Government Debt stood at €13.26 trillion in the 4th quarter of 2024[69]. As of June 2025, EUR stablecoin market capitalisation stood at $480 million[70], whereas USD stablecoin market capitalisation stood at $250 billion[71]. USD M1 stood at $18.80 trillion in June 2025[72]. According to the above figures, the USD stablecoin ratio to M1 is therefore roughly 1.3%. If EUR stablecoins matched this ratio, this would result in a EUR stablecoin market cap of about €145 billion. If all EUR stablecoin reserves were held in government debt, this would result in a share of 1.1%. This is a significant but not systemically dominant share.

3.4. The stablecoin loophole that could expose the EU (the stablecoin multi-issuer)[73]

The approval in the EU of the issuance of an EMT that is the same as a token issued by a third country issuer (multi-issuer scheme) presents significant regulatory, supervisory and financial stability challenges. In this arrangement, stablecoins issued from different firms are deemed fully fungible, meaning tokens issued under different regulatory regimes are interchangeable. This fungibility enables global stablecoin issuers to operate across jurisdictions, effectively circumventing national safeguards and exploiting regulatory arbitrage.

The fragmentation of reserve management under the multi-issuer model raises concerns about the effectiveness of redemption guarantees and the adequacy of investor protection. Under current EU law, stablecoins jointly issued by EU established firms are subject to prudent requirements: issuers must maintain a single reserve, implement a unified custody policy, and coordinate their recovery and resolution plans. However, when the same stablecoin is issued by both an EU-regulated entity and a third-country entity, reserves are distributed between

[68] https://data.ecb.europa.eu/data/datasets/BSI/BSI.M.U2.Y.V.M10.X.1.U2.2300.Z01.E

[69] https://ec.europa.eu/eurostat/web/products-euro-indicators/w/2-22042025-bp

[70] https://www.coindesk.com/markets/2025/06/27/market-cap-of-euro-stablecoins-surges-to-nearly-500m-as-eurusd-rivals-bitcoins-h1-gains

[71] https://www.reuters.com/business/finance/stablecoins-market-cap-surges-record-high-us-senate-passes-bill-2025-06-18/

[72] https://fred.stlouisfed.org/release/tables?eid=1217602&rid=21

[73] Richard Portes (London Business School) has addressed this issue in The stablecoin loophole that could expose the EU, Financial Times, 25 July 2025. A full technical description of the model and its associated risks can be found in Annex 1.

jurisdictions and managed according to the requirements of local regulators, with each likely to prioritise their own markets in times of stress.

This fragmentation exposes EU markets to the risk of a run on stablecoins, as investors may preferentially seek redemption within the EU, where prompt and cost-free redemption at par is mandated by law. In a crisis scenario, reserves held outside the EU could be ringfenced by foreign authorities and thus unavailable to meet redemptions in the Union. This creates the possibility that EU-regulated entities could become liable for obligations originating from third-country issuers, with potentially severe implications for the solvency and liquidity of the EU issuer and for the wider financial system. The potential impact of these risks is likely to increase in line with the growth of the multi-issuer stablecoins in circulation. As evidenced by several past episodes of financial turbulence, contagion risk and reputational concerns may induce authorities to support troubled financial institutions, even in the absence of *ex ante* guarantees.

The lack of harmonisation in stablecoin regulation across jurisdictions further exacerbates these vulnerabilities and complicates effective oversight. Requirements regarding eligible reserve assets, redemption rights, and prohibitions on interest, prudential requirements differ significantly between the EU and third countries. Although the FSB issued in July 2023 recommendations on global stablecoin arrangements, there are still significant divergencies across jurisdictional regulatory framework which makes it difficult to estimate the total value of stablecoins circulating within the EU and to calibrate the corresponding reserve amount, increasing the risk of under-collateralisation and contagion in the case of a large run.

Given these facts and related risks, the multi-issuer model warrants urgent regulatory attention and coordinated action at both EU and international levels. The current regulatory silence under MiCAR about these third-country multi-issuer schemes undermines financial stability and a run could create pressure for public intervention, as witnessed in previous episodes involving MMFs. It is recommended that the European Commission and Parliament conduct a formal review of the regulatory framework to explicitly address the risks of multi-issuer, and that macroprudential authorities intensify their analysis of the systemic threats posed by this model

See annex 1 for a detailed risk assessment of the multi-issuer scheme

Annex 1: Risks related to Third-country multi-issuer stablecoins

The legislator has introduced in MiCAR clear provisions for the case of an Asset Referenced Token (ART) or an Electronic Money Token (EMT) jointly issued by two or more entities all established in the EU (hereinafter 'the intra EU multi-issuer'). In this respect, the legislator has stipulated that EU entities issuing the 'same' ART or EMT must operate a single reserve of assets (Art. 36(5)), maintain a single custody policy (Art. 37(2)) and be subject to tailored requirements under the two sets of guidelines issued by the EBA for recovery plan and redemption plan.

On the contrary, the legislator has made no explicit reference in MiCAR to the possibility of issuing the same token by an EU firm and a third-country firm. MiCAR does not explicitly regulate the case of a multi-issuer scheme with a third country leg.

The requirements applicable to the intra EU multi-issuer scheme are justified by the fact that all the firms participating in such a scheme are subject to the MiCAR requirements, while being jointly and severally liable for the redemption of the tokens issued. They are exposed to different and greater risks than firms engaging in the issuance of individual tokens. Against this backdrop, the heightened challenges arising from a multi-issuer scheme with a third-country leg are evident.

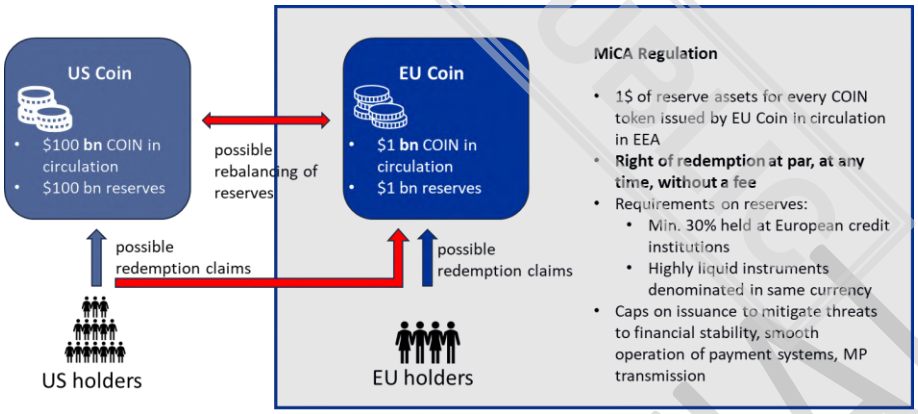
From a technical point of view, the cross-border multi-issuer scheme is a fundamental deviation from traditional risk management and supervision in the financial sector. For the first time, the board of an EU legal entity and the relevant EU supervisors would be responsible for the solvency of that entity by ensuring reimbursement of both liabilities directly taken by the firm (EU liabilities) and the third-country issuer's liabilities – as the latter are fully fungible and indistinguishable from EU liabilities. As the EU supervisors (either European or national) have no insight or control over the risk management or assets outside the EU, they do not seem to have adequate tools to achieve this objective. To make the analogy with traditional finance, in no situation could the EU supervisors of an EU subsidiary of a large and global banking group become responsible for the solvency and liquidity of third-country bank by allowing depositors of the third-country bank to redeem their third-country deposit from an EU subsidiary.

Under a multi-issuer scheme with a third-country leg, an EU EMT issuer could receive requests from third-country holders to redeem the tokens issued by the third-country issuer (and vice versa). In case sufficient reserves are not available in the EU, it is expected that the two entities[74] should rebalance their respective reserves.

This scenario is presented in the figure below as a generic example applied to the EU and the US as a third country. The size of the reserves indicated within this example are solely illustrative.

[74] In theory a multi-issuer scheme could operate with more than two entities in multiple jurisdictions outside the EU, but as currently operating schemes consist of two entities, for simplicity the report considers only the case of a scheme composed of two entities.

Figure 10 – Generic example of EU and third country stablecoin multi-issuer applied to EU and US.



Source: **ESRB CATF, ECB non-paper on EU and third country stablecoin multi-issuance (https://data.consilium.europa.eu/doc/document/WK-4742-2025-COR-1/en/pdf)**

Thus a multi-issuer scheme with a third country leg:

- Significantly weakens the EU's prudential regime for EMT issuers by increasing the likelihood of a run, as EU issuers may not have enough assets under the supervision of EU authorities to fulfil redemption requests by both EU and non-EU token holders. Regulatory arbitrage may exacerbate this risk, as EU-based issuers are mandated to redeem EMT at par and at no cost, incentivizing holders to redeem their tokens with the EU issuer—especially if the third-country issuer applies redemption fees or has a longer timeline for reimbursement. If the market value of the EMT falls below par, the incentive to redeem from the EU firm is heightened. Insolvency of an EMT issuer may have further contagion effects: a direct contagion to the banking system may arise if the issuer is a credit institution, or an indirect contagion may arise when the issuer is an e-money institution (EMI) and thus maintains deposits at EU credit institutions, as required by MiCAR. The run on the EMT issuer could also trigger a run on other EU bank(s), EMT issuer, or on the EU banks where the EMI maintained its deposits, if these deposits are seen as significant from the point of view of that bank's liquidity position. Herding effects, enhanced by the rapid spread of news (either real or fake), can increase the dynamics of such runs, as evidenced, for example, by the Silicon Valley Bank case. On the other hand, there is the limit on the size of deposits of an individual EMT issuance at a specific bank (1.5% of the bank's assets). But there is no overall limit for banks to gather deposits from various EMT (and ART) issuances or issuers, potentially leading to the emergence of so-called 'crypto-friendly banks' that are disproportionately dependent on funding from crypto-asset players. Runs on EMT issuers could translate into shocks to the EU banking sector, especially in light of the large reserve requirement in banking deposits (30% and 60% for non-significant and significant issuers, respectively);

- Weakens EU safeguards for EU (retail) EMT holders – the EU-held reserve assets that are intended to meet the liability of the EU undertaking would be (fully) available to meet the liability of the third-country firm. EU-held reserve assets may not be sufficient to cover both EU and non-EU redemption requests. This would undermine the protections afforded to EU holders, exposing them to heightened risks;

- Allows for the circumvention of EU requirements intended to mitigate challenges to financial stability or the smooth operation of payment systems. Examples of these requirements include caps on the issuance of foreign-denominated EMTs and increased supervisory requirements when thresholds are met. Ultimately, this would imply a spillover of negative shocks coming from abroad to the EU financial sector. It would also be difficult to enforce other supervisory measures aimed at reducing the role of foreign currency EMT in intra-EU payments;

- Creates reputational risk for the EU. Third-country issuers may consider it attractive to partner with EU firms because they could market their jointly issued tokens as benefitting from the protection of MiCAR. This association could be used as a marketing tool, even though the third-country issuer is not subject to the EU regime. Third-country issuers that are part of a multi-issuer scheme could claim that they can offer their clients MiCAR protections – although they are not subject to EU requirements and supervision;

- Entails an unjustified and material deviation from traditional risk management and supervision standards. An EU entity and its prudential supervisor would be accountable, in their respective roles, for ensuring the solvency and liquidity soundness of both the EU-based issuer's and the third-country issuer's liabilities – as the latter are fully fungible with the EU liabilities. This would dilute the effectiveness of EU supervisory frameworks and impose undue burdens on EU authorities;

- Sets a dangerous precedent for all non-EU EMT issuers to gain access to the EU single market without sufficiently complying with the necessary protections and EU supervision that safeguard the interests and liabilities of EU holders. This precedent could encourage further regulatory arbitrage, undermining the EU's financial stability and investor safeguards.

Confidence that a multi-issuer scheme with a third-country leg would operate smoothly is reliant on trusting that the transfer of funds (the rebalancing mechanism) from one jurisdiction to the other – to meet redemption requests at the firm they are filed with – is permitted at all times by third-country authorities. Ensuring that the rebalancing mechanism works in a business-as-usual situation is not enough, because when the mechanism matters the most is under stressed conditions – for either idiosyncratic or systemic shocks. Even in cases when the supervisory authorities of the firms participating in the multi-issuer scheme with a third country leg may have entered into a cooperation agreement and their respective regulatory frameworks are aligned, it cannot be excluded that, in case of need, an authority

gives preference to protecting national interest. In this context, the lessons of the Global Financial Crisis are clear, including the experiences gained with national authorities ring-fencing capital and liquidity during moments of such stress.

The proper functioning of the rebalancing mechanism between the EU and the third-country firms also relies on the:

- effectiveness and efficiency of the risk management and procedural arrangements of all parties involved (EU and third-country issuers and their respective banks and custodians);
- adequacy of the business continuity arrangements of the parties involved;
- availability of sufficient liquid assets to be moved quickly from one party to the other as needed.

While operational incidents or other impediments, e.g. of legal nature, may hinder the proper functioning of the rebalancing mechanism, the most critical aspect is the availability of liquid reserve-of-assets to meet redemption requests. Estimating the amount of reserve-of-assets to be maintained by each issuer in the scheme is an exercise subject to significant subjectivity challenges, including data availability and uncertainty about the true amount of tokens in circulation:

- a material share of stablecoins are held through non-custodial (or self-hosted) wallets – 44% in the case of Circle USDC as of 28 February 2025[75] – and for such wallets there is no precise way of determining the location and nature of the owner;
- obligations to report to issuers holdings of tokens by clients are applicable only to crypto-asset service providers (CASPs) established in the EU - EU CASPs' reporting practices are furthermore not yet in line with supervisory requirements. Such information can at best provide a lower bound for the value of EMTs held by EU residents, as they can also hold EMTs in self-hosted wallets. Neither the EU issuer nor the third country issuer have information on the number of tokens entrusted in custody to CASPs established outside the Union.

In absence of accurate information on the location of token holders, the distribution of reserve-of-assets among the various issuers participating in the scheme is to a large extent conjectural. Moreover, formulating behavioural assumptions regarding tokens custodied through self-hosted wallets is a largely judgemental exercise. Similarly, it is not possible to formulate reliable behavioural assumptions regarding tokens that are held through omnibus wallets at third-country CASPs (a quite frequent practice). Against this background, the calibration of the parameters to be used by the EU issuers for their stress testing is hindered and the exposure to model risk - an inherent feature of each stress testing exercise – is magnified.

[75] Figures based on publicly available blockchain data analysed by ECB.

The regulatory and supervisory regime and the soundness of the third country's banking sector where the other issuer is located play a role almost as important as that of the crypto-asset sector. Indeed, while the third-country issuer may be solvent and hold enough liquid assets, difficulties in its domestic financial sector may impair its ability to timely use such funds. There is a particular risk in cases where the third-country issuer has placed a material amount of reserves in MMF, as for Circle, whose assets are for the vast majority in a dedicated MMF. In such case, the authority tasked with supervision of MMFs may suspend redemptions of the funds to contain an idiosyncratic or systemic crisis. Absent a robust agreement with third-country financial market and MMF supervisors, the EU competent authority cannot be confident that the rebalancing mechanism will operate under stressed conditions.

Thus the multi-issuer scheme with a third-country leg has a heightened inherent risk which affects both the issuers and the token holders. If such a scheme is authorised, this requires that an accurate disclosure be made to (prospective) token holders via white paper. Information availability for investors would be strengthened if ESMA issues on its own initiative guidelines on third country multi-issuer specific disclosures in ART and EMT whitepapers. The mandate for issuing such guidelines would be further reinforced if the text of MiCAR is revised to explicitly refer to risks relevant to multi-issuer schemes.

The fact that a stablecoin (EMTs in case of MiCAR-authorised stablecoins) is exchanged in various jurisdictions and issued by different legal entities subject to distinct prudential regimes magnifies the likelihood of de-pegging which offers arbitraging opportunities. Indeed, purchasing the stablecoin below par and seeking redemption at face value without any fee from the EU issuer offers a secure profit. The emergence of arbitrage opportunities could also be caused by malicious actors (market manipulation). In cases of de-pegging, the ban on redemption fees of EU issuers would create strong incentives to file redemption requests with the EU entity.

