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**Public Digital Money and the Transatlantic
Divergence: Competing EU and U.S.
Visions of the Future Monetary Order**

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Abstract

Money is undergoing its most significant transformation in decades, as physical cash recedes and privately issued digital instruments proliferate at a pace that existing monetary frameworks were not built to accommodate. The digitalization of money is prompting many jurisdictions to confront the same underlying question: whether and how sovereign money should exist in digital form. Few questions are more pressing for monetary authorities, legislators, and financial regulators today. In this context, central bank digital currencies (“CBDCs”) have emerged as a key area of research and activity across the world: a new form of sovereign money, a direct liability of a central bank, denominated in the national unit of account, and available to the public in digital form.

This trajectory is driven by a convergence of structural forces. Physical cash usage is declining, which risks leaving central bank money increasingly absent from everyday retail payments, along with the public trust the monetary anchor depends on. Financial inclusion is another driver: a CBDC, as risk-free and widely accessible digital money, offers a mechanism for extending payment services to populations that private digital solutions have consistently failed to serve. Privately issued digital money, particularly stablecoins, is also growing rapidly, largely operating outside the banking system without deposit insurance, central bank oversight, or reserve transparency. Lastly, cross-border payment systems remain persistently inefficient, a problem CBDCs could address by making transactions faster and cheaper.

The design of a CBDC carries significant consequences for privacy, financial stability, monetary policy transmission, and market competition. Privacy concerns operate on two levels: the risk that a CBDC could give the issuing authority real-time visibility into individual financial behavior, and the risk that it could be designed to restrict or condition how money is spent. On financial stability, a widely available CBDC represents a direct substitute for commercial bank deposits and, in periods of financial stress, could accelerate deposit flight at a speed and scale that conventional deposit insurance and central bank liquidity facilities may not be designed to address. CBDCs also introduce a structural dependency on digital infrastructure that physical cash does not share. Because they would be accessible to millions of users through a wide array of devices and channels, CBDCs would dramatically expand the attack surface available to malicious actors. A large-scale breach could undermine public confidence with systemic implications well beyond those of a conventional payment system failure. A CBDC would also create a new instrument on the central bank’s balance sheet and a new channel through which monetary conditions could reach households and businesses directly, without passing through the commercial banking system. The magnitude of this effect depends critically on CBDC design, particularly on whether and how it is remunerated. A CBDC built on open standards, meanwhile, has the potential to improve competition in payments through pricing discipline, quality improvements, and broader access. Interest in CBDCs ultimately reflects a growing recognition that payment infrastructure, standards, and instruments are strategic assets of national and supranational sovereignty that states can no longer leave entirely in private or foreign hands.

Within the global CBDC debate, the European Union and the United States, two of the most systemically significant monetary jurisdictions, have arrived at structurally opposite institutional responses. Through a comparative analysis of their frameworks,

this paper examines the live and fast-moving legal and policy landscape governing CBDCs in both jurisdictions. It situates the divergence between their approaches within a broader question: how sovereign monetary systems, and the states that stand behind them, will adapt to a rapidly evolving digital economy.

On one hand, the European Union is advancing a digital euro proposal, anchoring the monetary system in a publicly governed infrastructure. The digital euro is conceived as a pan-European public payment instrument, backed by the European Central Bank, universally accepted, and free for basic use. Motivated by the fragmentation of Europe's payments landscape and its structural dependency on non-European card schemes and mobile payment solutions, the digital euro is designed to strengthen the singleness of the euro in a digitalizing economy, enabling simpler cross-border commerce, greater competition, and new opportunities for businesses and consumers alike. Privacy is preserved through pseudonymization and encryption for online transactions, offline cash-like anonymity, and restrictions on access to individual transaction data. Disintermediation risk is to be managed through holding limits, waterfall mechanisms, and a deliberately non-interest-bearing design, reflecting the primacy that financial stability considerations have assumed in the legislative process now advancing through the EU institutions.

On the other hand, the United States has taken the opposite path by prohibiting the Federal Reserve from issuing a U.S. dollar CBDC, while constructing a federal regulatory framework for privately issued, U.S. dollar-denominated stablecoins in parallel. This reflects a deliberate judgment that the U.S. dollar's global primacy and the privacy interests of individual users are best protected by the worldwide proliferation of privately issued, federally regulated U.S. dollar instruments extending its reach into digital payments at a scale and speed no CBDC issuance could replicate. Both jurisdictions invoke monetary sovereignty, financial stability, privacy, and payments innovation as the values their chosen approach is designed to protect; both are responding to similar structural forces, including the decline of cash, the concentration of payment infrastructure in a small number of large platforms, and the geopolitical implications of digital monetary dependency. Yet, they have pursued those shared values, and tackled those challenges, through institutional architectures that are fundamentally opposed.

The comparative analysis in this paper shows that the conventional public-versus-private framing does not map cleanly onto the outcomes each jurisdiction pursues: the European Union's digital euro is designed to enable private-sector distribution and innovation on top of a publicly anchored ledger, while the United States pairs its rejection of a digital U.S. dollar with a regulated, publicly backstopped private stablecoin regime. The real dividing line is instead where the monetary anchor sits: on the central bank's balance sheet in the EU model, or on the balance sheets of federally regulated private institutions in the U.S. model.

Unresolved questions remain on both sides of the Atlantic. Legislative passage of the digital euro regulation, once achieved, will mark only the beginning of the challenge. Successful adoption of the digital euro by individuals and businesses will depend on building digital money that works for the real economy: one that is technically sound, legally robust, reliable, secure, and easy to use and integrate. Moreover, whether mandatory distribution obligations will be sufficient to drive genuine digital euro

adoption by a banking and financial sector that has raised persistent implementation and disintermediation concerns remains to be seen. Similarly, the U.S. private stablecoin model remains largely untested under conditions of market stress and, at least at this stage, is oriented predominantly toward wholesale, institutional, and crypto-native use cases. Whether stablecoins can become core, everyday consumer retail payment instruments, and serve as a genuine substitute for a public digital-payment channel to citizens in a severe downturn is yet to be confirmed.

The transatlantic divergence carries implications well beyond the two jurisdictions directly examined in this paper. Every G20 economy other than the United States is now exploring a CBDC, and emerging markets are increasingly citing the global proliferation of U.S. dollar-backed stablecoins as a driver of their own CBDC activities. A jurisdiction that delays its own development risks seeing its monetary system progressively marginalized, as citizens organically gravitate toward digital alternatives in its place. For jurisdictions at earlier stages of CBDC development, the EU and U.S. frameworks offer two contrasting design templates. Neither is straightforwardly transferable, given the distinct conditions that produced them, and both will need to be critically assessed and adapted by any jurisdiction that draws on them.

No central bank is developing a CBDC in isolation: multilateral forums, including the Financial Stability Board, the Committee on Payments and Market Infrastructures, and the G20, provide the institutional architecture through which central banks and governments can share experience and coordinate on the cross-border dimensions of CBDC design that no single jurisdiction can resolve unilaterally.

Different as the EU and U.S. paths are, they should not obscure a deeper commonality of purpose that motivates both jurisdictions and speaks equally to others still charting their own course: ensuring that the monetary system continues to function efficiently and that public money retains its role as the anchor of trust and convertibility as the economy digitalizes and private digital instruments proliferate. Whether this goal is best achieved through a CBDC, a regulated private stablecoin framework, or some combination of the two remains genuinely contested. What is certain is that the choices being made today will shape the monetary architecture of the global economy for decades to come.

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PREFACE

Forms of money have evolved continuously, but its foundational function has remained constant: to provide a universally trusted, publicly anchored medium of exchange that enables economic life to function. Central bank digital currencies (“CBDCs”) represent the most significant proposed transformation of that institution in the modern era.

CBDCs are, in essence, a proposal to create a new form of sovereign money, a direct liability of a central bank, denominated in the national unit of account, and available to the public in digital form. CBDCs are attracting increasing attention at the precise moment when the digitalization of economic life is rendering physical cash progressively marginal and private digital money is proliferating at a scale and speed that existing monetary frameworks were not designed to accommodate.

The policy stakes are high. If central banks issue CBDCs that are widely adopted, they will have extended the reach of public money into the digital economy, preserved the monetary anchor that underpins trust in the financial system, and potentially reshaped the competitive dynamics of the global payments industry. If they do not or if the space is occupied instead by privately issued digital instruments operating outside central bank governance, the foundational properties of money that citizens have historically taken for granted (including universal access, stability, and public accountability) risk being progressively eroded. The question of whether, and how, to issue a CBDC is therefore not merely a question of payments policy but one that goes to the future of the monetary system itself and the role of the state in guaranteeing the integrity of the money that underpins economic and social life.

The question of how sovereign money adapts to a digital economy is among the most pressing facing monetary authorities, legislators, and financial regulators around the world today. However, despite a shared recognition of the underlying challenge, two of

the most systemically significant monetary jurisdictions have arrived at strikingly different answers. The European Union is building a digital euro, whilst the United States has legislated against a digital dollar. Both invoke monetary sovereignty, financial stability, privacy, and payments innovation as the values their chosen approach is designed to protect. Both are responding to similar structural forces, including the decline of cash, the rapid growth of privately issued digital money, the concentration of payment infrastructure in a small number of large platforms, and the geopolitical implications of digital monetary dependency. And yet they have operationalized those shared values through institutional architectures that are structurally opposite.

Against this background, this paper examines the live and fast-moving frameworks governing CBDCs in the European Union and the United States from a comparative legal and policy perspective as follows:

- Chapter 1 explains what a CBDC is and why it differs from existing forms of money, identifies the main forces driving global CBDC development, and examines the key economic and policy questions that CBDCs raise. It closes by framing the transatlantic divergence between the European Union and the United States as the central analytical puzzle of the paper.
- Chapter 2 examines the European Union's digital euro project in depth, analyses the key design choices embedded in the draft regulation, and assesses the strategic and geopolitical rationale that has driven the project forward.
- Chapter 3 turns to the United States, examining the legislative and regulatory architecture through which the United States has simultaneously prohibited the Federal Reserve from issuing a retail CBDC and constructed a federal regulatory framework for privately issued, U.S. dollar-denominated stablecoins.

- Chapter 4 concludes the paper by drawing on the comparative analysis to examine the broader trajectory of CBDCs and the key questions that remain open. It considers the implications of the transatlantic divergence for other jurisdictions navigating their own CBDC decisions, and reflects on the long-term relationship between public and private digital money and the role of international cooperation in shaping the future of the global monetary system.

CHAPTER 1

THE DIGITALIZATION OF MONEY:

THE RISE OF CENTRAL BANK DIGITAL CURRENCIES

1.1 What is a Central Bank Digital Currency?

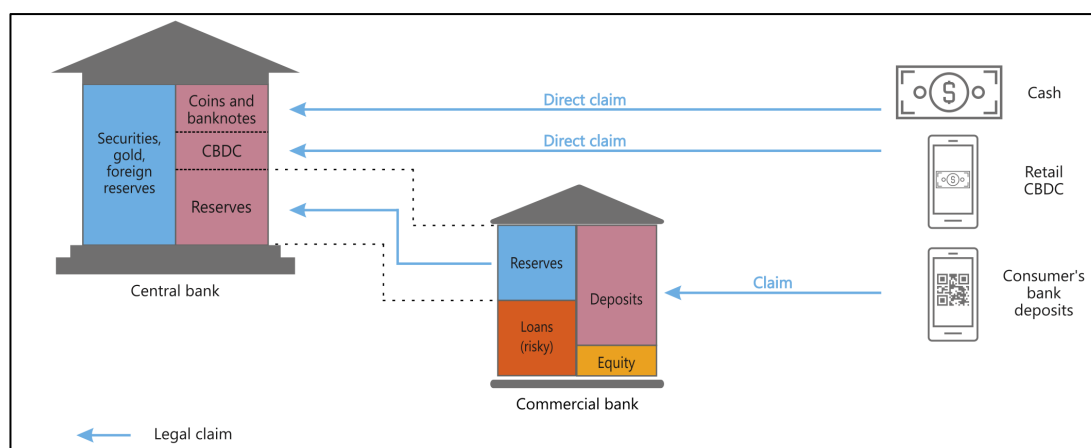
A central bank digital currency (“CBDC”) is a digital form of sovereign money, a liability of the central bank, denominated in the national unit of account, and in principle available to the general public for everyday payment needs. Unlike commercial bank deposits, which represent a claim on a private institution, a CBDC represents a direct claim on the central bank itself, carrying no credit risk. In this sense, a CBDC is the digital equivalent of a physical banknote: public money in digital form.¹

Two main variants can be distinguished: wholesale CBDCs which can be used to enable domestic and cross-border payment and settlement transactions between financial institutions; and retail (or general purpose) CBDCs which function as a form of “digital cash” accessible to all.² This paper focuses primarily on broadly available retail CBDCs.

¹ See, Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve System and Bank for International Settlements, Central bank digital currencies: foundational principles and core features, Report No. 1 (2020); Bank for International Settlement (BIS), Central bank digital currencies: motives, economic implications and the research frontier, BIS Working Papers No. 976 (November 2021); Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve System and Bank for International Settlements, Central bank digital currencies: legal aspects of retail CBDCs, Report (November 2024).

² See, Deloitte, Are Central Bank Digital Currencies (CBDCs) the money of tomorrow?, Deloitte Report (2020); Bank for International Settlement (BIS), Committee on Payments and Market Infrastructures Markets Committee (CPMI), Central bank digital currencies, Working Papers (March 2018).

Figure – The Monetary System with a Retail CBDC



Source: Bank for International Settlement (BIS), Central bank digital currency: the quest for minimally invasive technology, BIS Working Papers No. 948 (June 2021).

The distinction between central bank money and private money is foundational to understanding why the CBDC debate has gained growing relevance over the past few years. Modern payment systems rest on a layered architecture in which central bank money (cash and central bank reserves) serves as the ultimate settlement asset, while commercial bank deposits function as the primary medium of everyday transactions.

Three foundational properties characterize any effective monetary system: singleness, meaning that all forms of money are mutually convertible at par across financial intermediaries and platforms, such that the recipient of a payment need not assess the creditworthiness or provenance of the monetary claim presented to them before accepting it; elasticity, meaning that money is supplied flexibly so that obligations are discharged in a timely way without gridlock; and integrity, meaning that the system operates with adequate safeguards against illicit activity.³

³ See, Bank for International Settlement (BIS), Chapter III: The next-generation monetary and financial system, BIS Annual Economic Report (2025); Bank for International Settlement (BIS), Chapter III: Blueprint for the future monetary system: improving the old, enabling the new, BIS Annual Economic Report (2023).

Central to the integrity of this system is the convertibility of commercial bank money into central bank money at par. As payment systems digitalize and new private forms of digital money proliferate (ranging from bank deposits held on proprietary platforms to privately issued stablecoins⁴), that convertibility guarantee requires a publicly issued digital anchor capable of operating in a digital environment. A CBDC is the mechanism through which certain central banks propose to provide that anchor, preserving the singleness of money as the monetary system transitions into its digital phase.⁵

1.2 The Global Momentum Behind Central Bank Digital Currencies

Interest in CBDCs has accelerated sharply over the past few years, driven by a convergence of structural forces in the global payments landscape. According to the Bank for International Settlements (“BIS”)’ 2024 survey of 93 central banks covering jurisdictions representing 78% of the world’s population and 94% of the global economic output, 91% of the central banks surveyed are now engaged in some form of CBDC work.⁶ Notably, more than one in three jurisdictions reported having accelerated their CBDC work specifically in light of developments in stablecoins and other crypto-assets, thus underscoring both a reactive as well as proactive dimension of the global CBDC movement.⁷

⁴ See, e.g., Diana Milanesi, A New Era of Stablecoins: Market Evolution and the Regulatory Race Shaping Digital Finance Across the European Union, the United Kingdom, and the United States, Stanford-Vienna Transatlantic Technology Law Forum (TTLF) Working Paper No. 136, (2025).

⁵ See, e.g., McKinsey & Company, Beyond Stablecoins: The Emerging Architecture of On-Chain Money, McKinsey & Company Report (May 2026); McKinsey & Company, What is central bank digital currency (CBDC)?, McKinsey & Company Report (March 2023); Deloitte, An introduction to central bank digital currencies (CBDCs) - Drivers, design, and impact on commercial banks, Deloitte Report (September 2021).

⁶ See, e.g., Bank for International Settlement (BIS), Advancing in tandem – results of the 2024 BIS survey on central bank digital currencies and crypto, BIS Papers No. 159 (August 2025). See, also, Bank for International Settlement (BIS), Embracing diversity, advancing together – results of the 2023 BIS survey on central bank digital currencies and crypto, BIS Papers No. 147 (June 2024); Bank for International Settlement (BIS), Rise of the central bank digital currencies: drivers, approaches and technologies, BIS Working Papers No. 880 (August 2020); European Central Bank (ECB), The economics of central bank digital currency, ECB Working Paper Series No. 2713 (2022).

⁷ Ibidem.

PwC's annual CBDC Global Index tracks project maturity using a synthetic index of project status, central bank statements, and public interest. It has documented the rapid acceleration of central bank engagement with CBDCs since 2021, with retail and wholesale projects at varying but consistently advancing stages of development across all major economies.⁸

Similarly, the Atlantic Council's CBDC Tracker tracks the rapid global shift toward digital fiat currencies across various stages of development, piloting, and launch.⁹ As of July 2026, it indicates that 146 countries and currency unions, representing over 98% of global GDP, are exploring a CBDC project. Among them, there is a new high of 77 countries in the advanced phase of exploration, which includes development, pilot, and/or launch. Every G20 country except the United States is exploring a CBDC, with 18 of them in the advanced stages of exploration.

