

Kiffmeister's Digital Currency Monthly Monitor (September 2026)

Retail central bank digital currency (CBDC) has been explored in 118 jurisdictions (unchanged from end-January 2026) of which 23 are "live".¹ This month features updates on the Bank of Japan's digital yen prototyping work, preparations for European Central Bank (ECB) digital euro pilot to be launched in 2027, and the National Bank of the Kyrgyz Republic retail CBDC project.

The ECB launched the Pontes pilot that provides an option to settle tokenized asset transactions in tokenized central bank money. Also, the Securities and Exchange Board of India launched the Demat 2.0 pilot to test settling tokenized corporate bonds with wholesale digital rupees. The South Korean Ministry of Science and Information and Communication Technology launched a pilot allowing public officials to use tokenized deposits, settled with wholesale CBDC, for some government operating expenses.

September also saw a deluge of academic and policy papers covering the full range of digital currencies.

FYI [back issues of the digital currency monthly monitor](#) are available to monthly subscribers. To access them please send a request to john@kiffmeister.com.

Retail CBDC Developments (see also Annex)

The Bank of Japan (BoJ) published an English version of the progress report on its retail CBDC experiments [published in Japanese in June 2026](#). It finds that no fatal technical barriers preclude a full-scale launch, yet severe scalability and resource challenges remain unresolved in the current prototyping phase. The architecture is based on a two-layered model that decouples a centralized core ledger for basic accounting from a peripheral layer of privately managed overlay services. By linking application programming interfaces (APIs) on the central bank's core to diverse external systems, private intermediaries tested various innovations, including distributed ledger technology (DLT) platforms for purpose-bound money and tokenized securities settlement. Although simulations processed 50,000 transactions per second, they were significantly simplified compared to real-world demands. The proposed record-splitting solution for single-account transaction concentration exhibited diminishing returns, as excessive splitting degraded performance. Furthermore, the application sandbox operated separately from the centralized high-load pilot system, leaving unresolved how cross-layer latency, asynchronous transaction failures, and ledger synchronization between the core and external systems will perform under live retail market stress. Also, despite the simplified architecture, resource consumption proved substantial, raising critical questions about the feasibility of the massive system resources required for national deployment. [[BoJ](#)]

The BoJ also published a summary of the sixth general meeting of its CBDC Forum that provided a condensed executive presentation of the technical findings detailed in progress report above. It also announced that the Forum's seven working groups were being reorganized into three discussion groups focused on retail CBDC architecture, new technologies, and retail CBDC ecosystems. The new technologies group will evaluate stablecoins, tokenized deposits, distributed ledger technology, asset tokenization, and programmability. Furthermore, the restructured Forum will operate with a focus on initiatives that also contribute to the BoJ's efforts related to wholesale payment systems. [[BoJ](#)]

The European Central Bank (ECB) has launched a call for expression of interest inviting e-commerce and mobile commerce merchants operating in the euro area to take part in the 12-month digital euro pilot expected to start in the second half of 2027. The call follows the selection of payment service providers (PSPs) to participate in the pilot. Selected merchants will test a beta instrument—without legal-tender status—in remote-commerce payment journeys, operational processes, and integration

¹ [Retail CBDC](#) is a broadly available general purpose digital payment instrument, denominated in the jurisdiction's unit of account, that is a direct liability of the jurisdiction's monetary authority. [Wholesale CBDC](#) is limited to a set of predefined user groups, typically financial institutions, and based on distributed ledger technology. The Annex counts 23 "live" retail CBDC projects, including those that are currently in active launch (4), pilot (3) or proof-of-concept (7) phases, plus others that have published research progress updates during the last 12 months (9).

with acquiring PSPs, and their feedback will inform technical specifications and merchant-facing design. Participation is voluntary and unpaid, requires an agreement with the ECB and an acquiring PSP, and applicants will be assessed on market reach, readiness, and suitability. ([ECB](#))

The ECB also launched a call for expressions of interest inviting private companies and organizations to collaborate in exploring how the digital euro can foster innovation in the market via two workstreams. The experimentation workstream will explore electronic integrated receipts, multi-payer and conditional payments, and payment-app features. The exploration work stream will explore artificial intelligence in payments and public-sector uses. The work could inform services built on the digital euro's core infrastructure and possible future design changes. ([ECB](#))