Competent authorities could strengthen the requirements applicable to issuers on the basis of:

- Article 45(4): Competent authorities can strengthen the liquidity requirements for significant issuers on the basis of the results of a stress test exercise. In this respect, note that because of the absence of (accurate) data on holdings of tokens and their locations the calibration of stress testing parameters is hindered. These gaps underscore the need for the supervisory toolbox to evolve. Nevertheless, the existing regulatory tools should be used to the fullest extent possible to make sure that risk factors related to the multi-issuance scheme are factored in the stress testing practice and that liquidity requirements are strengthened to address these risk factors. Supervisory cooperation and coordination under the aegis of EBA is crucial to ensure that these supervisory tools are used in a consistent manner across the EU.

- Article 94(1)v: Competent authorities can take any type of measure to ensure that issuers comply with MiCAR.

Competent authorities could also increase own funds requirements for all issuers on the basis of Article 35. In particular, they could increase the standard own funds requirements by:

- 20% (i.e. from 2% to 2.4% and from 3% to 3.6% for non-significant and significant issuers, respectively) on the basis of, inter alia, the evaluation of the risk-management processes and internal control mechanisms of the issuer and the importance of the markets on which the asset-referenced token is offered and marketed;

- Between 20% and 40% in certain circumstances having regard to the risk outlook and solvency stress testing results. Based on the draft regulatory technical standard (RTS) on adjustment of own funds requirements and stress testing, competent authorities have to apply among others the following criteria when deciding on the add-on: whether at-all-times redemption at par value and market value is not ensured either in normal or in stressed market circumstances. Being part of multi-issuer scheme with a third-country leg appears to increase the risk of being unable to meet at-all-times redemption requests at par value.

Considering that being part of a multi-issuer scheme raises, inter alia, the business model risk of the EU firm, the increase of the own funds' requirement may be an appropriate measure to strengthen the issuer's ability to bear losses. The participation in a third-country multi-issuer scheme heightens all the risks born by an issuer, and this would require a more intense scrutiny by the supervisor.

The classification of an EU issuer as significant can take place only on the basis of the tokens in circulation in the EU, whose measurement is subject to substantial uncertainty. The classification can also take into account the international use of the token and its interconnectedness with the financial system. At the current juncture, the quality of the data reported by CASPs seems not sufficient for stablecoin issuers to comply with their supervisory reporting obligations. Given the relatively recent enactment of these reporting requirements, there is scope for improvement as market participants improve their reporting processes. Such improvement would greatly improve the certainty with which competent authorities could prove that the quantitative thresholds under Art. 43(1)a,b,c MiCAR have been met. And the competent authorities' ability to exercise the power under Art. 23 MiCAR is constrained by the aforementioned data reporting issues.

Taking into account that redemption requests are expected to be filed with the issuer subject to the most stablecoin-holder friendly regime (no redemption cost, reimbursement at sight), it is very challenging to fully guarantee that the EU issuer participating in a multi-issuer scheme with a third country is always able to honour redemption requests without requiring that the entire reserve of assets is held by the issuer, however inherent risks could be mitigated by strengthening requirements, including liquidity and capital requirements based on stress test results, and imposing recovery options like redemption fees or limits to redemptions if those requirements are not met or are likely to not be met in the near future.

Finally, the cross-border nature of the third-country multi-issuer scheme and the associated threats to the EU financial system should be treated as a compelling criterion for EU firms participating in such schemes to be classified as significant and thus entrusting the EBA with the supervisory responsibility. This would enable an intra-EU level playing field and reduce coordination costs for the interaction with third-country authorities.

International perspective and EU Commission's view

The matter of the multi-issuer scheme has also attracted attention also outside the EU, because authorities in some jurisdictions have been approached by firms aiming to replicate Circle's scheme. Preliminary discussions with representatives of such authorities suggest some scepticism on the effectiveness of the rebalancing mechanism as a tool to ensure the proper functioning of the scheme in all instances. Foreign authorities also question the feasibility of the scheme pending a widespread implementation of the FSB recommendations on global stablecoins (GSC) and effective cooperation arrangements.

The EU Commission argues that MiCAR aims to avoid the situation where jurisdictional regulatory frameworks on stablecoins would require holding a full reserve of assets in each jurisdiction for global stablecoins. It seems that the Commission bases its argument upon the understanding that the FSB recommendations on GSC establish that jurisdictions should not request the domestic location of reserves. But there is no evidence that the FSB argues that.

The Commission agrees with the ECB that it is key to assess the regime of third countries before authorizing an EU firm to be part of the multi-issuer. But it maintains it that such an assessment can take place under the current legal text (which does not cater for it) and this is a task for national competent authorities (NCAs). The Commission further asserts that an NCA can enter into a cooperation arrangement with the regulator in the third country to ensure the effective compliance and enforcement of requirements and to require an effective rebalancing mechanism, so that the reserves held in the EU back estimated EU holdings. The decentralization of the assessment of equivalence of third country regime is not permitted in other areas of EU financial law. Thus it appears inappropriate - absent a specific legal provision – that NCAs engage in a practice in sharp contrast with the overall EU regulatory framework. Entrusting NCAs with the assessment of third-country regulation may lead to different outcomes across Member States. And it is difficult to imagine a single member state NCA negotiating with the third-country authorities.

Annex 2: Macroprudential issues arising in the calibration of stablecoin (EMT) reserves regulation

The regulation of EMT reserves has both a microprudential and a macroprudential angle. From a microprudential perspective, the composition of reserve assets should ensure that the value of EMT in circulation is fully backed and that the EMT issuer is able to meet token redemptions on demand and at par. Thus these rules aim to prevent or mitigate failures stemming from liquidity and credit risks inherent in stablecoin issuers' business models. But the presence of bank deposits and securities in reserve assets creates interconnectedness between EMTs and the traditional financial system, as inflows and outflows of funds into EMTs have the potential to influence asset prices and liquidity positions of banks. This interconnectedness and its macroprudential implications gain importance as the size of the sector increases. A useful example for this transition is the evolution of the regulation of money market mutual funds in the US after the 2010 reforms.

The entry into force of MiCAR's provisions has triggered debate over their macroprudential adequacy. Some argue that the EU rules on reserve assets are overly strict and may reflect a broader intent to limit the growth of significant stablecoins. Meanwhile, global developments in both markets and regulation have underscored the risks of regulatory arbitrage and cross-border interconnectedness.

This annex first outlines the macroprudential rationale behind MiCAR's rules on reserve asset composition for stablecoins, particularly EMTs. It then quantitatively assesses the potential systemic risks arising from redemptions, including impacts on bank liquidity and financial markets. A comparison with the regulatory approach in the United States highlights differences in policy trade-offs.

MiCAR and level 2 regulation based on it require that EMTs be backed by reserves in the form of bank deposits, liquid debt securities and other liquid instruments (see annex 3) to ensure that the issuer can meet redemption requests in a timely fashion. The calibration of the composition of reserve assets faces some subtle trade-offs. Requests to redeem stablecoin tokens issued by e-money institutions, if sufficiently large and concentrated in time, could cause disturbances to both securities markets and banks. Sales of securities from the reserve assets to accommodate redemptions might lead to price volatility, depending on the urgency and scale of the demand for liquidity experienced by stablecoin issuers. On the other hand, bank liquidity management may also be disrupted by large and sudden withdrawals of deposits triggered by stablecoin issuers.

The regulation of reserve assets can influence these channels and mitigate contagion effects by setting limits on reserve asset structure, i.e. by enumerating eligible categories of assets and setting limits on share of categories of assets, such as securities or bank deposits, in reserves. The calibration may need to recognize the fact that even when the share of bank deposits in reserves is high, shocks may still impact the financial markets. As long as the magnitude of the shock and the subsequent withdrawals of bank deposits by e-money institutions does not exhaust

significantly the liquidity buffers of banks, the shock is contained within the banking system. If the shock is sufficiently large that it cannot be accommodated smoothly by banks drawing on liquid assets of their HQLA buffer or by refinancing operations, banks would need to sell assets, potentially as fire sales. In other words, when the redemption is sufficiently large, bank deposits in stablecoin reserves may only reduce (or likely delay) the scale of market shocks and not prevent them altogether.

The relevance of a macroprudential perspective in the case of stablecoins is particularly important due to the differences between the US and EU regulations relating to composition of reserve assets. The US GENIUS Act does not mandate a minimum share of bank deposits, thus potentially limiting direct impact on banks[76]. The main rule envisaged restricts the maximum time to maturity of investable T-bills, bond and notes to 93 days. This largely matches practice by major issuers like Circle and Tether. The former holds close to 90% of its reserves in T-bills with average duration of 12 days. The share of these instruments in the assets reported to back Tether is smaller (around 65%) but is still substantial. In turn, MiCAR and the implementing delegated regulations adopt a more balanced and explicit approach comparable to the diversification requirements of MMFs. At least 30% of the reserve assets must consist of deposits with credit institutions, and in the case of a significant EMT the minimum reaches 60%. Delegated regulation further requires that for significant issuers at least 40% and 60% of reserve assets, respectively, mature within one and five days.

An evaluation of the merits of those two different approaches calls for an assessment of their respective costs. The elements to consider in a stylized evaluation are the size of the stablecoin sector, the depth of the relevant securities market, the price impact of fire sales as well as the distortions to bank liquidity metrics due to the change in deposit run-off rates.

As regards the potential future size of the EUR stablecoin sector, a hypothetical benchmark to consider is the 1.25% of M1 that USD stablecoins amounted in the US at the end of 2024 (ca. USD 230 bn). In view of the negligible current size of the sector in EU, such a scenario would imply strong growth in the use of EUR stablecoins. In that scenario, the size of the EUR stablecoin sector would be EUR 130 bn[77].

To calculate the maximum impact of a stablecoin sector of such a size on bank liquidity metrics, we can consider a scenario in which all of the stablecoin reserves are held as bank deposits[78]. As a starting point, the value of the liquidity buffer for SIs at 2024 end amounted to EUR 4950 bn and the average LCR of SIs reached 158%. The maximum deterioration of average LCR can be gauged approximately by a calculation that assumes that the entirety of stablecoin reserves enters bank liabilities as deposits with 100% runoff rate, replacing deposits with an assumed low

[76] This may also reflect the larger role played by financial markets in the US economy compared to the EU. It has to be noted that the adopted US legislation allows the OCC, as supervisor, to issue secondary regulation setting i.a. liquidity and diversification standards for issuers of payment stablecoins.

[77] M1 amounted at end-2024 to 10600 bn EUR

[78] This analysis abstracts from the question of treatment of the multi-issuer model of stablecoins. The EUR 130 bn value could be interpreted as the value of EMT reserves that has to be absorbed by the euro area banking sector and financial markets.

(5%) runoff rate. Under such assumptions, the average LCR for SIs would decrease to 154%. Doubling or tripling the size of the stablecoin sector (EUR 260 bn and EUR 390 bn) would drop the average LCR to 149% and 145%, respectively.

The deterioration of average liquidity metrics would thus not be significant on aggregate. Furthermore, the magnitude of the impact on individual banks is capped in the EU by the requirement that deposits from a single EMT issuance in a particular bank cannot exceed 1.5% of total assets of that bank (see annex 3). Around 9 Euro area banks could accept EUR 10 bn in deposits from stablecoin issuers without breaking this limit. In practice this restriction (combined with requirement for at least 30% of reserves being placed in bank deposits) may limit the growth of the stablecoin sector, as larger issuers would need to secure deposit relationships with multiple large banks.

The potential market impact of forced sales of securities from stablecoin reserves may be extrapolated from studies for the Euro area investment fund sector[79].The mismatch between redemption terms of mutual funds and the liquidity of their assets may entail significant market impact in sectors where liquidity is lower and holdings concentration is larger. Sowinski (2024) estimates the price impact of forced sales of sovereign bonds for different scenarios regarding outflows of various sizes (1, 2, 5 and 10 % of Asset under management[80]), for different volatility conditions and liquidation horizon (1, 2, 3, 4, 5 days). The results show that up to 10% of outflows (corresponding to EUR 400 bn) the price impact is not material (ca 55 bp). In addition, estimates show that price impact at a 5-day liquidation horizon is 1/3 of the one corresponding to 1-day horizon (ca. 18 bp). The magnitude of these effects precludes significant second round effects. Mirza et al (2020) examined the price impact of fire sales by euro area banks and funds considering also second round effects. In a setting where the initial shock is a 100 bp upward shift to the yield curve, banks react with much stronger sales than funds (6.6% vs 1.2% of the respective total assets) and dominate sales in absolute terms (92%). As to the second-round price effects, the model features banks' and funds' common holdings as a contagion channel but abstracts from other possible channels, such as those related to bilateral exposures. In any case, the overall system of banks and seven categories of funds experiences losses amounting to 1.85% of the sum of bank equity and funds' issued shares due to second-round price effects. Bank sales contribute 1.64% to this loss while bond funds contribute the rest. The magnitude of the second-round effects may be not fully relevant to the case of shocks originating from the stablecoin sector, as such shocks would mainly affect the short part of the yield curve. Furthermore, such shocks would likely be smaller, as the study by Sowinski (2024) mentioned above suggests that the flows of the size of the euro stablecoin sector would not be enough to generate a 100 bp shift in yields.

The preceding analysis indicates that macroprudential risks from growth in the euro-denominated non-bank stablecoins is limited. MiCAR has opted to limit contagion

[79] See Mirza et al (2020) Fire sales by euro area banks and funds: what is their asset price impact?, Sowinski (2024) The potential impact on the euro area bond market of forced asset sales by euro area investment funds and Lo and Carpentier (2023) Liquidity_Stress_Test_for_LU_investment_funds_-_the_time_to_liquidation_approach.pdf

[80] In 2024, 1% of AuM in the bond funds sectors amounted to 40 bn €.

risk by requiring that a significant portion of EMT reserves is held as bank deposits, while simultaneously setting a limit on a single bank's liabilities towards a particular EMT issuance. This choice may limit the yield available to stablecoin issuers and hence also the incentives to issue stablecoins. The alternative of giving more room to securities in the composition of reserves may be seen as promoting capital market integration by generating demand for securities from EMT issuers, but it might not have a beneficial impact on the risk profile of EMTs.

Annex 3: Detailed description of regulation of EMTs and ARTs under MiCAR

Compliance with MiCAR is supervised by the national competent authorities designated by the Member States in accordance with Article 93 MiCAR. EBA and ESMA coordinate supervisory activities of those competent authorities and promote supervisory convergence. In this respect, EBA is responsible for supervisory convergence activities with regard to ARTs and EMTs (and has direct supervision responsibilities for ARTs and EMTs determined to be significant), while ESMA has responsibilities for the coordination of supervision of CASPs.

If ARTs are issued by credit institutions, compliance with requirements under Regulation 575/2013 (CRR) and Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (CRD) is supervised by prudential competent authorities at national or EU level (ECB), whereas compliance with MiCAR requirements is supervised by the competent authorities designated under such regulation. Thus cooperation between competent authorities is important. For EMTs issued by credit institutions, the MiCAR competent authority has responsibility vis-à-vis issuers essentially for white paper related matters. MiCAR does not impose additional prudential requirements on credit institutions beyond CRD-CRR rules, so the supervisory responsibility remains with the banking supervisor. Banks (i.e. credit institutions licensed in the Union) are not subject to any reserve requirement when they issue EMTs as explained below. The bank is liable with its entire estate vis-à-vis EMT holders and can use the proceeds of the issuance as any other liability it raises from the public.

EMTs are legally equivalent to funds, so issuers are obliged to redeem at any moment at par value, just as issuers of traditional e-money. If the issuer is an electronic money institution (EMI), it is subject to the safeguarding obligations set under art. 7 electronic money directive (EMD) and art. 54 MiCAR (funds to be deposited in a separate account in a credit institution or invested in secure, liquid low-risk assets as defined by EBA regulatory technical standards issued on the basis of art. 38(1) of MiCAR). Competent authorities may require EMIs issuing EMTs that are not significant to comply with any requirements for significant issuers where necessary to address liquidity risks, operational risks, or risks arising from non-compliance with requirements for management of reserve of assets.

Banks issuing ARTs are subject to the same reserve requirement set for other ART issuers and described below.

ART issuers and issuers of significant EMTs issuing the same token must operate a single reserve of assets (Art. 36(5)) and operate and maintain a single custody policy. MiCAR thus caters for the possibility of joint issuance by entities established and licensed in the Union but under strict requirements, including those related to recovery plan and redemption plan as set under the two sets of EBA Guidelines.