Whilst the motivations vary across jurisdictions, a common set of drivers behind the increased interest and activities relating to CBDC has rapidly emerged.

The first and most visible driver is the sustained decline in physical cash usage across advanced economies. Cash usage globally already declined to approximately 80% of 2019 levels in 2024, and continues to fall at roughly 4% annually, with an estimated \$26 trillion in transactions still conducted in cash.¹⁰

In the Euro area specifically, cash accounted for only 24% of day-to-day payments by 2024, and the share of businesses refusing cash has tripled over three years.¹¹

⁸ See, PricewaterhouseCoopers (PwC), Global CBDC Index and Stablecoin Overview 2023, PWC Report (November 2023).

⁹ See, Atlantic Council, Central Bank Digital Currency Tracker (Updated as of July 2026).

¹⁰ See, McKinsey & Company, Global Payments in 2024: Simpler interfaces, complex reality, McKinsey & Company Report (October 2024).

¹¹ See, Chapter 2 for more information.

In the United States, cash makes up approximately 14% of consumer payments by number. Consumers average 6 to 7 cash payments a month, down sharply from 14 in 2016, but stable since 2020.¹²

As cash declines, central bank money risks becoming invisible to the public, present in the financial system at the wholesale level, but absent from the retail payments that individuals and businesses conduct every day. Without a publicly issued digital alternative, the monetary anchor that underpins trust in the entire payments system would cease to be directly accessible to the public whose confidence ultimately sustains it.

In this framing, a CBDC may prove a structural necessity: a mechanism for preserving the public's direct access to central bank money as the payments system digitalizes, thus ensuring that the foundational properties of sound money (singleness, stability, and universal accessibility) are not lost in the transition from a cash-based to a fully digital payments economy.

The issuance of a CBDC could help ensure that sovereign money retains its foundational role in anchoring public confidence in the monetary and payments system. By continuing to serve as the reference point against which all forms of private money are valued, a CBDC could safeguard the integrity of money and preserve monetary sovereignty.¹³

The second driver behind the increased interest in CBDCs is financial inclusion, particularly in emerging and developing economies. Despite meaningful progress in

¹² See, Board of Governors of the Federal Reserve System, 2025 Diary of Consumer Payment Choice, Federal Reserve Report (2025); Board of Governors of the Federal Reserve System, 2026 Diary of Consumer Payment Choice, Federal Reserve Report (2026).

¹³ See, e.g., European Central Bank (ECB), Central bank digital currencies: a monetary anchor for digital innovation, Speech by Fabio Panetta, Member of the Executive Board of the ECB, at the Elcano Royal Institute, Madrid (November 5, 2021); Bank of England, Central Bank Digital Currency Opportunities, challenges and design, Bank of England Discussion Paper (March 2020).

account ownership, approximately 1.3 billion adults worldwide remain entirely unbanked as of 2024.¹⁴

While 61% of adults in low- and middle-income economies made or received a digital payment in 2024, recording a 27% increase since 2014, significant gaps remain for the most vulnerable populations, including women, rural communities, and those with limited digital literacy.¹⁵

A CBDC, as risk-free and widely acceptable digital money with potentially lower costs and greater accessibility than commercial bank accounts, offers a mechanism for extending payment services to populations that private digital solutions have consistently failed to reach.¹⁶

The third driver is the rise of private digital money. The rapid growth of private digital money, particularly stablecoins, has introduced a new category of monetary instruments that largely operates outside the traditional banking system, without deposit insurance, without central bank oversight, and often without transparency about reserve composition.

According to the Federal Reserve's own analysis, the stablecoin market grew by more than 50% in the course of 2025, with aggregate market capitalization reaching \$317 billion as of April 2026.¹⁷ Their growth has prompted central banks around the world

¹⁴ See, World Bank, Global Findex Database 2025: Connectivity and Financial Inclusion in the Digital Economy, World Bank Report (2025); World Bank, Digital technology is unlocking financial inclusion, World Bank Publication (2025).

¹⁵ Ibidem.

¹⁶ Ibidem. See, also, International Monetary Fund (IMF), Central bank digital currency -- progress and further considerations, IMC Policy Papers (October 2024); McKinsey & Company, CBDC and Stablecoins: Early Coexistence on an Uncertain Road, McKinsey & Company Articles (October 2021).

¹⁷ See, Board of Governors of the Federal Reserve System, Stablecoins in 2025: Developments and Financial Stability Implications, Federal Reserve Notes (April 8, 2026). See, also, Deloitte, Digital assets and payments - Increasing regulatory clarity sets the stage for strategic choices, Deloitte Publication (January 2026); McKinsey & Company, Stablecoins in payments: What the raw transaction numbers miss, McKinsey & Company Publication (February 2026).

to consider whether the absence of a public digital alternative creates systemic risk, and whether a CBDC could provide the regulatory anchor that private stablecoins currently lack.

The fourth driver is the persistent inefficiency of cross-border payment systems, which has attracted sustained attention at the highest levels of the international financial architecture. The G20 identified the improvement of cross-border payments as a priority as early as 2020, commissioning the Financial Stability Board (“FSB”) and BIS Committee on Payments and Market Infrastructures to develop a comprehensive roadmap comprising 19 building blocks for making cross-border payments faster, cheaper, more transparent, and more inclusive by 2027.¹⁸

However, progress has been slower than anticipated and traditional cross-border payment systems are still largely slow, expensive, and opaque. The FSB’s 2025 consolidated progress report concludes that, whilst more than half of the planned actions under the roadmap have been completed, those efforts have not yet translated into tangible improvements for end-users at the global level, and that it is unlikely satisfactory improvements would be achieved in line with the 2027 targets, particularly on cost and speed of remittances in the most expensive regions.¹⁹

CBDCs, particularly through multilateral interoperability arrangements, have the potential to significantly reduce the cost and increase the speed of international money transfers.²⁰ The most operationally advanced initiative in this space is Project mBridge,

¹⁸ See, Financial Stability Board (FSB), G20 Roadmap for Enhancing Cross-border Payments: Consolidated Progress Report for 2024, FSB Report (October 2024).

¹⁹ See, Financial Stability Board (FSB), G20 Roadmap for Cross-border Payments: Consolidated Progress Report for 2025, FSB Report (October 2025).

²⁰ See, e.g., Bank for International Settlements (BIS), Multi-CBDC arrangements and the future of cross-border payments, BIS Papers No. 115 (March 2021); Darrell Duffie, Interoperable payment systems and the role of central bank digital currencies, Stanford Graduate School of Business Working Paper No. 3867 (May 2020).

developed by the BIS Innovation Hub in collaboration with the central banks of Hong Kong, Thailand, the UAE, and China.²¹ In 2022, the platform completed a real-value pilot settling over \$22 million across 164 transactions among 20 commercial banks in 4 jurisdictions, thus demonstrating that CBDCs can enable instant, peer-to-peer cross-border settlement, bypassing the correspondent banking chains that currently generate the majority of cross-border payment costs and delays. Building on the lessons from that pilot, the platform reached minimum viable product stage in June 2024.²²

The BIS has framed this potential in systemic terms. In its Annual Economic Report 2025, it argued that tokenized central bank money operating on a unified ledger could replace the complex chain of intermediaries in today's correspondent banking transactions with a single integrated process, eliminating the sequential messaging, reconciliation, and settlement steps that currently generate cost and delay across multiple time zones and jurisdictions.

²¹ Over the past few years, the BIS Innovation Hub (the “Hub”) has launched a variety of projects, some of which relate to CBDCs. The Hub’s strategy combines the BIS’s global perspective with the local expertise of host central banks, focusing primarily on cross-border use cases while also supporting domestic CBDC development. Individual centers within the Hub pursue projects suited to their specific capabilities, and the Hub collaborates widely with central banks, international financial institutions, the private sector, and academia. Its work spans both wholesale and retail CBDCs, covering domestic and cross-border applications, and is informed by emerging real-world CBDC implementations globally. See, Bank for International Settlements (BIS), *Lessons learnt on CBDCs*, Report submitted to the G20 Finance Ministers and Central Bank Governors, BIS Report (July 2023).

²² See, Bank for International Settlements (BIS), *BIS and four central banks complete successful pilot of real-value transactions on cross-border CBDC platform*, BIS Press Release (October 26, 2022); Bank for International Settlements (BIS), *BIS Innovation Hub, Project mBridge: reached minimum viable product stage*, BIS Press Release (November 2024); Bank for International Settlements (BIS), *BIS Innovation Hub, Project mBridge reaches minimum viable product stage and invites further international participation*, BIS Press Release (June 2024); Bank for International Settlements (BIS), *Project mBridge: connecting economies through CBDC*, BIS Report (October 2022). See, also, Bank for International Settlements (BIS), Committee on Payments and Market Infrastructures (CPMI), International Monetary Fund (IMF), and World Bank, *Options for access to and interoperability of CBDCs for cross-border payments*, Report to the G20 (July 2022); Bank for International Settlements (BIS) and World Bank Group, *Central bank digital currencies: a new tool in the financial inclusion toolkit?*, FSI Insights on policy implementation No. 41 (April 2022); Bank for International Settlements (BIS), Committee on Payments and Market Infrastructures (CPMI), International Monetary Fund (IMF), and World Bank, *Central bank digital currencies for cross-border payments*, Report to the G20 (July 2021).

The IMF has similarly identified cross-border payment efficiency as one of the most significant potential benefits of CBDC adoption, noting that CBDCs could facilitate faster, cheaper, and more inclusive international transactions, with particular benefits for remittance-dependent households in lower-income economies where the cost of sending money across borders remains disproportionately high.²³

1.3 Key Design Choices for Central Bank Digital Currencies

Against this backdrop of accelerating interest, the practical question facing an increasingly large number of central banks shifts from whether to pursue a CBDC to how to design one.

Central banks can adapt the design of CBDC features to be strong drivers of the demand for CBDCs. Moreover, the design of a CBDC and its supporting infrastructure determines the central bank's operational responsibilities and reflects strategic decisions about the extent and nature of its role within the national payment ecosystem.²⁴

Central banks around the globe are exploring variations in CBDC design while weighing factors such as access, privacy, and distribution method. While there are many possible design considerations, several key dimensions commonly used to characterize CBDC designs include the following.

²³ See, International Monetary Fund (IMF), Cross-Border Payments with Retail Central Bank Digital Currencies: Design and Policy Considerations, IMF Fintech Notes No. 2024/002 (May 2024).

²⁴ See, e.g., Jiaqi Li, Predicting the demand for central bank digital currency: A structural analysis with survey data, *Journal of Monetary Economics* Volume 134, pp. 73-85 (March 2023); Itai Agur, Anil Ari, and Giovanni Dell'Ariccia, Designing central bank digital currencies, *Journal of Monetary Economics* Volume 125, pp. 62-79 (January 2022); Bank for International Settlements (BIS), CBDCs: an opportunity for the monetary system, Chapter III, Annual Economic Report (2021); Bank for International Settlements (BIS), Central banks and payments in the digital era, Chapter III, Annual Economic Report (2020); Bank for International Settlements (BIS), Central bank digital currencies: putting a big idea into practice, Remarks by Agustín Carstens (General Manager, Bank for International Settlements) (March 2021); Bank for International Settlements (BIS), The Technology of Retail Central Bank Digital Currency, BIS Quarterly Review (March 2020).

The first is verification method: token-based CBDCs verify the authenticity of the token itself (similar to physical cash), while account-based CBDCs verify the identity of the account holder (similar to a bank account). Each approach carries different technical infrastructure requirements and different implications for privacy and access.

The second dimension is distribution architecture. Under a direct model, the central bank operates all accounts or wallets and interfaces directly with the public. Under an indirect (or synthetic) model, private intermediaries handle customer-facing distribution and onboarding, while the central bank remains once removed from end users. A hybrid model splits the difference: the central bank maintains the core ledger and retains the underlying claim, while intermediaries handle servicing and customer relationships.

A third dimension concerns remuneration: whether the CBDC bears interest. This choice bears directly on disintermediation risk, since an interest-bearing CBDC would compete far more directly with bank deposits than a non-remunerated one.

Closely related is the use of holding and transaction limits, which several central banks have proposed as the primary tool for managing disintermediation risk, by capping the amount of CBDCs an individual may hold at any one time.

Lastly, design debates increasingly address offline functionality and programmability.²⁵ Offline capability, allowing transactions without network connectivity, is framed as a resilience and financial inclusion feature. Programmability, meaning the capacity to attach conditions to payments, akin to smart contracts, remains

²⁵ See, e.g., Bank for International Settlements (BIS) Innovation Hub, Project Polaris Part 1: A handbook for offline payments with CBDC, Report (May 2023).

more contentious, raising questions about the boundaries of privacy, freedom of choice, and state oversight.

1.4 Key Economics, Legal and Policy Implications

The introduction of CBDCs raises a set of legal, economic, and policy questions of fundamental relevance across jurisdictions.

Privacy, Control, and Operational Risk

Unlike physical cash, which enables anonymous, peer-to-peer transactions that leave no centralized record, a CBDC would, by design, generate a digital record of every transaction processed through the central bank's infrastructure. The nature, extent, and governance of that record lie at the heart of the privacy dimension of the CBDC debate.²⁶

The privacy concern operates at two distinct levels. The first is transactional privacy: the risk that a CBDC could give the issuing authority, whether the central bank, the government, or both, visibility into the financial behavior of individual citizens in real time and at a level of granularity that no prior form of public money has made possible. The second is programmability and control: the risk that a state-issued digital currency could be designed, or subsequently adapted, to restrict, condition, or monitor how

²⁶ See, e.g., International Monetary Fund (IMF), Central Bank Digital Currency Data - Use and Privacy Protection, IMF Fintech Notes No. 2024/004 (2024); Bank for International Settlements (BIS), Central Bank Digital Currency and Privacy: A Randomized Survey Experiment, BIS Working Paper No. 1147 (November 2023); World Economic Forum, Privacy and Confidentiality Options for Central Bank Digital Currency, White Paper (November 2021); Nikhil George et al., A Framework for Programmability in Digital Currency, MIT Digital Currency Initiative (August 1, 2023); Bank of England and HM Treasury, The digital pound: a new form of money for households and businesses?, Bank of England and HM Treasury Consultation Paper (February 2023); Bank of England and HM Treasury, Response to the Bank of England and HM Treasury Consultation Paper - The digital pound: a new form of money for households and businesses?, Bank of England and HM Treasury Consultation Response (January 2024).

individuals and businesses spend their money, introducing a form of financial surveillance or behavioral control that physical cash structurally prevents.

Privacy design choices can impact public willingness to adopt CBDCs, and poorly designed or managed CBDC data could undermine public trust in central bank money as an institution.²⁷ CBDC privacy design encompasses a spectrum of options, ranging from cash-like anonymity for small-value transactions to full identity verification for larger ones, each carrying different implications for regulatory compliance, financial inclusion, and public trust.

The resolution of these concerns is both a technical challenge and a constitutional and institutional one. The question of how much visibility a democratic state should have into the financial transactions of the public, and under what conditions, subject to what oversight, and with what legal protections, is a question that CBDC design forces into the open in a way that existing payment systems have not. How each jurisdiction answers it will shape the architecture of its digital currency and the broader relationship between the public and the monetary institutions that serve them.

In addition, CBDCs present a distinct set of operational and security challenges. Unlike physical cash, whose integrity rests on accumulated anti-counterfeiting expertise embedded in the physical properties of banknotes, the integrity of a CBDC depends heavily on the security of the underlying digital infrastructure, requiring among other things robust cryptographic protocols and real-time settlement mechanisms. While these are technically achievable, they introduce a structural dependency on technological infrastructure that physical cash does not share. The consequences of a

²⁷ See, Bank for International Settlements (BIS), Central Bank Digital Currency and Privacy: A Randomized Survey Experiment, cit.

systemic failure or a successful exploit could propagate through the system at a speed and scale that has no equivalent in the physical currency world.

The cybersecurity challenge is particularly acute.²⁸ CBDCs available to the public would be accessible to millions of individuals through a wide array of devices, applications, and distribution channels, dramatically expanding the attack surface available to malicious actors and making comprehensive perimeter defense significantly more difficult. The number of endpoints would be orders of magnitude larger than those of existing central bank infrastructure, creating multiple potential vectors for attack, from individual wallet compromises to coordinated assaults on the core settlement layer itself.

The systemic consequences of a successful cyber-attack could be severe. A large-scale breach affecting a significant number of users simultaneously could undermine public confidence in the digital currency with systemic implications that go well beyond those of a conventional payment system failure. Precisely because a CBDC is a liability of the central bank, any demonstrated vulnerability could implicate the reliability of a service, as well as the credibility of the central bank itself and the integrity of the monetary system.

Central banks developing CBDCs have recognized these challenges and have identified operational resilience, encompassing cybersecurity, resistance to attacks, and offline payment functionality as a contingency for connectivity disruptions, as core design requirements. The difficulty of defending a system with an unprecedented number of

²⁸ See, e.g., International Monetary Fund (IMF), *Cyber Resilience of the Central Bank Digital Currency Ecosystem*, IMF Fintech Notes No. 2024/003 (2024); Innovate Finance, *Cybersecurity and risk considerations for CBDCs*, Innovate Finance Articles (March 31, 2022); Bank for International Settlements (BIS), *Central bank digital currency (CBDC) information security and operational risks to central banks*, BIS Report (November 2023); Bank for International Settlements (BIS) Innovation Hub, *Project Polaris Part 2: A Security and Resilience Framework for CBDC Systems*, Report (July 2023).

endpoints against an increasingly sophisticated threat landscape nonetheless remains one of the most significant technical challenges of CBDC design.