The Reserve Bank of Australia (RBA) and the Australian Government Treasury published reports that concluded that Australia's retail payment system is serving households and businesses well, and that there is no clear public interest case for a retail CBDC. This is consistent with the conclusions of the 2024 "[Central Bank Digital Currency and the Future of Digital Money in Australia](#)" RBA and Treasury joint paper. The new assessment drew on a [public consultation conducted by Verian Group](#), which asked Australians about their payment needs and views on a potential retail CBDC. Going forward, the RBA will continue monitoring developments in retail payments, cash accessibility, tokenized money, consumer payment preferences and digital finance domestically and internationally, to ensure it remains well placed to reassess the case for a retail CBDC should circumstances (and the policy case) change in the future. Meanwhile, the RBA remains committed to progressing a range of initiatives in wholesale markets and money, including a coordinated work program on wholesale tokenized finance. ([RBA](#))

CertiK, a US-based firm specializing in blockchain security and smart contract auditing, announced that it had entered into a memorandum of understanding with the National Bank of the Kyrgyz Republic (NBKR) focused on technical security assessments, continuous monitoring, and financial integrity regulatory advisory for a Digital Som CBDC project and broader virtual-asset oversight. However, the arrangement is purely an exploratory framework for dialogue, and it commits to no software deployment or procurement award. ([CertiK](#))

[eCurrency Mint](#) announced its Secure eOffline CBDC solution, demonstrated in Africa, enabling CBDC transactions without internet or mobile connectivity via partner-supplied phones, smart cards, or dedicated hardware. It positions offline capability as parity with cash and a lever for financial inclusion within eCurrency's existing Digital Symmetric Core Currency Cryptography (DSC3) infrastructure. However, the release provides no technical detail on offline settlement finality, double-spend prevention, or reconciliation upon reconnection. ([PR Newswire](#))

And some catching up on some older CBDC-related news:

[May 20, 2026] Bank of Ghana (BOG) Dr. Johnson Asiama assured that the e-cedi project has not been abandoned, despite delays in its rollout, speaking at the 130th Monetary Policy Committee meeting. He explained that the central bank is taking additional time to complete key preparatory stages before fully deploying the initiative. The Bank is prioritizing critical systems and safeguards, particularly cybersecurity resilience, before moving to the next phase of implementation. ([BOG](#))

[March 10, 2025] The National Bank of the Kyrgyz Republic (NBKR) laid out its plans to issue a blockchain-based Digital Som to enhance financial inclusion, payment security, and digital economy infrastructure. Following the IMF's "5P" methodology, the project will progress sequentially from initial proof-of-concept functional testing to limited-user prototyping, followed by a live pilot before fully launch ("production"). Over the 2027–2030 horizon, the central bank aims to incorporate smart contracts for programmable payments, establish cross-border interoperability with foreign platforms,

and optimize throughput and cyber resilience, supported in parallel by a dedicated regulatory framework governing platform operators and participant connectivity. [\[NBKR\]](#)

Tokenized Central Bank Money (Wholesale CBDC) Developments

The ECB launched Pontes to enable wholesale transactions in tokenized assets to be settled in central bank money (CeBM) via Trans-European Automated Real-time Gross Settlement Express Transfer (TARGET) Services. It features a dual settlement model that allows participants to settle the cash leg of transactions either directly in T2 (the Eurosystem's real-time gross settlement system) via API-based triggers, or on the Eurosystem DLT platform utilizing cash tokens (a claim on the ECB to transfer the equivalent CeBM in T2) and dedicated DLT wallets. In both cases, legal settlement finality in CeBM occurs in T2 — for cash tokens, upon defunding or the mandatory end-of-day sweep back into T2 accounts. The hash-link protocol is specifically utilized to ensure secure, synchronized delivery versus payment (DVP) across platforms. Pontes will initially offer a core set of services, with enhanced features and extended operating hours introduced gradually toward full implementation by 2028. [\[ECB\]](#)

