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ELECTRONIC MONEY TOKENS (EMTs) VS TOKENIZED DEPOSITS: A COMPARATIVE ECONOMIC ASSESSMENT

by Giuseppe Ferrero* and Federico Guerra**

Abstract

This paper compares euro-denominated electronic money tokens (EMTs) – issued under MiCAR by credit institutions or electronic money institutions – with tokenized deposits, a form of privately issued tokenized money for which there is currently no dedicated EU regulatory framework. Our analysis shows that the key determinant of an instrument’s monetary and financial stability properties is not the underlying technology, but two design features: whether the instrument is bearer or non-bearer, and whether settlement occurs within or outside central bank infrastructure. Non-bearer tokenized deposits settle through the existing two-tier system and are consistent with the singleness of money; bearer instruments – both EMTs and bearer tokenized deposits – can trade on secondary markets at prices that deviate from par. By applying the ‘same activity, same risk, same regulation’ principle, the paper finds that bank-issued EMTs and bearer tokenized deposits are economically equivalent and should be treated consistently in terms of remuneration, prudential treatment and deposit guarantee scheme coverage, whereas bearer tokenized deposits currently fall outside any instrument-specific regulatory framework. The paper concludes that the policy implications of tokenized money instruments depend not on the underlying technology but on three structural features – holder identifiability, redemption design and the scope of end-user protections – combined with the regulatory framework in which they operate.

JEL Classification: E42, E58, G21, G28.

Keywords: electronic money tokens, tokenized deposits, MiCAR, stablecoins, singleness of money, financial stability, monetary policy transmission.

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1. Introduction

This note compares euro-denominated electronic money tokens (EMTs) – issued by credit institutions or electronic money institutions (EMIs) under MiCAR – with tokenized deposits, both being forms of privately issued tokenized money recorded on distributed ledger technology. EMTs represent an established instrument category under MiCAR; tokenized deposits remain a prospective development, with no dedicated EU regulatory framework currently in place.¹ Both instruments raise related but distinct questions for regulatory design, financial stability, monetary policy transmission, and the singleness of money. The comparison covers both bearer and non-bearer forms of tokenized deposits (Table 1).²

Since no EU regulatory framework for tokenized deposits currently exists, the note adopts the following working assumption: bearer tokenized deposits are treated as EMTs under MiCAR, while non-bearer tokenized deposits remain subject to the framework applicable to traditional bank deposits. This assumption reflects the “same activity, same risk, same regulation” principle – the standard applied in international regulatory practice to instruments with similar economic characteristics.

The note is organised as follows. Section 2 presents a comparative assessment of the main characteristics of EMTs and tokenized deposits and their economic implications. Section 3 examines a set of technically specific, policy-relevant questions: the degree of economic equivalence between bank-issued EMTs and bearer tokenized deposits (Section 3.1); secondary-market pricing challenges inherent to bearer instruments and the implications for the singleness of money (Section 3.2); the feasibility and rationale of issuing EMTs fully backed by central bank reserves (Section 3.3); the financial stability implications of tokenized money (Section 3.4); the impact on monetary policy transmission (Section 3.5); and the role of the regulatory framework relative to instrument design (Section 3.6).

2. EMTs vs Tokenized Deposits: A Comparative Assessment

The main policy-relevant distinction between EMTs and tokenized deposits does not concern technology, but rather the legal nature of the claim and its mode of settlement. Two design features are decisive: whether the instrument is bearer or non-bearer, and whether settlement occurs within or outside the central bank infrastructure. These features determine how instruments circulate, how they interact with the existing monetary system, and how they may affect the monetary policy transmission and singleness of money.³

In the European Union, EMTs are a category of crypto-assets designed to maintain a stable value relative to a single official currency. They may be issued by credit institutions or by EMIs, which are subject to distinct regulatory requirements under MiCAR.

EMIs do not have access to the central bank balance sheet. They are subject to strict requirements on reserve assets – the “asset-backed model”⁴ – under which at least 30 per cent of their funds (rising to 60 per cent for significant issuers) must be held in

¹ Several of the analytical dimensions examined in this note bear directly on issues raised in the European Commission’s [Targeted Consultation on the Review of MiCAR](#) (European Commission, 2026), open for responses until 31 August 2026. In particular, the analysis in this note is relevant to: the prudential regime for EMT issuers and the question of whether reserve and segregation requirements should be extended to bank-issued EMTs; the adequacy of redemption rights and crisis management measures under Articles 46-47; the access to central banks’ balance sheet and the potential extension of lender-of-last-resort facilities to EMIs issuing EMTs; and the regulatory treatment of tokenised deposits under the CRD/CRR framework and deposit insurance. The note’s working assumption, that bearer tokenised deposits should be subject to EMT-equivalent regulation, is also directly relevant to the consultation’s questions on whether the current MiCAR framework remains fit for purpose considering market developments involving tokenised commercial bank money.

² Bearer tokenized deposits are transferable claims that can circulate to holders outside the issuing bank without a contemporaneous update of the issuer’s balance sheet, adjusted only upon redemption. Non-bearer tokenized deposits are account-based instruments linked to an identified customer, settled through the traditional two-tier system.

³ Scotti (2026) “*Digital Money and the Architecture of Trust*”. Banca d’Italia, ECB, EABCN and CEPR Workshop on ‘Digital Assets and Monetary Policy Transmission’.

⁴ See Born A. et al, 2026, “*Euro stablecoins and their potential effect on sovereign bond market*”. ECB Macprudential Bulletin 33.

segregated accounts with credit institutions, recorded as liabilities on those institutions' balance sheet. The remaining portion must be invested in low-risk instruments, such as government bonds or highly-liquid covered bonds.⁵

Banks issuing EMTs directly are instead subject to the standard prudential framework – the “balance-sheet model”⁶ – under which LCR and NSFR requirements apply to the balance sheet as a whole. Some banks may prefer to issue EMTs through a subsidiary⁷ holding an EMI licence. The reasons may include reputational considerations, the opportunity to pilot a new business line without direct exposure of the bank's brand, and differences in compliance costs and prudential requirements across the two frameworks.⁸

A tokenized deposit is a deposit balance recorded on a distributed ledger technology (DLT) or similar programmable platform. It constitutes a digital representation of a commercial bank liability that mirrors a traditional deposit. Tokenization does not alter the fundamental nature of the underlying claim or its regulatory qualification as a deposit.

Two forms can be distinguished in theory. Non-bearer tokenized deposits are account-based instruments that settle in central bank money, preserving the logic of the two-tier monetary system. Transfers follow the existing burn/issue mechanism: the sender's token is cancelled and a new token is issued to the receiver, with concurrent settlement in central bank reserves. Bearer tokenized deposits are transferable claims that can circulate to holders outside the issuing bank without a contemporaneous update of the issuer's balance sheet, which is adjusted only upon redemption. Both EMTs and bearer tokenized deposits are bearer instruments: the redemption right is attached to the current token holder, not to the original purchaser. Non-bearer tokenized deposits are account-based instruments linked to an identified customer and do not circulate outside the issuing bank.

The bearer nature of EMTs and bearer tokenized deposits enables the formation of an autonomous secondary market and, with it, the possibility of a market price that deviates from par. Such instruments are subject to price divergence arising from settlement frictions, perceived credit risk differentials across issuers, or operational redemption conditions as specified in the issuer's white paper. In practice, redemption timelines may range from near instantaneous to more than twenty business days. Non-bearer tokenized deposits involve no secondary market and no risk of price divergence. The transfer of funds follows the existing two-tier system: accounts are debited and credited, and settlement occurring in central bank money. These instruments are therefore consistent with the singleness of money.

MiCAR prohibits the remuneration of EMTs by both issuers and crypto-asset service providers (CASPs), with the explicit objective of promoting their use as a means of payment rather than a store of value. This prohibition is consistent with the regulatory treatment of e-money under the Electronic Money Directive (EMD2), which similarly restricts interest payments to e-money holders. The parallel reflects the application of the “same activity, same risk, same regulation” principle: EMTs, like e-money, are payment instruments and should not function as deposit substitutes. Non-bearer tokenized deposits are not subject to this restriction and may continue to pay interest as ordinary deposits. Given the substantial economic equivalence between bank-issued EMTs and bearer tokenized deposits, a consistent application of the same principle would call for extending the non-remuneration requirement to bearer tokenized deposits.

⁵ In the asset-backed model, the assets backing the tokens are legally segregated from the issuer's general estate and must match outstanding liabilities on a one-to-one basis. The reserve is restricted to low-risk assets permitted under MiCAR, limiting the issuer's investment discretion. This framework prohibits both lending and leverage, ensuring that reserves remain fully available to support redemption. Token holders benefit from a stronger protection regime, having a direct claim on the pool of reserved assets (in some cases, a secondary claim on the issuer's estate). Capital requirements are comparatively simpler, generally amounting to a small percentage of the reserve, possibly complemented by additional stress-testing obligations.

⁶ In the balance sheet model, the assets backing stablecoins form part of the issuer's general estate and are not legally segregated. There is no strict one-to-one link between assets and liabilities, and issuers retain broad discretion over how issuance proceeds are invested. This framework allows both lending activities and the use of leverage, reflecting a more flexible, bank-like balance sheet structure. In the event of insolvency, token holders rank *pari passu* with other creditors rather than having a dedicated claim on a reserve pool. Capital requirements follow prudential banking rules, including risk-weighted capital ratios and leverage constraints.