Bank Disintermediation and Financial Stability

A widely available CBDC represents a direct substitute for commercial bank deposits. If individuals and businesses can hold central bank money in digital form, they have a risk-free alternative to bank accounts that did not previously exist in a digital, accessible form. Commercial banks play a central role in the modern economy not merely as payment intermediaries but as providers of maturity transformation, credit creation, and liquidity insurance to households and firms. All these functions depend critically on the deposit base that a CBDC may erode.²⁹

Moreover, in periods of financial stress, the availability of a CBDC may accelerate deposit flight with a speed and scale that conventional deposit insurance and central bank liquidity facilities may not be designed to address. Empirical research has indicated that stock market reactions of U.S. banks to Federal Reserve's speeches signaling CBDC development are significantly more negative the more those banks depend on deposits, and correspondingly more positive when the Federal Reserve promises safeguards such as non-remuneration or holding limits.³⁰

²⁹ See, Federal Reserve Board, Retail Central Bank Digital Currencies: Implications for Banking and Financial Stability, Finance and Economics Discussion Series (2023); Federal Reserve Board, The Macroeconomic Implications of CBDC: A Review of the Literature, Finance and Economics Discussion Series (2022); Board of Governors of the Federal Reserve System, Central Bank Digital Currency: A Literature Review, FEDS Notes (November 2020). See, also, Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve System and Bank for International Settlements, Central bank digital currencies: foundational principles and core features, cit.; Bank for International Settlement (BIS), Central bank digital currencies: motives, economic implications and the research frontier, cit.; European Central Bank (ECB), Central Bank Digital Currency: functional scope, pricing and controls, ECB Occasional Paper Series No. 286 (December 2021).

³⁰ See, Lars Beckmann et al., CBDC and the Shadow of Bank Disintermediation: US Stock Market Insights on Threats and Remedies, Finance Research Letters 67 (2024).

The academic literature to date has examined the potential financial disintermediation, bank runs, and credit contraction risks associated with the use of CBDCs from several analytical angles. Findings are broadly reassuring about the magnitude of these risks while confirming the importance of design choices in containing them, in particular the remuneration rate, the holding limits, and the central bank’s willingness to use its balance sheet to offset deposit outflows.³¹

The BIS has formalized the analytical distinction between “slow disintermediation” and “fast disintermediation” in relation to CBDCs.³² The former refers to the gradual structural shift of deposits into CBDC in normal times, which compresses bank funding margins and shrinks lending capacity; the latter describes the sudden acceleration of that shift during a banking stress event, which could amplify bank runs with unprecedented speed given the digital, frictionless nature of a CBDC.

The BIS has developed a quantitative framework for estimating an optimal holding limit calibrated to suppress the fast disintermediation dynamic while preserving the payments utility of the CBDC. Its analysis demonstrates that a carefully set holding limit can enhance financial stability by constraining the capacity of depositors to shift funds into CBDCs at the speed and scale that would be necessary to precipitate a

³¹ See, e.g., David Andolfatto, Assessing the impact of central bank digital currency on private banks, *The Economic Journal*, vol 131, no 634, pp. 525–40 (February 2021); and Jesus Fernandez-Villaverde et al, Central bank digital currency: central banking for all?, NBER Working Papers no. 26753 (February 2020); European Central Bank (ECB), Tiered CBDC and the financial system, ECB Working Paper Series No. 2351 (January 2020); Michael Kumhof and Clare Noone, Central bank digital currencies - Design principles for financial stability, *Economic Analysis and Policy*, Volume 71, pp. 553-572 (September 2021); Todd Keister and Cyril Monnet, Central bank digital currency: Stability and information, *Journal of Economic Dynamics and Control*, Volume 142 (September 2022); Linda Schilling et al., Central bank digital currency: When price and bank stability collide, *Journal of Monetary Economics* Volume 145, 103554 (July 2024); Young Sik Kim and Ohik Kwon, Central Bank Digital Currency, Credit Supply, and Financial Stability, *Journal of Money, Credit and Banking*, 55, pp. 297–321 (2023).

³² See, Bank for International Settlements (BIS), CBDC and Banks: Disintermediating Fast and Slow, BIS Working Papers No. 1280 (2024).

systemic bank run, without materially impairing the digital currency's function as a retail payment instrument.

The IMF has developed comprehensive balance sheet scenarios for central banks and the banking sector to model the financial stability implications of varying degrees of deposit replacement and different central bank policy responses, confirming that the risk is relevant but can be substantially managed through design choices, most notably non-remuneration, holding limits, and waterfall mechanisms that automatically sweep CBDC balances exceeding the threshold back into a linked commercial bank account.³³

The IMF has also identified specific design parameters as the primary toolkit for managing disintermediation risk without sacrificing the CBDC's policy objectives, including tiered holding limits that differentiate between natural persons and legal persons, lower remuneration for CBDCs held as a store of value, and access criteria that can be adjusted countercyclically.³⁴

Monetary Policy Transmission

A CBDC creates a new instrument on the central bank's balance sheet and a new channel through which monetary conditions can reach households and businesses directly, without passing through the commercial banking system. The monetary policy implications of this are complex, and the magnitude of the impact depends crucially on CBDC design.

An interest-bearing CBDC could function as a powerful monetary policy tool by enabling central banks to transmit rate changes immediately to the general public

³³ See, International Monetary Fund (IMF), Central Bank Digital Currencies and Financial Stability: Balance Sheet Analysis and Policy Choices, IMF Working Paper WP/24/226 (2024).

³⁴ See, International Monetary Fund (IMF), Implications of Central Bank Digital Currency for Monetary Operations, IMF Fintech Notes No. 2024/007 (2024); International Monetary Fund (IMF), Implications of Central Bank Digital Currencies for Monetary Policy Transmission, IMF Fintech Notes No. 2023/010 (2023).

without the intermediary lags that characterize the conventional interest rate channel, and potentially eliminating the effective lower bound constraint on monetary policy rates by making negative rates on CBDC holdings technically feasible.³⁵

The BIS has examined the interaction between CBDC design and the operational framework of monetary policy in depth, noting that the impact of CBDC on central bank balance sheets, reserve supply, and the effectiveness of interest rate corridors depends critically on whether the CBDC is remunerated and at what rate.³⁶

Payment System Competition and Market Structure

A publicly provided digital payment infrastructure, built on open standards and available to all regulated intermediaries, has the potential to fundamentally alter the competitive dynamics of the payments market through four distinct channels: pricing discipline, quality improvements, increased contestability, and broader financial access.

A recent IMF's analysis on the impact of CBDCs on payments competition identifies CBDCs as functioning simultaneously as a payment instrument expanding end users' transaction choices, and as a platform infrastructure broadening intermediaries' opportunity to provide and innovate in payment services. Critically, the IMF notes that CBDCs can assume the "credible threat" role that physical cash historically played by serving as a publicly available fallback that disciplines private payment providers,

³⁵ See, e.g., Michael D. Bordo and Andrew T. Levin, Central Bank Digital Currency and the Future of Monetary Policy, NBER Working Paper No. 23711 (2017); Elyor Davlatov and Judit Sági, The Transmission Mechanism of Monetary Policy and Central Bank Digital Currency: A New Monetary Order?, Journal of Central Banking Theory and Practice No. 1 (2025); European Central Bank (ECB), More than an intellectual game: exploring the monetary policy and financial stability implications of central bank digital currencies, Opening speech by Fabio Panetta, Member of the Executive Board of the ECB, at the IESE Business School Banking Initiative Conference on Technology and Finance, Frankfurt am Main, (April 8, 2022); Massimo Ferrari Minesso et al., Central bank digital currency in an open economy, Journal of Monetary Economics Volume 127, pp. 54-68 (April 2022).

³⁶ See, Bank for International Settlements (BIS), CBDC and the operational framework of monetary policy, BIS Working Papers No. 1126 (2024).

while also functioning as a vehicle for interoperability that reduces the network effects currently entrenching dominant private platforms.³⁷

However, the IMF also cautions that the competitive impact of CBDCs depends significantly on the existing payments landscape and regulatory environment: where a public fast payment system already exists, a CBDC is likely to exert only incremental additional competitive pressure, since both instruments occupy similar roles in the payment market. In more concentrated markets, dominated by a small number of large private platforms exploiting network effects and data advantages, the competitive case for a CBDC is correspondingly stronger.³⁸

The BIS has framed the distinction between CBDCs and fast payment systems as structurally important: both deliver instant, low-cost transfers for end users, but they differ in that fast payment systems facilitate claims on private intermediaries, whereas a CBDC is a claim on the central bank. This distinction gives the CBDC its unique role as a publicly anchored settlement asset even in a market populated by competing private payment instruments.³⁹

Geopolitics and Monetary Sovereignty

Perhaps the most significant dimension of the CBDC debate is geopolitical. The digitalization of money is reshaping the architecture of monetary power in the global economy in ways that extend well beyond the technical evolution of payment systems.

³⁷ See, International Monetary Fund (IMF), The Impact of Central Bank Digital Currency on Payments Competition, IMF Fintech Notes No. 2025/007 (November 2025); International Monetary Fund (IMF), Positioning Central Bank Digital Currency in the Payments Ecosystem, IMF Fintech Notes No. 2024/006 (2024); International Monetary Fund (IMF), Central Bank Digital Currency: Further Navigating Challenges and Risks, IMF Papers (November 2025).

³⁸ Ibidem. See, also, Bank for International Settlements (BIS), Central bank digital currencies and fast payment systems: rivals or partners?, BIS Papers No. 151 (December 2024).

³⁹ Ibidem.

As digital transactions become the dominant mode of economic exchange, the infrastructure, standards, and instruments that underpin those transactions are increasingly recognized as strategic assets and dimensions of national and supranational sovereignty that states can no longer afford to leave entirely in private or foreign hands.

The stakes of this shift are considerable. A monetary system without a publicly issued digital currency risks becoming dependent on the payment networks, digital instruments, and settlement infrastructure of other jurisdictions or private actors operating outside domestic regulatory perimeters.⁴⁰ Unlike conventional financial risks, this form of structural exposure cannot be addressed through prudential regulation alone.

It is this recognition that has driven the acceleration of CBDC development across advanced and emerging economies alike, and that lends the global CBDC movement a geopolitical urgency that goes beyond the domestic payments policy questions with which it is often conflated.

At the same time, jurisdictions have not converged on a common answer to the question of how monetary sovereignty is best protected in a digital age and there is yet no broad consensus among central banks on the need for CBDC issuance.

1.5 The Transatlantic Divergence

Against the described backdrop of global economic drivers, two structurally distinct strategies have emerged. The first is the public digital currency model, pursued most prominently by the European Union (“EU”), in which the central bank issues a CBDC

⁴⁰ See, e.g., Markus K. Brunnermeier et al., *The Digitalization of Money*, NBER Working Paper No. 26300 (September 2019).

as a direct liability, anchoring the monetary system in publicly governed infrastructure and preserving the singleness of money as private digital instruments proliferate. The second is the private stablecoin model, pursued most prominently by the United States, in which the state regulates and backstops privately issued, domestic-currency-denominated digital instruments rather than issuing a competing public alternative.⁴¹

At one end of the spectrum, the EU has committed to developing the “digital euro”, a publicly issued retail central bank digital currency grounded in the European Central Bank (“ECB”)’s treaty mandate and underpinned by a legislative framework that, at the time of writing, is approaching its final stages.

The EU’s approach reflects a fundamental conviction that the response to the digitalization of money must be anchored in public institutions: a digital form of central bank money, issued and guaranteed by the Eurosystem, is the main instrument capable of preserving the singleness of the euro, protecting citizens’ access to risk-free digital money, and securing Europe’s monetary infrastructure against dependence on private and foreign-controlled payment systems. The digital euro is, in this framing, both a payments evolution and an expression of institutional and monetary sovereignty.

At the other end of the spectrum, the United States has actively legislated against a U.S. CBDC by prohibiting the Federal Reserve from issuing a digital U.S. dollar, while simultaneously constructing a federal regulatory framework for privately issued, U.S. dollar-denominated stablecoins.

The U.S. approach reflects an equally fundamental conviction that the appropriate response to the digitalization of money is to regulate and empower the private sector

⁴¹ See, European Parliament, Cryptomercantilism vs. Monetary Sovereignty, Dealing with the Challenge of US Stablecoins for the EU, Monetary Dialogue Paper (June 2025); European Parliament, Stablecoins and digital euro: friends or foes of European monetary policy?, Monetary Dialogue Paper (June 2025).

rather than to extend the reach of the central bank into retail payments. On this view, privately issued stablecoins, regulated under federal law, can deliver the benefits of digital money (with focus on efficiency, inclusion, and innovation), without the risks that a government-controlled digital currency would pose to financial privacy, market competition, and the structural integrity of the existing financial system.

Both jurisdictions are facing similar structural pressures and digital evolutions, and invoke the same values, including monetary sovereignty, privacy, financial stability, and payments innovation. Yet, they have operationalized those shared values through structurally opposite institutional choices: public versus private, state-issued versus market-issued, regulatory mandate versus regulatory prohibition.

The diversity of their approaches reflects fundamentally different theories of the appropriate role of the state in the monetary system of a digital economy and how monetary power is constituted and projected in a digitalizing global economy. This divergence provides the analytical foundation for the comparative analysis in this paper.

The chapters that follow examine the regulatory and legislative frameworks through which the EU and the United States have pursued their chosen approach to CBDCs, with a view to identifying the key design choices and their legal underpinnings and assessing the extent to which each framework is delivering on its stated objectives.

CHAPTER 2

THE MAKING OF THE DIGITAL EURO

2.1 The Digital Euro: Foundational Principles and Institutional Architecture

The digital euro is the Eurosystem’s project to introduce a digital form of cash. This initiative aims at ensuring that central bank money retains its foundational role in an economy undergoing rapid digital transformation. As digital transactions increasingly displace cash across the Euro area, the absence of a public digital means of payment risks leaving the monetary system without a publicly issued anchor at the retail level.

The urgency of the digital euro initiative is underscored by two structural vulnerabilities in Europe’s payments landscape. First, the landscape remains deeply fragmented and externally dependent. Nearly two-thirds of Euro area card-based transactions are processed by non-European companies,⁴² and 15 Euro area countries currently rely entirely on international card schemes or foreign mobile solutions for in-store payments.⁴³ As a result, digital payments are often processed through non-EU infrastructures with related data stored in a non-EU country, and fees are set according to commercial conditions defined outside the EU.

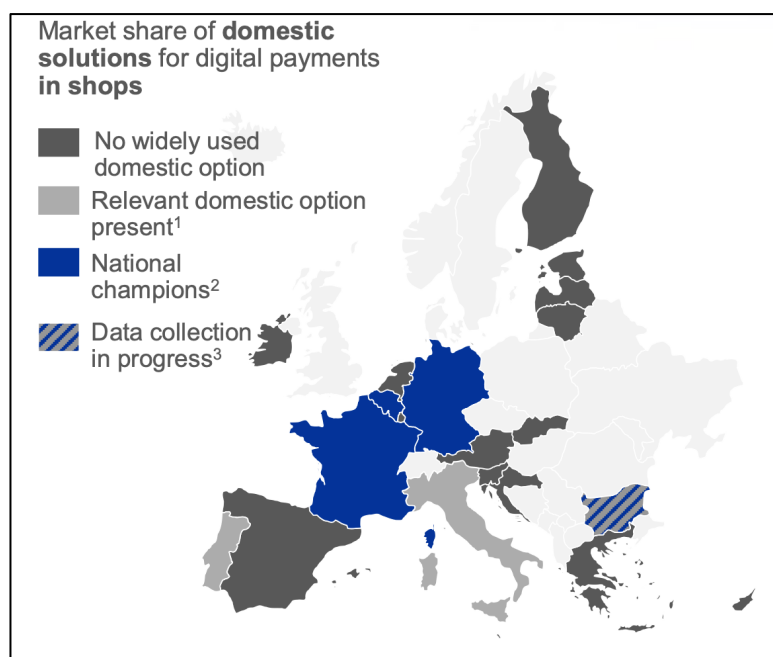
In addition, there is no European electronic payment solution that currently operates at pan-European scale: existing European schemes serve primarily national markets and discrete use cases, leaving European payment service providers (“PSPs”) structurally unable to compete on their own continent.⁴⁴

⁴² See, European Central Bank (ECB), Report on card schemes and processors, ECB Report (2025).

⁴³ See, European Central Bank (ECB), Digital Euro – The Future of Money, Policy breakfast, I-Com (Istituto per la Competitività), Speech by Piero Cipollone (Member of the Executive Board of the ECB) (June 18, 2026).

⁴⁴ See, European Central Bank (ECB), Preparation phase of a digital euro - Closing report, ECB Report (October 2025).

Figure – European Digital Payments



Source: European Central Bank, Digital Euro - The Future of Money, cit.; European Central Bank, Preparation phase of a digital euro - Closing report, cit.

1) >10% market share. 2) >50% market share. 3) Bulgaria joined the Euro area on 1 January 2026 - the country has a domestic solution (bcard) for digital payments in shops. Data collection is in progress.