ART issuers have to ensure that the issuance and redemption of tokens is always matched by a corresponding increase or decrease in the reserve of assets. The

issuer must determine the aggregate value of the reserve of assets by using market prices in accordance with rules under money market funds regulation. Its aggregate value must be at least equal to the aggregate value of the claims against the issuer from the holders of the ART in circulation. ART issuers are obliged to have in place a clear and detailed policy describing the stabilisation mechanism of such tokens.

All profits or losses, including fluctuations in the value of the financial instruments referred, and any counterparty or operational risk related costs that result from the investment of the reserve of assets, must be borne by the issuer. Neither issuers nor CASPs (the latter when providing crypto-asset services related to ARTs and EMTs) can offer interest on ARTs and EMTs. The goal pursued through the prohibition to pay a remuneration is to avoid that ART/EMT are held for investment purpose, and the requirement prevents them from competing with deposits.

ART issuers and EMIs issuing significant EMTs that invest a part of the reserve of assets must invest those assets only in 'highly liquid financial instruments' with minimal market risk, credit risk and concentration risk. The investments have to be capable of being liquidated rapidly with minimal adverse price effect. Such a requirement has the evident intent of preserving financial stability by limiting contagion through fire sales.

EMI issuing EMTs that are not significant, which safeguard funds received in compliance with EMD, must:

- deposit in separate accounts at credit institutions at least 30% of the funds received;
- invest the remaining funds in secure, low-risk assets that qualify as 'highly liquid financial instruments' with minimal market risk, credit risk and concentration risk (as per the definition of 'highly liquid financial instruments') and are denominated in the same official currency as the one referenced by the EMT.

In the case of non-significant ARTs referencing one or more official currencies, the reserve of assets must be composed of deposits in credit institutions by at least 30% (or 60% if required by the relevant competent authority or significant ART) of the amount of the assets referenced in each official currency. In the case of ARTs referencing a combination of official currencies with assets other than official currencies, the minimum required amount of deposits in credit institutions applies for the part referencing official currencies only.

EMIs issuing EMTs that are significant must maintain at least 60% of their reserves in deposits at credit institutions. EMIs issuing EMTs that are not significant can be required by their competent authority to have a minimum of 60% in the form of deposits in credit institutions.

Pursuant to draft regulatory standards under MiCAR, 'highly liquid financial instruments' eligible for inclusion in the reserve of assets are:

- those meeting the definition of 'financial instruments' under Market in Financial Instruments Directive 2014/65/EU;
- those that can be included in the pool of high-quality liquid assets (HQLA) Level 1 for Liquidity Coverage Ratio as set under Union Single Rule Book. HQLAs Level 1 bearing a 0% haircut can be included in the reserve without any cap; HQLAs Level 1 qualifying as exposures in the form of extremely high-quality covered bonds cannot exceed 35% of the reserve of assets;
- those complying with the general requirements and operational requirements set under LCR Regulation.

Haircuts under LCR regulation do not apply because issuers are subject to an overcollateralization requirement.

In a similar fashion to the LCR regime:

- for hedging derivatives to highly liquid financial instruments, the net liquidity outflows and inflows that would ensue from an early close-out of the hedge, including from derivatives hedging the difference between the change of the market value of reserve assets and the change of the market value of the assets referenced by the token, must be taken into account in the valuation of the highly liquid financial instruments;
- issuers have to unwind short-term collateral swaps, repos and reverse repos to prevent the computation in the reserve of assets of collateral received under securities financing transactions that will be paid out in the short term (i.e. within five working days).

Units in collective undertakings (UCITs) are considered highly liquid financial instruments if the UCIT invests solely in highly liquid financial instruments and the issuer of the token ensures that the concentration risk of the reserve of assets is minimal.

Single name concentration limits are applied to:

- issuers of government bonds - 35%;
- issuers of covered bonds – 10%;
- UCITS – 5%. This limit applies to the market value of UCITS with a single management company or with management companies with close links;
- unmargined part of OTC derivatives – 10% if the counterparty is a credit institution, 5% in all other cases.

Deposits at credit institutions are subject to concentration limits as well. In particular, for each ART and EMT, deposits at a single credit institution cannot be larger than:

- 25% if the bank is a global systemically important institution (G-SII) or another systemically important institution (O-SII);
- 15% if the bank is a 'large credit institution' as defined in Capital requirement regulation and it is not a G-SII/O-SII;
- 5% if the bank does not fall in any of the previous two categories.

In any case, deposits at a credit institution are eligible for inclusion in the reserve of assets if such deposits do not exceed 1.5% of the bank's total assets. This is a backstop measure aimed to prevent that a single stablecoin issuance could become a too big a depositor for a bank. But the requirement does not prevent a credit institution from taking deposits from various issuers and thereby gathering a material amount of funding from the crypto-asset sector, which would increase its vulnerability to runs from such a sector. Banking supervisors must monitor the level of sectoral concentration of banks' funding and prevent the emergence of crypto-friendly banks like the failed Signature Bank in the US.

The amount of the deposits in a credit institution together with the market value of highly liquid financial instruments in the form of securities or money market instruments issued or guaranteed by the same credit institution, and the risk exposure to that credit institution in unmargined over-the-counter (OTC) derivatives, must not exceed 30% of the market value of the reserve of assets referred to the same tokens. For assessing compliance with the single name concentration limit, the issuer has to consider all other entities with which that credit institution has close links.

A look through approach applies for the assessment of compliance with the concentration limit when it comes to UCITs or in collective investment undertakings (CIUs).

If an issuer does not meet all the requirements set out in the regulatory standards, including for reasons relating to the financial instruments ceasing to fulfil the conditions set out therein, or where the issuer or the competent authority has evidenced such requirements are likely to be breached, the issuer must prepare a detailed plan, including following a request by the competent authority, and submit it to the authority within five working days.

For tokens referencing official currencies, issuers must maintain assets with daily and weekly maturities as follows (percentages expressed as market value of reserve of assets maturing within the timeframe to the total market value of the overall reserve of assets): i) at least 40% (daily) and 60% (weekly) for significant tokens; ii) at least 20% (daily) and (30% weekly) for tokens, which are deemed as significant.

Deposits at credit institutions can be included in the reserve of assets if issuers have no reason to expect non-performance by the credit institutions taking the deposits (this requirement mirrors the one under LCR). The assessment referred to in the previous paragraph shall be made for a time-horizon of 365 days for sight deposits, and for time until maturity for term deposits.

Custody:

- Segregation requirements are set out in Article 36(2) and (3) MiCAR providing for legal and operational segregation of the reserve assets from the issuer's estate and from the reserve of assets of issuer's other tokens, so that creditors of the issuers have no recourse to the reserve of assets, in particular in the event of insolvency;
- Custodial services can be provided only by legal entities (as described above) licensed in the Union. Such territorial restrictions appear consistent with the goal of fostering the development of an EU crypto-asset sector and the deliberate absence of a mechanism for the recognition of third-country regime as equivalent to MiCAR;
- ART issuers must exercise all due skill, care and diligence in the selection, appointment and review of CASPs, credit institutions and investment firms appointed as custodians of the reserve assets. The custodian shall be a legal person different from the issuer;
- Custodians must act honestly, fairly, professionally, independently and in the interest of the issuers and the holders of such tokens. In the case of a loss of a financial instrument or a crypto-asset held in custody, the custodian that lost that financial instrument or crypto-asset must compensate, or make restitution, to the issuer with a financial instrument or a crypto-asset of an identical type or the corresponding value without undue delay.

2 Crypto-investment products

Overview

- Crypto-investment products have experienced significant growth since January 2024 boosted by the approval of spot Bitcoin exchange-traded products (ETPs) by the U.S. Securities and Exchange Commission (US SEC) in January 2024 and strong investors' appetite. They are still relatively small in size but are likely to continue to grow, especially considering the supportive regulatory stance adopted by the U.S. Administration.

- Crypto-investment products make it easy for investors to build exposure to crypto-assets, without the need to deal with the technicalities involved in holding crypto-assets directly. The growing exposure of investors to crypto-assets increases the risk of negative spillover effects from crypto to traditional markets and therefore requires close monitoring.

- A source of vulnerability in relation to crypto-investment products is the high concentration that prevails for custody services. This high concentration increases the risk of chain effects and may amplify losses for investors, e.g., in case of a glitch or a cyber-attack at a key provider. Such an incident seems unlikely to trigger broader financial instability at this point. However, it could significantly disrupt crypto markets and have negative spillover effects on traditional financial markets if crypto-investment products were to continue to grow substantially.

- Traditional financial institutions are increasingly engaging in crypto-related activities such as custodial activities, including in relation to crypto-investment products. This also requires close monitoring as it increases interlinkages between the crypto and the traditional financial systems and therefore contagion risks.

Introduction

This part of the report focuses on the financial stability impact of tokens and applications other than stablecoins on the EU's financial markets and institutions. The scope of analysis covers approximately 90% of the global value assigned to crypto-assets, including three of the four largest: Bitcoin (market capitalisation > USD 1.6 trillion), Ether (market capitalisation > USD 230 billion), and Ripple (market capitalisation > USD 130 billion). These crypto-assets are "unbacked", i.e. they do not represent tokenised real assets.

Current direct exposures of both euro area banks[81] and insurance undertakings[82] to crypto-assets seem to be low and the proposed or existing prudential measures are designed to effectively mitigate the associated risks. Since 1 January 2025, EU credit institutions must assign a risk weight of 1250% with two exceptions: 1) exposures to tokenised traditional assets, including EMTs, should be treated as exposures to the traditional assets they represent ("look-through"), and 2) exposures to asset-referenced tokens by MiCAR-compliant issuers with reference to traditional assets are risk weighted at 250%. In addition, the value of a bank's total exposure to crypto-assets pursuant to Art. 3(1)(5) MiCAR with a risk weight of 1250% should not exceed 1% of that bank's Tier 1 capital.[83] Under European Insurance and Occupational Pensions Authority's (EIOPA) draft advice for the European Commission, as published in the consultation paper of October 2024, EIOPA proposes to introduce a one-to-one capital weight for crypto-assets (100%) without diversification, also regardless of their balance sheet treatment or direct/indirect investment status.[84]

Assuming future growth of crypto-assets, systemic concerns of indirect exposures warrant further analysis. These may stem from three sources:

First: crypto-linked investment products (CIPs) – as a collective term for products other than direct holding of the crypto-assets, where the initial investment determines the investors' maximum loss.[85] CIPs come with crypto-related market risk in any

[81] By the end of 2024, the direct holdings of euro area significant institutions of crypto-assets pursuant to Article 3(1)(5) MiCAR (excluding tokenised financial instruments and deposits) were only around €1 million. Similarly, exposures to derivatives with crypto-assets as the underlying stood at €600 million. See Aerts et al (2025): Just another crypto boom? Mind the blind spots, Financial Stability Review, ECB, May 2025.

[82] According to EIOPA, exposure of the EU's insurance industry, including through investment funds, to crypto is equal to 0.0068% of the overall assets held by EU insurance companies. See EIOPA, CONSULTATION PAPER on technical advice on standard formula capital requirements for investments in crypto-assets, 10/24, p. 10.

[83] See Art. 501d of the Capital Requirements Regulation (CRR) and Regulatory Technical Standards on the calculation and aggregation of crypto exposure values | European Banking Authority . These transitional provisions are in place until a dedicated prudential treatment for crypto-asset exposures taking into account the applicable BCBS standard is adopted into EU law. By 30 June 2025, the Commission shall, where appropriate, submit a legislative proposal for a dedicated prudential treatment of crypto-assets exposures. The BCBS standards need to be implemented by 1 January 2026, for details see here: BCBS, *Prudential treatment of cryptoasset exposures* (Dec. 16, 2022), at SCO60.84 et seq., https://www.bis.org/bcbs/publ/d545.htm.

[84] See EIOPA, CONSULTATION PAPER on technical advice on standard formula capital requirements for investments in crypto-assets, 10/24, p. 18.

[85] Service providers, however, may be exposed to risks commensurate with the assets they serve, as discussed in the next paragraph.

form. Examples include open-ended and mutual funds, index funds and exchange-traded funds (ETFs), exchange-traded notes (ETNs), exchange-traded certificates (ETCs) and closed-ended funds that are materially exposed to crypto-assets and the related crypto industry.[86] CIPs may have a leveraged component embedded.

Second: crypto-derivatives, as collective term for financial contracts (other than CIPs) whose value is derived from an underlying crypto-asset. Examples include futures, swaps and options. While similar to CIPs, the main risk category of crypto derivatives includes market risk. Contrary to CIPs, the potential losses from the financial contracts may exceed the initial investment (even though market practice limits maximum exposures).

Third: crypto-services, a collective term encompassing a financial institution's crypto-related activities performed on behalf of clients and third parties,[87] such as brokerage, trading, marketing, asset management, and custody. In the EU, these services are regulated under MiCAR, which holds providers liable and exposes them to compliance, legal, operational, and reputational risks, similar to those faced in traditional financial services. For example, financial institutions might need to cover their clients' losses for CIPs marketed to them, or assets held in custody on behalf of these clients; these losses may destabilise these institutions in turn. For instance, under Art. 75 (8) MiCAR crypto custody providers are 'liable to their clients for the loss of any crypto-assets or of the means of access (the private key) to the crypto-assets as a result of an incident that is attributable to them', up to the market value of the crypto-asset at the time the loss occurred.[88] Financial institutions engaging in crypto-assets related activities may therefore suffer losses from these activities, e.g., in case the internal risk management processes are not robust enough. While such risks are not unique to crypto activities, they are likely to be exacerbated in the case of crypto markets because of the specific risks inherent to those markets (e.g., high price volatility, numerous hacks and frauds) and the fact that they may remain largely unregulated outside of the EU.

[86] There is no consistent terminology. Some use the term exchange-traded products (ETPs) for ETFs, ETNs and ETCs.

[87] This excludes trading in CIPs and crypto derivatives on the institutions' own accounts; the trading on one's own account is considered as CIP and crypto derivatives.

[88] See for relevant scenarios Dirk Zetzsche, Julia Sinnig, Areti Nikolakopoulou, Crypto custody, *Capital Markets Law Journal*, Volume 19, Issue 3, July 2024, Pages 207 229, https://doi.org/10.1093/cmlj/kmae010.

1. Data Analysis

1.1. Regulatory Data Availability and Gaps

Regulatory and ad-hoc reporting for the euro area banking sector provides a relatively good picture of the contagion channels running from crypto-assets to the banking system.[89] This includes banks' direct holdings of crypto-assets and crypto-assets at large, exposures to derivatives with crypto-assets as the underlying or crypto-investment products, and banks' services to the crypto industry such as custody, brokerage and trading. Data are also available on banks providing deposit taking services to companies with crypto-related business models. Assessing such data can provide information on the size and concentration and specific depositors, as long as they are above a certain threshold.

For insurance undertakings, Solvency II supervisory reporting provides information on direct holdings of crypto-assets. But the identification of additional exposures from crypto-investment products and crypto derivatives requires manual identification and may not cover all investments. Forthcoming amendments to the relevant Implementing Technical Standards (ITS) on supervisory reporting may remedy this deficiency.[90]

The available data do not provide transparency on the banks' and insurance undertakings' counterparties and interlinkages. On the one hand, this concerns the counterparties in relation to CIPs and crypto derivatives. On the other hand, the lack of data hinders the identification of risk concentration at the level of service providers.

In addition, cross sectoral data on the exposure of euro investors are available through the Securities Holdings Statistics by Sector (SHSS)[91]. The SHSS, while not exempt from limitations, allow for the analysis of holdings of CIPs by euro area investors and whether these investors belong to the financial, non-financial or household sector[92]. However, as the database does not flag CIPs, these products need to be identified manually, increasing the likelihood of inaccuracies. At the same time, data on CIPs held by non-bank financial institution (NBFIs) is not yet part of the regular reporting for these NBFIs.

On crypto-derivatives, the European Market Infrastructure Regulation (EMIR) reporting[93] provides daily data on the total notional amount outstanding by reporting counterparty and type of derivative contract in the EEA.

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[89] There are also data available at the global level for several large global banks reporting to the BCBS QIS, showing banks' prudential exposures and assets under custody, including a breakdown for spot, ETP and derivatives holdings: https://www.bis.org/bcbs/dashboards.htm.

[90] See "Financial Stability Report", EIPOA, June 2024.

[91] Securities Holdings Statistics | ECB Data Portal.

[92] See https://data.ecb.europa.eu/methodology/securities-holdings-statistics

[93] Since the EU EMIR Refit (Apr 2024), the Regulatory Technical Standard provides additional data on Derivative based on crypto-assets.