⁷ That must use the asset-backed model.

⁸ Within the EU, banking institutions use either framework. For instance, EURCV is issued by SG-FORGE, a Société Générale subsidiary holding an EMI licence, under an asset-backed structure. By contrast, Banking Circle S.A. issues EURI and ODDO BHF issues EUROD following a balance sheet approach (see Aerts S., et al (2025), “*Stablecoins on the rise: still small in the euro area, but spillover risks loom*” ECB Financial Stability Review).

The prudential determinant of bank-issued EMTs and bearer tokenized deposits is the same: the issuing bank’s ability to identify the token holder on a continuous basis, as established by the Basel framework (SCO60.107). Where continuous identification is not possible – the structural condition of bearer instruments circulating on permissionless blockchains via unhosted wallets – the liability must be classified as unsecured wholesale funding from other legal entities (LCR40.42), implying a 100 per cent LCR run-off rate.⁹ This treatment is materially less favourable than that applicable to retail deposits, generating higher HQLA requirements and potentially constraining credit supply when liquidity requirements are binding.

The prudential impact of EMTs issued by EMIs operates through a different channel. The deposits that EMIs place with banks are subject to a 100 per cent outflow rate. This reduces the recipient banks’ LCR. Banks seeking to preserve their LCR unchanged may respond by increasing their HQLA holdings relatively to other assets in their balance sheet, with a potential contractionary effect on credit supply.

Non-bearer tokenized deposits, where the holder is continuously identifiable, receive the standard prudential treatment based on counterparty type. This preserves the same regulatory assessment as traditional sight deposits.

EMTs are explicitly excluded from deposit guarantee schemes (DGS), which protect retail deposits up to €100,000. The “same activity, same risk, same regulation” principle would call for extending this exclusion to bearer tokenized deposits. Applying DGS coverage to bearer instruments would raise both technical obstacles – notably the difficulty of identifying holders in decentralised settings – and regulatory inconsistencies, by creating an unjustified asymmetry between economically equivalent instruments. Non-bearer tokenized deposits, by contrast, retain DGS coverage, preserving one of the defining features of the traditional bank deposit.

⁹ All else equal, issuing EMTs would reduce a bank’s LCR, as the framework requires the stock of unencumbered high-quality liquid assets (HQLA) to exceed expected net cash outflows over a 30-day stress period. To prevent such a decline, a bank could either increase its holdings of HQLA, such as sovereign bonds, or alternatively lower its projected net outflows, for example by replacing short-term wholesale funding with longer-term bond issuance.

Table 1 – Comparative assessment of E-Money Tokens and Tokenized deposits ¹⁰						
		EMT (MiCAR) — Banks	EMT (MiCAR) — EMI	Bearer Tokenized Deposits (Hp: EMT-like regulation)	Non-bearer Tokenized Deposits (Hp: current sight-deposit regulation)	Economic issue
1.	Issuer	Bank	EMI	Bank	Bank	Some banks might prefer to issue EMTs through an EMI subsidiary. Relevant aspects to assess this option include: — Compliance costs: authorisation, supervision, risk management and capital allocation differ across the two frameworks (for Banks and for EMIs). — Reserve requirements: EMIs face stricter and more prescriptive requirements than banks, as they must hold liquid, segregated reserves; 30% bank deposits (60% for significant EMTs) and segregated reserves; for banks, LCR/NSFR. — Access to the central bank balance sheet: only banks have direct access.
2.	Nature of the instrument	Bearer	Bearer	Bearer	Non-bearer	The nature of the instrument changes its economic and risk profiles. Bearer instruments can give rise to a secondary market and trade at prices deviating from par. Non-bearer instruments do not circulate independently of the issuer's ledger and cannot form a secondary market.
3.	Rights and obligations	Governed by the white paper	Governed by the white paper	Governed by the underlying deposit contract, subject to EMT-equivalent requirements under the working assumption of this note	Governed by the underlying deposit contract	Under the working assumption adopted in this note, bearer tokenised deposits are treated as EMTs under MiCAR. In the absence of a specific regulatory framework, however, the contractual terms governing rights and obligations may differ from those of EMTs – in particular regarding redemption timelines, fees, and the conditions for suspension. The two bearer instruments could further differ where the issuer maintains a register of token ownership. ¹¹
4.	Access to the central bank balance sheet	Yes	No	Yes	Yes	The absence of central bank access for EMIs is a first-order structural distinction. It determines the severity of de-pegging risk and the depth of run dynamics: banks can access intraday credit and lender-of-last-resort facilities; EMIs cannot and must meet redemption requests solely from reserve assets liquidated at market prices. ¹² A Eurosystem-level discussion has identified both potential benefits — mitigating ex-ante run risks, strengthening the link between stablecoins and central bank money, supporting singleness — and risks — moral hazard,

¹⁰ Issuers are EU residents and the token is in €. Since, to date, there is no specific regulatory framework for tokenized deposits in the EU, we assume in what follows that bearer tokenized deposits are treated as Electronic Money Tokens (EMTs) under the European crypto-assets regulation, while non-bearer tokenized deposits remain subject to the same regulatory framework applicable to traditional bank deposits. This distinction reflects the different economic nature of the two instruments. Where a tokenized deposit remains account-based and linked to an identified customer at the bank, the token simply represents a different technological means of recording an existing bank liability; the economic function of the instrument is unchanged, and the prudential banking framework and deposit guarantee mechanisms therefore continue to apply. By contrast, where the deposit takes a bearer form and the claim on the instrument is embedded in the possession of the token, it acquires characteristics more akin to those of a transferable and potentially tradable payment instrument, analogous to stablecoins. In this case, it appears consistent to apply the EMT regime. This approach makes it possible to preserve the regulatory principle that instruments with similar economic characteristics should be subject to similar rules, while avoiding regulatory arbitrage between functionally equivalent forms of money.

¹¹ Bearer instruments typically possess three properties: (i) the holder of the instrument is also its owner; (ii) ownership of the instrument is transferred through the transfer of the instrument itself; (iii) the issuer maintains no register of ownership. The latter characteristic may vary depending on the instrument and the platform used. In the case of bearer tokenized deposits, unlike classical bearer instruments, the underlying legal relationship between the bank and an identified counterparty is preserved (for AML/KYC purposes).

¹² The [MiCAR review consultation](#) asks about the potential extension of emergency liquidity support and lender-of-last-resort facilities to EMIs issuing EMTs (Question 25). This question bears directly on the structural asymmetry identified here. In UK, the [Consultation Paper](#) published in November 2025 envisages that systemic stablecoins issuers would hold a minimum of 40 per cent of backing assets as unremunerated deposits at the BoE. The Fed is also considering the possibility to offer a “[skinny](#)” [payment account](#) to give limited access to its payment and settlement services to federally regulated stablecoin issuers with bank charters.

						uneven playing field with MMFs, potential creation of synthetic CBDCs without holding limits, and implications for monetary policy transmission. ¹³
5.	Secondary market	Yes. No update to the issuer's balance sheet is required upon each transfer; the balance sheet is adjusted only upon redemption.	Yes. Same as bank-issued EMTs.	Yes. Same as bank-issued EMTs.	No. Transfers change the composition of liabilities of the intermediaries involved, with accounts debited and credited and settlement in central bank money.	Bearer instruments circulate as transferable issuer liabilities and are, for all intents and purposes, comparable to tradable assets. Par redeemability does not preclude secondary-market price formation: deviations from par can arise whenever redemption is subject to frictions – whether time-based, quantitative, or eligibility-related.¹⁴ Deviations from par may reflect: – settlement frictions: MiCAR requires at-par redemption but delegates timelines to each issuer's white paper, implying material variability across issuers;¹⁵ – perceived credit risk or loss of confidence in the issuer's ability to guarantee convertibility at par. Non-bearer tokenized deposits are tokens representing a <i>not directly transferable issuer liability</i>. The transfer of deposits follows the current <i>two-tier</i> system, where parties' accounts are debited and credited, settling in central bank money.
6.	De-pegging risk	Mitigated by central bank backstop. Banks can access intraday credit and lender-of-last-resort facilities, containing the tail risk of a self-reinforcing redemption spiral.	Severe: no central bank access. Redemption requests must be met entirely from reserve assets liquidated at market prices; the cash-in-advance constraint is binding under stress.	Mitigated by central bank backstop, as bank-issued EMTs.	Absent. No secondary market; transfers occur at par through the two-tier system.	The identity of the issuer introduces a first-order distinction in de-pegging risk that is independent of instrument design. EMI-issued EMTs are structurally more exposed to self-reinforcing run dynamics than bank-issued bearer instruments, precisely because the lender-of-last-resort backstop is absent.
7.	Reserves	LCR/NSFR requirements applied to the balance sheet as a whole – the <i>balance-sheet model</i> . ¹⁶	Liquid and segregated reserves – the <i>asset-backed model</i> . Minimum composition: at least 30 per cent in bank deposits (rising to 60 per cent for significant EMTs); ¹⁷ the remainder in low-risk instruments. Level 2 EBA rules are being	LCR/NSFR requirements applied to the balance sheet as a whole, consistent with the working assumption of EMT-like treatment.	LCR/NSFR requirements applied to the balance sheet as a whole and minimum reserve requirements (MRR).	– Liquid reserves limit liquidity risks and reduce ex-ante probability of bank runs. Segregated reserves protect token holders in the event of issuer default, limiting ex-post default risk.¹⁸

¹³ Towards a Eurosystem digital asset strategy: ECB Governing Council Seminar, 19 November 2025.