Second, the use of cash is declining faster than anticipated.⁴⁵ By 2024, cash accounted for only 24% of day-to-day payments and the percentage of businesses refusing cash has tripled to 12% over three years, with the value of e-commerce purchases doubling from 18% to 36% of goods purchased between 2019 and 2024.⁴⁶ These trends are expected to accelerate as the broader economy digitalizes, thus compounding Europe's exposure to external payment infrastructure and narrowing its strategic autonomy.

The digital euro represents the Eurosystem's proposed answer to the structural challenges discussed above. Rather than addressing fragmentation and cash decline as separate policy problems, the project is conceived as a single public infrastructure solution capable of resolving both at once. By introducing the digital euro, European

⁴⁵ See, European Central Bank (ECB), Study on the payment attitudes of consumers in the euro area (SPACE), ECB Report (2024).

⁴⁶ Ibidem. See, also, European Central Bank (ECB), Use of cash by companies in the euro area in 2024, ECB Report (2024).

authorities aim to ensure that the euro continues to cater for people's changing payment preferences and to strengthen the Euro area's strategic autonomy.

At its core, the digital euro would function as a pan-European public payment instrument backed by the ECB, universally accepted and free for basic use and services, such as holding, sending and receiving digital euros. It would be available throughout the Euro area, under European governance and operated by European providers. The digital euro is designed to operate uniformly across all payment contexts (including person to person, person to business, person to government, business to person, business to business, business to government, government to person, government to business, government to government, point-of-sale, and e-commerce payments) across the entire Euro area. This universality is central to its policy rationale.⁴⁷

The digital euro is conceived as a digital complement to the current offering of euro banknotes and coins, which is designed to preserve citizens' and businesses' freedom of choice in how they pay, promote financial inclusion, and reinforce Europe's monetary sovereignty. Similarly, the digital euro would not replace cards or mobile payment apps; instead it would complement them by offering an additional way to pay digitally.

The digital euro would always be worth its face value: one digital euro would always be worth exactly the same as a €1 coin.

A further design objective is resilience. The digital euro is intended to function under all circumstances, including in periods of crisis or connectivity disruption, where reliance on private foreign infrastructure may prove inadequate. An offline payment capability, currently under active technical development, is a concrete expression of

⁴⁷ See, Council of the European Union, The digital euro explained (as of June 2026).

this objective: it would allow payments to be made without any internet or network connection, preserving the contingency role that physical cash has historically played but extending it to digital environments. In so doing, the digital euro is aimed at strengthening the resilience of the Euro area's payment system and giving people a resilient and reliable European digital payment option, alongside existing private solutions.

Financial inclusion is embedded in the project as a guiding design principle. The digital euro is intended to have accessible features, local support infrastructure, and offline capabilities to ensure that all individuals can participate in the digital economy on equal terms, including those with limited digital skills, low incomes, disabilities, or restricted access to conventional banking services. In this sense, the digital euro is designed both to digitize existing payment behavior and, importantly, to extend the protective qualities of cash into the digital payment environment.

Users would access the digital euro through a dedicated digital euro account or digital wallet, provided by their bank or another regulated intermediary. Opening and using a basic digital euro wallet would be free of charge.

Through their digital euro account and wallet, users would be able to make payments in shops (both in person and online), send money directly to other individuals, such as friends or family, and transact both online and offline.

To protect financial stability, individual holding limits would apply, capping the amount of digital euros a person may hold in their wallet at any given time. These limits serve a dual purpose: ensuring the digital euro functions primarily as a means of payment rather than as a store of value; and guarding against the risk of large-scale

deposit outflows from commercial banks that could destabilize the broader financial system.

More broadly, the digital euro is intended to act as a structural enabler of competition and innovation in the European payments market, providing open standards on which private-sector PSPs can build, while ensuring that the public dimension of money (trust, stability, and universal access) is not ceded entirely to private actors operating beyond European jurisdiction. By acting as a unifying driving force in Europe's digital economies, a digital euro would also be an emblem of the ongoing process of European integration.

From an institutional architecture perspective, the digital euro project is a multilateral endeavor. The ECB leads all technical and operational preparation, acting through its Governing Council and Executive Board and the Eurosystem's High-Level Task Force on Digital Euro. Established in January 2020 to advance work on CBDCs in the Euro area, the High-Level Task Force on Digital Euro reports to the ECB's Governing Council and is made up of members from national central banks of the Eurosystem.

Six national central banks (Banca d'Italia, Banco de España, Banque de France, Deutsche Bundesbank, Lietuvos Bankas, and Oesterreichische Nationalbank) have been selected to deliver core infrastructure components such as clearing, settlement, and issuance.

The European Commission ("EU Commission") tables the legislation and retains an observer role in the EU Council working-party discussions.

It is proposed that PSPs would distribute the digital euro to end users; critically, the ECB would not hold consumer accounts directly, a design choice intended to preserve the existing banking intermediation model. The Rulebook Development Group

(“RDG”), comprising senior representatives from European retail payments associations, is developing the operational rulebook.

2.2 The Digital Euro Investigation Phase (October 2021 to October 2023)

In October 2020, the ECB published a report on the digital euro which is widely regarded as the foundational ECB document that launched the digital euro project.⁴⁸

The report examines the cases in which the Eurosystem might issue a digital euro, the potential design options available, and the possible implications for the broader financial system.

The report identifies seven scenarios that could make the issuance of a digital euro necessary or desirable: (i) to support the digitalization of the European economy and the strategic independence of the European Union; (ii) in response to a significant decline in the role of cash as a means of payment in the euro area; (iii) if there is significant potential for foreign CBDCs or private digital payment instruments to become widely used in the Euro area; (iv) as a new monetary policy transmission channel; (v) to mitigate risks to the normal provision of payment services; (vi) to foster the international role of the euro; and (vii) to support improvements in the overall costs and ecological footprint of the monetary and payment systems. The report notes that the materialization of any specific scenario does not necessarily warrant the issuance of a digital euro to the extent that alternative solutions are available.

The report deliberately does not advocate for a specific type of digital euro and does not reach conclusions on issues such as the setting-up, running costs or cost recovery of a digital euro; instead, it establishes the intellectual and policy framework upon which all subsequent work is built. The report identifies various principles and

⁴⁸ See, European Central Bank (ECB), Report on digital euro, ECB Report (October 2020).

requirements that any type of design for the digital euro must fulfil (including accessibility, robustness, safety, efficiency and privacy), while complying with relevant legislation (including legislation on money laundering and the financing of terrorism).

In terms of structure, the report adopts a pragmatic, policy-driven methodology structured around three sequential analytical layers. The first establishes the core principles that any digital euro must satisfy, the second derives scenario-driven requirements, and the third and broadest layer identifies the general requirements that must be met across all foreseeable scenarios.

Following the release of the report, the ECB launched a public consultation on a digital euro in October 2020, which ran until 12 January 2021. The consultation included 18 questions aimed at collecting the views of individuals and professionals on the benefits and challenges of issuing a digital euro and on its possible design. The responses collected provide valuable input for the Eurosystem's assessments on a digital euro proposal.⁴⁹

Following publication of the aforesaid report, European ministers held a strategic discussion on the benefits and challenges of a possible future introduction of a digital euro in November 2020.⁵⁰ Subsequently, at the Euro Summit in March 2021, leaders called for exploratory work on the possible launch of a digital euro to be taken forward.⁵¹ Shortly thereafter, finance ministers of the Euro area exchanged views on the digital euro project at the Eurogroup meeting in April 2021, drawing on a report by

⁴⁹ See, European Central Bank (ECB), Eurosystem report on the public consultation on a digital euro, ECB Report (April 2021).

⁵⁰ See, Eurogroup, Video conference of the Eurogroup (November 3, 2020).

⁵¹ See, European Council, Video conference of the members of the Euro Summit (March 25, 2021).

the ECB setting out the findings of its public consultation on a digital euro, which had been launched in October 2020.⁵²

A few months later, in July 2021, the ECB's Governing Council formally decided to launch a two-year investigation phase, with work commencing in October 2021.⁵³ This phase was designed to study the potential design and distribution of a digital euro, focusing particularly on how it could meet citizens' and merchants' needs while avoiding unintended consequences for monetary policy and financial stability. Key workstreams covered user needs and design options, business models for the private sector, technological approaches, anti-money-laundering requirements, and the implications for the broader financial system. The investigation phase ran through October 2023 and involved extensive cooperation with EU institutions, national central banks, market participants, and consumer groups. It produced multiple technical papers and ultimately concluded that a digital euro was both feasible and desirable, thus setting the stage for the following preparation phase.

In late 2021, focus groups were conducted in all Euro area countries to gather views from different target audiences on their payment habits, and specifically their attitudes towards digital payment methods.⁵⁴

The EU Commission launched a call for evidence and a targeted consultation on a digital euro from early April 2022 until mid-June 2022.⁵⁵ The targeted consultation was intended to complement the ECB's public consultation, with the aim to collect further information from industry participants, relevant authorities and experts with a

⁵² See, Eurogroup, Video conference of the Eurogroup (April 16, 2021).

⁵³ See, European Central Bank (ECB), Eurosystem launches digital euro project, ECB Press Release (July 14, 2021).

⁵⁴ Kantar Public, Study on New Digital Payment Methods, Report (March 2022).

⁵⁵ European Commission, Targeted consultation on a digital euro, European Commission (2022). European Commission, Consultation Document - Targeted consultation on a digital euro, European Commission Consultation (2022).

focus on seven thematic areas central to the design and governance of the digital euro, including: users' needs and expectations; the digital euro's role in the EU's retail payments ecosystem and digital economy; the preservation of euro cash's legal tender status alongside retail availability; financial sector impact and financial stability risks; AML/CFT compliance; privacy and data protection; and international payment use cases.

Between September 2022 and February 2023, experts from EU Member States and national central banks, together with representatives of the ECB, were invited to share their views through the EU Commission's Expert Group on Banking, Payments and Insurance ("EGBPI"), supported by targeted country-level consultations. EU Member States also contributed perspectives through Euro Group meetings from 2021 onwards. Although the positions expressed at EGBPI level remained preliminary, most EU Member State experts indicated support for the potential issuance of a digital euro carrying legal tender status across the Euro area.

In parallel, the EU Commission and the ECB convened a high-level conference on the digital euro in November 2022, bringing together representatives of national and EU authorities, Members of the European Parliament ("EU Parliament"), private sector participants, civil society organizations, and academic experts.⁵⁶

Subsequently, from December 2022 to January 2023 focus group sessions were carried out to assess Euro area citizens' perceptions of digital wallet features, with participants expressing interest in trying out the digital wallet and providing insights on digital payment preferences important for shaping the design of the digital euro.⁵⁷

⁵⁶ See, European Commission and European Central Bank, Towards a legislative framework for a digital euro, Digital Euro Conference (November 7, 2022).

⁵⁷ See, Kantar Public, Study on Digital Wallet Features, Report (March 2023).

Further engagement took the form of roundtable discussions with merchants and businesses, consumer representatives, and payment service providers held in February and March 2023. The EU Commission also participated in an EU Parliament’s plenary debate in April 2023, as well as in policy discussions convened by the EU Parliament’s Economic and Monetary Affairs Committee in January and March 2023.

The Eurogroup, meeting in inclusive format, exchanged views on the international aspects of CBDCs and received an update on the state of the digital euro project in May 2023.⁵⁸ The Eurogroup further reviewed progress on the digital euro project in June 2023, focusing on two distinct strands of work: an update from the EU Commission previewing its forthcoming legislative proposal (see below); and a presentation by the ECB on the high-level product description of the digital euro, including the proposed compensation model for PSPs.⁵⁹

In June 2023, the EU Commission tabled a proposal for a regulation of the EU Parliament and the Council of the European Union (“EU Council”) on the establishment of the digital euro,⁶⁰ which forms part of a broader “Single Currency Package”⁶¹ alongside a proposal to reinforce the legal tender status of euro cash to safeguard the role of cash, ensure it is widely accepted as a means of payment and remain easily accessible for people and businesses across the Euro area.

The fact that the legislative proposals on the legal tender status of cash and on the digital euro have been treated as a single package reinforces the notion that euro cash and the

⁵⁸ See, Eurogroup (May 15, 2023).

⁵⁹ See, Eurogroup (June 15, 2023).

⁶⁰ See, European Commission, Proposal for a regulation of the European Parliament and of the Council on the establishment of the digital euro, COM(2023) 369 final, 2023/0212(COD) (June 28, 2023).

⁶¹ See, European Commission, Single Currency Package: new proposals to support the use of cash and to propose a framework for a digital euro, European Commission Press Release (June 28, 2023); European Commission, Digital euro package, European Commission (June 28, 2023).

digital euro are the same money, differing only in the technology used.⁶² This emphasizes the role of the digital euro not as a replacement for cash but as its digital counterpart; both instruments of public money, both forms of the single currency, both serving the same function of preserving citizens' freedom of payment choice.

The draft regulation is accompanied by a detailed Impact Assessment⁶³ and represents the first formal step in the EU legislative process, requiring co-decision by the EU Parliament and the EU Council.

The proposal sets out the legal framework under which the ECB would be empowered to issue the digital euro and defines its key features. It establishes the digital euro as legal tender throughout the Euro area, which entails inter alia its mandatory acceptance by payees, with limited exceptions. For example, small businesses (microenterprises) would be able to opt out, provided they do not already accept comparable digital payment methods. Private individuals making personal payments would also be exempt. Where both the payer and payee have expressly agreed in advance to use a different payment method, the merchant would not be required to accept the digital euro. That said, merchants would not be able to use commercial terms to systematically exclude the digital euro, as any such exclusion must be genuinely negotiated between the parties.

Under the proposal, the EU Commission would be empowered to introduce additional exceptions by secondary legislation, and EU Member States would also retain some ability to legislate their own exceptions.

⁶² See, European Central Bank (ECB), Europe's money evolves so people's freedom to pay remains - Introductory statement by Piero Cipollone, Member of the Executive Board of the ECB, at the Committee on Economic and Monetary Affairs of the European Parliament (June 3, 2026).

⁶³ See, European Commission, Impact Assessment Report, European Commission (SWD/2023/233) (June 28, 2023).

Finally, the digital euro and physical euro cash must always be exchangeable at equal value, and where both are legally required to be accepted, the payer would have the right to choose which one to use.

The draft regulation further provides that any PSP already licensed to operate in the EU would be able to offer digital euro services without needing a separate authorization. Users would have a direct contractual relationship with their PSP(s) (not with the ECB) and would be able to hold multiple digital euro accounts across different PSPs.

The digital euro would be primarily for residents and businesses in Euro area countries, but access would also be available to people who previously lived in the Euro area, visitors, residents of non-euro EU countries (subject to conditions), and residents of third countries where a specific international agreement is in place.

Payment providers must offer automatic top-up and drawdown functionality. If a user's digital euro balance exceeds any holding limit to be set by the ECB, the excess must be automatically swept into their linked bank account (waterfall). Conversely, if a user tries to make a payment larger than their digital euro balance, the shortfall must be automatically topped up from their linked bank account (reverse waterfall).

Banks operating payment accounts would be required to offer basic digital euro services to any customer who requests them. For people who do not have a non-digital euro payment account at a credit institution or do not wish to open a digital euro payment account at a credit institution or at other PSPs distributing the digital euro, EU Member States must designate fallback providers, such as post offices or local authorities, to ensure no one is excluded. Basic services would be free. All mandatory providers must offer additional support to people with disabilities, limited digital skills, or older users.

Under the draft regulation, the ECB would have the power to set holding limits and other tools to prevent the digital euro from being used as a savings vehicle rather than a payment instrument, and to protect financial stability. The EU Commission's original position proposes that the calibration of those limits and the use of those other tools be entirely the ECB's decision.⁶⁴ The digital euro should not pay interest.

Merchant service charge or inter-PSP fee for processing digital euro transactions would be capped at the lower of (i) the actual cost incurred by the PSP (including a reasonable margin), and (ii) the equivalent fee for a comparable payment method. The ECB would monitor costs and publish updated figures regularly.

Non-euro EU Member States would be allowed to apply for access, subject to agreeing certain conditions and the ECB entering an arrangement with the relevant national central bank. Third countries would also be permitted to access the digital euro under an international agreement with the EU. The third country must commit to a number of conditions and the ECB and the non-euro area national central bank must have entered an arrangement that specifies the necessary implementing measures. Cross-currency payments between the digital euro and local currencies would require a prior arrangement between the ECB and the relevant central bank.

Under the draft regulation, the digital euro must work both online and offline from the moment of first issuance. It must be accessible by the public, including financially excluded users or persons at risk of financial inclusion, people with disabilities, and older users. Users would not need a bank account to hold digital euros, though some features (such as the waterfall functions) would require a linked account.

⁶⁴ Both the EU Council and the EU Parliament have since proposed modifications to this governance model. See the following sections for further information.

Critically, the digital euro would not be programmable money, would not be restricted to specific types of spending or made to expire, and would be fully fungible as a form of the single currency.

Users would be able to access the digital euro through European Digital Identity Wallets. They would be permitted to switch their digital euro account to a different PSP at any time. The ECB would support dispute resolution and fraud prevention at Euro area level, though it would not itself be a party to disputes. PSPs would be able to build their own front-end interfaces, and users would be free to choose between them.

Under the proposal, the ECB and national central banks may only process personal data for settlement purposes. All data processing must use state-of-the-art privacy techniques such as pseudonymization and encryption, to ensure that data is not directly attributed to an identified digital euro user by the ECB and national central banks. The EU Commission would be empowered to adopt delegated acts on the categories of personal data processed by PSPs, the ECB and national central banks and providers of support services.