Three main data gaps have been identified:

First, for all type of financial institutions there is a lack of data on leverage. While total leverage in the crypto industry can be approximated, for example by open interest in Bitcoin perpetual swaps,[94] total volumes of leveraged contracts and the extent to which leverage is actually used on trading platforms and by financial sector institutions involved in, or exposed to crypto, are generally not reported. This is to be nuanced as EMIR now provides data on the outstanding notional amount of open crypto derivatives contract by counterparty.

Second, crypto-related regulatory and supervisory reporting of non-bank financial institution (NBFIs) can be improved with regard to NBFIs' holdings of crypto-assets, CIPs and crypto derivatives as well as interlinkages with the crypto industry through crypto services, in particular marketing, exchange, and custody services. The scarcity of data on NBFIs' crypto activities is a concern in light of credit institutions' and insurance companies' frequent interactions with NBFIs. Under MiCAR, ESMA maintains a register of authorised CASPs which contributes to a better understanding of those activities but such information is mostly lacking in other jurisdictions.

Third, there is a lack of data on counterparty risk associated with CIPs, crypto derivatives, and crypto services.

1.2. Overall Volumes

As of July 2025, the total valuation of CIPs on a global level have grown substantially, reflecting increased institutional and retail interest in CIPs. Precise capitalisation figures for CIPs are challenging to estimate due to limited regulatory reporting and varying methodologies and terminologies. The available data suggest growth: in December 2024, the global capitalisation of CIPs exceeded USD 130 billion[95]. In early July 2025, the capitalisation of 336 of 383 CIPs reached USD 235 billion[96]. Main products were launched in North America (> 60%[97] of the market capitalisation) and Europe (> 10% of the total market capitalisation). Spot Bitcoin

[94] This estimate has limitations as it only gives the number of open positions, while leverage is not standardised across positions and can vary, from very low to very high.

[95] According to the Flow Traders 2024 Crypto ETP Report (December 2024, crypto-etp-report.pdf), Global crypto-asset ETPs AUM totalled approximately USD 134.5 bn in November 2024. Other sources estimate AUM of US-market crypto-asset ETPs to exceed USD 100 bn (Nico Oefele; One year of bitcoin spot ETPs: A brief market and fund flow analysis Author; Elsevier; April 2025). Based on calculations by Coinglass Bitcoin ETF alone have a total AUM of 129,79 bn, as of 05 June 2025 (Bitcoin ETF Overview , Bitcoin ETF Flows ,Bitcoin ETF Inflows and Outflows ,Bitcoin ETF Tracker | CoinGlass). Cointelegraph estimates even higher numbers of USD 187 bn AUM, as of 2 June 2025 (Crypto ETPs keep $10.9 billion inflows in the past 7 weeks).

[96] D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025). These data do not consider some 50 open-ended and mutual funds (including private funds) whose shares are not traded at trading venues and for which net asset value (NAV) values are not regularly disclosed to the public, as well as some ETPs and ETFs where trading data is not permanently available.

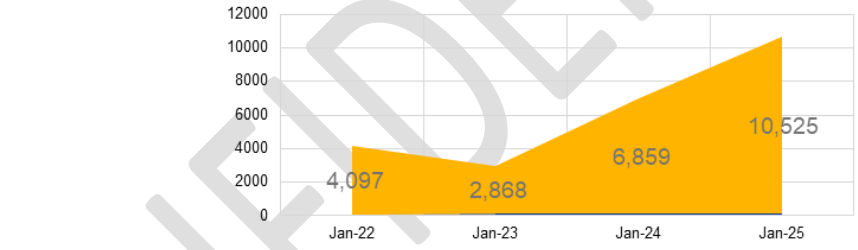
[97] The Big Three include iShares Bitcoin Trust ETF (approx. 75 bn USD), Fidelity Wise Origin Bitcoin Fund (approx. 21 bn USD) and Grayscale Bitcoin Trust ETF (approx. 20 bn USD).

ETPs, following their approval by the SEC in January 2024[98], make up the largest share of the market capitalisation. As of July 2025, BlackRock's iShares Bitcoin Trust (IBIT) stands at a total net asset value (NAV) exceeding USD 80 billion.[99] This is considered one of the most notable ETF launches to date.

It is estimated that EU investors invested approximately USD 18 billion in 270 ETPs as of June 2025 (that is: ETFs, ETNs, and ETCs).[100] Bitcoin-focused ETPs exceeded USD 10 billion, Ethereum-based ETPs represented an estimated USD 2.3 billion, reflecting cautious but increasing adoption. This represents an increase of +150% within 12 months (approx. EUR 7 bn reported in 2023Q4);[101] the Bitcoin price over that period increased by the same measure, by and large. Note that figures for EU investors investing in crypto-investment funds are not available.

Most of the EU-traded ETPs are traded on XETRA in Frankfurt, with a market capitalisation exceeding EUR 10.5 billion in June 2025 for all products.[102]

Figure 1: shows the ETPs traded at XETRA, the most important EU exchange for that purpose. (2022 to 2025)



	Apr-22	Apr-23	Apr-24	Jun-25
Volume of crypto ETNs	4,097	2,868	6,859	10,525
Number of crypto ETNs	94	108	114	127

Source: Xetra

[98] SEC.gov | Statement on the Approval of Spot Bitcoin Exchange-Traded Products

[99] iShares Bitcoin Trust ETF | IBIT

[100] ETFbook.com - Crypto ETP EU

[101] Just another crypto boom? Mind the blind spots

[102] See Deutsche Börse Cash Market - ETF & ETP Statistiken. More than 90 per cent of all trading in shares at all German exchanges and about 30 per cent of trading in ETFs in Europe is transacted through Xetra (Deutsche Börse Xetra - Handelsmodelle).

The market capitalisation of XETRA-traded ETPs has increased by close to 230% from 30 April 2022 to 30 Jun 2025.

Table 1: Holdings of CIPs by Sector in Euro Billions (As of Q1 2025)

	Households	Financial sector (banks, investment funds, insurance undertakings, pensions funds)	Non-financial firms	Total
2025Q1	8.5	2.7	5.1	16.3
2024Q1	7.3	2.6	0.8	10.7
2023Q1	2.5	1.7	0.4	4.6
Increase 2023-2025	240%	59 %	1175 %	254 %

Source: SHS data

Crypto derivatives reported under EMIR, such as futures and options traded on exchanges like Eurex[103] seem to add only marginally to the total exposures. The notional amount of outstanding crypto derivatives contracts in the EEA reported under EMIR totalled EUR 5.9 billion in June 2025, a level comparable to that observed in December 2024 and representing a tiny portion (less than 0.01%) of the overall EEA derivatives market[104]. Yet, these data only reflect data provided by EMIR reporting entities. Trading venues and counterparties outside of the EU do not provide EMIR data

The global market for CIPs is expected to grow[105], driven by increasing institutional adoption, regulatory advances, and product innovation as well as speculation on the future rising market prices. Regulatory progress, especially in the U.S. with approvals for Bitcoin and Ethereum ETFs and a more crypto-friendly environment conveyed by the US administration, is laying the groundwork for broader institutional adoption. Data based on the 13F filings of US issuers confirm this expectation.[106]

The available data on a growing number and range of products, and the introduction of thematic and sector-specific CIPs beyond Bitcoin and Ethereum, including many crypto-assets with a smaller market capitalisation, seem to support that assumption; they indicate investor appetite and facilitate mass-market adoption. The market entry of large incumbent financial institutions (including Blackrock, Fidelity, Bank of America, BONY, State Street, LGT and other top names of the asset management industry) underscores their institutionalisation, with firms like BlackRock integrating

[103] Cryptocurrency Derivatives

[104] The total notional amount of outstanding derivatives contracts reported under EMIR stood at EUR 425tn as of end-June 2025

[105] According to State Street 2025 Global ETF Outlook Report "*Digital asset ETF AUM will grow larger than precious metals ETF AUM by the end of 2025.*" (https://www.statestreet.com/je/en/asset-owner/insights/etfs-2025-outlook).

[106] SEC 13F filings show a growing institutional detention of ETPs, with institutional investors representing 22.9% share of the total capitalisation of all US Bitcoin ETFs. See Rapport CoinShares – Déclarations Institutionnelles sur les ETF Bitcoin 1er trimestre 2025

Bitcoin into model portfolios.[107] Regulatory developments after the US presidential election and macroeconomic factors will play pivotal roles. Global interest rate cuts in 2024 lowered borrowing costs, encouraging risk-on investments in CIPs, a trend likely to persist with accommodative monetary policies. In the EU, MiCA provides important safeguards that may support wider crypto adoption by more risk averse investor groups.

1.3. Concentration among Service Providers

The global market comprises at least 377 CIPs, and 6 CIPs undergoing liquidation.[108]

Table 2: Crypto-investment Products by Product Type in numbers and bn USD[109]

	Open-ended & Mutual Funds	Index Funds and ETFs	ETPs/ ETNs/ ETCs	Closed-ended Funds	Treasury companies
Number of Products	64	142	161	7	+100
'At least' Market Capitalisation per 31/07/25	8 bn	68 bn	135 bn	2 bn	118bn

Source: ***D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-Investment Products (July 2025).***

Notes:

The data on market capitalisation are based on estimates drawing on data disclosed by trading venues. Some open-ended and mutual funds that do not qualify as exchange-traded fund (ETF) report assets under management at NAV dates that diverge from 31 July 2025. The estimate is based on 32 funds that have disclosed NAVs per 31 July 2025

The estimates on Treasury companies are based on the "Top 100 BTC Treasury Companies listed at BitcoinTreasuries.NET - Top Bitcoin Treasury Companies (data of 31 July 2025). Other estimates report per 31 July 2025 holding values close to 150 bn USD, cf. "Bitcoin Treasuries Charts: Holdings for Bitcoin Treasury Companies. Treasury companies develop increasingly also in non-BTC crypto-assets. See Top Crypto Treasury Companies Holding Bitcoin, ETH and more

[107] Why bitcoin? A model portfolio builder's view | BlackRock

[108] The data in this part are taken from D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).

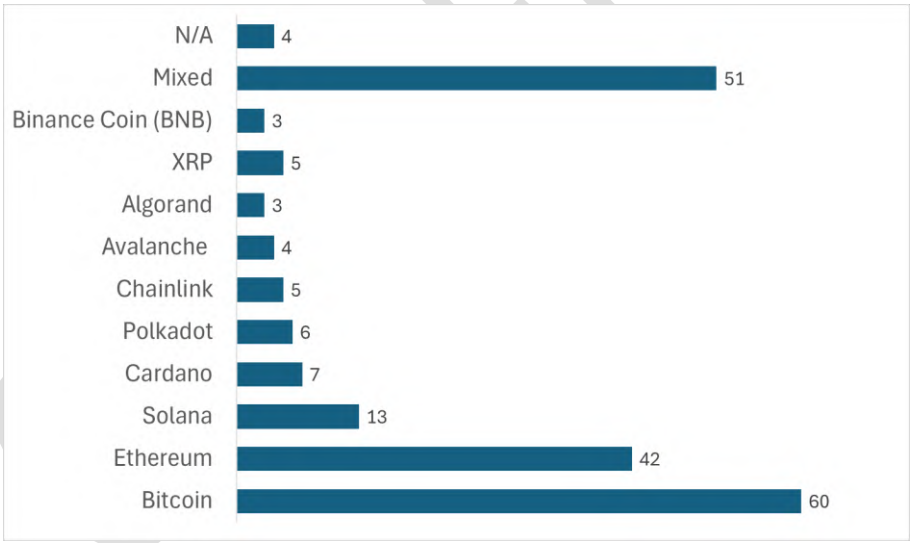
[109] The data on market capitalisation are based on estimates drawing on data disclosed by trading venues. Open-ended and mutual funds that do not qualify as exchange-traded fund (ETF) report volumes at annual and quarterly NAV dates not considered in Table 2 as the dates diverge from 12 June 2025

1.4. Backing/Collateralisation of Products Referencing Crypto-assets

Out of the 374 CIPS (other than treasury companies), 235 hold crypto-assets directly. 132 hold crypto-related securities and derivatives. Among the former, 9 products hold both crypto-assts directly and crypto-related securities and derivatives at the same time.[110]

Among the 235 CIPs holding crypto-assets directly, at least 36 products enable or make use of staking (indicating some form of encumbrance)[111]. 60 = 25% of the products provide exposure to Bitcoin alone and 42 = 18% to Ethereum alone. The balance (56 = 24%) provides exposure to a basket of digital -assets (often including Bitcoin, Ethereum). (see Figure 2 below).

Figure 2: Physical Backing by Type of crypto-asset[112] July 2025



Source: D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).

[110] Cf. D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).

[111] Staking facilitates leverage inside crypto ecosystems. Its implications cannot be discussed in this report. The staking of crypto-assets is the process of locking up crypto-assets to support the operations of a blockchain network and receive rewards for doing so. Staking is a key mechanism used by Proof-of-Stake (PoS) blockchains, as opposed to Proof-of-Work (PoW) networks that use mining to validate transactions. Staking as part of the PoS mechanism requires the original token of the designated blockchain to be staked with a so-called validator. In addition to being used for validation of transactions, staking has become a business in itself for crypto lending, bundling of governance rights, and as rewards for acquisition of crypto-assets, and as liquidity provision. Cf. D.A. Zetzsche, R.P. Buckley, D.W. Arner, M.C. van Ek, Remaining regulatory challenges in digital finance and crypto-assets after MiCA (Study for the European Parliament), May 2023, at p. 64-69.

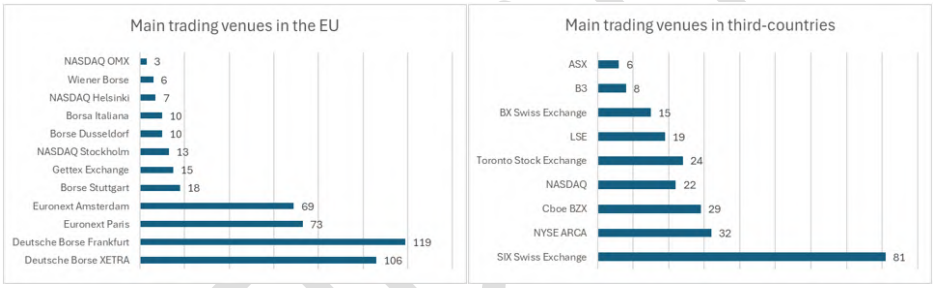
[112] Cf. D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).

The other 139 products hold in other crypto-investment products in 42 cases (30%), of derivatives in 51 cases (37%), and in 69 cases (50%) of exposure to securities issued by crypto-asset service providers and actors of the crypto-industry. We noted significant exposures to Coinbase shares (30 = 22%). Note that one product can make use of several types of exposures at the same time.[113]

1.5. Trading Venues

In the European Economic Area, data suggest a concentration of trading activity on crypto-investment products, with Deutsche Börse (including Deutsche Börse XETRA) as most crypto-investment products are traded here.

Figure 3: Trading Venues by Number of Crypto-investment Products (July 2025)[114]



Source: ***D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).***

1.6. Origin of Issuers

The issuers' residence is primarily (68%) outside of the EU. Main nationalities of issuers include the U.S. (109), Switzerland (59), Jersey (37) and Canada (23). The most important countries for EEA issuers include Liechtenstein (29), Germany (26), Sweden (16), France (14), Ireland (9), Malta (10) and Luxembourg (6).