¹⁴ This mechanism has a precise analogical precedent: during the US free banking era (1837–1863), privately issued banknotes circulated as bearer instruments at issuer-specific discounts from par, violating the no-questions-asked principle in precisely the same way (Gorton, 2024; Harris and Rogoff, 2026).

¹⁵ With the recent public consultation, the European Commission asked if there is a need to weaken, keep as is or strengthen the timeframe for redemption by the issuer.

¹⁶ The question about reserve asset segregation has been included in the targeted consultation document on the MiCAR review. Under the current framework, credit institutions issuing EMTs are not subject to the reserve asset segregation requirements or the requirement to maintain a reserve of assets applicable to non-bank EMT issuer (art. 58). The consultation ask to the public if MiCAR should require reserve maintenance and segregation of EMT reserve asset within the credit institution's balance sheet, require issuance through a legally separated entity (with full segregation) or keep the current approach.

¹⁷ National competent authorities can extend these requirements also to non-significant EMTs issued by EMIs if necessary to reduce risks. These requirements specify the allocation of reserves across different maturities and identify highly liquid financial instruments in which reserves can be invested. The EBA's Draft Regulatory Technical Standards further specifying the liquidity requirements of the reserve of assets under Article 36(4) of Regulation (EU) 2023/1114 provide that, for significant EMTs, and, at the discretion of the national competent authority, also for non-significant EMTs, issued by EMIs, the rules under development require that at least 20% of the reserve of assets, measured at market value (40% for significant tokens), must be redeemable with one business days' notice, and at least 30% (60% for significant tokens) must be redeemable with five business days' notice.

¹⁸ The MiCAR review consultation (European Commission, 2026) asks whether reserve maintenance and segregation requirements should be extended to EMTs issued by credit institutions (Question 16), and whether the 30–60 per cent bank deposit requirement for EMI-issued EMTs remains appropriately calibrated (Question 26).

			developed to further specify liquidity requirements.			
8.	Remuneration	Prohibited for both issuers and CASPs under MiCAR. This is consistent with the treatment of e-money under EMD2 and the “same activity, same risk, same regulation” principle.	Prohibited. Same as bank-issued EMTs.	Prohibited. Under the working assumption of this note, same as bank-issued EMTs.	Permitted. Non-bearer tokenised deposits may pay interest as ordinary sight deposits.	The remuneration ban reflects a deliberate legislative choice to limit EMTs to their payment function and prevent them from competing with bank deposits as a store of value. This is consistent with the approach under EMD2. However, the prohibition creates a persistent opportunity cost in positive interest rate environments¹⁹ and may have contributed to the limited development of the euro-denominated EMT market, which currently accounts for less than 1 per cent of the global stablecoin market. The MiCAR review consultation explicitly asks whether interest or interest-equivalent remuneration should be permitted, fully or under defined conditions (Part 2).
9.	Implications for the amount, distribution and concentration of deposits	Total liability size unchanged. Composition and regulatory assessment change. Bearer EMTs are treated as less stable than overnight deposits for LCR and NSFR purposes.	Total liability size broadly unchanged. Implications depend on reserve asset allocation. Deposits placed by EMIs with banks are subject to a 100 per cent LCR outflow rate. Level 2 EBA rules are being developed to specify concentration limits on EMI deposits, expressed as percentages of total reserve assets and of the custodian bank’s balance sheet. ²⁰	Total liability size unchanged. Under the working assumption of this note, same as bank-issued EMTs.	Total liability size and regulatory assessment are unchanged. Non-bearer tokenised deposits are treated as stable as overnight deposits for LCR and NSFR purposes	The overall size of bank money is unaffected; in some cases, nature of some liabilities changes from non-bearer to bearer; in other cases deposits change from retail to wholesales. The prudential classification of bearer instruments and wholesale deposits as less stable than traditional deposits, penalizes banks in terms of LCR and NSFR. This assumption warrants scrutiny. For bearer instruments, transferability does not cause the liability to exit the issuer’s balance sheet – the token changes hands but the issuer’s obligation remains unchanged until redemption is requested. Similar considerations hold for wholesale deposits placed by EMI issuers of EMTs with banks.²¹ For EMTs issued by banks, the Basel framework (SCO60.107) distinguishes two cases: – Case 1) Holder identifiable at all times: standard prudential treatment applies based on counterparty type (retail or wholesale); retail holders receive less favourable treatment than stable retail deposits, reflecting bearer transferability. – Case 2) Holder not identifiable at all times: the liability must be classified as unsecured wholesale funding from other legal entities (LCR40.42), implying a 100 per cent run-off rate and zero NSFR ASF factor for maturities below six months (50 per cent for six to twelve months). The same distinction applies to bearer tokenised deposits.

¹⁹ This “implicit tax” is highly unstable and can contribute to the creation of cyclical flows in and out of stablecoins linked to the interest rate cycles (see Bindseil U., 2025, *Stablecoin regulation revisited: is prohibiting remuneration the solution?* SUERF Policy Note No 394).

²⁰ [EBA, Draft Regulatory Technical Standards to further specify the liquidity requirements of the reserve of assets under Article 36\(4\) of Regulation \(EU\) 2023/1114](#). For significant EMTs, and, at the discretion of the national competent authority, also for non-significant ones, issued by EMIs, the draft rules provide that deposits with any single custodian bank must not exceed 1.5 per cent of the bank’s total assets. In addition, for a deposit to qualify as part of the reserve of assets, it must meet concentration thresholds based on the bank’s profile: up to 25 per cent of reserves for G-SIIs or O-SIIs, 15 per cent for other large institutions under the CRR, and 5 per cent for all other banks. The MiCAR review consultation (European Commission, 2026) asks about concentration limits on deposits held by EMI issuers with credit institutions (Question 26), a dimension currently being addressed in Level 2 EBA rules.

²¹ The prudential classification of bearer instruments as less stable than traditional deposits reflects the assumption that transferability increases outflow risk. This assumption warrants scrutiny: for bearer instruments, transferability does not cause the liability to exit the issuer’s balance sheet – the token changes hands but the issuer’s obligation remains unchanged until redemption is requested. This contrasts with non-bearer deposits, where each transfer exits the originating bank’s balance sheet through interbank settlement. The relevant risk driver is therefore not transferability per se, but redemption frictions and conditions. A separate but related point concerns the treatment of wholesale deposits placed by EMI issuers with banks in fulfilment of their reserve requirements. These deposits are subject to a 100 per cent LCR outflow rate under the Basel framework, on the grounds that wholesale funding from financial institutions is less stable than retail deposits. This treatment is appropriate for standard wholesale deposits, where the depositor can withdraw funds at will. However, in the case of EMI-issued EMTs, the deposits held by the EMI against outstanding tokens are structurally different: their effective stability depends not on the EMI’s discretion to withdraw but on the redemption behaviour of the underlying token holders. As long as token holders do not redeem – and, as noted above, secondary-market transfers do not trigger redemption – the EMI’s deposit at the custodian bank is not at risk of outflow. On this basis, a blanket application of the 100 per cent wholesale run-off rate to EMI reserve deposits may overstate their instability relative to traditional retail deposits of equivalent size. The appropriate calibration of outflow rates for this category of deposits warrants further analytical and regulatory attention.