Offline payments carry higher privacy protections than online ones. For offline transactions, neither the ECB, national central banks, nor PSPs would have access to personal transaction data. PSPs would only be able to see funding and defunding data. This data can be shared with financial intelligence units if money laundering or terrorist financing is suspected.

Under the proposal, the ECB should report regularly to the EU Parliament, EU Council, and EU Commission on the digital euro, including on holding limit instruments, no later than six months before planned issuance and at regular intervals thereafter. The EU Commission should also report on the impact of the parameters and the use of the

instruments in particular on the role of financial intermediaries in the financing of the economy.

The draft regulation should take effect twenty days after publication in the Official Journal of the European Union. Once the draft regulation is agreed by the EU Parliament and the EU Council, the ECB will decide when and in what amount to issue the digital euro.

2.3 The Digital Euro Preparation Phase (November 2023 to October 2025)

Following the successful completion of the investigation phase and based on the findings of that phase,⁶⁵ in October 2023 the ECB's Governing Council decided to move to a preparation phase running through to October 2025.⁶⁶ This decision marked the transition from a conceptual feasibility study to an active technical and operational development.

The preparation phase involved three principal workstreams: (i) finalizing a draft digital euro scheme rulebook; (ii) selecting providers for key technical components of the digital euro platform and infrastructure; and (iii) conducting experimentation, testing and proofs of concept with market participants and deepening stakeholder and user research to inform design choices.

The ECB's Governing Council was clear that moving to the preparation phase did not constitute a commitment to issuance, and that any decision to that extent would only be made once EU legislation would be in place. The phase was designed to generate the technical evidence base needed to inform both the decision itself and the legislative discussions in the EU Council and the EU Parliament.

⁶⁵ See, European Central Bank (ECB), A stocktake on the digital euro, ECB Report (October 2023).

⁶⁶ See, European Central Bank (ECB), Eurosystem proceeds to next phase of digital euro project, ECB Press Release (October 18, 2023).

Four progress reports were published documenting the ECB's work during the preparation phase: the first report was published in June 2024, covering the period from November 2023 to approximately May 2024;⁶⁷ the second report was published in December 2024, covering the period from May to October 2024;⁶⁸ the third report was published in July 2025, covering the period from November 2024 to April 2025;⁶⁹ and the closing report was published in October 2025, summarizing the progress made during the preparation phase from November 2023 to October 2025 and outlining the next steps.⁷⁰

The closing report concludes that the preparation phase was successfully completed and all objectives were achieved.

A core deliverable of the preparation phase was a comprehensive draft rulebook setting out the rules, standards, and procedures that PSPs must follow when offering digital euro services. Drawing on existing industry standards where possible, the rulebook distinguishes between requirements that are mandatory for all participants and those that are optional, leaving room for PSPs to develop innovative services on top of the common baseline.

At the time of the closing report, a new and comprehensive draft version of the rulebook had been shared and commented on by the digital euro scheme's Rulebook Development Group ("RDG") and its constituents. The draft covers functional requirements (such as how users access the service and manage transactions), non-functional requirements (such as system availability and response times), minimum

⁶⁷ See, European Central Bank (ECB), Progress on the preparation phase of a digital euro - First progress report, ECB Report (June 2024).

⁶⁸ See, European Central Bank (ECB), Progress on the preparation phase of a digital euro - Second progress report, ECB Report (December 2024).

⁶⁹ See, European Central Bank (ECB), Progress on the preparation phase of a digital euro - Third progress report, ECB Report (July 2025).

⁷⁰ See, European Central Bank (ECB), Preparation phase of a digital euro - Closing report, cit.

user experience standards, dispute management, and branding. The rulebook was developed collaboratively through the RDG, which brings together consumer representatives, merchants, PSPs, and third-party service providers from across the Euro area, as well as observers from the Eurosystem national central banks and EU institutions.

The selection of providers for the digital euro service platform (“DESP”) was another important milestone achieved during the preparation phase. The sourcing process covered both externally procured and internally sourced components. Externally, the ECB ran competitive tender processes for five external components of the digital euro service platform, with all five providers signing framework agreements.⁷¹ Core settlement and issuance components will be built within the Eurosystem itself. These agreements do not yet involve financial commitments as the actual development work will only begin under subsequent specific contracts.

In parallel, the ECB launched an innovation platform to investigate how the digital euro could support innovation in payments and address new market needs.⁷² Around 70 market participants (including banks, fintechs, merchants, and PSPs) participated in the initiatives. Two workstreams ran in parallel: one testing features such as conditional payments in a simulated environment, and one focused on forward-looking proposals for integrating the digital euro into Europe’s financial ecosystem. The overall finding was that market participants see strong innovative potential in the digital euro, both technically and in terms of expanding financial inclusion and creating new business opportunities.

⁷¹ See, European Central Bank (ECB), ECB selects digital euro service providers, ECB MIP News (October 2, 2025).

⁷² See, European Central Bank (ECB), Digital euro innovation platform. Outcome report: pioneers and visionaries workstreams, ECB Report (September 2025).

Accessibility was a guiding design principle throughout. Qualitative and quantitative user research and engagement with civil society organizations confirmed the importance of simple, familiar payment flows, and multiple onboarding options. Vulnerable consumers indicated a preference for the digital euro to be distributed by trusted banks or public bodies and expressed greater willingness to use it if offered by a European provider. Small merchants were supportive of the digital euro, particularly valuing the prospect of greater bargaining power on transaction fees and seamless integration with their existing systems. The backing of the digital euro by the ECB was also viewed as a further positive factor and perceived as a guarantee of strong payment security, which could increase consumer trust and potential adoption.

From a technical perspective, the ECB made significant progress on designing an offline payment function, which would allow payments to be made without internet connectivity, thus providing both resilience in emergencies such as power or network outages, and a cash-like level of privacy for those transactions.

Stakeholder engagement was critical to advancing technical work on the design of the digital euro in the preparation phase. Extensive engagement with banks, PSPs, merchants, and consumers through technical sessions and workshops identified several areas of broad consensus: the digital euro would strengthen European PSPs' and merchants' negotiating position; open standards would allow existing European schemes to voluntarily integrate the digital euro or co-badge it on physical cards; the digital euro would create a common acceptance layer for account-to-account payments across in-store and online channels; and a phased roll-out approach would allow costs and implementation efforts to be spread over time while ensuring broad adoption.⁷³

⁷³ See, European Central Bank (ECB), Fit of the digital euro in the payment ecosystem - Report on the dedicated Euro Retail Payments Board (ERPB) technical workstream, ECB Report (October 2025).

The ECB maintained close engagement with EU institutions throughout, providing technical input to the legislative process. At their March⁷⁴ and October 2025⁷⁵ meetings, EU leaders called for swift progress on the digital euro.

In September 2025, Euro area finance ministers agreed on the governance framework for the digital euro holding limit.⁷⁶ This was a contested question: the ECB had argued that the holding limit should be set by the ECB's Governing Council as a technical monetary policy tool, while EU Member State governments sought political oversight over what could functionally be a monetary policy instrument with distributional consequences.

The Eurogroup agreement established the governance process for setting holding limits (subsequently formalized in the EU Council's general approach of December 2025) with a two-tier model under which the ECB would set the holding limit within a ceiling defined by the EU Council, thus preserving ECB operational independence while giving EU Member States control over the maximum range. This was a significant political milestone in the legislative process and facilitated the adoption of the EU Council's general approach, which followed three months later.

In parallel, in response to co-legislators' requests, the ECB published two technical analyses: one confirming that holding limits of up to €3,000 per person would not harm financial stability even under extreme stress scenarios,⁷⁷ and one estimating total banking sector investment costs at between €4 billion and €5.8 billion, broadly in line

⁷⁴ See, European Council, Euro Summit (March 2025).

⁷⁵ See, European Council, Euro Summit (October 2025).

⁷⁶ See, Eurogroup (September 2025).

⁷⁷ See, European Central Bank (ECB), Technical data on the financial stability impact of the digital euro, ECB Report (October 2025).

with the EU Commission’s 2023 impact assessment and comparable to the costs of implementing Payment Services Directive (PSD2).⁷⁸

Further research was conducted with small merchants and vulnerable consumers across the Euro area, who expressed interest in the prospect of offline access and stressed the need for a simple, reliable and secure payment experience.⁷⁹

2.4 The Digital Euro Technical Readiness Phase (October 2025 to Date)

Following the successful completion of the preparation phase, at the end of October 2025, the ECB’s Governing Council decided to advance to the next phase of the project, focused on building the technical capacity needed ahead of a potential issuance decision.⁸⁰ The ECB’s Governing Council’s decision aligns with the European leaders’ request to accelerate progress on the digital euro as stated at the October 2025 Euro Summit.⁸¹

The ECB’s working assumption is that the final regulation will be adopted by co-legislators in 2026, with a pilot and initial transactions potentially beginning as early as mid-2027 and first issuance targeted for 2029. To deliver on this shared ambition, the Eurosystem is focused on three workstreams:

- Advancing technical readiness: developing the digital euro’s technical foundations, including initial system set-up and piloting;

⁷⁸ See, European Central Bank (ECB), A view on recent assessments of digital euro investment costs for the euro area banking sector, ECB Report (October 2025).

⁷⁹ See, Ipsos, European Public Affairs, ECB Digital Euro User Research, Report (October 2025).

⁸⁰ See, European Central Bank (ECB), Eurosystem moving to next phase of digital euro project, ECB Press Release (October 30, 2025).

⁸¹ See, European Council, Euro Summit (October 2025).

- Deepening market engagement: collaborating with PSPs, merchants, and consumers to finalize the rulebook, conduct user research and test the system through pilot activities; and
- Continuing to support the legislative process: providing technical input to EU co-legislators and assist the legislative process as required.

Work is structured in modules to allow gradual scaling and limit financial commitments ahead of a final decision. Total development costs until first issuance are estimated at approximately €1.3 billion, with annual operating costs of around €320 million from 2029 onwards. The Eurosystem would fund the development and operating costs of the digital euro, just as it currently funds the production and issuance of physical banknotes. Both are treated as public goods. As with banknotes, those costs are expected to be offset over time by the seigniorage income the digital euro generates, even if the volume of digital euro in circulation remains modest relative to physical cash.

The ECB's Governing Council's decision on whether and when to issue will only be taken once the legislation is formally adopted. The ECB will continue to follow the legislative debate closely and implement any appropriate adjustments to the development of the digital euro that may result from legislative deliberations.

In the press release announcing the beginning of the technical readiness phase,⁸² ECB President Christine Lagarde noted that “[t]he euro, [the European] shared money, is a trusted sign of European unity” and framed the decision in terms of modernizing public money for the digital era, emphasizing that the digital euro would complement, rather than replace, physical cash.

⁸² See, European Central Bank, Eurosystem moving to next phase of digital euro project, cit.

ECB Executive Board member Piero Cipollone, Chair of the High-Level Task Force on a Digital Euro, further noted that “[t]his is not just a technical project but a collective effort to future-proof Europe’s monetary system”. He emphasized that “[a] digital euro will ensure that people enjoy the benefits of cash also in the digital era. In doing so, it will enhance the resilience of Europe’s payment landscape, lower costs for merchants, and create a platform for private companies to innovate, scale up and compete.”⁸³

On December 19, 2025, the EU Council agreed its negotiating position on key proposals to strengthen the euro currency by enabling the introduction of a digital euro and by better clarifying the legal tender status of euro cash.⁸⁴

The package comprises three proposed regulations: two establishing the legal framework that would govern a potential digital euro issuance;⁸⁵ and a third aimed at protecting the continued role of physical cash in the EU by guaranteeing its broad availability and acceptance as a means of payment.⁸⁶

Commenting on the EU Council’s position, Stephanie Lose, Danish Minister for Economic Affairs, noted that “[t]he digital euro is an important step towards a more robust and competitive European payment system, and can contribute to Europe’s strategic autonomy and economic security, as well as a strengthened international role for the euro.”⁸⁷

⁸³ Ibidem.

⁸⁴ See, Council of the European Union, Single currency: Council agrees position on the digital euro and on strengthening the role of cash, Council of the European Union Press Release (December 19, 2025).

⁸⁵ See, Council of the European Union, Single currency Package: Proposal for a Regulation of the European Parliament and of the Council on the establishment of the digital euro (2023/0212 (COD)), 16695/25 Council of the European Union (December 17, 2025); Council of the European Union, Single currency Package: Proposal for a Regulation of the European Parliament and of the Council on the provision of digital euro services by non-Euro area payment service providers (2023/0211 (COD)), 16695/25 Council of the European Union (December 17, 2025).

⁸⁶ See, Council of the European Union, Single currency Package: Proposal for a Regulation of the European Parliament and of the Council on legal tender of euro banknotes and coins (2023/0208 (COD)), 16695/25 Council of the European Union (December 17, 2025).

⁸⁷ See, Council of the European Union, Single currency: Council agrees position on the digital euro and on strengthening the role of cash, cit.

Morten Bødskov, Danish Minister for Industry, Business, and Financial Affairs, further noted that “Europe’s strategic autonomy must be strengthened, including in the payments sector. The proposal for a digital euro is specifically aimed at enhancing the resilience of the payments infrastructure in the Euro area. The Council’s agreement therefore sends a clear signal that the EU is capable of taking action on this important agenda.”⁸⁸

The EU Council’s approach on the draft regulation establishing the digital euro represents the agreed negotiating position of EU Member States and forms the basis for the trilogue negotiations with the EU Parliament and the EU Commission. In adopting this position, the EU Council has clarified a number of important points regarding the design of the digital euro.

Under the EU Council’s position, the digital euro would be issued at face value. Users would access the digital euro solely through a contractual relationship with their PSPs, and there would be no direct account or legal relationship between users and the ECB or national central banks. PSPs would manage users’ digital euro accounts and deliver all payment services on their behalf.

The digital euro is classified as an immaterial asset giving rise to in rem (property) rights under national private law. Users would remain the sole legal owners of their digital euro holdings even when accessing them through a PSP. Critically, digital euro holdings would be ringfenced from PSP insolvency: creditors of a PSP would not be allowed to reach users’ digital euros, and insolvency proceedings against a PSP would not affect users’ holdings.

⁸⁸ Ibidem.

The digital euro would carry legal tender status across the Euro area. Mandatory acceptance applies to both online and offline transactions, with merchants required to accept in a manner consistent with how they operate.

Exceptions to mandatory acceptance include: private individuals acting in a personal capacity; enterprises, employed persons and non-profit legal entities that only accept credit transfers or direct debits non initiated at the point of interaction and/or only euro banknotes and coins; and temporary good-faith refusals due to circumstances beyond the payee's control (e.g. power outage, defective device). Importantly, merchants would not be able to use standard contract terms to systematically exclude the digital euro. The EU Commission may introduce further exceptions by delegated act, and EU Member States would retain limited power to introduce national exceptions.

The digital euro would be primarily available to residents and businesses in Euro area Member States. Extended access would be available to: former Euro area residents who opened an account while residing there; visitors to the Euro area; EU citizens exercising free movement rights; and residents of non-euro EU Member States or third countries, subject to bilateral arrangements. The ECB may restrict access for visitors and former residents on monetary policy or financial stability grounds, but must always allow them to defund their accounts.

All EU-licensed PSPs, including credit institutions, electronic money institutions, payment institutions, post office giro institutions, EU Members States or their regional or local authorities when not acting in their capacity as public authorities, and MiCA-regulated crypto-asset service providers that are account-servicing PSPs may distribute the digital euro without additional authorization.

Only PSPs that already offer cash deposit and withdrawal services for non-digital euro payment accounts would be required to offer the equivalent services for digital euro accounts. The rules governing who is eligible for these services, and through which channels they are available, should mirror whatever arrangements exist for non-digital euro payment accounts at the relevant time. Providers can charge fees for these cash-in/cash-out services, both to the user and as an inter-provider fee, but those fees cannot exceed what the same provider charges for equivalent cash services on ordinary accounts and must remain reasonable and proportionate.

Distribution of core digital euro services would be mandatory for designated providers, and the payees subject to the acceptance obligation should have guaranteed access to mandatory digital euro acquiring services.

The mandatory obligation to distribute the digital euro is limited in scope to avoid placing disproportionate burdens on PSPs with specialized, non-consumer oriented business models. Only credit institutions that already provide payment account services at the request of their clients would be required to distribute the digital euro. Similarly, the obligation to provide mandatory acquiring services is limited to providers that already offer acquiring services to those same merchants. Providers that do not currently serve retail clients or merchants would not be caught by the mandatory distribution obligation.

For those without a bank account or unwilling to use a bank, EU Member States would be required to designate fallback providers (for example, post offices, and local authorities) as a last resort. All mandatory distributors should provide digital inclusion support to persons with disabilities, limited digital skills, and elderly users.

Two automated liquidity mechanisms would be mandated. The waterfall automatically sweeps excess digital euro holdings above the holding limit into the user's linked bank account. The reverse waterfall automatically tops up a digital euro balance from the linked bank account when a payment would otherwise exceed the user's holdings. Both should be expressly authorized by the user. Merchants may accumulate inbound digital euro payments throughout the business day and sweep them to their bank account at day's end.

The EU Council's position establishes a two-tier governance model:

- The ECB would set individual holding limits within a ceiling defined by the EU Council (by qualified majority implementing decision, acting on an ECB recommendation submitted jointly with the EU Commission).
- The ceiling would be reviewed at least every two years.
- Should the EU Council fail to act within six months of the ECB's recommendation, the ECB would be allowed to implement its own recommendation.