1.7. Custodians

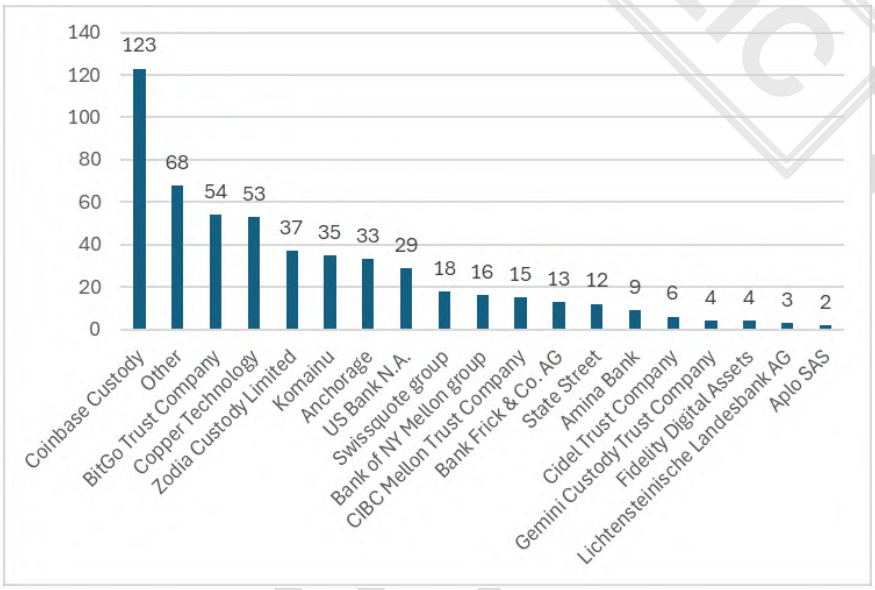
Custody services for crypto-investment products are highly concentrated. Coinbase alone has a 32% market share, followed by BitGo and Copper Technologies (both at around 14%), as measured by the number of crypto-investment products for which

[113] Cf. D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).

[114] Cf. D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).

those firms provide custody services. In total, the three largest custody providers cover approx. 39% of the investment products in number, which is equivalent to 60% of the total size of crypto-investment products for which data is available.[115]

Figure 4: Custody Providers in Crypto-investment Products July 2025



Source: ***D.A. Zetzsche, D. Blangero & A. Waicman-GonÇalves, An Empirical Analysis of Crypto-investment Products (July 2025).***

For those CIPs that hold crypto-assets directly exclusively, custody services are even more concentrated: the top 3 custody providers named above serve at least 63% (at least 149 out of 235) of crypto-investment products and hold assets in custody that are equivalent to approximately 71% of the total market capitalisation of CIPs where data is available.

This high concentration is a source of vulnerability. If one of these custody providers experiences financial or operational difficulties, for example due to cyber-attacks or technical malfunctions (see supra), it could affect a wide range of CIPs, amplify losses for investors and have a wider destabilizing effect on crypto markets, with potentially negative spillover effects on traditional financial markets. It could also indirectly affect traditional financial institutions engaged in activities in relation to those CIPs, e.g., in case they derive a significant portion of their revenues from such activities. The finding on concentration among crypto custodians is confirmed for spot crypto ETFs launched in the U.S. since January 2024.

[115] Daily data on market capitalisation not considered concern, in particular, the holdings of 59 open-ended and mutual funds whose shares are not traded at trading venues, and several products with data availability issues.

2. Potential Threats to Financial Stability from Spillovers to the Traditional Financial System

While exposure to crypto derivatives seems to be low currently, the involvement of traditional financial institutions in CIPs paired with ongoing growth has opened new channels for contagion and the realisation of systemic risks. A key concern is that risks in CIPs spill over to the traditional financial system, undermining its critical intermediation role for the real economy. Concretely:

The failure of – or operational risk events at – systemically important crypto intermediaries could lead to shocks across crypto markets and losses at traditional financial institutions. A run on stablecoins, but also tokenised money market funds that are estimated to have a market capitalisation exceeding USD 8 billion, could put pressure on the markets in which they invest, including U.S. Treasury bill markets.[116]

If credit institutions and other traditional financial institutions issue stablecoins, sponsor crypto-investment products or become otherwise involved in crypto markets (for instance, as custodians, trading venues or fund depositaries), shocks in crypto markets could lead to stress scenarios for these institutions. In extreme cases, this could undermine their ability to uphold payment infrastructures and perform their role in supporting the real economy.

If stress arises in the crypto market and through these channels threatens to undermine financial stability, there is the risk that crypto and other intermediaries will turn to the public sector to request emergency support (bailouts). This would be a striking historical irony for a sector that grew out of Bitcoin's genesis block, which included a January 2009 headline about support to banks by the UK Chancellor of the Exchequer[117]. After years of substantial financial gains in the crypto sector primarily benefiting private entities, the socialisation of these losses could be perceived as inequitable.[118]

3. Results and areas for policy attention

Risks that potentially impact traditional financial institutions could stem from crypto derivatives and from CIPs for which traditional institutions serve as custodians. Further, we note crypto-induced counterparty risks, from derivatives and insolvencies

[116] For example, Ahmed and Aldasoro (2025) suggest that outflows from stablecoins can have a much more severe yield impact on Treasury bills than inflows.

[117] The Times, 3 January 2009, "Chancellor on brink of second bailout for banks"

[118] Notably, there are broader distributional concerns with the price increase of Bitcoin and other crypto-assets. See Bindseil and Schaaf (2024), who argue that – even without any losses to investors – there is the possibility for losses by non-holders of Bitcoin. Since "Bitcoin does not increase the productive potential of the economy… the wealth effects on consumption of early Bitcoin holders can only come at the expense of consumption of the rest of society". Ulrich Bindseil and Jürgen Günter Schaaf (2024), The distributional consequences of Bitcoin", available at SSRN: https://ssrn.com/abstract=4985877 or http://dx.doi.org/10.2139/ssrn.4985877.

of important participants of the crypto industry, in particular custodians. In light of this discussion, we propose the following recommendations.

First, significant data gaps persist that impair the assessment of systemic risk stemming from NBFIs' holdings of CIPs and crypto derivatives, crypto services provided by credit institutions and data on leverage.

Second, the available data suggest a) an increasing number and volume of CIPs, exceeding USD 235 billion globally per 31 July 2025, b) an increasing involvement of large traditional financial institutions in CIPs as offerors and service providers (in particular custodians), and c) a very high concentration in core crypto services, in particular the custody of physically backed crypto-investment products, where only three service providers serve 80% of the products. These three developments together could potentially impact adversely on EU financial markets and financial institutions.

As of 31 July 2025, at least 6 crypto-investment products have a market valuation exceeding USD 5 billion, with the three largest ones showing capitalisations of USD 21, 24 and 85 billion, i.e. three CIPs represent close to half of the market capitalisation. At the same time, these physically backed CIPs are served by a very small number of crypto custodians. If one of these custodians experiences operational or financial difficulties, a chain effect affecting other CIPs is likely, and a step-in situation may arise, driven by legal or reputational concerns, given the involvement of large incumbent financial institutions in the product set-up and marketing. The overall volumes have reached a level that make this scenario concerning.

Third, risks further concentrate on the level of service providers, in particular through important services being bundled within multi-function groups that serve both as crypto custodians and exchanges.

To sum up, interlinkages between traditional finance and crypto coupled with the market concentration in core crypto services increase the contagion risk in traditional finance. Assuming further growth as is supported by the available data, the increase of overall exposure raises concerns regarding the stability of the traditional financial system, as potential spillover effects can be expected to the same extent that the overall capitalisation will rise. These spillover effects have already been observed already with regard to stablecoins. Spillover risks with regard to CIPs may be expected from the failure of large crypto custodians, that often form part of multi-function groups that offer custodian, transfer and exchange services. The increase in market capitalisation paired with strong concentration in core crypto infrastructure suggests that the tipping point may be reached rather soon. In addition, the lack of comprehensive data complicates the monitoring of both growth and market concentration. Regulators are encouraged to observe the developments and enhance data collection and monitoring on crypto-investment products, leverage and crypto services provided by traditional financial institutions.

3 Multi-function groups active in crypto-asset markets (MFGs)

Overview

Different types of groups may choose to offer crypto-asset products and services within the EU. Some groups may be well-established and may be active primarily in the traditional financial sector (e.g. banking groups). Other multi-function groups carrying out crypto-asset activities (referred to in this chapter as 'MFGs') in the EU may be newer entrants active in a specific part of the financial sector (e.g. payments), in wider commerce (e.g. BigTechs), or may be exclusively active in the crypto-asset sector. Many non-bank groups may originate from, or be primarily active, outside the EU.

Viewed through the micro-prudential lens, potential opportunities and risks posed by crypto-asset activities are largely common across the different types of MFG. However, factors including the scale of the activities, interconnectedness within the group, interconnectedness with the crypto-asset sector and, potentially, the traditional finance sector, can elevate risks such that they become relevant from a macroprudential perspective.

Notwithstanding these considerations, the ability of supervisors to identify and mitigate macroprudential risk ex ante is undermined by the fact that group-wide regulatory and supervisory arrangements for non-bank MFGs are largely non-existent. In particular:

- consolidated supervision arrangements exist only for banking groups and do not apply to any other type of group;
- the conglomerates supervision framework applies only to certain types of group carrying out traditional banking/insurance/investment activities and pre-dates the emergence of crypto-asset activities;
- the supervisory college framework in MiCAR is focussed on a specific type of crypto-asset activity: the issuance of significant asset-referenced tokens (ARTs) and significant electronic money tokens (EMTs);
- while MiCAR envisages arrangements between EU and third country authorities[119], no structures exist to ensure fully formalised and structured group-wide cooperation with third country authorities notwithstanding the large non-EU footprint of many relevant groups.

Albeit no current systemic risk has been identified, as a priority, NCAs, the EBA and ESMA should strengthen arrangements for cross-group supervisory dialogue for the non-bank MFGs carrying out in the EU significant crypto-asset activities (issuance, custody, exchange, trading etc) in order to ensure effective group-wide supervision from a macroprudential perspective.

In the mid- to long-term, and in the event of a large increase in the scale (volume/value) of crypto-asset activities by non-bank MFGs in the EU, enhancements to the regulatory framework should be taken forward to provide more formalised arrangements to ensure group-wide reporting and to facilitate effective risk mitigation and supervisory dialogue, including with third country authorities.

[119] See Article 107, 126 and 127 MiCAR.

Introduction

Crypto-asset products and services may be offered by entities in the same group as other financial and non-financial firms. Such groups may be active only in the crypto-asset sector or may carry out a broader range of financial activities or other commercial activities. This chapter establishes a taxonomy of the different types of multi-function groups carrying out crypto-asset activities (MFGs) in the EU[120]. The chapter goes on to explore the potential opportunities and risks and reflects on the adequacy of the existing regulatory and supervisory arrangements with regard to specific types of MFGs, concluding with areas for potential future policy attention to address macroprudential considerations.

1. Taxonomy of MFGs

MFGs active in the EU can be divided into three core categories: Category 1: MFGs carrying out various regulated crypto-asset activities (crypto-asset services and/or issuance); Category 2 MFGs carrying out regulated crypto-asset activities and other financial services (this category can be further sub-divided into those MFGs whose predominant activity is in the crypto-asset sector, and those whose predominant activity is in the traditional financial sector); and Category 3: other MFGs. These categories, as further described in Table 1, are especially relevant from the perspective of considering potential risks and the adequacy of existing regulatory and supervisory arrangements.

Table 1: Taxonomy of MFGs (predominant activity)

Group type: Predominant activity		Description
MFG Cat. 1	Crypto	MFGs carrying out (only) various regulated crypto-asset activities. The MFGs may focus on crypto-asset services (exchange, custody, transfer etc) or may, in addition, issue crypto-assets, such as EMTs.
MFG Cat. 2a	Crypto + limited traditional financial services	MFGs carrying out regulated crypto-asset activities as the predominant activity, and other financial services such as payments, often complementary to the crypto-asset activities.
MFG Cat. 2b	Banking + crypto	MFGs carrying out predominantly traditional financial services, as well as regulated crypto-asset activities. For example: (a) MFGs who are banking groups, with parts of the group carrying out regulated crypto-asset activities; (b) MFGs who are payments groups, with parts of the group carrying out regulated crypto-asset activities; (c) MFGs with other types of regulated financial institution (e.g. non-bank lenders) with parts of the group carrying out regulated crypto-asset activities.
	Payments + crypto	
	Other financial services + crypto	
MFG Cat. 3	Commercial + crypto	MFGs whose predominant activities are not in the financial services sector, but who carry out regulated crypto-asset activities (e.g. large non-financial corporates, including potentially BigTechs).

Source: ESRB CATF

[120] In this sense, the chapter refers to a broader set of MFGs than in work of international bodies such as the Financial Stability Board (FSB) who typically focus on 'multi-function crypto-asset intermediaries' (in this chapter referred to as Category 1 MFGs).

Some MFGs may have significant operations outside the EU; some may also carry out crypto-asset activities that are not regulated. Importantly, some MFGs may be primarily active in jurisdictions where activities that are regulated in the EU pursuant to MiCAR are not yet regulated (in full or in part). Moreover, some MFGs may carry out crypto-asset activities that are not regulated in the EU, including facilitating crypto-asset borrowing and lending[121] and blockchain validation. Financial losses or reputational issues arising with regard to any such activities may impact not only the third country entity but also potentially the wider group. Some groups may also purport to operate on a 'decentralised' basis and/or provide customers with access to decentralised finance (DeFi) applications[122].

Some groups, in the performance of their core activities, may gain exposure to crypto-assets. For instance, a banking group may partner with a fund to offer clients exposure to crypto-assets or may provide a deposit account to a crypto-asset issuer in which reserve assets can be held in the form of deposits[123], or may enter into derivatives contracts referring to crypto-assets. An insurer may provide an insurance policy to a crypto-asset service provider to insure against theft. A corporate may accept some types of crypto-asset as a means of payment. Such activities are outside the scope of this chapter.

2. Potential opportunities

The carrying out of crypto-asset activities may offer potential opportunities for the MFG and for its clients. Often these opportunities may be of a mutual benefit. For instance, network effects may lower costs and any cost savings may be passed on to clients. Some benefits may arise from the perspective of compliance, with integrated group functions potentially consolidating compliance activities and providing broader contact points for supervisors, thus enhancing 'supervisibility'. For a description of the potential opportunities, see Annex 1.

Overall, MFGs can be well-positioned to drive innovation and adapt their business models to meet evolving market demands. By leveraging synergies across their various activities, data pools and technology interfaces, MFGs may be able to develop and deliver enhanced customer-facing platform functionalities, integrate services, and expand rapidly their products and services (see Box 1). This can improve user experience and develop new revenue streams. Moreover, economies of scale, combined with shared infrastructure and resources, can enable MFGs to offer competitive pricing models while enhancing service quality. This cost

[121] See the January 2025 EBA ESMA report on recent developments in crypto-asset markets: https://www.eba.europa.eu/publications-and-media/press-releases/eba-and-esma-analyse-recent-developments-crypto-assets

[122] For a discussion of recent crypto-asset market developments, including DeFi, see EBA and ESMA (2025): https://www.eba.europa.eu/publications-and-media/press-releases/eba-and-esma-analyse-recent-developments-crypto-assets For instance, Binance enables clients to participate in DeFi staking via its Binance Web3 Wallet: https://www.binance.com/en/square/post/23973790529706

[123] For instance, in the context of the issuer's compliance with reserve requirements for ARTs pursuant to Article 36(4)(d) MiCAR.

efficiency can not only strengthen competitive advantage but also create room for further innovation in product development and business-model strategies/evolution.

Box 1
Service integration

Some Category 1 (see, for example, Figure 1) and Category 2 MFGs combine various kinds of crypto-asset activity to improve customer experiences and expand service offerings. For instance, many crypto-asset exchanges 'reward' customers with exclusive access to various features and services (potentially offered by other group entities), for example, enabling users to earn rewards via staking, or to acquire tokens that enable participation in decision-making process (governance) or enable exchange for goods and services[124].

In the domain of payments, some Category 2 MFGs offer payment cards linked to a bank account or digital wallet, enabling users to immediately convert crypto-assets into fiat currency at the moment of payment. This functionality may facilitate the use of crypto-assets in everyday transactions, improving their integration into the broader financial system. An example is Bitpanda, which allows users to make purchases using crypto-assets with automatic fiat conversion at the time of payment.[125] As for lending and borrowing, some MFGs allow users to borrow fiat currency or crypto-assets using their existing crypto-assets as collateral. In terms of trading, some MFGs are offering instruments tracking or backed with traditional financial instruments, integrating crypto-assets and traditional financial markets. Furthermore, some MFGs offer e.g. staking as a Service (StaaS) which is a model where a third-party provider manages the staking process for users, allowing them to earn rewards without directly managing their own infrastructure. For example, Revolut offers staking programme covering ETH (Ethereum), ADA (Cardano), DOT (Polkadot), XTX (Tezos), SOL (Solana) and POL (Polygon).[126] Overall, banks and other financial institutions are gradually entering the provision of crypto-asset activities albeit still at a low base.[127]

Traditional payments companies and so-called 'PayTechs' have also entered the crypto market. For example, consumers can make payments with crypto-assets linked to Visa and Mastercard cards. Coinbase customers can use Mastercard credit and debit cards to make purchases in the crypto company's non-fungible token (NFT) marketplace. PayPal users can transfer, send and receive crypto-assets. Additionally, PayPal launched a new rewards program that will allow users in the US

[124] https://medium.com/@rizwangreat726/benefits-of-using-exchange-tokens-in-crypto-trading-f0bb898af301

[125] Similar solutions are offered e.g. by Deblock, Crypto.com, and Coinbase.