10.	Implications for credit supply	Affected. Although there is no impact on banks' liability size, the less favourable LCR/NSFR treatment of bearer EMTs relative to retail deposits may reduce credit supply when liquidity constraints are binding.	Affected. Depends on reserve asset allocation. EMI deposits received by banks carry a 100 per cent run-off rate, worsening recipient banks' LCR and potentially reducing credit supply.	Affected. Same as bank-issued EMTs	Not directly affected.	– If the holder is not identifiable, the treatment of EMTs and bearer tokenized deposits implies a high LCR outflow rate (100 per cent) and a low NSFR ASF factor (0/50 per cent). This implies a greater need to hold HQLA and rely on other stable sources, with a negative impact on credit supply. – If the holder is identifiable, there could still be a negative impact on credit supply, given the “less stable” treatment versus traditional bank deposits. – In case of EMIs issuing EMTs, deposits that banks receive from the issuers are subject to a 100 per cent run-off rate.
11.	Monetary policy transmission	Affected. Partial substitution of remunerated retail deposits with non-remunerated EMTs on the bank's own balance sheet.	Affected. Shift from retail deposits to wholesale deposits from NBFI issuers, which track policy rates more closely.	Affected. Effects broadly analogous to bank-issued EMTs, given near-functional economic equivalence.	Partially Affected. Economically equivalent to traditional deposits. DLT technology could reduce operational frictions that underpin depositor inertia, with implications for monetary policy transmission.	– For bank issued EMTs: Replacing remunerated retail deposits with non-remunerated EMTs reduces the responsiveness of funding costs to policy rate changes, dampening the interest rate channel and weakening pass-through to lending rates. The reduced sensitivity of deposit volumes to policy rate changes further weakens the deposit channel. Finally, the lower responsiveness of funding costs – relative to assets that reprice more slowly – reduces the sensitivity of bank profitability to policy rate changes, attenuating the bank capital channel. – For EMI issued EMTs: The substitution of retail deposits with wholesale deposits from NBFI issuers makes banks' funding costs more closely linked to policy rates, strengthening the interest rate channel and increasing pass-through to lending rates. The greater responsiveness of funding costs relative to assets that reprice more slowly increases the sensitivity of bank profitability to policy rate changes, reinforcing the bank capital channel. However, the reduced role of retail deposits may weaken the deposit channel, as deposit volumes become less sensitive to policy rate changes. – Non-bearer tokenized deposits: if DLT technology materially reduces the operational frictions that underpin depositor inertia, the effective responsiveness of funding costs to policy rate changes may increase. Banks can no longer exploit depositor stickiness to keep deposit rates below the policy rate, making pass-through to funding costs and lending rates faster and more complete – strengthening the interest rate channel. The greater responsiveness of funding costs relative to assets that reprice more slowly increases the sensitivity of bank profitability to policy rate changes, reinforcing the bank capital channel. The MiCAR review consultation (European Commission, 2026) asks about the potential impact of stablecoins on monetary policy transmission and financial stability (Questions 9 and 24).
12.	Deposit insurance (DGS)	No. Explicitly excluded under MiCAR.	No. Explicitly excluded under MiCAR.	No. Under the working assumption of EMT-like treatment.	Yes. Standard deposit guarantee scheme (DGS) coverage up to €100,000 applies	The exclusion of EMTs from deposit guarantee schemes follows from the combined reading of two MiCAR provisions.²² The underlying rationale – that instruments designed as means of payment should not compete with protected deposits as stores of value – is the same principle that informs MiCAR's prohibition on remuneration for EMTs. Extending DGS to bearer tokenised deposits would raise two distinct problems. First, a technical obstacle: the anonymity of bearer instruments circulating on permissionless blockchains via unhosted wallets makes holder identification – a prerequisite for DGS claims – structurally difficult. Second, a regulatory inconsistency: applying DGS to bearer tokenised deposits while

²² Article 48(3) clarifies that EMT holders do not benefit from the depositor protection rights established under EU law, in particular those provided under Directive 2014/49/EU (the Deposit Guarantee Schemes Directive, DGSD). Article 51(4) further specifies that EMT's white paper shall contain a clear warning that e-money tokens are not covered by the deposit guarantee schemes under Directive 2014/49/EU. This treatment is consistent with the approach under the Electronic Money Directive (EMD2, Directive 2009/110/EC), which similarly excluded e-money from deposit guarantee coverage on the grounds that e-money constitutes a payment instrument rather than a savings product.

						excluding economically equivalent EMTs would create an unjustified asymmetry, contrary to the “same activity, same risk, same regulation” principle. ²³
13.	Redeemability	Permanent at-par redeemability upon request by the current token holder.	Same as bank-issued EMTs.	Same as EMTs under the working assumption.	Permanent, at-par redeemability governed by the deposit contract.	Operational redemption conditions are a first-order determinant of secondary-market pricing for bearer instruments: the settlement lag is the effective maturity of the embedded redemption option, and deviations from par reflect the market’s assessment of interim impairment risk within that window. Structural trade-off: a shorter settlement lag strengthens the par anchor but increases run risk by requiring near-immediate mobilisation of reserves; a longer lag reduces run risk but introduces an endogenous discount in the secondary-market price (see Section 3.2).²⁴ For EMTs, MiCAR delegates the definition of redemption timelines to the issuer’s White Paper; moreover, MiCAR allows the suspension of redemptions (Art. 46) exclusively by decision of the competent authority and prohibits redemption fees, except where a redemption plan is implemented.²⁵ For non-bearer tokenized deposits, redeemability is name-based; the right to reimbursement can be exercised only by the deposit holder. Redemption must be carried out without delay, subject to contractual limits (notice periods, lock-up period, and quantitative caps). In other jurisdictions access to the primary market for minting and redemption is restricted to a defined set of institutional arbitrageurs, in contrast to MiCAR’s universal redemption right (see for example the GENIUS Act in the US).
14.	Holding limits or transaction caps	No	No	No	No	No EU rules impose holding or transaction limits on these instruments (unlike cash). Only AML monitoring thresholds apply.
15.	Ledger arrangement	Native tokens on the relevant distributed ledger	Native tokens on the relevant distributed ledger	- Native tokens (<i>One-layer model</i>) - Non-native tokens (<i>Two-layer model</i>)	- Native tokens (<i>One-layer model</i>) - Non-native tokens (<i>Two-layer model</i>)	In the one-layer model, deposits are recorded directly on a DLT, replacing the traditional bank ledger. From the depositor’s perspective, the experience is equivalent to a traditional deposit.²⁶ In the two-layer model, on-chain deposits require a corresponding off-chain bank account; the token represents a claim on a balance maintained in the legacy system.
16.	Infrastructure	Permissioned blockchain or permissionless blockchain	Permissioned blockchain or permissionless blockchain	Permissioned blockchain or permissionless blockchain	Permissioned blockchain only.	Non-bearer tokenised deposits require interoperable infrastructure to enable transfers across institutions. Four architectural options are available Multiple-fragmented: each bank operates on its own infrastructure with no interoperability. Multiple-interoperable: make individual bank platforms interoperable to ensure diffusion. Common-combined: banks could develop a shared <i>programmable platform</i>. Common-RTGS: replicate the current settlement scheme by integrating the DLT platform with RTGS systems (e.g., TIPS Hash-link) or by issuing tokenized central bank money directly on-platform (ECB projects Appia–Pontes). Only permissionless blockchain are compatible with unhosted wallets. The use of unhosted wallets is a key determinant of holder identifiability and,

²³ The MiCAR review consultation asks about the regulatory treatment of tokenised deposits under deposit insurance frameworks (Question 79).

²⁴ The MiCAR review consultation asks whether redemption timing requirements should be strengthened and whether supervisory powers to intervene in redemption plans are adequate (Question 23).

²⁵ It is an operational plan to guarantee the orderly redemption of tokens decided by the competent authority if the issuer is unable, or likely to be unable, to meet its obligations.

²⁶ This distinction is relevant for the bank’s back-office operations, depending on the type of ledger used to record balances and their respective identifiers (IBAN or DLT address).

						consequently, of prudential classification (see row 8) and AML/CFT compliance. Bearer instruments circulating via unhosted wallets operate in pseudo-anonymity. EU rules require CASPs to verify customer identity when interacting with unhosted wallets, but transfers directly between unhosted wallets remain outside the KYC perimeter.²⁷ This creates a structural integrity gap that is absent for non-bearer tokenised deposits.²⁸
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²⁷ Stablecoin issuers can technically freeze, or block tokens held in self-custodial wallets via smart contract mechanisms, yet EU law currently contains no provisions governing the exercise of such powers – unlike emerging frameworks in other jurisdictions, most notably the US GENIUS Act. See Angelini P. (2025), “Criptoattività, stablecoin e antiriciclaggio”.

²⁸ Regulation (EU) 2023/1113, Transfer of Funds Regulation (TFR).

3. Policy-Relevant Issues

The comparative assessment in Section 2 establishes the structural characteristics of EMTs and tokenized deposits. This section examines a set of more specific but policy-relevant questions that arise from that comparison. The analysis is organised as a series of focused questions, each addressing a distinct dimension of the EMT/tokenized deposit nexus. This approach has two advantages. It allows each issue to be examined on its own terms, without forcing a linear narrative that obscures the heterogeneity of the relevant trade-offs. And it makes the policy implications more transparent, by ensuring that each analytical step leads directly to a concrete economic consideration. Section 3.1 analyses the degree of economic equivalence between bank-issued EMTs and bearer tokenized deposits, from both the issuer's and the user's perspective, and draws out the prudential and regulatory implications. Section 3.2 examines the secondary-market pricing challenges inherent to bearer instruments and the role of regulation in mitigating deviations from par. Section 3.3 assesses the feasibility and economic rationale of issuing EMTs fully backed by central bank reserves. Section 3.4 examines whether tokenized forms of money make the financial system safer and more resilient, or whether they introduce new channels of instability. Section 3.5 analyses the impact of tokenized money on monetary policy transmission, examining the role of both the type of instrument and the identity of the issuer as equally relevant and interacting determinants. Section 3.6 assesses the extent to which outcomes depend on the instrument itself rather than on the regulatory framework within which it operates.

3.1. Are Bank-Issued EMTs and Bearer Tokenized Deposits Economically Distinct?

From an economic perspective, bank-issued EMTs and bearer tokenized deposits can be understood as tokenized bearer liabilities that share a common set of structural features, giving rise to a near-functional equivalence.

Both instruments can circulate on DLT without requiring a contemporaneous update of the issuer's balance sheet at each transfer. Balance sheet adjustments occur only upon redemption. Both entail a standing obligation of redemption at par. The right to redemption attaches to the current token holder rather than to the original purchaser – the defining property of bearer instruments, whereby ownership transfers with possession.