The Financial Times (FT) reported that the Saudi Arabian Monetary Authority (SAMA) withdrew from the blockchain-based mBridge cross-border payments platform on May 13, 2025. SAMA joined the project as an observing member in 2023, and became an active participant in 2024, joining China, Hong Kong, Thailand, the United Arab Emirates and the Bank for International Settlements (BIS). The BIS “graduated out” of the project in October 2024. SAMA reportedly said that “as planned, SAMA successfully completed its mBridge [proof of concept (POC)] on 13 May 2025 [and] following the completion of the POC, SAMA is no longer a participating member of mBridge.” [\[FT\]](#)

The Securities and Exchange Board of India (SEBI) launched the “Demat 2.0” pilot project, introducing tokenized corporate bonds natively recorded on a distributed ledger. It utilizes the Reserve Bank of India's wholesale CBDC and Unified Market Interface to enable instantaneous atomic settlement, using smart contracts to automate interest and redemption payments. Unlike global precedents—which largely involve individual issuers on isolated platforms—Demat 2.0 natively embeds tokenized bonds and CBDC settlement directly within India's existing regulated market infrastructure. Following an initial ₹1,025 crore issuance by three companies, the pilot aims to reduce costs and settlement risks. While the technology changes, investor safeguards, legal rights, and regulatory frameworks remain identical to conventional bonds, with future phases planned for retail access. [\[SEBI\]](#)

The South Korean Ministry of Science and Information and Communication Technology (MSIT) has launched a sandbox pilot allowing public officials to use commercial-bank deposit tokens, settled with Bank of Korea (BOK) wholesale CBDC, for eligible government operating expenses. The pilot bypasses statutory restrictions that otherwise limit such payments to government cards and bank transfers, using smartphone QR codes and pre-programmed spending controls. It extends Project Hangang from consumer and subsidy use cases into public-sector disbursement while preserving a two-tier model: banks issue the customer-facing tokenized deposits and the BOK provides interbank settlement. [\[MSIT\]](#)

At the inaugural [Silk Road Finance and Technology Forum \(SRFTF\)](#), Central Bank of Uzbekistan (CBU) officials outlined a model under consideration in which a wholesale CBDC could provide a trusted settlement layer for privately issued stablecoins, with licensed institutions managing customer relationships and initial testing taking place through a regulatory sandbox. The SRFTF was co-organized by the CBU and the Global Finance & Technology Network (GFTN). The CBU has posted on its website a [white paper co-authored by the GFTN and the Official Monetary and Financial Institutions Forum \(OMFIF\) that explores the advantages and disadvantages of wholesale CBDCs in the Uzbekistan context.](#) The report assesses if wholesale CBDC could securely improve domestic capital markets and cross-border settlements. However, it critically questions whether alternative synchronization systems might achieve these goals more cost-effectively, proposing a rigorous 24-month evaluative roadmap. [\[CBU\]](#)

The Hong Kong Monetary Authority (HKMA) is planning to make a wholesale CBDC available for interbank settlement of tokenized deposits as part of Project EnsembleTX, enabling 24/7 payments by

around the end of 2026, and will continue to explore more use cases for tokenized deposits. The pilot, launched in November 2025, initially used the HKD real-time gross settlement (RTGS) system to settle the transactions. [\[HKMA\]](#)

Stablecoin and Tokenized Deposit Developments

Twenty-one global financial institutions intend to establish a new entity in H2 2026 to issue 1:1 reserve-backed stablecoins, initially USD-denominated with planned G7 currency expansion. Targeting an H1 2027 launch, the consortium aims for Guiding and Establishing National Innovation for U.S. Stablecoins (GENIUS) Act and European Union (EU) Markets in Crypto-Assets (MiCA) compliance. This initiative represents a highly coordinated, systemic effort by traditional finance to co-opt public blockchain infrastructure and challenge crypto-native issuers. The group comprises Bank of America, Capital One, Citi, Fidelity, Goldman Sachs, PNC, Scotiabank, TD, Wells Fargo, WisdomTree, Santander, BBVA, Commerzbank, Crédit Agricole, Deutsche Bank, Lloyds, Rabobank, UBS, MUFG, Sirius International, and Standard Bank. Notably absent are Barclays and BNP Paribas—participants in [an initial exploratory phase announced in October 2025](#)—alongside JPMorgan, which continues advancing its proprietary tokenized deposit network. [\[PR Newswire\]](#)