[126] https://help.revolut.com/en-DE/help/wealth/cryptocurrencies/crypto-staking/crypto-staking-basics/what-is-staking/

[127] For data on EU credit institution engagement in crypto-asset activities, see the EBA's regular Risk Assessment Reports: https://www.eba.europa.eu/risk-and-data-analysis/risk-analysis/risk-monitoring/risk-reports-and-other-thematic-work/risk-assessment-reports

to earn a 3.7% annual return on their holdings of PayPal USD (PYUSD)[128]. This program aims to encourage broader usage of PYUSD and differentiate it in the competitive stablecoin market. Users can earn rewards while keeping PYUSD in their PayPal or other wallets.

Turning to Category 3 MFGs, large technology companies and BigTech have significantly expanded their presence in the payments industry[129] offering digital wallets and payment apps and some can be identified as extending their presence to the crypto-asset sphere. For instance, Facebook (now Meta) proposals for Libra/Diem [130], Apple's partnership with Mesh[131], Google's investments in crypto-focused companies, including digital asset custody firms[132], and Amazon with its phased-out Amazon Coins[133], all demonstrate interest in expanding into crypto-assets and related services.

Figure 1: Overview of activities provided by selected MFG (Category 1) Sept 2024

Type of Activity	Activities	Binance	Coinbase	Bybit	OKX	whitebit	P2B	Upbit
Issuance, promotion and distribution	Stablecoins	NO	NO	NO	NO	NO	NO	NO
	Other crypto-assets	YES	YES	NO	YES	YES	NO	NO
Trading	Spot	YES	YES	YES	YES	YES	YES	YES
	Derivatives	YES	YES	YES	YES	YES	NO	NO
	Margin	YES	NO	YES	YES	YES	NO	NO
	OTC market	YES	YES	YES	NO	NO	NO	NO
	Brokerage	NO	YES	NO	NO	NO	NO	NO
Investment programmes	Staking/Staking as a service	YES	YES	YES	YES	NO	NO	YES
	Yield/Earn programmes	YES	YES	YES	YES	YES	YES	NO
Lending & Borrowing	Lending/ liquidity provision	YES	YES	YES	?	YES	NO	NO
	Borrowing	YES	YES	YES	YES	YES	NO	NO
Wallet/ custody, transmission and payment	Custodial wallet services	YES	YES	YES	YES	YES	YES	YES
	Non-custodial wallet	YES	YES	NO	YES	NO	NO	NO
	Crypto-asset payment services / prepaid cards	YES	YES	YES	NO	YES	NO	NO
Proprietary activities	Proprietary trading	?	?	?	?	?	?	?
	Direct (venture capital) investment	YES	YES	YES	YES	NO	NO	NO
Other activities	Others	YES	YES	YES	YES	YES	YES	YES
Number of activities		14	14	12	11	10	4	4

Sources: Based on the exercise carried out by A. Born, E. Marchi, L. Painelli, T. Räsänen, and E. Rubera within the Crypto-asset Monitoring Expert Group (CAMEG). To enable a deeper analysis, from the set of major centralised crypto-exchanges, a subset comprising the 5 largest global crypto-exchanges, and the 2 largest crypto-exchanges headquartered in the EU were subject to deeper analysis. It is inconclusive if at the time of the analysis all crypto-exchanges offered all listed services to the European customers.

128 https://www.bloomberg.com/news/articles/2025-04-23/paypal-aims-to-boost-stablecoin-use-by-offering-3-7-on-balances

129 For example, a joint-ESA 2025 monitoring exercise via the European Forum for Innovation Facilitators (EFIF) identifies that, in the EU, 5 BigTechs have a total of 6 subsidiaries authorised in the EU to carry out payment services and issue electronic money [data to be published in September 2025]. Additionally, 5 BigTechs have a total of 11 subsidiaries relying on exclusions under the Second Payment Services Directive (PSD2) to carry out specific payment services without the need for authorisation.

130 Facebook-funded cryptocurrency Diem winds down

131 Apple (NasdaqGS:AAPL) Embraces Crypto with Mesh Partnership for Apple Pay Integration

132 Google has invested in crypto-focused companies, including digital asset custody firms, NFT platforms, and venture funds. Additionally, Google Cloud offers services like Blockchain Node Engine, enabling businesses to deploy and manage blockchain infrastructure.

133 https://www.amazon.co.uk/gp/help/customer/display.html?nodeId=GWSH56DBKXBNGC8E

3. Potential risks

Notwithstanding the opportunities, risks may arise which, under some conditions, could become relevant from a macroprudential perspective. These risks include (i) prudential risks, (ii) operational risks, (iii) conflicts of interest and wider governance risks, (iv) reputational risks, (v) concentration risk, and (vi) risks stemming from opacities in corporate structure and regulatory arbitrage. Considerations that may elevate such risks to a level relevant from a macroprudential perspective include the scale of the activities concentrated in the MFG, interconnectedness within the group, and interconnectedness with the crypto-asset sector. Interconnectedness with the traditional finance sector, however, remains very limited to-date due to the de minimis direct exposure of the EU financial sector to crypto-assets,[134] and notwithstanding the integration of crypto-asset issuance and crypto-asset services into the stable of products and services offered by some EU financial institutions (Category 2b MFGs in our taxonomy)[135]

Intra-group funding challenges, including liquidity shortfalls, can pose risk for MFGs and for the wider market. MFGs, as for other types of interconnected conglomerate, may rely on intra-group funding for their operations. Such dependencies may propagate risk through the MFG. For instance, in the event a subsidiary suffers a major outflow of funds (for example, to meet redemption requests in very stressed market conditions, or to pay a large penalty or compensation following a major operational or conduct failure (e.g. data or sanctions breach)) other group entities may need to step-in to support the viability of the subsidiary. Group entities may also have their financial condition impacted due to the subsidiary being unable to repay intra-group financing in line with the initial terms. Should these other group entities carry out significant financial activities (e.g. lending) this could pose wider risks should the continuing ability to carry out those activities be impeded.

MFGs can be more sensitive to operational risks, particularly technological and cyber risks, due to heavy reliance on common or interconnected technological infrastructure; should the MFG perform high value/volumes operational disruptions may pose system-wide risks. Concentration of infrastructure can mean that an operational disruption or breach in one area can affect a wide range of services and become relevant from a macroprudential perspective. For instance, if central systems like authentication servers and trading platforms are compromised, attackers may gain widespread access to systems resulting in knock-on effects (such as major crypto-asset market dislocation) including beyond the MFG. Moreover, the larger the market share the more attractive the target for potential illicit actors targeting a MFG for data or crypto-asset theft or for ransom (e.g. by Bybit hack – see Annex 2). Such actors may be external

[134] Based on EBA bank, ESMA funds, and EIOPA insurance sector data on institutions' exposures to crypto-assets.

[135] For instance, see ESMA's interim register of EMT (and ART) issuance under MiCAR: https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica

or internal. Human errors may also propagate a broader impact due to the scale of the MFG's operations.

The structure and business models of MFGs may pose risks related to governance challenges and conflicts of interest, which may give rise to reputational risks spilling over to other entities/groups perceived as having similar issues. The vertical and horizontal integration of multiple crypto-related services and/or issuance under a single umbrella – often characterised by opaque governance[136] can increase the potential for governance challenges and conflicts of interest to materialise (see Annex 3). Shortcomings in interactions with clients can quickly undermine market confidence in the MFG. This may impact not only the MFG itself but also the stability of the wider crypto-asset market should other entities/groups be identified as having similar deficiencies.

Indeed, declines in market sentiment toward MFGs may trigger contagion. Reputational harm may trigger sudden withdrawals from platforms operating in similar markets, potentially forcing distressed crypto-asset sales. This could destabilise not only the affected MFG but also interconnected crypto-assets, platforms or services propagating contagion risk (Box 2).

Box 2
FTX

As highlighted by the FSB in its November 2023 report Financial Stability Implications of Multifunction Crypto-asset Intermediaries "[multi-function groups] represent a critical part of crypto-asset markets and can exacerbate structural vulnerabilities in those markets, e.g. relating to leverage and liquidity mismatch. Some MFGs are deeply interconnected with a broad range of counterparties across the crypto-asset ecosystem. As a result, a major [group's] failure could be significant for the crypto-asset ecosystem due to its centrality and interconnectedness in the market."

These effects could be observed in the context of the collapse of FTX in November 2022.[137] FTX operated in multiple capacities, including token issuance (FTT), exchange, and investment services; its quantitative trading fund, Alameda Research, specialised in crypto-assets that borrowed strategies from traditional hedge funds. According to bankruptcy filings, the group had over 134 legal entities around the world, owned by 7 "top companies" where Samuel Bankman-Fried was the controlling owner, director, officer, manager or other authorised person for the each

[136] See the FSB report on the financial stability implications of MCIs (November 2023): https://www.fsb.org/uploads/P281123.pdf

[137] Arner, Douglas W. and Zetzsche, Dirk Andreas and Buckley, Ross P. and Kirkwood, Jamieson, The Financialization of Crypto: Lessons from FTX and the Crypto Winter of 2022-2023 (March 1, 2023). University of Hong Kong Faculty of Law Research Paper No. 2023/19, UNSW Law Research Paper No. 23-31, Available at SSRN: https://ssrn.com/abstract=4372516 or http://dx.doi.org/10.2139/ssrn.4372516. See also: https://www.theguardian.com/technology/2022/nov/10/what-happened-to-ftx-and-could-crisis-spill-over-to-rest-of-crypto

of them.[138] Extensive failures in governance and risk management, including the co-mingling of own account and customer funds and crypto-assets, as well as poor accounting practices and record-keeping were exposed.[139] Notably, some group entities were also using another group entity's token (a liability) as collateral for loans, resulting in "wrong way risk" as losses in confidence in those group entities fed into demands for additional collateral and collateral (FTT) liquidation resulting in a run on the issuer.

When FTX collapsed, the impact was not contained to investors in FTX and users of its products and services, but also by investors across the crypto-asset markets due to contagion effects. For instance, the failure of FTX had a large impact on the price of crypto-assets serving as collateral for crypto lending. This triggered cascading liquidations by crypto lenders because of the decrease in the value of the collateral.[140] Overall, the FTX case serves to illustrate well risks from intra-group interconnectedness and interconnectedness within the crypto-asset market.[141]

Importantly, a concentration of market power under a MFG may mean that risks that are of a pure microprudential relevance in some groups may become relevant from a macroprudential perspective. Globally, crypto-asset markets exhibit high levels of concentration, with a few (non-bank) MFGs dominating trading volumes. The Herfindahl-Hirschman Index (HHI) indicates that the crypto-asset market was "highly concentrated" in 2023 (2,500>HHI), with the market share of the 5 largest exchanges increasing consistently over the last five years. Recent analysis indicates that around 90% of trades are executed on the top 10 exchanges globally, with Binance alone accounting for more than 50% of global trading volumes. The next biggest exchange, UPbit, records only about a seventh of this volume.[142] Indeed, high levels of concentration can also be observed in the EU with 95% of the transactions conducted on licenced EU CASPs attributable to two platforms: Binance and Coinbase.[143] Additionally, two exchanges (Bitvavo[144] and Kraken[145]) dominate EUR-denominated trade volume (Figure 2).[146] This means that any issues with these groups are likely to have a broader impact due to the scale of their operations. Similar concentration risks can be observed in the market for so-called stablecoins with Tether Ltd, the issuer of USDT, illustrating concentration risk due to its dominant role in providing liquidity (as well as wider risks regarding Tether's lack of

[138] https://storage.courtlistener.com/recap/gov.uscourts.deb.188448/gov.uscourts.deb.188448.1.0.pdf

[139] Cecchetti, November 2022: Tales from the Crypt(o) — Money, Banking and Financial Markets

[140] Speech by Fabio Panetta, Member of the Executive Board of the ECB, at a panel on the future of crypto at the 22nd BIS Annual Conference, 23 June 2023: https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp230623_1~80751450e6.en.html

[141] For a wider discussion, see section 3.2.4 of the FSB's February 2023 report on the Financial Stability Risks of Decentralized Finance: https://www.fsb.org/uploads/P160223.pdf

[142] ESMA (April, 2024): www.esma.europa.eu/sites/default/files/2024-04/ESMA50-524821-3153_risk_article_crypto_assets_market_structures_and_eu_relevance.pdf

[143] Kaiko Research: State of the European Crypto-asset Market (2024): The State of the European Crypto Market - Kaiko - Research

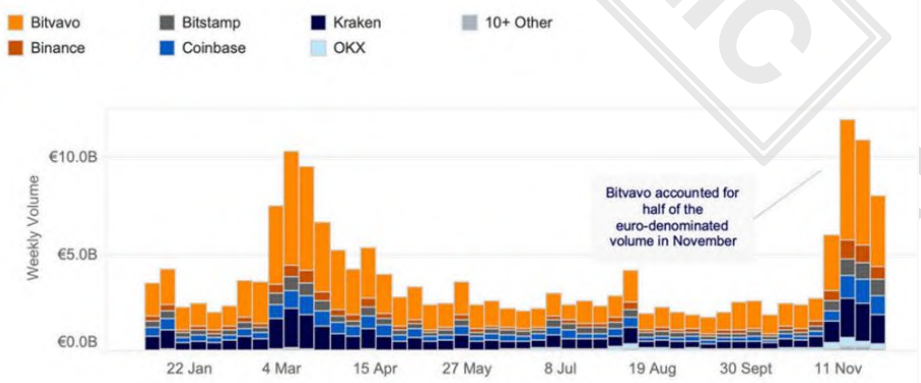
[144] In the EU, Bitvavo is authorised as a crypto-asset service provider under MiCA. It is in a group with Bitvavo Custody BV, an authorised custodian: https://bitvavo.com/fr/imprint

[145] In France, Kraken provides services through a group company called Coin Meester B.V. which is registered with the Autorité des Marchés Financiers (AMF) as a digital asset service providers (DASP). A large number of other group companies, including Payward Europe Solutions Limited (trading as Kraken and regulated by the Central Bank of Ireland), provide other services.

[146] Ibid.

transparency regarding its reserves and the potential impact on market stability if confidence in USDT were to decline) (see Chapter on Stablecoins).

Figure 2: 2024 weekly EUR-denominated trade volume by exchange



Source: Kaiko Report – The State of the European Crypto Market 2024

Centralisation and concentration risk can lead to systemic vulnerabilities and increased potential for market manipulation. For example, Binance not only operates one of the world's largest crypto-asset exchanges, but also manages the Binance Smart Chain (BSC),[147] where it has significant influence over network governance and validator selection. This vertical integration allows Binance to control multiple layers of the transaction process, raising potential concerns about market concentration and potential conflicts of interest.

The multi-function and global nature of many Category 1 and Category 2a MFGs poses additional challenges. MFGs' operating structures may be opaque, making it difficult for supervisors to monitor risks and identify supervisory counterparts. Some MFGs may also specifically structure themselves in ways to arbitrage applicable regulatory frameworks, basing their operations in jurisdictions with less stringent regulatory regimes or, potentially no sector-specific regulation (e.g. FTX). Risks emerging from such parts of the MFG may spill over into other parts of the group absent effective ex ante mechanisms for supervisory vigilance and mitigation. Moreover, most large Category 1 and Category 2a MFGs are established outside the EU, which may limit the ability of EU supervisors to supervise effectively. This risk is compounded by the potential for EU clients to engage with non-EU entities through reverse solicitation. Although ESMA's Guidelines clarify that reverse solicitation should be interpreted narrowly and cannot be interpreted to circumvent

[147] https://www.bnbchain.org/en/bnb-smart-chain

MiCAR requirements, this mechanism introduces potential gaps in regulatory compliance and consumer protection.[148]

4. Existing regulatory and supervisory arrangements

The activities of MFGs have to be assessed on a case-by-case basis to determine what (if any) activities are subject to regulation and supervision in the EU. In order for a legal entity to carry out some crypto-asset activities in the EU, the entity must be authorised under MiCAR (specifically, offering to the public or seeking admission to trading in the EU of ARTs or EMTs[149] or carrying out one or more crypto-asset services[150]) or otherwise already be in possession of a relevant licence (e.g. as a credit institution). As a consequence of any requirement to be authorised, the legal entity will be subject to regulation and supervision as regards the regulated activity/activities concerned – this may entail activities-based regulation (e.g. in the context of the issuance of ARTs[151]) and/or entities-based regulation (e.g. for credit institutions regardless of the blend of activities undertaken); in terms of regulatory reporting requirements for crypto-asset activities, only banks and issuers of ARTs/EMTs, are subject to specific requirements (in the former case under the CRD/CRR, and in the latter, pursuant to the EBA's own initiative Guidelines[152]). Other types of crypto-asset activities (e.g. lending, staking etc) do not require authorisation and are thus not subject to regulation or supervision albeit, in some cases, AML/CFT rules may still apply.