As transferable bearer claims, both instruments can give rise to secondary markets and, consequently, to deviations from par. The underlying drivers of such deviations are also common: settlement frictions, perceived issuer credit risk, and – particularly in the case of EMTs – operational redemption conditions specified in the white paper, including potentially variable timelines. Par redeemability is not sufficient to ensure price stability: deviations from par can emerge whenever redemption is subject to frictions – whether time-based, quantitative, or eligibility-related – that create scope for secondary-market pricing.

MiCAR prohibits the remuneration of EMTs by both issuers and CASPs. As noted in Section 2, this is consistent with the treatment of e-money under EMD2 and reflects the “same activity, same risk, same regulation” principle. The economic equivalence between EMTs and bearer tokenized deposits would call for extending this requirement to the latter.

Prudential treatment (LCR/NSFR). The key prudential determinant is not the legal classification of the instrument, but the bank's ability to identify the token holder on a continuous basis. This criterion – set out in the Basel framework (SCO60.107) and transposed on a transitional basis into CRR3 – should be applied symmetrically across both instruments.

Where the holder cannot be continuously identified – an inherent feature of bearer tokens circulating on permissionless blockchains via unhosted wallets – the liability must be classified as unsecured wholesale funding from other legal entities (LCR40.42). This implies a 100% LCR run-off rate and a zero NSFR available stable funding (ASF) factor for maturities below six months, rising to 50% for maturities between six and twelve months. In this scenario, EMTs and bearer tokenized deposits receive identical prudential treatment, effectively eliminating any economic distinction between the two.

Where the bank can continuously identify the holder – for instance through an ownership register maintained by the issuer – the treatment depends on the nature of the counterparty (retail versus wholesale), with corresponding LCR outflow rates and NSFR ASF factors. Even in this case, both instruments are likely to be classified as less stable than traditional retail deposits, reflecting the intrinsic transferability of bearer instruments.²⁹

Under both scenarios, banks issuing either EMTs or bearer tokenized deposits are likely to face higher liquidity requirements and less stable funding profiles, with potential adverse effects on credit supply, particularly when LCR and NSFR constraints are binding.

The absence of meaningful prudential differences between the two instruments highlights a clear risk of regulatory arbitrage. If bearer tokenized deposits were treated as ordinary deposits, banks could issue liabilities economically equivalent to EMTs, while benefiting from more favourable prudential treatment – in direct violation of the “same activity, same risk, same rule” principle.

Holder protection. EMTs are explicitly excluded from deposit guarantee schemes coverage. A consistent regulatory approach would suggest extending this exclusion to bearer tokenized deposits. Applying DGS coverage to bearer instruments would raise both technical obstacles – notably the difficulty of identifying holders in decentralised settings – and regulatory inconsistencies, creating an unjustified asymmetry between economically equivalent instruments.

Operational redemption conditions. Redemption arrangements may vary across issuers for both EMTs and tokenized deposits. Under MiCAR, redemption timelines and conditions are specified in the issuer’s white paper and may range from near-instantaneous settlement to delays of several days or longer. Such heterogeneity can generate a “duration discount” in secondary markets. A similar logic applies to bearer tokenized deposits, where redemption frictions depend on platform design and on whether the issuing bank maintains an ownership register, thereby reducing operational constraints related to AML/CFT compliance.

Remuneration. MiCAR prohibits the remuneration of EMTs by both issuers and crypto-asset service providers (Art. 50). The prohibition is intentionally broad: any benefit linked to the duration of token holding – including indirect forms of remuneration structured as net compensation, discounts, or third-party rewards – is treated as interest and falls within the scope of the ban (Art. 50(3)). This design reflects a deliberate policy choice to confine EMTs to their payment function, preventing their use as a store of value.³⁰ The economic equivalence between bank-issued EMTs and bearer tokenized deposits established in the preceding analysis calls for a consistent application of the non-remuneration requirement to the latter.³¹

Conclusion. Bank-issued EMTs and bearer tokenized deposits are technically and economically near-identical instruments: both are transferable bearer liabilities on DLT, featuring balance-sheet recognition primarily at redemption, a right to redeem at par held by the current possessor, and the potential for secondary-market trading at prices different from par. The relevant policy and prudential questions are therefore driven by three underlying structural features that shape liquidity risk and run dynamics: (i) the identifiability of the holder, which determines prudential classification; (ii) the design of redemption arrangements and associated frictions, which affect the strength of the par anchor; and (iii) the scope of end-user protection. Any residual differences in regulatory treatment not grounded in these structural characteristics risk creating distortions and should be addressed to prevent regulatory arbitrage.

3.2. What issues arise with bearer instruments in terms of secondary-market pricing? What role does regulation play in mitigating these issues?

Unlike bank deposits and traditional e-money – account-based instruments without a secondary market, where doubts about the issuer manifest directly as redemption requests – bearer instruments such as EMTs and bearer tokenized deposits embed the claim

²⁹ This classification warrants scrutiny from an economic standpoint. On this see Footnote 20.

³⁰ The same prohibition applies, via Art. 40, to asset-referenced tokens.

³¹ Failure to extend the prohibition would create an incentive to structure bearer payment instruments as tokenized deposits rather than EMTs.

on the issuer in a tradable unit on DLT. This feature enables an autonomous secondary-market price to form, giving rise to a possible trade-off between de-pegging and run risks.

De-pegging risk. Even with adequate reserves and a formal at-par redemption obligation, the secondary-market price can deviate from par. Arbitrage between purchasing on the secondary market and redeeming on the primary market is effective only if convertibility is exercisable predictably and without frictions. When the settlement lag is non-zero or perceived as uncertain, the token acquires an implicit duration component and a premium for interim impairment – the risk that an adverse event occurs (operational, regulatory, or insolvency-related) in the window between a redemption request and its settlement. The deviation from par is therefore proportional to the length of the settlement lag and the intensity of interim risks, even in the absence of issuer solvency concerns.

This mechanism has a precise “analogical” precedent. During the free banking era in the United States (1837–1863), privately issued banknotes functioned as bearer instruments and circulated at discounts that varied with the issuing bank’s geographic distance and perceived creditworthiness.³² Discounts of up to 20 per cent were observed for notes issued by distant banks (Gorton and Zhang, 2023). Weekly newspapers – the *bank note reporters* – published secondary-market prices for each issuing bank’s notes, and a class of specialist intermediaries, the note brokers, made markets in these instruments. The no-questions-asked (NQA) principle – the requirement that money be accepted at face value without due diligence on the issuer – was systematically violated: every transaction involving out-of-state notes required due diligence on the issuer, introducing frictions that made private bank notes an economically inefficient means of payment (Gorton, 2024).³³ The analogical parallel with EMTs and bearer tokenized deposits is direct. As Harris and Rogoff (2026) observe, stablecoins are, at their core, bearer instruments issued by private entities that promise to convert at par, precisely as the circulating medium of the nineteenth century was. Digital settlement reduces redemption costs relative to shipping bundles of notes by horse and cart, so deviations from par should in general be smaller. Nevertheless, the essential similarity remains: like pre-Civil War banknotes, EMTs and bearer tokenized deposits are bearer claims whose secondary-market price reflects issuer-specific credit risk, settlement frictions, and the effective maturity of the embedded redemption option. The settlement lag – the time between a redemption request and its fulfilment – functions precisely as the distance to the issuing bank did in the nineteenth century: it determines the discount at which the instrument trades relative to par.

The trade-off with run risk. Reducing the settlement lag to strengthen the price anchor exposes the issuer to a more rigid liquidity dynamic: following an information shock, redemption requests must be met almost immediately, leaving little time to mobilise reserves. Conversely, a longer lag reduces liquidity fragility but introduces an endogenous discount in the secondary-market price. This trade-off is structural and cannot be eliminated. Par convertibility is not a mechanical property of the instrument, but an equilibrium condition that depends on the interaction between reserve quality, market expectations, and operational redemption timelines. This is consistent with the broader observation that stablecoins and EMTs structurally struggle to maintain par under stress, precisely because their bearer nature severs the link to central bank settlement (Shin, 2025; Garratt and Shin, 2023).

³² In fact, the earliest forms of free banking predate this by a considerable margin. Around the mid-fifteenth century in Venice: “*Bank money entries not only served as a means of payment for goods, but soon became commodities in their own right, bought and sold*” – as we would say today – “*through the intermediation of brokers. A ten-year ban was threatened against any broker engaged in such activity in 1421. Two years later, any banker, or anyone else, who sold bank entries on their own account or through an intermediary faced a fine of 100 ducats per entry, while the broker, in addition to an equal fine, would have been barred from practising his profession. By 1526, however, the prohibition was modified to the effect that these penalties were declared applicable only where the seller of the entry had been compelled to sustain a loss; so that it remained lawful for anyone to accept bank money entries at par, without any discount or premium, ducat for ducat.*” Ferrara (1871).

³³ Gorton (2024) formalises the pre-Civil War bank note as a zero-coupon perpetual bond with an embedded put option, where the put represents the right – but not the obligation – to redeem the note at par at the issuing bank. The effective maturity of the put is the time required to travel to the issuing bank and present the note for redemption. The implied volatility of the option, computable from observed secondary-market discounts, reflected market-assessed risks including the quality of state bond backing and the perceived solvency of the issuer. Discounts of up to 25 per cent were observed for notes of distant banks – such as the Planters Bank of Tennessee when traded in Philadelphia – and the discount schedule was efficiently priced by note brokers operating in all major cities (Gorton, 2024, Chapter 3). The same formal structure applies to EMTs: the white paper redemption timeline is the effective maturity of the put and observed secondary-market deviations from par price the probability of adverse events – operational, regulatory, or insolvency-related – occurring within that window.