Six Canadian banks are jointly exploring the development of Canadian dollar based digital money solutions, starting with a tokenized deposits initiative. The project seeks to deliver faster, more efficient and programmable payments to Canadian customers while preserving safety, stability, and effective regulatory oversight. The first phase aims to move tokenized deposits efficiently across Canadian financial institutions with a longer-term goal to connect with other emerging digital assets initiatives. The participants are Bank of Montreal, Canadian Imperial Bank of Commerce (CIBC), National Bank of Canada, Royal Bank of Canada, The Bank of Nova Scotia, and TD Bank. [\[CIBC\]](#)

The U.S. Federal Reserve Board (FRB) proposed two rules to implement the GENIUS Act for FRB-supervised payment stablecoin issuers: one governing issuance, reserves and supervision, and another governing applications by supervised banks. The first would require full backing with eligible liquid assets, including short-term Treasury bills, and set capital and risk-management standards; it would also regulate reserve-asset safekeeping and clarify permissible bank activities. The second would require applicants to provide a business plan and financial information and establish procedures for appeals and final decisions. Their final terms remain subject to comment, due 60 days after Federal Register publication. [\[FRB\]](#)

And a few stablecoin-related news items from earlier this year and last year that I missed:

[February 16, 2026] The IMF published a selected issues paper on the opportunities and risks of modernizing Palau's financial system that included an analysis of the government's planned "tokenized dollar" (TD) that follows up on the [Palau Stablecoin proof-of-concept that concluded in June 2024](#). While intended as a 1:1 USD-backed stablecoin to improve payment efficiency, the analysis questions its use-case justification and operational viability. Adoption faces substantial barriers, including entrenched cash preferences, inadequate IT infrastructure, and a lack of commercial bank buy-in. Furthermore, the TD introduces severe systemic vulnerabilities, notably acute financial integrity risks, cybersecurity gaps, and privacy compromises on public ledgers. Crucially, managing the reserves creates considerable fiscal exposure, risking speculative attacks. Mitigating these threats requires rigorous regulatory frameworks and profound institutional capacity building. [\[IMF\]](#)

[July 14, 2025] Palau President Surangel S. Whipp Jr. submitted to Congress a [Draft Digital Payment System Bill](#) outlining a modernized national payment system involving the TD. The proposal would place the Ministry of Finance in charge of issuance and administration, with each TD fully backed by U.S. dollars held in a government-controlled account and redeemable for cash. TD would circulate through digital wallets for payments to participating merchants and government agencies, with private providers permitted to support operations under ministry supervision. The bill provides for monthly reporting,

regular audits, and data-protection commitments, while allowing adoption incentives for two years. This follows a [Palau Stablecoin proof-of-concept that concluded in June 2024](#). [\[Island Times\]](#)

Recent CBDC- and Stablecoin-Related Research

Remunerating Means of Payment

Ulrich Bindseil argues that regulatory constraints on remunerating electronic means of payments are either ineffective or undermine financial stability and efficiency. No economic theory of the interest-rate spread between money and adjacent financial assets implies that means of payment must be unremunerated. Furthermore, enforcing non-remuneration acts as a regressive tax proportional to nominal interest rates, transferring wealth from users to issuers. Such constraints are easily circumvented, generating financial flows that could threaten market stability. Although some defend these restrictions as necessary to protect bank deposit franchises and systemic stability, the paper finds such claims insufficiently founded, serving only as temporary measures when superior regulatory tools are absent. Consequently, tiered remuneration for digital currencies should be adopted. [\[Bruegel\]](#)