Looking beyond activity and entity-based regulation/supervision, the question of whether any group-wide arrangement applies depends on a range of factors, including: the type of group and the placement of the entity within the group. Most obviously, if the entity is a credit institution, or in a group with a credit institution, the prudential consolidation framework under the CRD/CRR will apply. However, other types of group established in the EU are not subject to prudential consolidation and are either subject to more limited, or no, framework to facilitate conglomerates supervision or college coordination for specific purposes as summarised in Table 2. Groups established outside the EU, with one or more entities

[148] ESMA Guidelines on reverse solicitation under the Markets in Crypto-assets Regulation (November 2024): https://www.esma.europa.eu/sites/default/files/2024-12/ESMA35-1872330276-1899_-_Final_report_on_GLs_on_reverse_solicitation_under_MiCA.pdf

[149] Under Title II MiCAR it is not necessary to be authorised to offer to the public crypto-assets other than ARTs and EMTs. However, the person must be a legal person (not necessarily a legal person established in the EU) and have drawn up a white paper in conformity with MiCAR and adhere to other relevant requirements (Article 4 MiCAR).

[150] Under Title V MiCAR – see point (16) of Article 3(1) of MiCAR for the definition of 'crypto-asset service'.

[151] For example, the requirement to issue a white paper (Article 19 of MiCAR), and to hold a reserve of assets (Article 36 of MiCAR).

[152] EBA own initiative Guidelines on templates to assist competent authorities in performing their supervisory duties regarding issuers' compliance under MiCAR (2024): https://www.eba.europa.eu/activities/single-rulebook/regulatory-activities/asset-referenced-and-e-money-tokens-micar/guidelines-templates-assist-competent-authorities-performing-their-supervisory-duties-regarding

carrying out crypto-asset activities in the EU, fall outside the scope of these frameworks.

Table 2: Taxonomy of MFGs and applicability of group-wide regulation/supervisory arrangements

Group type: Predominant activity		Consolidation	Conglomerates supervision	Colleges
MFG Cat. 1	Crypto	No	No	Limited*
MFG Cat. 2a	Crypto + limited traditional financial services	No	No	Limited*
MFG Cat. 2b	Banking + crypto	Yes	Yes (some groups)	Yes
	Payments + crypto	No	No	No
	Other + crypto	No	No	No
MFG Cat. 3	Commercial + crypto	No	No	Yes (limited*)

Source: ESRB CATF

***Note: ONLY where the activities involve the issuance of an asset-referenced token or electronic money token determined by the EBA to be 'significant' in accordance with MiCAR. The college focus is on the ART/EMT (see further below).**

Prudential consolidation rules do not apply to Category 1, 2a and Category 3 MFGs and apply only to a specific type of Category 2b MFG (banking groups). Consolidation enables a holistic prudential regulation and supervision of the group, including governance and ICT risk management. While banking groups are subject to consolidation (including as regards group entities carrying out crypto-asset activities[153]), other types of group – notably mixed activity payments groups and wider mixed activity financial (and non-financial) groups – are not subject to consolidation.[154] This is because such groups, including BigTechs, do not have entities of a kind that engage consolidation rules under the CRD/CRR (and, with respect to insurance groups, Solvency II).[155] Additionally, they do not have entities which engage a supervisory option to require the imposition of a holding company structure for the 'financial' parts of the group.[156] The overall effect is that there is no

[153] For the rules on prudential consolidation, see Chapter II of Title II of Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 Text with EEA relevance (*OJ L 176, 27.6.2013, pp. 1–337*) (as amended).

[154] See further the EBA's response to the Call for Advice on PSD2 (2022): https://www.eba.europa.eu/sites/default/files/document_library/Publications/Opinions/2022/Opinion%20od%20PSD2%20review%20%28EBA-Op-2022-06%29/1036016/EBA%27s%20response%20to%20the%20Call%20for%20advice%20on%20the%20review%20of%20PSD2.pdf on the potential need for a prudential consolidation framework for large non-bank payments groups, and the ECB Opinion on the PSD2 https://www.ecb.europa.eu/pub/pdf/legal/ecb.leg_con_2024_13.en.pdf

[155] See further the ESA's response to the Call for Advice on digital finance (2022): https://www.eba.europa.eu/publications-and-media/press-releases/esas-recommend-actions-ensure-eus-regulatory-and-supervisory

[156] For instance, the groups do not include investment firms: see further the ACPR article on the growth of BigTechs (2024): https://acpr.banque-france.fr/en/publications-and-statistics/publications/growth-big-techs-financial-sector-which-risks-which-regulatory-responses;

regulatory or supervisory 'overlay' to account for group wider/cumulative risks posed by the [financial], including crypto-asset activities of the group.

Conglomerates supervision does not apply to Category 1, Category 2a and Category 3 MFGs and applies only to very specific types of Category 2b MFGs. Very specific types of group – classically groups active in banking and insurance (so-called bancassurers) – are subject to the financial conglomerates supervision framework under Financial Conglomerates Directive (FICOD) (Directive 2002/87/EC). FICOD establishes a framework for supplementary supervision, focussing on capital adequacy, risk concentration, and intra-group transactions. However, the supplementary supervision applies only to EU "regulated entities"[157] within the group (banks, insurers and investment firms) and thus does not encompass other types of entity, such as financial subsidiaries authorised as electronic money institutions (e.g. for EMT issuance) or as CASPs. Moreover, FICOD does not extend to other types of group, nor to other types of risk (e.g. reputational and operational interdependencies, including in the context of recovery and resolution, and digital operational resilience). As such, FICOD does not provide a supplemental supervisory overlay for the full range of groups and risks elaborated in this chapter, nor does it facilitate cooperation with third country authorities responsible for the supervision of non-EU parts of the group.[158]

Supervisory college arrangements apply in limited cases. In the case of any MFG with an entity issuing an ART or EMT that is determined by the EBA to be 'significant', regardless of the regulatory status of the issuer, the EBA is required to establish and chair 'consultative' supervisory colleges "to facilitate the exercise of supervisory tasks and act as a vehicle for the coordination of supervisory activities under MiCAR" (Article 119(1) MiCAR). Colleges must include the ECB, ESMA, the competent authority of the home Member State in which the issuer is established, the competent authorities of the most relevant CASPs (including trading platforms where the ART or EMT is admitted to trading), the competent authorities of entities "custodying" reserve assets, and relevant supervisory authorities of third countries with which EBA has concluded administrative arrangements in accordance with Article 126 MiCAR. The college may issue non-binding opinions on specific matters (Article 120 MiCAR), which are required to be "duly considered" by EBA in the performance of its supervisory function (Article 120(4) MiCAR). The matters include, but are not limited to, decisions to require an issuer to hold higher own funds, updates to recovery or redemption plans, modified white papers, and the application of corrective or supervisory measures. The MiCAR supervisory college structure therefore should be seen as very much focussed on the issuance activity, and not on the wider group. As such, the supervisory colleges should be seen as having limited utility as they do not encompass all risks to which reference is made in this chapter, nor indeed are they intended to facilitate the coordinated supervision of wider group entities. Indeed, MiCAR supervisory colleges can be contrasted clearly with colleges of supervisors for banking groups (Article 16 of the Capital Requirements Directive

[157] Regulated entity is defined in Article 2(4) FICOD.

[158] For a discussion of the limits of conglomerates supervision in the context of novel mixed activity groups, see Noble. E (2020): *Next generation of financial conglomerates* (2020): *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3693870*

(CRD IV))[159], which encompass the joint assessment of banks' risks, and joint decisions on the adequacy of cross-border banks' capital within a college setting, rather than non-binding opinions focussed on one specific activity (issuance).[160]

Overall, with the exception of banking groups, formalised mechanisms to facilitate MFG-wide risk monitoring and joined-up supervisory actions do not apply resulting in EU-based supervisors being highly impaired in their capacity to identify and mitigate risks on a group-wide and potentially systemic basis. Specifically, no mechanism exists to facilitate joined-up supervisory actions for Category 1 and 3 MFGs, and for the majority of Category 2 MFGs. While competent authorities in the EU, and the EBA in the discharge of its supervisory functions under MiCAR, are subject to requirements to cooperate in the performance of their tasks,[161] there is no formal setting to monitor, coordinate or impose initiatives (including on a group-wide basis), to address risks that may propagate across MFGs (whether prudential, operational, or governance-related). Additionally, no toolkit exists to address opacities in corporate structure and risks of regulatory arbitrage. This is a particular concern taking account of known 'shape shifting' to avoid emerging regulation, and in view of lessons learned following the collapse of various MFGs, including FTX. Moreover, while group entities may be required to conform to reporting requirements with regard to specific activities (e.g. under Article 22 MiCAR with regard to ARTs), there is no toolkit to require reporting on a consolidated basis across a (non-bank) MFG's crypto-asset[162] and other financial activities thus resulting in significant challenges for supervisors in trying to piece together independently held data to assess and monitor the cumulative relevance of a MFG's activities.

Issues may be further exacerbated in the case that large payments groups and BigTechs become increasingly active in the area of crypto-assets. As acknowledged in multiple papers issued by the BIS, ESAs, ECB, FSB, FSI, and some national authorities,[163] should large payments groups and BigTechs become increasingly active in financial services, including activities involving crypto-assets, there may be a need to re-think supervisory arrangements due to the potential systemic impact materialising from any risks as a result of scaling and network

[159] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC Text with EEA relevance *(OJ L 176, 27.6.2013, p. 338–436). Article 116 CRD IV (colleges of supervisors) sets out a narrower set of functions for the college as compared to the college arrangements in MiCAR, including sharing information, ensuring the consistent application of the prudential framework to entities within the banking group, and taking joint decisions on the application of specific prudential requirements (see, in particular, Article 113 CRD IV).*

[160] For further information about colleges of supervisors see: https://www.eba.europa.eu/regulation-and-policy/colleges-supervisors

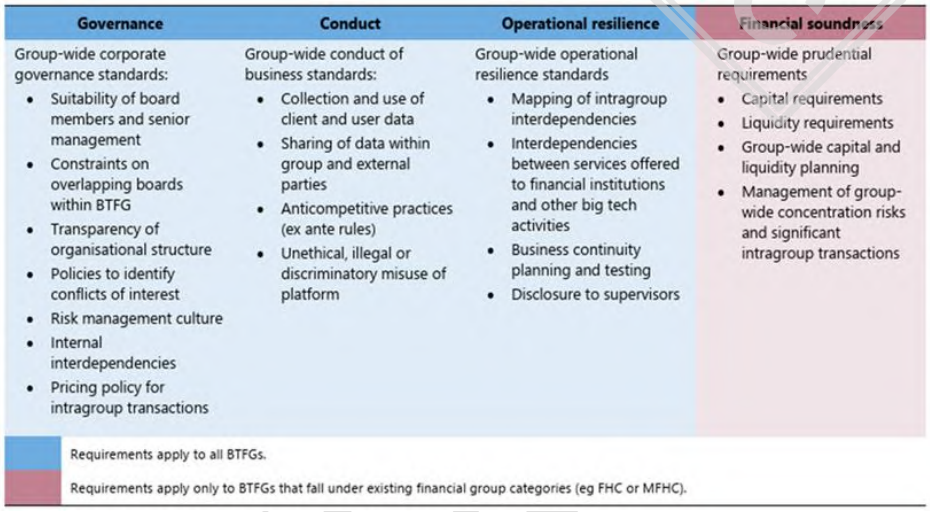
[161] For example, see Article 95, 96 and 98 of MiCAR.

[162] For a discussion of some of the reporting gaps under MiCAR, see section 1.3 of Chapter 3.2 of the ESRB Report on Crypto-assets and Decentralised Finance (2023): https://www.esrb.europa.eu/news/pr/date/2023/html/esrb.pr230525~c74fa66621.en.html

[163] See, for example: Joint-ESA report on BigTech direct financial service provision (2024): https://www.eba.europa.eu/sites/default/files/2024-02/b0c38062-0055-4631-b99e-b728f19e3868/Report%20on%202023%20stocktaking%20of%20BigTech%20direct%20financial%20services%20provision.pdf; ACPR article on the growth of BigTechs (2024): https://acpr.banque-france.fr/en/publications-and-statistics/publications/growth-big-techs-financial-sector-which-risks-which-regulatory-responses; BIS Working Paper Consumer Financial Data and Non-horizontal Mergers (2025): https://www.bis.org/publ/work1251.pdf

effects. Interestingly, some of these papers have reflected not only on prudential risks, but also governance, conduct and operational resilience considerations of a kind elaborated in this chapter, and have brought forward options for new supervisory frameworks encompassing these elements (see Figure 3 below).[164]

Figure 3: Proposed regulatory requirements for BigTech Financial Groups (BTFG)



Source: FSI (2022)

At the international level, no structures exist to formalise supervisory coordination with regard to MFGs carrying out crypto-asset activities on a cross-border basis. This is notwithstanding FSB and IOSCO recommendations for close supervisory cooperation and coordination. However, authorities in some jurisdictions have started to put in place memoranda of understanding and cooperation arrangements (as also envisaged in Article 107, 126 and 127 MICAR) to facilitate supervisory dialogue cross-border. Such measures can enhance information exchange but provide a relatively weak basis for coordinated supervisory actions, especially in stressed market conditions as they typically set out expressions of goodwill rather than binding commitments.

Finally, while under MiCAR issuers of ARTs and EMTs are required to have in place recovery and redemption plans, no resolution toolkit exists to facilitate the orderly wind-down of non-bank MFG's crypto-asset activities. Under MiCAR, entities carrying out the activities of issuing ARTs or EMTs are required to have in place recovery plans to help restore compliance with requirements

[164] For a discussion of the risks posed by BigTech in financial services, and some regulatory/supervision options, see FSI Occasional Paper No. 20 Big Tech Regulation: In search of a new framework (2022): https://www.bis.org/fsi/fsipapers20.pdf

applicable to the reserve of assets, and to address operational disruptions.[165] Recovery actions can be triggered by issuer, potentially on the instruction of the competent authority (Article 94(1)(v) MiCAR). Redemption plans are required to support the orderly redemption of the ART/EMT in situations where a competent authority has determined that the issuer is unable or likely to be unable to fulfil its obligations, including in the event of insolvency, withdrawal of the authorisation etc.[166] For EU banking groups the general recovery and resolution framework under the BRRD applies, but for other types of MFG no group-wide requirements or powers are available. Overall, this means that supervisors and resolution authorities lack the tools need to manage destabilising events within MFGs and prevent disorderly failure and, potentially, significant dislocation in the market for crypto-assets.