The digital euro would not bear interest. Holding limits may differentiate between natural persons and legal persons.

Basic digital euro payment services would be free for consumers, including opening and closing accounts, carrying out digital euro payment transactions from their account or wallet, or funding and defunding their digital euro accounts or wallets with money from their other deposit accounts in the same PSP.

Distributing PSPs should be able to charge digital euro users for the provision of certain additional services, provided those fees remain justified and proportionate.

PSPs can be compensated through an inter-PSP fee paid by acquiring PSPs to distributing PSPs. Merchant service charges and inter-PSP fees would be capped: during a transitional period (at least five years from first issuance) by reference to comparable payment methods; thereafter, potentially by a cost-based methodology once reliable data exists. A uniform euro-area cap would apply, with a permitted national floor where local fee levels are statistically significantly lower. The ECB and national central banks should not charge PSPs for settlement or scheme services. A comprehensive review of the fee model would be mandated ten years after first issuance.

Under the EU Council's position, offline payments would carry cash-like privacy: PSPs should only process funding and defunding data (amount loaded/unloaded, user identity). No transaction data monitoring should occur for offline digital euro payment transactions and offline digital euro payment transaction data should not be retained. This is explicitly modelled on ATM cash withdrawals.

The ECB and national central banks should process personal data only where strictly necessary for the functioning of the digital euro, covering settlement, security, anti-counterfeiting, and fraud prevention. Any personal data processed should be pseudonymized or encrypted so that individual users cannot be directly identified. The ECB and national central banks should not request or use information that would allow them to identify individual users such as encryption keys.

Each digital euro account should be assigned a unique access number generated by the ECB or national central banks, which identifies the relevant PSP but not the user, as only the user's own PSP should be able to link that number to an individual. The ECB should keep the list of access numbers and the list of the digital euro PSPs structurally separated from the settlement infrastructure.

Where a single access point is established to support holding limit enforcement, personal data processing should be minimized, privacy-by-design principles should apply, and decentralized data storage should be considered to reduce the risk of data breaches where appropriate.

Online payments would be subject to the comprehensive anti-money laundering and countering the financing of terrorism (“AML/CFT”) framework laid down in Regulation (EU) 2024/1624, Directive (EU) 2024/1640 and Regulation (EU) 2023/1113.

The EU Authority for Anti-Money Laundering and Countering the Financing of Terrorism (“AMLA”) is directed to develop due diligence procedures for digital euro account opening and technical standards to facilitate widespread access while ensuring compliance with applicable AML/CFT requirements.

Privacy is framed as a fundamental right. The design principle is data minimization: the ECB and national central banks would be permitted to process only pseudonymized or encrypted data for settlement purposes and would not be allowed to identify individual users from transaction data. PSPs would be data controllers for user-facing processing. The ECB’s front-end interface is designed so the ECB cannot identify users through it. Personal data processing must comply with GDPR (Regulation (EU) 2016/679) and the ECB’s own data protection regulation (Regulation (EU) 2018/1725).

Under the EU Council’s position, the digital euro would not be programmable money, and units should not be restricted to specific spending categories or made to expire. Conditional payments (automatically triggered by pre-agreed conditions) would be permitted but should not function as programmable money. The ECB must ensure compatibility with private payment solutions on a best-efforts basis. Crucially, mobile

device manufacturers and telecoms providers should provide access to NFC hardware and secure elements on fair, reasonable, and non-discriminatory terms. The EU Commission may adopt implementing acts defining those access criteria.

With the adoption of the described approach, the EU Council has formally established its negotiating mandate, enabling it to enter trilogue negotiations.

In February 2026, the EU Parliament adopted its annual review of the ECB's policies and its recommendations for 2026.⁸⁹ In its review, the EU Parliament emphasizes that equal access to payment services is a prerequisite for full participation in economic life. It warns that the progressive digitalization of payments, if left solely in the hands of private and non-European actors, risks generating new forms of exclusion, affecting both individual users and merchants. In this context, the EU Parliament stresses that a digital euro, available both online and offline, should serve as a safeguard for universal payment access and broad merchant acceptance across the EU, while fully respecting privacy and data protection requirements.

In its review, the EU Parliament also recognizes the ongoing legislative work on the digital euro, underlining that, against a backdrop of heightened geopolitical uncertainty and the EU's excessive reliance on non-European payment infrastructure, the introduction of a digital euro is essential. Designed to complement rather than replace physical cash and existing private banking services, the digital euro is seen as a necessary instrument for strengthening EU monetary sovereignty, reducing fragmentation in the retail payments market, and reinforcing the integrity and resilience of the single market.

⁸⁹ See, European Parliament, European Parliament resolution of 10 February 2026 on the European Central Bank – annual report 2025, (2025/2182(INI)) European Parliament (February 10, 2026).

Shortly thereafter, in April 2026, the ECB signed agreements with three European standard-setting organizations (ECPC, nexo standards and the Berlin Group) to reuse existing open technical standards, accessible to all stakeholders, for processing digital euro online payments.⁹⁰ The standards include:

- CPACE standards developed by ECPC which support contactless “tap-to-pay” payments using near-field communication between a payment device and a payment terminal;
- nexo standards specifications which connect merchants’ systems with the back-end systems of payment service providers and acquirers. These are used, for example, to support payment acceptance and ATM transactions; and
- Berlin Group standards which allow payments to be made using an alias (such as a mobile phone number) and support balance checks and reconciliation across mobile devices and payment acceptance in areas like digital euro transactions initiated in merchant apps on smartphones.

The described standards were identified in close cooperation with market participants through the digital euro Rulebook Development Group.

The practical significance of this step is considerable. By leveraging these open standards and working closely with the respective standardization bodies, the ECB seeks to minimize adoption costs for the market and encourages early coordination among all involved players, including PSPs and standardization entities. For example, merchants, who periodically update their payment terminals, can already take these

⁹⁰ See, European Central Bank (ECB), ECB signs agreements with European standard setters to facilitate digital euro payments, ECB Press Release (April 24, 2026).

standards into account in their next upgrade cycle, and PSPs can align their development plans accordingly.⁹¹

Europe currently heavily depends on proprietary standards controlled by international card schemes, which limits the scalability of European payment solutions and forces them either to pay for the use of foreign standards or to rely on domestic standards with limited reach, both of which are costly and inefficient. On the contrary, using widely adopted European standards will simplify digital euro acceptance and create a uniform user experience across the Euro area, while enabling European payment schemes to expand geographically and diversify use cases.⁹²

The benefits of the digital euro standard will materialize ahead of digital euro issuance. Once EU co-legislators adopt the digital euro regulation, providing certainty that the standards will apply across the Euro area given the digital euro's legal tender status, European PSPs would be able to scale up beyond national borders. Adoption of the regulation will provide market actors with certainty for their future investments and reduce Europe's current dependencies in the area of payments. Timely progress on the legislative framework is therefore essential.⁹³

On June 23, 2026, the EU Parliament's Committee on Economic and Monetary Affairs ("ECON Committee") adopted its negotiating position on the Single Currency Package by approving all three legislative files.⁹⁴

The draft regulation establishing the digital euro was adopted by 43 votes to 14, with 1 abstention. A second regulation, governing the provision of digital euro services by

⁹¹ See, European Central Bank, Europe's money evolves so people's freedom to pay remains, cit.

⁹² Ibidem.

⁹³ Ibidem.

⁹⁴ See, European Parliament, Digital euro: MEPs want to ensure sovereignty, privacy and financial stability, European Parliament Press Release (June 23, 2026).

PSPs incorporated in non-euro EU Member States, was adopted by 43 votes to 9, with 6 abstentions; and a third regulation on the legal tender status of euro banknotes and coins was adopted by 46 votes to 4, with 8 abstentions.

The ECON Committee's position confirms that the digital euro would be a new, electronic form of money issued by the ECB and would work online and offline. Online payments would be processed through an account-based system, while offline payments would work directly via local storage devices and would be treated as equivalent to physical cash, including the consequence that losing the device would mean losing the offline holdings with no possibility of refund.

Privacy-by-design and privacy-by-default principles would be built into the digital euro. Cutting-edge technologies such as zero-knowledge proofs would allow transactions to be verified without exposing personal data, which would be processed only to the extent strictly necessary for the system to function. The ECB would not have access to personal identification data.

On fees, the position adopted by the ECON Committee proposes that offline payments be entirely fee-free, going beyond the general principle that basic services are free of charge for consumers. Fees for merchant service charges and inter-provider compensation would be capped. PSPs could charge for additional services, with the explicit exclusion of account maintenance inactivity penalties or service bundling, which would be prohibited.

Businesses would not be permitted to hold digital euros at all, except to accumulate incoming payments for up to 24 hours. Importantly, the digital euro would not earn or cost any interest.

It is proposed that the EU ceiling on individual holdings be set by the EU Commission based on ECB's recommendations and reviewed at least every two years, with the EU Parliament seeking full decision-making powers in that process.

On launch sequencing and the ECB's role, the text is notably detailed. Before the launch, the ECB should finalize a rulebook, build the infrastructure, run real-life pilot tests, and iron out liability rules with particular attention to offline risks such as double-spending. Once authorized, a roll-out period of at least 24 months would follow, giving banks, providers, and users time to prepare. Governments and providers would also run coordinated public awareness campaigns. This is also intended to ensure that the ECB's operational role in the digital euro remains clearly separated from its monetary policy functions.

On distribution and acceptance, all PSPs including banks, e-money providers, post offices, and regulated crypto-asset providers could distribute the digital euro, and most businesses would be required to accept it. Exceptions cover the self-employed and small and micro enterprises that do not already accept other digital payments, as well as temporary refusals in circumstances such as power outages.

The accompanying regulation on non-euro EU Member States would allow PSPs from non-euro EU Member States to distribute the digital euro under the same rules as Euro area providers, while preserving the ECB's power to restrict access and use, and requiring non-euro EU Member States to designate a national authority to monitor any impact on their own currency.

The third regulation on legal tender reinforces the status of physical cash: Euro area countries would be obliged to keep cash accessible and plan for digital payment disruptions. Businesses would not be allowed to ban cash through standard contract

terms or “no cash” signs, and EU Member States would need to check cash availability regularly, paying special attention to vulnerable groups such as the elderly, low-income individuals, and the unbanked.

In the press release, Rapporteur Fernando Navarrete emphasized the package’s political rationale as “protecting citizens’ freedom to choose how they pay” and the key goal of “strengthening access to and acceptance of cash, while making central bank money available in digital form”. He noted that “Europe does not have to choose between the digital euro and successful private payment solutions” and highlighted the need for “both to work together”. He observed that “[t]he agreement rightly recognizes the dual approach: existing standards and infrastructure should be reused wherever possible. This will allow European payment solutions to connect to a common acceptance infrastructure and become interoperable across borders”. Lastly, he noted that “[t]he agreement also ensures that privacy will be built into the digital euro from the outset. Europeans will gain a secure digital payment option while remaining in control of both their money and their personal data”.⁹⁵

Following the EU Parliament’s ECON Committee vote of June 2026, in early July 2026 the EU Parliament agreed to proceed to the next stage of the legislative process and start the negotiations with the EU Council on the digital euro, with 416 votes in favor, 169 against, and 22 abstentions.⁹⁶

A third file forming part of the same single currency package (relating to the legal tender of Euro banknotes and coins) was not contested, and accordingly also proceeds to trilogue negotiations.

⁹⁵ Ibidem.

⁹⁶ See, European Parliament, Digital euro: MEPs ready to start negotiations, European Parliament Press Release (July 9, 2026).

Rapporteur Fernando Navarrete Rojas will lead EU Parliament's negotiating team. A first round of negotiations with the Irish Presidency of the Council, representing member states, took place in mid-July 2026. Further rounds of negotiations are scheduled for September 2026.

The key elements of the EU Parliament's negotiating position are as follows:

- The digital euro would constitute a new electronic form of central bank money, issued by the ECB and designed to function both online and offline, complementing rather than replacing physical cash.
- Privacy protection is a foundational design requirement. Transactions would be verified without exposing personal data, which would be processed only to the extent strictly necessary for the system to function.
- Mandatory acceptance would apply to most businesses across the Euro area. Exceptions would be available to the self-employed and to small and micro enterprises that do not already accept other digital payment methods.
- Basic digital euro services, including opening an account, holding and managing funds, and access to at least one payment instrument, would be free of charge for users.
- A holding limit would be imposed on the amount of digital euros any individual may hold at any given time to protect the stability of the financial system.
- Banks and PSPs from non-euro EU Member States would be permitted to distribute the digital euro.
- Euro area Member States would be required to ensure that physical cash remains accessible throughout their territories. Businesses would be prohibited from banning cash, and Member States would be required to monitor cash availability on a regular basis, with particular attention to the needs of vulnerable groups

including elderly people, low-income individuals, and those without access to conventional banking services.

The EU institutions have indicated their intention to reach a final agreement before the end of 2026, which would allow the ECB to proceed with its preparation timeline, with a pilot exercise from mid-2027 and potential first issuance of the digital euro in 2029.

The Eurosystem has confirmed that a twelve-month pilot exercise will be conducted in the second half of 2027, ahead of any decision to issue the digital euro at scale. The pilot will take place in a controlled Eurosystem environment involving real-world transactions, making it a significant test of the system's operational readiness.⁹⁷

Interest from the private sector has been strong: over fifty PSPs applied to participate in the pilot, offering a broad mix of business models and country coverage across the Euro area. The ECB has indicated that this level of interest provides a solid foundation for conducting the pilot as intended.

The selection process was completed in June 2026, with the announcement of 36 PSPs selected from across the Euro area to participate in the digital euro pilot in mid-July 2026.⁹⁸ Applicants were assessed against a set of pre-defined eligibility criteria. The selected participants were chosen to ensure a diverse and representative testing environment for the digital euro and include banks and non-bank PSPs across a broad range of business models, sizes, and geographies.

⁹⁷ See, European Central Bank (ECB), Digital euro pilot, ECB (updated as of July 2026); European Central Bank (ECB), FAQs on the digital euro pilot, ECB (Updated on 8 May 2026); European Central Bank (ECB), Focus session (virtual) - The digital euro pilot, ECB (January 2026); European Central Bank (ECB), Focus session on the digital euro pilot (II), ECB (March 2026); European Central Bank (ECB), Focus session on the digital euro pilot (III), ECB (April 2026); European Central Bank (ECB), The digital euro: preparing for a potential launch, Introductory statement by Piero Cipollone, Member of the Executive Board of the ECB, at the Committee on Economic and Monetary Affairs of the European Parliament (March 24, 2026).

⁹⁸ See, European Central Bank (ECB), ECB selects 36 payment service providers to join digital euro pilot, ECB Press Release (July 14, 2026).

The pilot will test four core payment use cases, reflecting the primary transaction types the digital euro is designed to support: person-to-person online transfers, person-to-person offline proximity payments using NFC technology, in-store payments at physical points of sale, and e-commerce payments online. Together, these four use cases cover the principal scenarios in which users would interact with the digital euro in everyday life, providing a comprehensive test of both the online and offline functionalities mandated by the draft regulation.

The pilot will take place at the ECB and 19 national central banks across the Euro area, namely in Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, the Netherlands, Austria, Portugal, Slovenia, Slovakia and Finland. The pilot takes into account that selected PSPs may provide pilot services in countries other than the one in which they are established.

The pilot will involve staff from participating Eurosystem central banks, as well as selected merchants providing everyday services on their premises (for example, in cafeterias and restaurants) or e-commerce services. Staff at participating central banks will have the opportunity to make beta digital euro payments from person to person (both online and offline) and from person to business (both at the physical point of sale, including Software Point of Sale, and via e-commerce, including mobile payments).

The pilot will use a beta version of the digital euro. It will be functionally and technically close to the digital euro as foreseen in the draft legislation but will not have legal tender status.

The pilot has four stated objectives:

- First, to test technical and operational readiness before any wider rollout, thus identifying and resolving issues at a controlled scale before they can affect a scaled live system.
- Second, to refine and improve the digital euro's value proposition by gathering real-world evidence on how users and merchants experience the product and where adjustments are needed.
- Third, to improve the go-to-market strategy by testing distribution models, onboarding processes, and communication approaches with participants.
- Fourth, to prepare for the subsequent full market rollout by ensuring that the infrastructure, governance, and other relevant arrangements are sufficiently mature to support issuance at scale, currently targeted for 2029.

Updates on progress will be regularly published on the ECB's dedicated digital euro pilot webpage.⁹⁹

As previously noted, a decision on whether to issue the digital euro will only be taken by the ECB's Governing Council once the relevant EU legislation has been formally adopted.

⁹⁹ See, European Central Bank (ECB), Digital euro pilot, cit.

CHAPTER 3

A PRIVATE-SECTOR APPROACH TO THE DIGITAL DOLLAR

3.1 A Deliberate Non-Central Bank Digital Currency Policy

The United States has made a considered and deliberate choice to pursue the digital future of the U.S. dollar through private rather than public means. That choice was originally expressed in executive policy and has now been codified in federal statute.

Opposition to a CBDC issued by the Federal Reserve has been broad and bipartisan: some have emphasized the risks of a government-controlled payments infrastructure; others have pointed to the constitutional dimension of financial privacy and individual liberty; while others have raised concerns about the potential displacement of community banks and credit unions that serve underbanked populations. The overwhelming congressional margins by which the United States has moved to prohibit a CBDC issued by the Federal Reserve suggest that this resistance is not merely political but structural, rooted in longstanding assumptions about the appropriate boundaries of state involvement in the financial system.