Tokenized Finance and The Perimeter of Central Banking

Darrell Duffie presented a paper at the Kansas City Fed (KC Fed) Jackson Hole Conference that evaluates how central banks can support safe settlement for large-scale tokenized finance without expanding their operational perimeter. He analyzes infrastructure models based on financial stability, central-bank balance sheet size, and fragmentation costs, warning that poor interoperability will severely delay tokenization's growth. Duffie assesses four approaches: (1) providing wholesale CBDC, (2) synchronizing extended-hour conventional payment systems with programmable ledgers, (3) authorizing private-sector narrow banks to offer tokenized deposits via central-bank omnibus accounts, and (4) utilizing wholesale stablecoins. He predicts central banks will likely delegate tokenization to private-sector narrow banks (approach 3) to avoid building 24x7 programmable ledgers themselves. He dismisses stablecoins as inferior for financial stability; as claims on private issuers, they carry vulnerabilities like liquidity transformation and contagion, lacking the safety of central bank money. [\[KC Fed\]](#)

Central Banks On-Chain

Discussing Darrell Duffie's paper, ECB Executive Board Member Isabel Schnabel argued that wholesale tokenization requires an ultimate settlement asset that is both risk-free and elastically supplied. Challenging Duffie's perimeter conservatism, she maintained that stablecoins cannot replicate central bank liquidity provision under systemic stress, and that proxy or bridge models preserve fragmentation while leaving policy operations off-chain. Citing the need to defend European monetary sovereignty against the rise of foreign-currency stablecoins, she advocated for wholesale CBDC to enable atomic repo, automated collateral management, and 24/7 liquidity facilities. Schnabel framed the central design choice as a trade-off between common ledgers—which maximize atomicity and integration—and interoperable networks, which better mitigate concentration, governance, operational resilience, and technology lock-in risks. [\[ECB\]](#)

Tokenizing Central Bank Money on Public Blockchains

Ulrich Bindseil and Benjamin Duve posted a paper that explores the option of issuing CBDC on public blockchains. The paper first reviews the main reservations, which include technical fragmentation, governance and operational risks, financial-stability concerns, and illicit-use and reputational risks. It then assesses how modern blockchain features may mitigate risks and evaluates the public policy objectives such issuance could advance. For example, central banks may mitigate chain-selection, operational, and illicit-use risks through formal admission criteria and strict issuer-controlled interoperability, plus embedded compliance architecture, and issuer-level control over minting, redemption, and freezing—paralleling existing stablecoin practice. Public rails would be markedly cheaper than proprietary infrastructure, while advancing monetary sovereignty, seigniorage, and

financial stability. The authors conclude these risks may be manageable, proposing licensed, fully backed licensed stablecoins as a transitional alternative. [\[SSRN\]](#)

Measuring Stablecoin, Crypto and Decentralized Finance Ecosystems

A BIS paper by Aerts, Heijmans, Paulick, and Vuletic concludes that widely used indicators of crypto-asset and decentralized finance (DeFi) activity are highly dependent on methodological choices, rendering them noisy approximations rather than direct economic measures. Although blockchain data is transparent, underlying protocol complexities obscure true economic signals. Bitcoin's transaction model conflates actual transfers with technical change outputs, drastically altering volume estimates based on applied heuristics. Similarly, programmable smart contracts on Ethereum generate spurious activity that complicates reliable classification. The text highlights severe data heterogeneity across blockchains, demonstrating that identical stablecoins fulfill distinct economic functions on different infrastructures. Consequently, accurately assessing DeFi dynamics demands bounded estimates and rigorous technical disaggregation rather than naive data aggregation. [\[BIS\]](#)

The Stablecoin Transfer Volume Number in Most Board Packs is Misleading

Al-Mabrook Financial also questions the reliability of headline stablecoin transfer volume metrics, challenging the oft-cited \$62 trillion transfer volume for 2025 as a true measure of adoption. The data suggests it is not, filtering gross volume down to just \$350–\$550 billion in genuine real-economy payments. Business-to-business transactions (\$150 to \$230 billion) dominate this legitimate flow because traditional rails remain inefficient, followed by consumer-to-consumer remittances and consumer-to-business payments (\$90 to \$130 billion each). Business-to-consumer flow, largely payroll and marketplace payouts, accounts for the remainder. [\[Al-Mabrook\]](#)