5. Areas for policy attention

The crypto-asset market is currently dominated by a small number of Category 1 and Category 2a MFGs carrying out a multiplicity of activities globally. At present, operational incidents or wider failures of these groups are unlikely to give rise to financial stability implications due to the low levels of interconnectedness with the traditional financial sector. However, as illustrated by the collapse of FTX, the crypto-asset market is highly interconnected and highly sensitive to confidence effects.[167] As such, potentially very significant, if not catastrophic, implications may arise in the EU crypto-asset market (and globally) in the event of major failures (financial, operational or otherwise) of Category 1 and Category 2a MFGs. Category 2b and Category 3 MFGs, on the other hand, currently carry out crypto-asset activities on a far more limited basis and thus are not the focus of the identified areas for policy attention.[168]

Albeit no current systemic risk has been identified currently, in the immediate term, EBA, ESMA, NCAs and the ECB are strongly encouraged to use all means available to enhance supervisory dialogue and coordination of supervisory activities over Category 1 and non-bank Category 2a MFGs carrying out crypto-asset activities in the EU. As noted in the preceding sections of this chapter, no formalised mechanism exists in the EU to facilitate joined-up supervisory actions for Category 1 and 3 MFGs, and for the majority of Category 2 MFGs. In view of the relative dominance of Category 1 and Category 2a MFG in the EU crypto-asset market, as a priority, the EBA (in its capacity as a supervisor of significant ARTs and significant EMTs, and in view of its broader policy

[165] Article 46(1) MiCAR (as applied to EMTs via Article 55 MiCAR). For further information about recovery plans, see the EBA's 2024 Guidelines: https://www.eba.europa.eu/activities/single-rulebook/regulatory-activities/asset-referenced-and-e-money-tokens-micar/guidelines-recovery-plans-under-micar

[166] Article 47 MiCAR (as applied to EMTs via Article 55 MiCAR). For further information about resolution plans, see the EBA's 2024 Guidelines: https://www.eba.europa.eu/publications-and-media/press-releases/eba-publishes-guidelines-redemption-plans-under-markets-crypto-assets-regulation

[167] For a discussion, see Milind Tiwari, You Zhou, Jamie Ferrill, Marcus Smith, Crypto Crashes: An examination of the Binance and FTX scandals and associated accounting challenges, The British Accounting Review, 2025, 101584, ISSN 0890-8389: https://doi.org/10.1016/j.bar.2025.101584

[168] Indeed, according to ESA data, no BigTechs carry out currently crypto-asset activities (2023 monitoring results, as refreshed in 2025): https://www.eba.europa.eu/publications-and-media/press-releases/esas-recommend-steps-enhance-monitoring-bigtechs-financial

responsibilities under MiCAR and with regard to the EU banking sector) and ESMA (in view of its responsibilities, including for CASPs under MICAR) are invited to establish designated structures to enhance supervisory dialogue with respect to Category 1 and Category 2 MFGs that:

- do not include a credit institution;
- have at least one issuer of a significant ART or significant EMT OR at least one significant CASP in the group, and
- have at least one other entity established in the EU carrying out any type of financial service (including potentially crypto-asset activities).

These conditions have been identified in the first instance as a way to draw the perimeter of relevant MFGs – i.e. those that are non-banks and have significant operations (as a result of ART or EMT issuance activity or crypto-asset service provision) in the EU.

Such structures should be used to promote dialogue between NCAs, the EBA, ESMA, the ECB and any relevant national central bank , and the ESRB. They should facilitate, where possible, multilateral engagement. Additionally, they should encompass relevant supervisors of parts of the MFG based in third countries. The structures should have the overall objectives of promoting a common level of understanding of:

1. interconnectedness (including financial and operational) and concentration risks within and beyond the MFG, including with the traditional financial sector;
2. changes in business strategy, including the commencement or discontinuation of crypto-asset and other financial activities;
3. the scale and geographic footprint in the EU of crypto-asset and other financial activities;
4. emerging or growing risks (e.g. stemming from unregulated activities such as staking as a service, novel activities, business partnerships with regulated or unregulated firms).

The structures should develop risk dashboards, inspired by the ESRB approach to NBFI risk monitoring, encompassing prudential risks such as liquidity, leverage and interconnectedness (within the crypto-asset market and with the wider financial sector). The structures should also serve as a venue to facilitate supervisory coordination, including in the event of idiosyncratic or market wide stress events.

In the mid- term in the context of the review of MiCAR, and in the event of a large increase in the scale (volume/value) of crypto-asset activities by non-bank MFGs in the EU informing a re-assessment of the systemic relevance of MFGs, a strengthening of the policy framework should be considered encompassing as a priority: (a) group level reporting requirements for Category 1 and Category 2a MFG crypto-asset activities, and (b) the strengthening of supervisory cooperation mechanisms across Category 1 and

Category 2a MFGs meeting the conditions described above. As noted in this chapter, with the exception of MFGs that are banking groups, no MFGs are subject to group-wide regulatory reporting requirements. Moreover, under MiCAR, very limited reporting requirements exist as supplemented by the EBA's own initiative Guidelines (for issuers of ARTs/EMTs), which were developed to address reporting gaps under MiCAR. This means that supervisors lack quantitative data to monitor effectively activities and associated risks, including liquidity and leverage, on an individual and collective basis thus significantly impeding their ability to carry out horizon-scanning with respect of any potential macroprudential risks emerging from MFGs.

Moreover, while short-term measures to strengthen supervisory dialogue and coordination through non-formalised mechanisms are welcome, a more formalised framework, including clear objectives and potential joint decision-making capabilities, should be considered in the event of a large increase in the scale (volume/value) of crypto-asset activities by non-bank MFGs in the EU. Such structured framework should build on, but substantially extend beyond, the concepts of MiCAR supervisory colleges and any experience acquired in the context of the 'immediate term' solution to which reference is made above, to ensure effective oversight of MFG activities in the EU, including any: issuance activities; crypto-asset service provision; non-MiCAR scope crypto-asset activities; non-crypto financial activities; intra-group financial, operational, or other dependencies. The overall objectives should be to enhance risk monitoring and support supervisory cooperation and coordinated or joint supervisory actions, to mitigate potential serious threats to investors, or to the orderly functioning of crypto-asset or wider financial markets.

Finally, it is noted that it is premature to consider the potential need for early intervention powers or resolution powers. However, any need for such powers should be kept under review based on any future growth of the crypto-asset sector in the EU and interconnectedness within the crypto-asset sector, and with the traditional financial sector.

Annex 1: Potential opportunities posed by MFGs

By providing a range of services under one umbrella, MFGs may deliver an enhanced user experience and improve efficiencies. For customers, access via a single group to a range of services may offer benefits stemming from the elimination of the need to use multiple providers and navigate multiple interfaces, which may not only provide greater convenience but may also reduce account provision/transaction costs. For example, crypto-asset trading platforms [e.g. Coinbase] offer integrated services including custody and staking, allowing customers to manage their crypto activities via one access interface. The combination of complementary services may also enable customers to use their crypto-assets in multiple ways (e.g. using crypto-assets held for trading and earning interest through staking) thereby potentially increasing the overall utility and value to be derived from holdings.

MFGs may also be able to leverage network effects to enhance their market share and profitability. Consolidating multiple services may enable MFGs to achieve economies of scale and scope, reducing operational costs related to technology infrastructure, compliance, customer acquisition and marketing. For instance, an exchange [Binance] uses a unified platform which spreads costs over a larger service base. The complementarity of services can open cross-selling opportunities and possibly strengthen customer loyalty, as customers incline to remain within an ecosystem that can fulfil multiple needs. This integrated approach can provide a competitive advantage in the marketplace. Furthermore, strong network effects — where the value of the platform grows as more users participate — can bolster MFG growth.

Supervisors may derive benefits from the consolidation of services under the umbrella of MFGs simplifying monitoring and enforcement. Taking account of a MFG's operational integration, supervisors may be able to insist on the implementation of compliance measures on a more uniform basis as compared to free-standing entities. The complementarity of services may enhance transparency and traceability as transactions occurring within a MFG's service offering may be easier to align with individual clients. In turn, this could contribute to market stability by enhancing the detection of risks due to higher volumes of activity within an integrated environment. Moreover, MFGs with higher levels of profitability may be better positioned to invest in more sophisticated cyber-security applications and compliance systems.

MFGs may benefit from enhanced intra-group liquidity. Managing liquidity is essential for payment and settlement across the whole range of wholesale instruments: foreign exchange (FX), securities, money-markets, derivatives, and in collateral management. As evidenced by the usage of JPMCoin, the integration of DLT-based settlement using an on-chain asset may help mobilise and optimise liquidity among the relevant connected entities, facilitating fund movements 24/7 globally and on demand or though pre-determined rules. The use of such infrastructure can also help banks identify token holders on a real-time basis,

enhancing the sensitivity of the calculation of outflow rates (BCBS). Similar benefits could also be reaped by other types of MFG.

MFGs may also contribute to deeper crypto-asset market liquidity by integrating crypto-assets into traditional financial products and offering those products to their existing customer base. For example, while research on the topic is limited, the introduction of spot Bitcoin ETF options marks an integration of crypto-assets into the broader financial ecosystem. It provides a regulated avenue for accessing crypto derivatives, and may potentially increase market liquidity, attracting greater institutional involvements, and contributing to price discovery. These developments could have a positive effect on the credibility and stability of the crypto-asset markets over time, supporting their integration into the mainstream financial sector.

Annex 2: Vulnerabilities to hacks and thefts

MFGs who integrate trading, custody, lending and other services, have emerged as key targets of increasingly sophisticated cyber-attacks. In 2024, funds stolen from cryptocurrency platforms increased by around 21% year-over-year, reaching $2.2 billion, with hacking incidents rising from 282 in 2023 to 303 in 2024[169]. Their size, concentration of assets and activities, and operational complexity create broad attack surfaces, exacerbating vulnerabilities linked to governance weaknesses, conflicts of interest, and insufficient cybersecurity controls.[170]

Indeed, over the past decade, cyber-attacks against major Category 1 and Category 2a MFGs have grown in scale and complexity. Prominent examples include Mt. Gox in 2014 ($473 million stolen due to inadequate security), Bitfinex in 2016 ($71 million lost despite multi-signature wallets[171]), Coincheck in 2018 ($530 million from compromised hot wallets[172]), Binance in 2022 ($570 million stolen through flaws in its cross-chain bridge), and Ronin Network in 2022 ($625 million stolen through social engineering and compromised validator nodes).[173] Most recently, the February 2025 hack of Bybit ($1.5 billion stolen), attributed to North Korean hackers, marked the largest incident yet. Attackers inserted hidden malicious code into a seemingly safe transaction, tricking Bybit members into digitally approving a transaction they believed legitimate. This deception gave hackers control over the exchange's - supposedly more secure - "cold", offline wallets, enabling them to transfer tokens directly into their own accounts.[174]

The Chainalysis 2025 Crypto Crime Report[175] highlights how often incidents employ a bespoke mix of tactics. Among these, recurring attack vectors include: 1) theft or social-engineering of private keys via phishing or insider access, 2) exploitation of smart contract flaws, and 3) infected third-party vulnerabilities, such as wallet infrastructures or APIs. Sophisticated actors often combine these techniques, increasingly targeting authentication systems and exploiting immature or rapidly evolving protocols.

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[169] See the Chainalysis report on crypto hacking and stolen funds (December 2024): https://www.chainalysis.com/blog/crypto-hacking-stolen-funds-2025/

[170] See the FSB report on the financial stability implications of MCIs (November 2023): https://www.fsb.org/uploads/P281123.pdf

[171] See the OCCRP article on Bitfinex security lapses in the 2016 hack (May 2023): https://www.occrp.org/en/feature/confidential-report-flags-bitfinex-security-lapses-in-huge-2016-hack. In the Bitfinex case, the multi-signature wallets setup failed because Bitfinex stored both of its private keys on a single server, nullifying the protection intended by the "2-of-3" scheme (3 keys in total, 2 signatures for any transactions).

[172] See the Reuters article on Coincheck's hack of around $530 million in 2018 (January 2018): https://www.reuters.com/article/world/japan-raps-coincheck-orders-broader-checks-after-530-million-cryptocurrency-th-idUSKBN1FI073. Coincheck stored all NEM tokens in a single, online wallet ("hot"), without multi-signature protections. Hackers were able to access the private key and drain the entire balance.

[173] See the Techloy infographic on the biggest crypto hacks from 2014 to 2025: https://www.techloy.com/infographic-biggest-crypto-hacks-ever-2014-2025/#:~:text=nodes%2C%20walking%20away%20with%20%24625,biggest%20crypto%20heist%20ever%20recorded

[174] See the Chainalysis analysis of the Bybit theft (February 2025): https://www.chainalysis.com/blog/bybit-exchange-hack-february-2025-crypto-security-dprk/

[175] See the Chainalysis 2025 Crypto Crime Report (February 2025): https://go.chainalysis.com/2025-Crypto-Crime-Report.html

Given their interconnectedness and their expanding role in crypto-asset markets, MFGs require robust cyber resilience frameworks. These should be underpinned by enhanced supervisory scrutiny, greater transparency in operational risk management, and cross-border coordination to address confidence shocks and contagion risks. Recent work by the FSB (2023) and IOSCO[176] (2023) stresses the need for comprehensive, function-based regulation of multi-function crypto-asset intermediaries, addressing risks from functional integration, poor governance, and technological vulnerabilities.

In the EU, the Digital Operational Resilience Act (DORA) represents a significant step forward in regulating cyber risk in the financial sector. DORA strengthens requirements on ICT risk management, incident reporting, digital operational resilience testing, and creates an oversight framework for critical ICT third-party providers (CTPPs), recognising that cyber incidents and attacks can propagate across interconnected financial entities. DORA applies to a wide range of financial entities (FEs)[177], including crypto-asset service providers authorised under MiCAR. As such, subsidiaries of certain Category 1 and Category 2 MFGs that qualify as FEs under DORA – fall within its scope.

While DORA places the EU at the forefront of global regulatory efforts to enhance cyber resilience, its coverage does not yet extend to the full spectrum of MFGs active in or connected to EU markets due to the focus on financial entities established in the EU, and CTPPs.

[176] See the IOSCO report on policy recommendations for crypto and digital asset markets (November 2023): https://www.iosco.org/library/pubdocs/pdf/IOSCOPD747.pdf

[177] See Article 2 of DORA.

Annex 3: Overview of potential governance challenges and conflicts of interest risks

The wide range of activities that MFGs may carry out increases the risk of conflicts of interest between these activities and their clients. For example, in the case MFGs also issue crypto-assets, they could prioritise on their trading platforms their own assets. Additionally, conflicts may arise when MFGs provide investment advice or portfolio management services while simultaneously engaging in proprietary trading. In such cases, there is a risk that client portfolios may be tilted toward investments in the MFGs own crypto-assets in which they hold a significant position. This creates incentives for the group to inflate the value of such crypto-assets to enhance their own financial gains, potentially at the expense of client interests.

Further, risks may emerge where MFGs act as custodians for client assets while also engaging in proprietary trading. Without appropriate safeguards, large MFGs might leverage insights from asset holdings to inform their own trading strategies, giving rise to market manipulation risks.

Moreover, MFGs might exploit their informational and positional advantages to apply high fees to their clients. Initially, these conglomerates may leverage network effects and integrated services to attract clients with competitive pricing. By offering multiple crypto-assets services – such as trading, custody and lending – within a unified ecosystem, MFGs can create strong incentives for clients to remain within their platform. This reliance may reduce clients' willingness or ability to switch providers, particularly if services are bundled or if off-platform transfers are costly or complex. Once clients are embedded in the ecosystem, MFGs could progressively raise fees or impose unfavourable conditions, capitalising on clients' dependence.

Through the combination of multiple functions (exchange services, custody, issuance, etc.), MFGs could have both the incentives and the means to favour crypto-assets or services that generate higher fees. The absence of comprehensive disclosure frameworks further exacerbates this risk, limiting clients' ability to assess fee structures or identify potential conflicts of interest. As a result, capital allocation in crypto-assets markets may become distorted, with funds disproportionately directed toward high-fee products or riskier crypto-assets. Such distortions could have systemic consequences [as explained for traditional finance by K. Judge, "Intermediary influence", 2015, which describes this phenomenon of "fee effects"].

Risk of lack of clear separation of powers and of a fit and proper governance. The internal governance of MFGs is often undisclosed and opaque [FSB]. The group might present a complex architecture, made up of subsidiaries and branches in different jurisdictions. There is scarce information available, since in most cases disclosure requirements are either very soft or non-existing. This is particularly the case for "category 1" entities, which do not carry out any other financial activity alongside crypto-assets services and/or issuance and therefore are not subject to more stringent requirements other than those laid down in MiCAR, where applicable.

MiCAR introduced specific provisions to address conflicts of interest, particularly for CASPs. Under Article 72, CASPs are required to take steps to prevent and manage conflicts of interest in the provision of their services. This includes implementing clear and effective procedures to identify and disclose potential conflicts of interest to clients. However, these measures may be insufficient in certain scenarios. Effective consolidated supervision may not be possible if the CASP is not part of a bank or financial holding group. In such cases, conflicts of interest involving parent or subsidiary companies may be undetected, particularly when governance structures are fragmented across several jurisdictions.

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