The de-pegging risk described above arises from frictions in the timing of redemption. Ma, Zeng and Zhang (2025) formalise a related but distinct mechanism. Their analysis identifies a separate source of fragility: the asymmetry in market access. In the US stablecoin market, only a restricted set of institutional arbitrageurs can redeem directly with the issuer in the primary market; all other investors are confined to the secondary market and must trade at the prevailing market price. This two-layer structure means that the issuer’s promise of fixed at-par redemption reintroduces strategic complementarity among secondary-market investors: if enough holders sell simultaneously, the issuer’s forced liquidation of reserve assets to meet arbitrageurs’ redemptions reduces the value available for future holders, making further selling rational and self-fulfilling. A key implication is that more efficient arbitrage – achieved by broadening access to the primary market – improves secondary-market price stability but simultaneously amplifies run risk by lowering investors’ price impact from selling. Price stability and financial stability are therefore distinct objectives that respond differently to the same policy lever.

The role of regulation. MiCAR addresses this issue on two distinct levels. Legally, it guarantees at-par convertibility “at any time, at par” (Art. 49), providing a legal basis for the peg and imposing requirements on reserve quality. Operationally, however, MiCAR does not prescribe a quantitative settlement timeline, leaving redemption conditions to each issuer’s white paper (Art. 49 (5)). This architecture ensures transparency – markets can observe and price the declared settlement lag – but leaves substantial issuer-by-issuer variability: in practice, settlement times range from near-zero, for some issuers with verified customers, to more than twenty business days (Table 2). An additional source of uncertainty arises from the fact that, under stress conditions, redemption may be subject to limitations set out in recovery plans (such as daily caps or temporary suspensions of redeemability), which directly affect the effective timing: daily limits de facto lengthen the time to exit, while suspensions render the timing endogenous and potentially indeterminate. Since the detailed content of such plans is not fully observable by the market, prices reflect not only the “ordinary” settlement timing – when disclosed in the white paper – but also the uncertainty surrounding the conditions and timing of the exercise of the redemption right, thereby reinforcing the risk of deviations from par.

Table 2 – Redemption policies of the main euro-denominated EMTs

Token	Issuer	Redemption commitment	Settlement structure	Operational frictions	Implied settlement lag
EURC	Circle (France)	Redemption at par “at any time”; processing typically ≤5 business days	Bank transfer after burn and compliance checks	KYC/KYT checks, banking rails, potential stress measures	≈ 3–5 days
EURI	Banking Circle / Eurite	Redemption within 5 business days after request	Burn wallet + bank transfer	Compliance checks, operational processing	≈5 days
EURCV	Société Générale – Forge	Redemption via partner channel; payment at latest end of month following confirmation	Monthly redemption window for some holders	Off-chain partner channel, institutional onboarding	≈10–30 days ³⁴
EUROD	ODDO BHF	Redemption at par subject to operational cut-off	Intraday cut-off (same-day or next-day settlement)	Banking cut-off times	≈0–1 day
EURØP (EUROP)	Schuman Financial	Expected redemption within 5 business days	Bank settlement after burn	AML/KYC checks and operational processing	≈ 1 day

³⁴ In the white paper it is specified that: “The Issuer shall confirm the reception of such redemption request no later than five (5) Business Days after the reception of the redemption request, subject to the satisfaction of KYC/AML, Permitted Transferee and Sanctions Rules controls performed by the Issuer. Upon such confirmation, holders of EURCV shall submit a transfer request of such EURCV to the Issuer’s public address. The Issuer will approve such transfer request upon the transfer of the redemption amount in euros to the EURCV holder’s cash account, at the latest on the last Business Day of the month following the month the redemption request was confirmed by the Issuer”.

EURR	StablR	Redemption at par “at any time”	Standard bank transfer redemption	Compliance procedures	24 hours
EURAU	AllUnity	Operational flows advertised as near-real-time for verified participants	Straight-through processing with bank rails	Whitelisting / participant verification	≈ minutes–hours
ENEUR	Fiat Republic	Real-time redemption for whitelisted clients; otherwise within 5 business days	Dual track (instant / standard banking settlement)	Compliance verification and rails	≈ 0–5 days
EURe	Monerium	Redemption at par “at any time”	Bank transfer via SEPA after redemption request	Dependence on banking partner and payment infrastructure	1 day
EURQ	Quantoz Payments	Redemption at par “at any time”	Bank settlement after redemption request	Compliance verification and banking rails	≈ 0–20 days

Regulation therefore mitigates de-pegging risk insofar as it imposes transparency on redemption conditions and reserve quality but does not eliminate it. The settlement lag remains an operational design variable that each issuer calibrates – implicitly or explicitly – along the trade-off between peg stability and liquidity risk management.

A further dimension of de-pegging risk depends critically on the identity of the issuer. When a bank issues bearer money instruments – whether EMTs or bearer tokenized deposits – the central bank backstop provides a structural firebreak that is entirely absent for EMI-issued EMTs. A bank facing large-scale redemption requests can access central bank liquidity facilities, draw on intraday credit, and ultimately rely on the lender of last resort. This does not eliminate de-pegging risk, but it materially contains the tail risk of a self-reinforcing redemption spiral. An EMI, by contrast, has no access to the central bank balance sheet. It must meet redemption requests solely from its reserve assets, which must be liquidated at market prices under stress conditions. The cash-in-advance constraint is therefore binding in a way that it is not for banks. This structural asymmetry means that the de-pegging risk of EMI-issued EMTs is categorically more severe than that of bank-issued bearer instruments: the former lacks any public anchor, while the latter retains – at least in extremis – the same backstop that underpins the two-tier monetary system.

3.3. Can a Bank Issue EMTs Fully Backed by Central Bank Reserves?

Under MiCAR, if the EMT issuer is a bank, the regulation does not impose specific constraints on the composition of the assets backing the token. The bank remains subject to the standard prudential framework applicable to credit institutions, in particular the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). In principle, therefore, a bank could elect to hold one euro of central bank reserves for each euro of EMTs issued, as nothing in MiCAR prohibits such an approach.

Under the ECB’s current operational framework – under which refinancing operations are conducted at a fixed rate with full allotment – banks can obtain additional central bank reserves against eligible collateral. A bank issuing EMTs could therefore, in principle, increase its reserve holdings by an amount equal to the EMTs issued – thereby maintaining one-to-one reserve coverage.

From a regulatory standpoint, however, EMTs appear simply as a liability item on the bank’s balance sheet. Liquidity requirements such as the LCR and NSFR are calculated on the balance sheet as a whole, not on individual liabilities. It is therefore not possible to establish a strictly one-to-one correspondence between a specific liability and a specific asset. Even if a bank held reserves equal to the volume of EMTs in circulation, this would not constitute a legally or operationally meaningful earmarking. Banks cannot maintain dedicated and segregated reserve accounts at the central bank exclusively to back specific liabilities such as EMTs.³⁵ Central bank reserves are held as part of the bank’s overall balance sheet and are not matched to individual liabilities.

³⁵ MiCAR does not require banks to establish and maintain segregated reserves to back EMTs ([EBA 2024, p. 19](#); [FSB, 2025, p. 56](#): *In the EU, banks issuing EMTs do not have to operate a reserve of assets – as it is the case for traditional electronic money – rather they have to meet stablecoins related liabilities with their entire estate*).

From an economic standpoint, banks would have limited incentive to maintain a fully reserve-backed structure. They would instead seek an asset mix that meets liquidity requirements while optimising overall profitability and balance-sheet efficiency. Although an EMT fully backed by reserves issued by a bank is technically feasible, it is unlikely to be economically optimal.

Current market developments are broadly consistent with this conclusion. While European banks generally do not issue stablecoins directly under their banking licence,³⁶ the few existing cases suggest that banks retain flexibility in the composition of assets backing their EMTs. Banking Circle segregates the funds received for its EMT EURI within a trust and bankruptcy-remote structure, while Oddo BHF holds the funds raised for its EMT EUROD in a segregated account and permits up to 70% of those funds to be invested in highly liquid financial instruments.³⁷ These structures provide transparency for token holders while preserving flexibility in managing the issuing bank's balance sheet.

3.4. Do tokenized forms of money make the system safer? Do they introduce new channels of instability?

The financial stability implications of tokenized money depend critically on instrument design, settlement architecture, and scale. Tokenization can reduce certain existing frictions – in clearing, settlement, and reconciliation – while simultaneously introducing new channels of fragility that have no direct precedent in traditional finance. The net effect on financial stability is therefore an empirical question that cannot be resolved in the abstract and requires continuous monitoring as adoption scales.

Non-bearer tokenized deposits, when properly designed, may represent a net improvement in operational efficiency without introducing new systemic vulnerabilities. By preserving settlement in central bank money, maintaining continuous identification of the holder, and keeping the claim within the regulatory perimeter of the two-tier system, they reduce reconciliation costs and settlement latency without altering the fundamental risk architecture of the banking system. Atomic execution eliminates the counterparty risk inherent in non-simultaneous settlement.³⁸ Non-bearer tokenized deposits therefore represent a genuine efficiency gain with a contained risk profile.