The Multi-Issuance Issue

A paper Ulrich Bindseil and others examines the viability under EU MiCA regulations, of stablecoin arrangements in which entities inside and outside the EU issue and redeem a single fungible stablecoin, each backing only the tokens it has itself issued. The authors use a financial accounts framework covering the two issuing entities, their custodian banks, holders, and an arbitrageur, to argue that token fungibility could inadvertently concentrate redemption pressure on EU-based issuers during stress events, potentially depleting local reserves. Furthermore, they question the efficacy of localized reserve mandates, positing that such requirements are either redundant if foreign frameworks are robust, or structurally flawed if they force dollar-denominated tokens into inferior offshore accounts. The paper advocates for an equivalence regime that allows direct EU distribution of foreign-issued stablecoins, despite reliance on foreign regulatory parity not completely safeguarding the EU against cross-border contagion. [\[SSRN\]](#)

Stablecoin Multi-Country Issuance and Dollar-Run Risks in Europe

A Centre for Economic Policy Research (CEPR) paper by Martino, Monnet, and Perotti examines the systemic risks posed by multi-country issuance of USD-denominated stablecoins. It argues that because the EU MiCA regulations guarantees unconditional, par-value redemptions—unlike proposed U.S. regulations that permit fees and gates—technologically fungible tokens create dangerous avenues for cross-border redemption arbitrage. In times of stress, this regulatory asymmetry incentivizes rational holders to offload dollar-run risks entirely onto EU-based issuers. Conceding that structural bans on multi-country issuance are politically unlikely, the authors propose a pragmatic mitigation strategy to achieve “functional redemption equivalence.” They advocate mandating automatic, smart-contract-embedded contingent measures, specifically sequencing redemption fees ahead of hard gates, to deter self-fulfilling runs. Furthermore, the paper recommends granting the ECB powers to suspend non-euro

stablecoin redemptions during severe crises, aiming to safeguard EU monetary sovereignty against unhedgeable USD stablecoin market contagion. [\[CEPR\]](#)

Designing Retail CBDCs: A Systematic Literature Review of Trade-Offs Between Security, Privacy, and Financial Stability

A systematic review of 140 peer-reviewed articles in the International Journal of Financial Studies (IJFS) examines retail CBDC design considerations, proposing a structural “CBDC design trilemma.” This framework asserts that retail CBDCs cannot simultaneously maximize privacy, financial stability, and regulatory compliance. The study finds scholarly consensus converging on a suboptimal “zone of compromise” — specifically two-tier architectures with tiered privacy — where stabilizing features inherently degrade user adoption or anonymity. This operationalizes these trade-offs for policymakers, clarifying that technical innovations cannot fully dissolve fundamental tensions between regulatory mandates and disintermediation risks. However, whether this theoretical trilemma strictly binds in practice remains unverified, given a critical deficit of empirical data from live deployments.” [\[IJFD\]](#)

Digital Markets Clarity Act – Insolvency Safe Harbor

In a letter to the U.S. Senate Committee on Banking, Housing, and Urban Affairs, fourteen legal academics argued that section 702 of the proposed Digital Asset Market Clarity Act threatens financial stability by extending bankruptcy safe harbors to digital assets. [The text posits a causal link between existing safe harbors and the 2008 financial crisis](#) and claims the absence of such exemptions contained the 2023 failures of crypto-asset firms like FTX. However, the document acknowledges a confounding variable: digital assets in 2023 were not fully integrated into the broader financial system, which inherently limited systemic effects regardless of safe harbor applicability. Ultimately, the proposed provisions would inequitably place digital asset holders in a “preferred position” over standard commercial creditors like employees, suppliers, and tort claimants. [\[Credit Slips\]](#)

Privacy in Wholesale Cross-Border Payments: Assessing Project Agorá

A Société Universitaire Européenne de Recherches Financières (SUERF) paper by Jan Camenisch and the Swiss National Bank’s Thomas Moser evaluates the privacy architecture of the Bank for International Settlements Project Agorá, a DLT initiative for wholesale cross-border payments, against five design objectives. The authors note that Agorá utilizes the Paladin framework to achieve selective disclosure, regulatory access, and multijurisdictional configurability with low computational overhead. However, the assessment highlights significant architectural trade-offs. By relying on issuer-delegated verification rather than trustless systems, the design concentrates information and trust within issuing entities. Additionally, keeping private state off-ledger introduces resilience challenges, and the network remains vulnerable to metadata leakage. The paper concludes that while Agorá is operationally pragmatic, future phases must address off-chain state management and metadata vulnerabilities. [\[SUERF\]](#)