Rather than pursuing U.S. dollar primacy through a government-issued digital instrument, the United States has concluded that the U.S. dollar's global role is best preserved through the worldwide proliferation of privately issued, U.S. dollar-denominated stablecoins and the global reach of its private financial sector, regulated and backstopped by federal law.

That approach is not without its critics: questions remain regarding financial inclusion, monetary policy transmission in conditions of stress, and the long-term resilience of a payments system anchored in private rather than public money.

The sections that follow examine the legislative and regulatory framework through which this architecture has been assembled and the institutional actors that have shaped it.

3.2 Federal Reserve Discussion Paper (January 2022)

In January 2022, the Federal Reserve published a discussion paper titled “Money and Payments: The U.S. Dollar in the Age of Digital Transformation” (the “Discussion Paper”),¹⁰⁰ which represents the first step in a public discussion between the Federal Reserve and stakeholders about CBDCs.

The Discussion Paper does not favor any specific policy outcome and does not signal any imminent decisions about issuing a CBDC. It explicitly indicates that the Federal Reserve did not intend to proceed with issuance of a CBDC without clear support from the executive branch and the Congress, ideally in the form of a specific authorizing law.

The Discussion Paper describes the economic context for a CBDC, key policy considerations, and the potential risks and benefits of a CBDC. The Federal Reserve defines a CBDC for the purposes of the Discussion Paper as “a digital liability of a central bank that is widely available to the general public”.

Feedback was solicited from all interested parties for 120 days, with a deadline of May 20, 2022.

The Discussion Paper emphasizes the role of money as a means of payment, a store of value, and a unit of account, and sets out the architecture of the U.S. monetary system in three tiers:

¹⁰⁰ See, Board of Governors of the Federal Reserve System, Money and Payments: The U.S. Dollar in the Age of Digital Transformation, Discussion Paper (January 20, 2022).

- Central bank money: a liability of the central bank and the safest form which exists as physical currency and as digital balances held by commercial banks at the Federal Reserve. It carries neither credit nor liquidity risk.
- Commercial bank money: the most used form by the public, held in accounts at commercial banks and protected by federal deposit insurance, prudential regulation, and access to central bank liquidity.
- Nonbank money: held at nonbank financial service providers and carries more credit and liquidity risk than commercial bank money.

The Discussion Paper emphasizes that commercial and nonbank money are denominated in dollars and intended to be convertible into central bank money, and that central bank money therefore serves as the foundation of the entire financial system and the overall economy.

The Discussion Paper describes the U.S. payment system as generally effective and efficient, with interbank payment services forming the backbone of the financial system functioning. It highlights two recent improvements, in particular: the Clearing House's RTP network for real-time lower-value payments, and the FedNow Service (then scheduled for 2023) enabling around-the-clock instant interbank settlement.

However, it also identifies two persistent challenges:

- Financial inclusion: more than 7 million Americans (over 5% of US households) remain unbanked at the time of the Discussion Paper,¹⁰¹ and nearly 20% more are underbanked, relying on costly services such as money orders, check-cashing, and payday loans.¹⁰²

¹⁰¹ See, Federal Deposit Insurance Corporation, How America Banks: Household Use of Banking and Financial Services, 2019 FDIC Survey (October 2020).

¹⁰² See, Financial Health Network, FinHealth Spend Report 2021 (June 11, 2021).

- Cross-border payments: the average cost of sending a remittance from the United States was 5.41% of the transaction value as of the second quarter of 2021, a figure the Discussion Paper describes as having a significant impact on lower-income households that rely on international transfers.¹⁰³

The Discussion Paper recognizes that technological innovation has ushered in a wave of digital assets with money-like characteristics. It notes that cryptocurrencies have not been widely adopted as a means of payment due to extreme price volatility, limited transaction throughput, significant energy consumption, and consumer vulnerability to loss, theft, and fraud.

On the other hand, stablecoins, which peg their value to sovereign currencies or other assets, are acknowledged as a more recent and potentially more payment-relevant development, predominantly used at the time of the Discussion Paper for trading other digital assets rather than as a means of payment.

Against this background, the Discussion Paper identifies four design characteristics that the Federal Reserve’s initial analysis suggested a CBDC would need to embody:

- Privacy-protected: Any CBDC would need to strike a balance between safeguarding consumer privacy rights and providing the transparency necessary to deter criminal activity.
- Intermediated: The Federal Reserve Act does not authorize direct Federal Reserve accounts for individuals, and such accounts would represent a significant expansion of the Federal Reserve’s role in the financial system.

Under the intermediated model the Discussion Paper contemplates, private-

¹⁰³ See, World Bank, Remittance Prices Worldwide Quarterly, World Bank Group Report (June 2021); Financial Stability Board, Enhancing Cross-border Payments: Stage 3 Roadmap, FSB Report (October 2020).

sector firms (commercial banks and regulated nonbank providers) would offer accounts or digital wallets to manage CBDC holdings, while the CBDC itself would remain a liability of the Federal Reserve. This model can leverage existing private-sector privacy and identity-management frameworks, foster private innovation, and reduce the risk of destabilizing disruption to the existing financial system.

- Widely transferable: For a CBDC to function as a broadly accessible means of payment, it would need to be readily transferable between customers of different intermediaries, as a requirement for payment system efficiency.
- Identity-verified: Any CBDC would need to comply with existing anti-money laundering and counterterrorism financing rules, requiring intermediaries to verify the identity of users.

On uses and functions, the Discussion Paper notes that CBDC transactions would need to be final and completed in real time. Individuals, businesses, and governments could use a CBDC for basic purchases, bill payments, and government benefit distributions; and a CBDC could potentially be programmed to deliver payments at certain times.

The Discussion Paper identifies five potential main benefits:

- Safely meeting future payment needs: A CBDC would provide broad public access to digital money free from credit and liquidity risk, creating a safe foundation for private-sector payment innovation and potentially levelling the playing field for smaller firms that cannot afford to issue safe private money at scale. It could also enable micropayments that traditional payment systems do not handle well.
- Improvements to cross-border payments: A CBDC could streamline cross-border payments by using new technologies, simplifying distribution channels,

and creating opportunities for interoperability with other jurisdictions' systems, although this would require significant international coordination on standards, legal frameworks, and infrastructure.

- Supporting the U.S. dollar's international role: The Discussion Paper raises the possibility that if foreign CBDCs became more attractive than existing forms of the U.S. dollar for international transactions, global use of the U.S. dollar could decline, and that a CBDC issued by the Federal Reserve might help preserve U.S. dollar primacy.
- Financial inclusion: The Discussion Paper identifies CBDC as a potential mechanism for reducing common barriers to financial access, lowering transaction costs for lower-income households, and reaching the unbanked. It notes a Federal Reserve Bank of Cleveland's initiative exploring CBDC design features specifically focused on expanding access to individuals outside the traditional financial system.
- Extending public access to safe central bank money: The Discussion Paper observes that cash (then accounting for 19% of U.S. total transactions (6% by value))¹⁰⁴ remains important, and that the Federal Reserve is considering a CBDC to expand safe payment options rather than to replace cash. It notes the rapid decline of cash use in other advanced economies as context for why this question may become more pressing over time.

The Discussion Paper further analyzes complex policy issues and relevant risks related to the use of CBDCs, with focus on the following:

¹⁰⁴ See, Kelsey Coyle et al., 2021 Findings from the Diary of Consumer Payment Choice (May 2021).

- Changes to financial-sector market structure: A widely available CBDC would function as a close substitute for commercial bank deposits. This substitution effect could reduce the aggregate amount of deposits in the banking system, increasing bank funding costs and reducing credit availability or raising credit costs for households and businesses. An interest-bearing CBDC could be particularly disruptive, potentially drawing funds away from money market mutual funds, Treasury bills, and other short-term instruments as well. The Discussion Paper notes that these risks could be mitigated by design choices (most notably, a non-interest-bearing CBDC or holding limits) but acknowledges that such mitigations may also reduce the CBDC's attractiveness and utility.
- Safety and stability of the financial system: Because central bank money is the safest form of money, a CBDC would be particularly attractive to risk-averse users during periods of financial stress. The ability to quickly convert commercial bank deposits into CBDC could make bank runs more likely or more severe, a concern the Discussion Paper describes as potentially not fully addressable through traditional tools such as prudential supervision, government deposit insurance, and access to central bank liquidity. As with concerns related to the financial-sector market structure, some of these flight-to-safety concerns could potentially be mitigated by CBDC design choices.
- Efficacy of monetary policy implementation: The Discussion Paper devotes considerable attention to the interaction between a CBDC and monetary policy implementation under the Federal Reserve's existing "ample reserves" framework. It finds that a non-interest-bearing CBDC would have manageable effects on reserve levels and the federal funds rate. However, an interest-bearing

CBDC at rates comparable to other safe assets could significantly and unpredictably alter public demand for reserves, requiring the Federal Reserve to substantially expand its balance sheet and potentially complicating interest rate control. The Discussion Paper flags this as an active area of research requiring further analysis.

- Privacy and data protection: The Discussion Paper acknowledges that a CBDC would generate data about users' financial transactions and that striking an appropriate balance between consumer privacy and anti-money laundering compliance would be a central design challenge. It notes that the intermediated model has the advantage of leveraging existing private-sector compliance frameworks.
- Operational resilience and cybersecurity: Any CBDC infrastructure would face the same operational disruption and cybersecurity risks as existing payment services and potentially more, given that a CBDC network could have more entry points than existing systems. The Discussion Paper notes that an offline capability could enhance payment system resilience during natural disasters and large disruptions, but acknowledges that the feasibility of such functionality requires further research.

The Discussion Paper explicitly notes that the Federal Reserve will only take further steps toward developing a CBDC if research points to benefits for households, businesses, and the economy overall that exceed the downside risks and indicates that CBDC is superior to alternative methods. Furthermore, the Federal Reserve would only pursue a CBDC in the context of broad public and cross-governmental support.

The Discussion Paper describes four categories of ongoing Federal Reserve research activity at the time. On the technological side, the Federal Reserve's Technology Lab

was assessing a centralized CBDC design leveraging existing infrastructure, while the Federal Reserve Bank of Boston was collaborating with MIT's Digital Currency Initiative on alternative platforms including distributed ledger approaches. On economic and policy research, work was underway at the Federal Reserve Banks of Cleveland and Atlanta on financial inclusion in digital payments.

The Discussion Paper also describes active participation in international collaboration, including co-authorship with 6 other central banks and the BIS of a foundational principles report for CBDCs published in October 2020,¹⁰⁵ and ongoing engagement with the FSB's cross-border payments roadmap.

The Federal Reserve invited public comment on 22 questions across broad themes, covering the fundamental necessity of a CBDC, its design features and tradeoffs, the balance between user privacy and AML compliance, financial stability risks, the interaction with monetary policy implementation, operational and cyber resiliency considerations, the potential to advance financial inclusion, and the scope for improving domestic and cross-border payments.

3.3 Executive Order 14067 (March 2022)

Executive Order 14067 ("Ensuring Responsible Development of Digital Assets") was the first presidential directive to place CBDC research at the center of the U.S. federal policy.¹⁰⁶ Signed on March 9, 2022, it reflected a recognition that the accelerating development of CBDCs by other major economies was creating a policy vacuum that required a coordinated federal response, and that the United States was risking falling

¹⁰⁵ See, Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve System and Bank for International Settlements, Central bank digital currencies: foundational principles and core features, cit.

¹⁰⁶ U.S. Federal Register, Executive Order 14067: "Ensuring Responsible Development of Digital Assets" (March 9, 2022).

behind in shaping the standards and architecture of the emerging global digital monetary system.

The order explicitly elevated the question of a U.S. CBDC as a matter of urgency, explaining that the Biden Administration was placing “the highest urgency on research and development efforts into the potential design and deployment options of a United States CBDC,” and had directed a broad program of inter-agency analysis.

That analysis was to cover the potential implications of a CBDC for consumers, investors, and businesses; financial stability and systemic risk; the payment system; national security; financial inclusion and equity; and the actions that would be required to launch a CBDC if doing so were deemed to be in the national interest.

The order also encouraged the Chairman of the Federal Reserve to continue research and reporting on the extent to which CBDCs could improve the efficiency and reduce the costs of existing and future payment systems; to assess the optimal form of a CBDC; and to develop a strategic plan for Federal Reserve and broader U.S. government action, evaluating the steps and requirements for potential implementation and launch. Notably, the Federal Reserve Chairman was also encouraged to evaluate the extent to which a CBDC, depending on its design, could enhance or impede the ability of monetary policy to function effectively as a macroeconomic stabilization tool.

In addition, the order directed the U.S. Attorney General, in consultation with the U.S. Secretary of the Treasury and the Chairman of the Federal Reserve, to provide within 180 days an assessment of whether legislative changes would be necessary to issue a CBDC, should it be deemed appropriate and in the national interest, and within 210 days a corresponding legislative proposal based on that assessment.

The inclusion of the U.S. Attorney General in this process, alongside the U.S. Treasury and the Federal Reserve, reflected the order’s recognition that issuing a CBDC would not be a purely technical or monetary policy decision, but rather one with significant legal and constitutional dimensions, potentially requiring new primary legislation.

The order’s approach was deliberate and measured rather than directive. It did not commit the United States to issuance, nor did it instruct any agency to begin building the infrastructure for a digital dollar.

3.4 Executive Order 14178 (January 2025)

Executive Order 14178 (“Strengthening American Leadership in Digital Financial Technology”), signed by U.S. President Trump on January 23, 2025, explicitly revokes Executive Order 14067 and the Department of the U.S. Treasury’s Framework for International Engagement on Digital Assets issued on July 7, 2022.¹⁰⁷ It replaces the prior administration’s research-oriented, open-ended approach with a categorical CBDC prohibition, and simultaneously establishes the legal and institutional foundations for a private-sector-led approach to digital U.S. dollar innovation.

The order explicitly describes CBDCs as instruments that “threaten the stability of the financial system, individual privacy, and the sovereignty of the United States”, and on that basis prohibits all federal agencies from undertaking any action to establish, issue, or promote CBDCs within the jurisdiction of the United States or abroad. Any ongoing plans or initiatives at any agency related to the creation of a CBDC shall be immediately terminated, with no further actions permitted to develop or implement such plans.

¹⁰⁷ U.S. Federal Register, Executive Order 14178: “Strengthening American Leadership in Digital Financial Technology” (January 23, 2025).

The breadth of this prohibition is notable and reflects a deliberate policy choice to disengage the United States from the global CBDC development landscape entirely.

The order draws a clear line between the instruments it prohibits (CBDCs) and those it promotes (privately issued, market-operated digital U.S. dollar instruments), thus ensuring that the prohibition does not inadvertently constrain the stablecoin market that the order simultaneously seeks to develop.

Hence, the order's prohibition on CBDCs is combined with an equally explicit directive to promote U.S. dollar-backed digital assets. The order establishes a Presidential Working Group on Digital Asset Markets (chaired by the Special Advisor for AI and Crypto and comprising senior administration officials and the heads of key financial regulatory agencies), and charges it with proposing a regulatory and legislative framework for digital assets, including stablecoins, within 180 days.

This highlights the current Trump Administration's position that the U.S. dollar's global role in the digital age would be better advanced through the proliferation of privately issued, U.S. dollar-denominated stablecoins than through a government-issued digital currency.

3.5 The 21st Century ROAD to Housing Act (March to July 2026)

The 21st Century ROAD to Housing Act is primarily a housing affordability measure, combining provisions from two earlier bills into a single bipartisan package aimed at expanding housing supply, streamlining environmental reviews, and restricting the purchase of single-family homes by large institutional investors.

Section 1001 of the Act as passed by the U.S. Senate in March 2026 temporarily prohibits the Board of Governors of the Federal Reserve System or any Federal Reserve

Bank from issuing or creating a CBDC, or any digital asset substantially similar to a CBDC, until December 31, 2030.

The provision defines a CBDC as a digital asset that is denominated in U.S. dollars, constitutes U.S. currency, is a direct liability of the Federal Reserve System, and is widely available to the public. This definition is deliberately narrow, targeting only government-issued instruments and explicitly excluding privately issued U.S. dollar-denominated currencies that are open, permissionless, and private, and that do not alter the privacy protections associated with physical U.S. coins and currency.

The carve-out for private stablecoins is not incidental: it reflects the same policy logic as Executive Order 14178, ensuring that the prohibition on public digital money does not constrain the private stablecoin market that federal policy simultaneously seeks to promote.

The White House issued a Statement of Administration Policy strongly supporting the bill on March 2, 2026, explicitly endorsing the CBDC related provision.¹⁰⁸ The U.S. Senate passed the bill in an 89 to 10 vote on March 12, 2026, reflecting strong bipartisan support.

Following negotiations between the U.S. House and U.S. Senate, the U.S. House released a final amended text in May 2026 and passed its version of the bill by 396 votes to 13, an extraordinary margin that underscored the breadth of bipartisan support for the package, including the CBDC ban. The amended text retained the core CBDC prohibition while adjusting other provisions.

¹⁰⁸ See, Statement of Administration Policy, Senate Amendment to H.R. 6644 - 21st Century ROAD to Housing Act (March 2, 2026).

After months of negotiations between the two chambers, a final agreed text was reached at the end of June 2026. The U.S. Senate passed the bill 85 votes to 5 on June 22, 2026, and the U.S. House passed it 358 votes to 32 the following day. The final version of the bill largely reflected the U.S. House's amended text, with a small number of U.S. Senate's provisions added back in.