The picture is materially different for bearer instruments. The core financial stability concern is run risk, which operates through a mechanism that is structurally analogous to bank runs but potentially faster and harder to contain. When an EMT issuer faces large-scale redemption requests, it must liquidate reserve assets to meet them. If many holders act simultaneously – a coordination dynamic facilitated by 24/7 availability and global access – the resulting fire sales can depress the prices of the reserve assets, generating a self-reinforcing loop between falling reserve values and rising redemption demand. The Terra Luna collapse in May 2022 and the temporary de-pegging of USDC in March 2023 following the Silicon Valley Bank failure illustrates how rapidly confidence shocks can propagate through bearer instrument markets.

For bearer tokenized deposits, the run dynamics share some of these features but are modulated by the bank backstop. Banks issuing bearer tokenized deposits have access to central bank liquidity facilities, which provides a structural firebreak against redemption runs. However, the coexistence of traditional and tokenized liabilities on the same balance sheet could increase resolution complexity for systemically important institutions making it harder to apply standard resolution tools in a predictable sequence.

The financial stability implications of EMTs extend beyond the issuer's balance sheet through two distinct contagion channels. First, when banks issue stablecoins directly, redemption pressure maps immediately onto the bank's liquidity position. Second, when EMIs place reserve assets as deposits with credit institutions – as required under MiCAR – banks lose stable retail funding and replace it with wholesale deposits from stablecoin issuers, which carry more volatile funding characteristics. In periods of stress,

³⁶ Emerging initiatives are typically structured either through consortium initiatives (such as the Qivalis project) or through dedicated vehicles, as in the case of Société Générale. In these cases, issuance is carried out through an electronic money institution (EMI) owned or controlled by the participating banks.

³⁷ See the [EURI](#) and [EUROD](#) white paper.

³⁸ Adrian T. (2026), “*Tokenized Finance*”. IMF Notes.

issuers may withdraw those deposits to meet token holder redemptions, transmitting run dynamics directly into bank liquidity positions and creating a two-way amplification loop between EMT stress and bank funding pressure.

Beyond run dynamics, both EMTs and tokenized deposits introduce operational risks without close equivalent in traditional finance. The FSB (2024)³⁹ identifies five categories of vulnerability: liquidity and maturity mismatch between tokens and underlying assets; leverage enabled by composability; asset quality risks from opacity and oracle manipulation; interconnectedness through shared platforms; and operational fragilities in the underlying DLT infrastructure. Of these, operational fragilities deserve particular attention in the context of this note. Smart contracts security practices are still evolving: coding errors may not be easily remedied once deployed, and automated execution can propagate errors or malicious actions across interconnected platforms with a speed and breadth that traditional operational risk frameworks are not designed to contain. Permissionless blockchains compound this risk by eliminating any contractual counterparty responsible for managing operational failures. The 24/7 nature of DLT operations increases the operational demands on infrastructure and reduces banks' ability to smooth intraday liquidity through end-of-day settlement cycles (Adrian, 2026).

Non-bearer tokenized deposits, when embedded in the two-tier system with settlement in central bank money, are likely to be broadly neutral or marginally positive for financial stability at the current scale, provided that operational risks are adequately managed. Bearer instruments – EMTs and bearer tokenized deposits – introduce new channels of fragility: run dynamics that are structurally faster and harder to contain than traditional bank runs, contagion loops between stablecoin stress and bank liquidity, and operational vulnerabilities inherent in DLT infrastructure. MiCAR addresses some of these risks through reserve requirements, recovery plan provisions, and the prohibition on remuneration, but these vulnerabilities may lead to material financial stability risks if tokenization scales significantly without a commensurate evolution in the regulatory and supervisory framework. Financial stability considerations should therefore inform not only the regulation of EMT issuers but also any future framework for bearer tokenized deposits, which currently operate without equivalent safeguards.

3.5. Monetary Policy Transmission: the role of the Identity of the Issuer?

The analysis below holds constant the overall demand for EMTs, to isolate the implications of the issuer identity for banks' balance sheets and for monetary policy transmission. It abstracts from cross-border deposit flows and focuses on aggregate effects across the banking sector, distinguishing between structural balance sheet effects and implications for the transmission of monetary policy. Three channels are considered: the interest rate channel, the deposit channel, and the bank capital channel.

EMT issued by EMIs

Structural impact on bank balance sheets. Part of retail deposits is replaced by wholesale deposits – which generally pay a higher interest rate – placed by the EMT issuer with the banking system. The overall cost of funding rises, as wholesale funding rates track policy rates more closely than retail deposit rates. Competition between deposits and EMTs reduces banks' market power in the deposit market, pushing deposit rates closer to the policy rate. Wholesale deposits from NBFIs are subject to higher run-off rates and lower NSFR ASF factors than retail deposits, tightening liquidity constraints and potentially reducing loan supply. As LCR and NSFR constraints tighten, banks may increase HQLA holdings. Greater demand for HQLA from both banks and NBFI issuers raises the convenience yield on safe assets, exerting downward pressure on their yields.

Impact on monetary policy transmission through banks. The interest rate channel is strengthened, as funding costs become more responsive to policy rate changes, and this responsiveness is transmitted more fully to lending rates and loan quantities. The deposit channel is weakened, as the closer link between funding costs and policy rates reduces the sensitivity of deposit volumes to policy rate changes, attenuating the indirect effect of policy on lending under a deposit-based credit supply framework (Drechsler,

³⁹ FSB (2024), “*The Financial Stability Implications of Tokenization*”.

Savov and Schnabl, 2017). The bank capital channel is reinforced, as greater sensitivity of funding costs to policy rates, combined with the longer maturity and fixed-rate composition of bank assets, increases the sensitivity of bank profitability to monetary policy.

EMT issued by banks

Structural impact on bank balance sheets. Part of retail deposits is replaced by non-remunerated liabilities on the issuing bank's own balance sheet. The overall cost of funding may decline, as EMTs carry a zero interest rate while deposits pay a positive rate. However, competition between deposits and EMTs⁴⁰ may increase deposit rates, pushing them closer to the policy rate. Bearer EMTs whose holders cannot be identified must be classified as unsecured wholesale funding from other legal entities (LCR40.42), implying a 100 per cent run-off rate and zero NSFR ASF factors for maturities below six months (50 per cent for maturities between 6 and 12 months). This tightens liquidity constraints and reduces loan supply. Demand for HQLA increases, though the effect on convenience yields is likely smaller than in the NBFIs case.⁴¹

Impact on monetary policy transmission through banks. The interest rate channel is weakened: funding costs become less responsive to policy rate changes, reducing the pass-through to lending rates and loan quantities. Competition from stablecoins may reduce the sensitivity of deposit quantities to policy rate changes.⁴² Smaller response of deposits may reduce the indirect effect of policy changes on lending, under a deposit-based credit supply channel (Drechsler, Savov, & Schnabl, 2017). The deposit channel is similarly attenuated. The bank capital channel is dampened: with funding costs less sensitive to policy rates and bank assets repricing slowly, bank profitability becomes less responsive to monetary policy. Smaller profits sensitivity implies smaller reactions of loans and weaker monetary policy transmission.

3.6. Do Outcomes Depend on the Instrument or on the Framework?

Outcomes depend on the framework at least as much as on the instrument itself, and in several critical dimensions the framework is the instrument. The monetary and financial stability properties of EMTs and tokenized deposits are not intrinsic to the tokens as technological objects. They are constituted by the regulatory choices governing reserve composition, redemption rights, remuneration, transferability, settlement architecture, and access to public backstops. The same token can behave as a stable payment instrument embedded in the two-tier system or as a bearer claim whose market price becomes a channel of fragility. The difference lies entirely in those choices. Regulation and design do not merely constrain outcomes – they determine them.⁴³

MiCAR provides a good case study about how regulatory choices shape the properties of a digital monetary instrument, through design decisions.

⁴⁰ This competition represents a trade-off for banks. On one hand, the zero-interest rate embedded in EMT makes their issuance more convenient for banks. On the other hand, the worse regulatory treatment may tighten liquidity ratios, making them less convenient.

⁴¹ Because the increased demand for HQLA by bank issuers stems from the deterioration of LCR/NSFR, whereas for NBFIs it derives from the reserve requirements imposed on the backing assets.

⁴² While competition from stablecoins increases the pass-through from policy rates to deposit rates, it may simultaneously reduce the sensitivity of deposit quantities to policy rate changes, as a portion of the customer base has structurally migrated to stablecoins and are less sensitive even when deposits remuneration becomes attractive.

⁴³ This point is developed explicitly in Scotti (2026), who organises the policy implications of digital money around seven dimensions – efficiency and innovation, trust and par convertibility, financial stability, market functioning, intermediation, monetary policy transmission, and regulation and design – and argues that the properties of digital instruments are not determined by technology alone but by the combination of issuer type, settlement architecture, reserve composition, redemption design, legal claim structure, and the availability of public backstops. On the specific question addressed in this section, Scotti (2026) observes that “good design and good regulation do not merely constrain outcomes; they help determine them” and that they shape “whether a tokenized instrument behaves as a modernized form of money embedded within a resilient settlement framework or as a bearer claim whose market price, under certain circumstances, may itself become a channel of fragility.” The speech also notes that the bearer/non-bearer distinction – and the associated question of whether settlement remains anchored in central bank money – is the crucial design feature determining the monetary and stability implications of tokenised instruments, a conclusion directly aligned with the analytical framework developed in this note (see also Garratt and Shin, 2023; Shin, 2025).