Navigating the Purpose and Provision of CBDC

In the International Journal of Political Economy (IJPE), George Pantelopoulos argues that one purpose of CBDC is to preserve the fungibility of privately issued means of payment. Through the retail anchor function of central bank money, convertibility into banknotes bridges heterogeneities among forms of private money and forges a symbiosis between them, preventing commercial bank money from de-anchoring and thereby averting adverse selection and fractured monetary sovereignty. With banknotes declining as a means of payment, however, this convertibility risks becoming a merely theoretical rather than real-world construct — a gap that could justify introducing CBDC. Separately, the paper contends that genuine CBDC must be booked as a direct central bank liability; “synthetic CBDC” schemes, being central-bank-backed e-money issued by intermediaries, do not qualify. A two-tier architecture is

presented as the most likely means of preserving this liability structure without requiring the central bank to hold retail accounts. [\[IJPE\]](#)

The Alchemy of Fungible Money: A Trilateral Approach to Bridging Heterogeneities

George Pantelopoulos and Paul Wessels posted a paper on the Social Science Research Network (SSRN) that challenges the prevailing [“moneyness” policy focus on “singleness”](#) – the property that payments denominated in the sovereign unit of account will be settled at par, even if they use different forms of privately and publicly issued monies. The authors argue that settlement at par is merely one component of true interchangeability. Even when instruments like commercial bank deposits, e-money, and stablecoins exchange at par, unmitigated heterogeneities in credit risk and accessibility can still trigger adverse selection and systemic instability during market stress. To achieve practical fungibility, they propose a trilateral framework of foundational (unit of account), enabling (convertibility, deterministic settlement finality, interoperability), and supportive (regulation, deposit insurance) elements. As physical cash usage declines, the analysis questions whether decentralized innovations like stablecoins and tokenized deposits can sufficiently replicate these complex institutional support mechanisms to achieve practical fungibility. [\[SSRN\]](#)

Trusted Execution Environments for Central Banks

The BIS published a paper that considers what trusted execution environments (TEEs) can responsibly deliver for central banks, the conditions under which they are most effective and how they can be deployed without widening who must be trusted. A TEE is a hardware-anchored, isolated computing space protecting "data in use" via verifiable code authenticity and runtime confidentiality. This capability is critical, enabling institutions to collaboratively analyze sensitive microdata without exposing raw records to peers or infrastructure operators. Yet, significant unresolved vulnerabilities persist, specifically regarding microarchitectural side-channel leakage, host-mediated subversion, and attestation failures. Consequently, TEEs offer conditional assurances rather than absolute security, demanding rigorous, evidence-based governance and layered mitigations to be viable. [\[BIS\]](#)

Safe Settlement Assets for Wholesale Tokenized Financial Markets

Ashley Lannquist (Glenbrook Partners) set out a decision framework for policymakers weighing which form of settlement asset should support safe large-scale tokenized financial markets — settled on DLT. (“Large-scale” denotes markets that would ordinarily settle on a systemically important financial market infrastructure such as a central securities depository or securities settlement system.) Once such activity migrates onto DLT, safety concerns compel a choice governed by whether the asset (1) should be central bank money and (2) should be “on-chain.” The resulting matrix maps to wholesale CBDC (yes/yes), RTGS synchronization (yes/no), regulated asset-backed stablecoins, tokenized e-money, or tokenized bank deposits (no/yes), and bank deposits (no/no). The framework is not prescriptive, being conditional on country context and acknowledging unresolved empirical questions about benefits and risks. [\[LinkedIn\]](#)

Notes: *The information reported here was compiled from the media and publicly available sources and not verified through official channels.*

Kiffmeister was a Senior Financial Sector Expert at the IMF from 2005 to 2021 and now provides digital currency advisory services to central banks and international financial institutions. Prior to that, he was at the Bank of Canada for 25 years. [Kiffmeister](#) also blogs at the [Kiffmeister Chronicles](#).