Notably, the CBDC provision was carried through unchanged into the final text, indicating that opposition to a CBDC issued by the Federal Reserve has achieved a degree of bipartisan consensus that would make future legislative reversal difficult.

Following approval by both chambers of the U.S. Congress, and in the absence of presidential signature within the constitutional 10-day window, the 21st Century ROAD to Housing Act (including the CBDC prohibition) became law by auto-enactment on July 11, 2026.

The CBDC prohibition bars the Federal Reserve from issuing or creating a CBDC, or any substantially similar digital asset, directly or indirectly through a financial institution or other intermediary, until 31 December 2030. Private, U.S. dollar-denominated digital assets (including regulated stablecoins) are explicitly carved out from the prohibition. A future administration that wished to pursue a CBDC would therefore need not merely a willing president and Federal Reserve, but congressional majorities in both chambers sufficient to repeal or amend the statutory prohibition.

CHAPTER 4

WHAT'S NEXT FOR CENTRAL BANK DIGITAL CURRENCIES

4.1 The Transatlantic Divergence: Two Visions of Digital Money

The comparative analysis presented in this paper has examined two of the most significant regulatory and legislative responses to the digitalization of money attempted by any jurisdiction to date.

The EU's digital euro project and the United States's prohibition of a U.S. dollar CBDC represent different policy choices and theories of what money is, what the state's role in the monetary system should be, and how monetary sovereignty is best expressed and protected in a digital economy. Interestingly, these jurisdictions have arrived at structurally opposite conclusions while invoking the same values: stability, sovereignty, privacy, inclusion, and innovation. Several findings of lasting analytical significance emerge from that examination.

The public versus private distinction, while analytically useful, does not map cleanly onto the outcomes each jurisdiction claims to pursue. The EU's digital euro is designed to support and enable private sector innovation through an intermediated distribution model, open standards, and a platform architecture that invites PSPs to build on top of a publicly anchored infrastructure layer. The United States's rejection of a digital U.S. dollar CBDC is accompanied by increased focus on a private stablecoin model which is regulated and governed by public authority.

The real distinction between the two approaches is therefore a question of where the monetary anchor sits: on the central bank's balance sheet as in the EU model, or on the balance sheets of federally regulated private institutions as in the U.S. model. That

distinction carries profound implications for financial stability, monetary policy transmission, and the ultimate accountability of the monetary system.

Moreover, both jurisdictions have positioned privacy as a core value of their chosen approach, yet they have operationalized that commitment through structurally opposite mechanisms. The United States has argued that privacy is best protected by ensuring there is no U.S. dollar CBDC at all, and that the decentralized architecture of privately operated stablecoin networks is constitutionally and structurally preferable to any instrument that would place real-time transaction data on a Federal Reserve ledger accessible to government authorities. Conversely, the EU has argued that privacy is best protected by ensuring that the government digital ledger is technically and legally constrained from surveilling its users through pseudonymization, zero-knowledge proofs, offline cash-like anonymity, and a statutory guarantee that neither the ECB nor EU Member State governments can access individual transaction data. These are different theories of financial privacy, and the extent to which each approach delivers on its promise remains to be tested.

In addition, the risk of bank disintermediation has been the most significant design constraint in both jurisdictions and has shaped the fundamental architecture of each framework. The EU has addressed it through holding limits, waterfall mechanisms, and a non-interest-bearing design. The United States has addressed it by not creating a U.S. dollar CBDC at all and by designing the stablecoin framework in a way that preserves the existing commercial banking architecture. In both cases, financial stability concerns have constrained the ambition of the digital money project, suggesting that the binding constraint on CBDC design in advanced economies is structural and rooted in the enduring importance of commercial bank deposits to the functioning of the credit system.

The geopolitical dimension is perhaps the most revealing. The EU's digital euro and the United States's stablecoin strategy and prohibition of a U.S. dollar CBDC are best understood as competing theories of monetary power in the digital age. The EU's theory holds that monetary sovereignty requires a publicly issued digital instrument, and that without a digital euro, the EU's monetary infrastructure will be structurally dependent on privately issued, foreign-controlled digital money. The United States's theory holds that monetary sovereignty is best projected through the global proliferation of privately issued, U.S. dollar-denominated digital instruments that extend the U.S. dollar's reach into digital commerce and cross-border payments (among others) at a scale and speed no central bank issuance could replicate.

4.2 Unresolved Questions and Structural Tensions

The comparative analysis in this paper surfaces a set of open questions that will help shape the long-term trajectory of digital money governance.

The Adoption Challenge for the Digital Euro

Legislative adoption of the digital euro regulation, once achieved, will mark only the beginning of the challenge. To preserve the singleness of the euro, reduce dependence on foreign payment networks, and deliver on its financial inclusion promise, the digital euro will need to be technically sound, legally robust, secure, reliable, and easy to integrate and use, and it will need to be meaningfully adopted by citizens and businesses.

The banking sector, which will be responsible for distributing the digital euro to end users, presents a further adoption challenge as banks have raised concerns throughout the legislative process about implementation costs and disintermediation risks. Whether mandatory distribution obligations under the draft regulation will be sufficient to ensure

that banks actively promote rather than merely technically comply with their digital euro obligations remains an open question.

These challenges go to the heart of whether the public digital money model can succeed in a market already served by a dense ecosystem of private digital payment solutions. The EU's legislative process has been carefully designed to manage the risks of the digital euro; the harder question is whether it has also been equally well calibrated to ensure its adoption and long-term relevance.

The Adequacy of the U.S. Private Stablecoin Model

The United States has rejected a U.S. dollar CBDC. The adequacy of its stablecoin framework and the market it governs remain largely untested under conditions of financial stress, and (at least at this stage) predominantly oriented toward wholesale, institutional, and crypto-native use cases rather than the everyday retail payments that a CBDC is designed to serve. Relevant questions remain open as to the U.S. framework's adequacy over time and the ability of the private stablecoin model to act as a genuine functional substitute for a public digital currency in the U.S. monetary architecture.

In particular, the unbanked and underbanked populations that a CBDC might reach are precisely those that private market solutions have historically failed to serve, and there is no substantial empirical evidence yet that regulated stablecoins will perform differently.

Moreover, in a severe economic downturn requiring rapid, universal government-to-citizen payments, the absence of a direct central bank-to-citizen payment channel may prove a structural limitation that no private stablecoin architecture can substitute for. A payments system anchored in privately issued instruments, however well regulated,

remains subject to the credit and liquidity risks of the private sector in a way that a central bank liability does not. The mandatory reserve requirements and insolvency priority rules embedded in the U.S.’s stablecoin legislative and regulatory framework represent meaningful protections, but they have not yet been tested under conditions of market stress.

The Role of Interest and Programmability

Both the EU and U.S. frameworks have chosen to constrain two of the most powerful potential features of a CBDC: interest-bearing remuneration and state-directed programmability.

The United States has done so by prohibiting a U.S. dollar CBDC entirely.

Under the proposed framework, the digital euro would not bear interest in order to manage disintermediation risk and avoid conflicts with the ECB’s monetary policy mandate. It would also not be programmable by the state in order to protect users from the risk of government control over how their money can be spent and to preserve the full fungibility of the single currency. These are prudent constraints, but they also limit the digital euro’s capacity to serve as a monetary policy instrument and as a vehicle for programmable public policy.

As CBDC technology matures and as trust in public digital money is established through operational experience, the question of whether and how these constraints should evolve and whether cautious design choices of the first generation of CBDCs should be revisited will become increasingly important.

4.3 Implications for Other Jurisdictions

The choices made by the EU and the United States are actively shaping the environment within which other jurisdictions are now navigating their own digital money strategies,

and the implications of the transatlantic divergence extend well beyond the two economies directly examined in this paper.

As noted in the first chapter of this paper, according to the Atlantic Council's CBDC Tracker, 146 countries and currency unions, representing over 98% of global GDP, are currently exploring a CBDC, with 77 countries in the advanced phase of exploration, including development, pilot, or launch.¹⁰⁹ That figure has significantly increased since May 2022, when 87 countries were engaged, reflecting the acceleration of CBDC interest that has coincided with the rise of U.S. dollar-denominated stablecoins and the crystallization of the EU and U.S. policy positions examined in this paper.

The geopolitical contours of that global engagement are telling. Every G20 country except the United States is exploring a CBDC, with 18 of them in the advanced stages of exploration and 14 in the pilot phase. The United States is an explicit outlier among its peers in this respect.

At the same time, a significant divergence is developing between advanced and emerging economies in their approach to CBDCs: outside the Euro area, advanced economies including Canada, Australia, and Norway have deprioritized CBDC development in recent years, while emerging markets such as Rwanda, Kazakhstan, and Bolivia are actively investing in CBDC development, in significant part as a direct response to the rapid proliferation of U.S. dollar-backed stablecoins.¹¹⁰

The risk of digital currency substitution, whereby citizens and businesses adopt foreign digital currencies in preference to domestic instruments, is a genuine monetary sovereignty concern that has become increasingly prominent in the CBDC debate. The

¹⁰⁹ See, Chapter 1, section 1.1. See, also, International Monetary Fund (IMF), Central Bank Digital Currency: Further Navigating Challenges and Risks, cit.

¹¹⁰ Ibidem.

IMF has identified this risk explicitly: unless a central bank provides an efficient and accessible form of digital money, private and foreign digital money could potentially replace domestic incumbent currencies and dominate the market, particularly in countries where the central bank does not have sufficient credibility in the retail payments ecosystem.¹¹¹ In those economies, private stablecoins pegged to a hard currency (most commonly the U.S. dollar) could become sufficiently attractive to consumers that they substitute for domestic money, reducing demand for the local currency and eroding monetary sovereignty, with potentially adverse implications for the effectiveness of monetary policy. A jurisdiction that delays its own CBDC development while U.S. dollar-denominated stablecoins proliferate globally, or while a digital euro achieves scale across the eurozone and beyond, may find its own monetary system progressively marginalized in the digital economy through the organic adoption patterns of its own citizens.

The geopolitical dimension of the CBDC development is also visible in the wholesale space. The mBridge platform, originally developed by the BIS Innovation Hub with the central banks of Hong Kong, Thailand, the UAE, and China, has seen transaction volume surge to \$55.49 billion, a more than 2,500-fold increase since its early 2022 pilots, with the e-CNY accounting for over 95% of total settlement volume.

All 11 members of BRICS (the intergovernmental grouping of major emerging economies comprising Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Indonesia, Iran, Saudi Arabia, and the UAE) are exploring CBDCs, with 9 already in

¹¹¹ See, International Monetary Fund (IMF), Central Bank Digital Currencies and Financial Stability: Balance Sheet Analysis and Policy Choices, IMF Working Paper WP/24/226 (2024).

the pilot phase. India, as host of the 2026 BRICS summit, has reportedly proposed linking member states' digital currencies to facilitate cross-border trade and tourism.¹¹²

The ECB has itself acknowledged that BRICS efforts to develop alternative payment systems, including potential cross-border CBDC platforms, represent a relevant dimension of the international monetary landscape, and that whether these developments will influence the international monetary system remains uncertain at this stage, as much will depend on actual take-up of the initiatives.¹¹³

For jurisdictions at earlier stages of CBDC development, the EU and U.S. frameworks offer two contrasting design templates, each with distinctive strengths and vulnerabilities. The EU model offers a publicly anchored, institutionally accountable, and privacy-protective instrument, but one whose public adoption trajectory is uncertain, whose distribution depends on commercial intermediaries with mixed incentives, and whose design reflects the specific constitutional and institutional conditions of a monetary union of twenty-one EU Member States. The US model offers a market-driven, rapidly scalable, and innovation-friendly architecture, but one whose financial stability properties, financial inclusion credentials, and resilience under conditions of stress have not yet been empirically validated at the scale its proponents envisage.

Neither template is straightforwardly transferable: both reflect the specific institutional, constitutional, and political economy conditions of the jurisdictions that produced them, and both will need to be critically assessed and adapted by any jurisdiction that draws on them.

¹¹² See, Atlantic Council, CBDC Tracker, cit. (last updated May 2026).

¹¹³ See, European Central Bank (ECB), Views Regarding the Internationalisation of CBDCs and Their Implications for the Euro Area, ECB Publications part of The international role of the euro (June 2024).

The IMF's guidance to policymakers is instructive in this respect: CBDC design and implementation require a holistic, country-specific approach, with risk mitigation achieved through careful design choices tailored to domestic circumstances rather than through the adoption of any single jurisdictional model. As the IMF notes, a uniform approach to legislation is not feasible, and central banks' strategic decisions and policy options will vary across jurisdictions, reflecting differences in available resources, legal systems, and policy priorities.¹¹⁴

4.4 The Long-Term Relationship Between Public and Private Money

Both the digital euro and the U.S. stablecoin framework assume a world in which public and private digital money coexist and interoperate, but they offer very different visions of what that coexistence looks like and who governs it.

The EU's design explicitly contemplates interoperability between the digital euro and private payment solutions, with the ECB committed on a best-efforts basis to ensuring technical compatibility, and with the platform model designed to make the digital euro a foundation on which private innovation can be built rather than a competitor to it.

The U.S. stablecoin framework governs private digital dollars that will circulate alongside, and in some jurisdictions in direct competition with, public digital currencies issued by central banks, including potentially a digital euro.

The future architecture of on-chain payments will likely involve stablecoins, tokenized bank deposits, and CBDCs operating as complementary instruments. How that coexistence will unfold, however, remains untested.

¹¹⁴ See, International Monetary Fund (IMF), Central Bank Digital Currency: Further Navigating Challenges and Risks, cit.

Public and private digital money could complement each other, as the EU intends; or compete in ways that fragment the payments landscape along jurisdictional and technological lines; or converge over time into a layered architecture, with central bank money anchoring settlement while private instruments serve retail and cross-border functions. Which of these outcomes prevails is an open empirical and institutional question, one that neither the EU nor the U.S. framework has yet fully tested and resolved.

What is clear, however, is that the question of how public and private digital money coexist is being answered in real time, through the legislative choices examined in this paper, through the design decisions of central banks and private issuers, and through the adoption patterns of citizens, merchants, and institutions across the global economy.

The frameworks developed by the EU and the United States represent the most architecturally distinct and institutionally advanced regulatory responses produced by any major monetary jurisdiction to the digitalization of money to date. The relationship between public and private digital money ultimately continues to evolve, the analytical work of understanding, comparing, and critically assessing those frameworks has never been more important, and the design choices, legislative instruments, and institutional architectures put in place in the years immediately ahead will lay the foundations of the future digital monetary order.

4.5 Looking Ahead: Central Bank Digital Currencies as a Catalyst for Innovation and International Cooperation

The ultimate success of any CBDC project will depend on the extent to which its design succeeds in reconciling the competing considerations examined in this paper (including

financial stability, privacy, inclusion, monetary sovereignty, and operational resilience) in a way that is both technically robust and institutionally credible.

If that balance is achieved, central banks could harness the transformative potential of digital currency technology to offer a stable, trusted, and universally accessible digital unit of account, with guaranteed finality of payments.

Moreover, for a CBDC to deliver on the public policy objectives that justify its issuance, it must achieve meaningful adoption and active use by the public. Central to this is a thorough understanding of the current and future needs of users in a payments landscape that continues evolving rapidly.¹¹⁵

In this framing, a well-designed CBDC need not be merely a digital replica of existing public money; instead, it could serve as a complementary payment instrument that addresses specific market failures, extends financial access to underserved populations, and acts as a catalyst for broader innovation in payments, finance, and commerce.

The path to that outcome is neither short nor straightforward. Research on CBDCs remains at a relatively early stage, and the development and implementation of a retail CBDC (from design through legislation, infrastructure build, pilot, and full issuance) is a process measured in years rather than months.

Central banks are accordingly approaching design decisions with caution, recognizing that the choices made now will be difficult to reverse once a system is operational at scale, and that the specific circumstances, legal frameworks, and institutional conditions of each jurisdiction require tailored rather than transplanted solutions. The EU and U.S. frameworks examined in this paper illustrate precisely this point: two

¹¹⁵ See, Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riksbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve System and Bank for International Settlements, Central bank digital currencies: user needs and adoption, Report (September 2021).

jurisdictions with broadly comparable levels of institutional sophistication have concluded, on the basis of their respective circumstances, that the appropriate response to the same set of structural pressures is fundamentally different.

In this context, international cooperation and peer learning are increasingly important. No central bank is developing a CBDC in isolation, and the insights generated by each jurisdiction's research, experimentation, and implementation efforts are of genuine value to all others. Multilateral forums, including the FSB, the Committee on Payments and Market Infrastructures and the G20, provide the institutional architecture through which central banks and governments can share experience, develop common approaches to interoperability and standards, and coordinate on the cross-border dimensions of CBDC design that no single jurisdiction can resolve unilaterally.

The transatlantic divergence documented in this paper between the EU's commitment to a publicly issued digital euro and the United States's legislative prohibition on a CBDC issued by the Federal Reserve should not obscure the deeper commonality of purpose that motivates both. Both jurisdictions are engaged, in different ways and through different instruments, with the same fundamental challenge: ensuring that the monetary system remains fit for purpose as the economy digitalizes, that public money retains its role as the anchor of trust and convertibility in an increasingly private digital financial landscape, and that the benefits of digital monetary innovation are distributed broadly rather than captured narrowly.

Whether these objectives are best pursued through a public CBDC, a regulated private stablecoin framework, or some combination of the two remains genuinely contested. What is certain is that the question will only grow in importance as digital money continues its rapid evolution, and that the choices being made today will shape the monetary architecture of the global economy for decades to come.

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