The prohibition on remuneration. MiCAR prohibits remuneration of EMTs by both issuers and CASPs. The objective is to confine EMTs to their payment function and prevent them from competing with other stores of value, particularly bank deposits. The prohibition is intentionally broad: any benefit linked to the duration of token holding – including indirect forms structured as discounts or third-party rewards – falls within its scope (Art. 50(3)).

The euro-denominated EMT market currently accounts for less than 1 per cent of the global stablecoin market by volume. The causal link between the remuneration ban and this outcome is difficult to establish empirically – network effects favouring dollar-denominated instruments, limited interoperability across DLT platforms, and regulatory uncertainty around tokenised infrastructure are all plausible contributing factors. Nevertheless, several observers argue that the remuneration prohibition is a significant constraint on the competitive viability of euro-denominated EMTs. Reichlin, Sangers and Zettelmeyer (2026) contend that the ban, combined with the mandatory bank deposit requirements, makes euro-denominated stablecoins structurally less competitive than their dollar counterparts. Bindseil (2026) further notes that the prohibition in MiCAR is more restrictive than its US equivalent, extending to CASPs and thereby closing potential channels for indirect yield distribution that remain open under the GENIUS Act.

On the other side, the concern that permitting remuneration would accelerate deposit substitution and weaken financial intermediation is supported by empirical and theoretical evidence. Altavilla et al. (2026) document, using confidential granular data on euro area banks, that stablecoin adoption induces a deposit-substitution mechanism whereby funds shift from retail deposits to digital assets, increasing banks' reliance on wholesale funding and constraining their intermediation capacity. Lee and Tou (2026) show that banks with stablecoin deposits experience substantial increases in payment demand and heightened liquidity exposure, with their loan share of assets contracting relative to peers. These findings are consistent with the broader theoretical literature on the risks of remunerated digital instruments competing with bank deposits, which has informed both the design of the digital euro and the MiCAR remuneration ban.

Whether the current calibration strikes the right balance between these competing considerations is a genuinely contested question. The MiCAR review consultation asks stakeholders whether the prohibition should be modified, and under what conditions remuneration could be permitted without compromising financial stability or the primacy of bank deposits (Question 20). The remuneration debate illustrates precisely the broader point with which this section began: the properties of a digital monetary instrument are not determined by its technology but by the regulatory choices governing it. A single design decision – whether to permit yield distribution – shapes the competitive dynamics of the instrument, its impact on bank intermediation, and its implications for monetary policy transmission.

The mandatory bank deposit requirement for EMI-issued EMTs. MiCAR requires EMIs to hold at least 30 per cent of reserve assets – rising to 60 per cent for significant issuers – as deposits with credit institutions. This provision was designed to serve two objectives: ensuring that non-bank EMT issuers maintain a pool of liquid assets sufficient to meet redemption requests, and limiting the risk of financial disintermediation by keeping a share of stablecoin reserves within the banking system.

The provision has, however, generated an unintended financial stability externality that works against the second objective. Deposits placed by EMIs with banks in fulfilment of their reserve requirements are subject to a 100 per cent LCR outflow rate under the Basel framework. This requires receiving banks to hold an equivalent amount of HQLA, increasing their liquidity burden and potentially constraining credit supply. A regulatory provision designed to protect bank funding has therefore created a cost for the very institutions it sought to benefit. Reichlin, Sangers and Zettelmeyer (2026) argue that this requirement compresses stablecoin issuers' margins in a way that has no equivalent under the GENIUS Act, where reserve composition rules are more flexible. As issuance scales and the 60 per cent threshold applies, the constraint becomes more binding, creating a structural disadvantage for large euro-denominated EMT issuers relative to their US counterparts.

The Bank of England's proposed regime for sterling-denominated systemic stablecoins (Bank of England, 2025) takes a fundamentally different approach to the same underlying problem. Rather than requiring stablecoin issuers to place reserves as

deposits with commercial banks, the Bank of England proposes that systemic issuers hold 40 per cent of their reserve assets directly at the central bank, with the remaining 60 per cent in short-term UK government debt. The rationale is explicit: anchoring a substantial share of reserves directly in central bank liabilities eliminates the credit and liquidity risk associated with commercial bank deposits, strengthens redemption certainty, and avoids the perverse LCR externality generated by MiCAR’s bank deposit requirement. Direct access to the central bank balance sheet is treated not as a concession to the stablecoin industry but as a prudential tool – a way of making stablecoins structurally safer while simultaneously reducing the systemic risks that their reserve management could otherwise generate. The Bank of England is also considering a backstop lending facility for eligible systemic issuers under stress, further reinforcing the parallel with the lender-of-last-resort function available to banks.

The contrast with MiCAR is instructive. Both frameworks share the objective of anchoring stablecoin reserves in safe, liquid assets. But MiCAR routes that anchor through commercial banks, with the LCR externality as an unintended consequence, while the Bank of England routes it through the central bank itself, eliminating the externality at source. The MiCAR review consultation asks stakeholders how appropriate the current reserve requirements are and whether recalibration or alternative approaches would better serve the regulation’s objectives (Question 26).

Like the remuneration ban, the reserve composition requirement shows that a design choice intended to achieve one regulatory objective has produced secondary effects that partially undermine that same objective. The comparison with the Bank of England approach shows that the same goal – safe, liquid reserves – can be achieved through different architectural choices, with materially different implications for the stability of the banking system and the competitiveness of euro-denominated EMTs.

The regulatory gap for bearer tokenised deposits. Bearer tokenised deposits issued by banks are currently subject to no instrument-specific regulatory framework. They fall outside MiCAR, which excludes instruments that qualify as deposits. The existing prudential framework for banks does not address their specific characteristics as transferable bearer instruments with a potential secondary-market price. The EBA (2024) acknowledges this gap and notes that the classification of tokenised deposits relative to EMTs remains an open question requiring supervisory convergence. Two instruments with very similar economic properties – a bank-issued EMT and a bank-issued bearer tokenised deposit – could therefore face radically different regulatory treatments. This asymmetry is not grounded in differences in underlying risk profile. It is difficult to reconcile with the principle of same activity, same risk, same regulatory treatment. Further regulatory clarity is being developed through EBA’s ongoing work and the Commission’s consultation on tokenised deposits (Questions 74–79).

Settlement architecture and instrument-level rules. A further dimension concerns the relationship between instrument-level rules and the broader architecture within which instruments operate. The preceding analysis has shown that the financial stability and monetary policy implications of a tokenized instrument depend critically on whether it settles in central bank money or outside the central bank core. This is a systemic, architectural property that cannot be determined by instrument-level regulation alone: it requires choices about infrastructure design, access to central bank settlement services, and the interoperability of tokenized platforms with existing payment rails. The Eurosystem’s Comprehensive Payments Strategy (ECB, 2026), through initiatives such as Pontes and Appia, begins to address this gap at the infrastructure level, but the interaction between instrument-level regulation and infrastructure design remains an area where policy coherence is still being developed.

Overall assessment. Outcomes depend overwhelmingly on the framework, not on the instrument in isolation.⁴⁴ MiCAR has established a robust regulatory architecture for EMTs, grounded in sound prudential principles and consistent with preserving the

⁴⁴ The proposition that outcomes depend on the regulatory framework rather than on the instrument in isolation has formal theoretical support. Huang and Keister (2026), for example, show in a general equilibrium model, that the desirability of stablecoins relative to tokenised deposits depends entirely on the regulatory cost imposed on banks and the intensity of their risk-shifting incentives: when regulatory costs are high and risk-shifting is limited, tokenised deposits raise welfare by expanding bank credit; when regulation is lighter and risk-shifting incentives are strong, stablecoins are preferable despite crowding out credit; in intermediate cases, competition between the two instruments is optimal. The key result is that no instrument dominates unconditionally – the welfare ranking depends on the regulatory architecture. This conclusion is consistent with the broader theoretical literature on narrow banking, which has long argued that the optimal structure of money creation depends on the regulatory environment rather than on the intrinsic properties of the instruments

two-tier monetary system. The debate now under way – reflected in the Commission’s targeted consultation – is about calibrating specific provisions, not dismantling the architecture. The objective is to allow euro-denominated EMTs to develop competitively within the EU regulatory perimeter, rather than ceding ground to foreign-currency stablecoins operating outside it. Two policy implications follow. First, the regulatory framework must be designed in coherence with the broader settlement architecture. Second, the “same activity, same risk, same regulation” principle must be applied consistently to all bearer instruments, regardless of formal classification. Closing the regulatory gap between bank-issued EMTs and bearer tokenised deposits is a necessary condition for a level playing field and for the sound development of euro-denominated digital money.

involved (Williamson, 2024). It is also consistent with the earlier empirical finding of Altavilla et al. (2026) that the effects of stablecoin adoption on bank intermediation and monetary policy transmission are non-linear and depend critically on the scale of adoption, instrument design, and regulatory treatment.

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