Annex: Jurisdictions Where Retail CBDC Is Being Explored (118)(of which 23 are “live”)[1]

Last Update			Last update		
Jurisdiction	Year	Month	Jurisdiction	Year	Month
Where central banks (CBs) have launched or piloted (or soon will)(8)(of which 7 have updated in last year)					
Bahamas (launched 2020)	2024	7	India (pilot started 2023)	2026	8
Jamaica (launched 2022)	2026	8	Peru (pilot started 2024)	2026	6
Kazakhstan (launched 2026)	2026	6	Turkey (pilot started 2024)	2026	7
Russia (launched 2026)	2026	8	Iran (pilot started 2024?)	2024	11
Where CBs have done proofs of concepts or prototypes (or soon will)(19)(of which 7 have updated in last year)					
Euro Area	2026	9	United Arab Emirates	2025	7
Ghana (piloted in 2022)	2026	5	Papua New Guinea	2025	2
Israel	2026	5	Macao	2024	12
Japan	2026	9	New Zealand	2024	12
Kyrgyzstan	2026	9	Sweden	2024	11
Rwanda	2026	2	Mauritius	2024	8
United Kingdom	2026	6	Thailand	2024	6
Chile	2025	8	Solomon Islands	2023	11
Georgia	2025	8	Laos	2023	2
Ukraine	2025	8			
Where CBs have explored or are exploring (69)(of which 9 have updated in last year)					
Bermuda	2026	3	Mongolia	2023	10
Bhutan	2026	5	Bahrain	2023	9
Bolivia	2025	10	Indonesia	2023	9
Madagascar	2025	10	Honduras	2023	8
Malawi	2026	1	Singapore	2023	6
Nigeria (launched 2022-25)	2026	6	Kuwait	2023	4
Uganda	2026	5	Montenegro	2023	4
Vietnam	2026	7	Jordan	2023	2
Western African Monetary Union	2026	5	Algeria	2023	1
Uzbekistan	2025	9	Mexico	2023	1
Angola	2025	8	Tanzania	2023	1
Morocco	2025	8	Oman	2022	11
Pakistan	2025	8	Nepal	2022	10
Zimbabwe	2025	8	Bangladesh	2022	6
Botswana	2025	7	Sudan	2022	4
Myanmar	2025	7	Switzerland	2022	4
Timor-Leste	2025	7	Qatar	2022	3
Liberia	2025	5	Trinidad and Tobago	2022	3
Belarus	2025	4	Albania	2022	2
Central African Monetary Union	2025	3	Iraq	2022	2
Serbia	2025	3	Palestine	2022	2
Ethiopia	2025	2	Yemen	2022	2
Namibia	2025	2	Zambia	2022	2
Colombia	2025	1	Saudi Arabia	2022	1
Haiti	2024	12	Tonga	2022	1
Eswatini	2024	10	Vanuatu	2022	1
Aruba	2024	9	Paraguay	2021	12
Dominican Republic	2024	8	Guatemala	2021	9
Taiwan	2024	7	Lebanon	2021	8
Mauritania	2024	4	Tunisia	2021	8
Egypt	2024	1	Czech Republic	2021	2
Sri Lanka	2024	1	Uruguay	2020	10
Armenia	2023	12	Barbados	2020	7
Maldives	2023	11	Iceland	2018	11
Argentina	2023	10			
Where CBs have shut down retail CBDC exploration (22)					
Australia	2026	9	Finland (launched 1993-2006)	2006	1
Azerbaijan	2024	8	Hong Kong	2025	10
Brazil	2025	11	Hungary (piloted 20xx-xx)	2025	3
Canada	2024	9	Kenya	2023	6
China (piloted 2019-25)	2025	12	Malaysia	2024	6
Costa Rica	2021	8	Norway	2026	3
Curacao	2023	3	Philippines	2023	6
Denmark	2023	3	Poland	2021	5
ECCB (piloted 2019-24)	2026	2	South Africa	2026	6
Ecuador (launched 2014-17)	2017	5	South Korea	2023	10
Fiji	2024	12	United States	2026	7

[1] By “live” is meant that the CBDC is currently in the launch, pilot, proof of concept, prototype or research phase, and updates have been made available within the last twelve months.