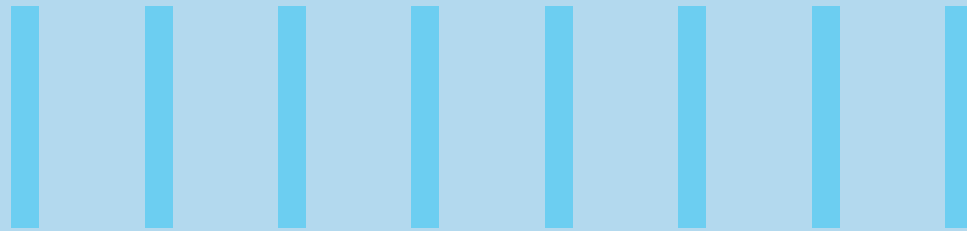




THE FUTURE OF DIGITAL MONEY: CBDCs, STABLECOINS, AND THE TOKENIZED BRIDGE



Abstract

Digital money is no longer a theoretical concept; it is rapidly materializing through the parallel emergence of central bank digital currencies (CBDCs), stablecoins, and tokenized bank deposits. These innovations are not merely digitized versions of cash or deposits. They represent a structural shift toward programmable, interoperable money operating on distributed ledger technologies (DLT).

This paper explains how tokenized deposits hold a unique position as a critical bridge, enhancing the trust in regulated traditional banking with the programmability and efficiency of blockchain-native finance. We outline the design principles, benefits, and trade-offs of each form of digital money, highlight their implications for financial markets, and explore how their convergence will shape the future global monetary system.

The paper also highlights the foundational role of cloud computing and artificial intelligence (AI) in enabling scalable infrastructure, intelligent compliance, and real-time operations. Strategic recommendations are offered for financial institutions to build secure, adaptive systems and reimagine governance in a programmable financial future.

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INTRODUCTION: THE THREE-TRACK EVOLUTION OF DIGITAL MONEY

The global financial system is undergoing its most significant transformation in centuries. The long-standing dominance of central and commercial banks in currency issuance and distribution is giving way to a new paradigm, driven not by volatile cryptocurrencies but by three structured innovations.

These are central bank digital currencies (CBDCs), stablecoins, and tokenized bank deposits. These tracks of digital money represent a fundamental shift. They mark the migration of fiat currencies, such as the US dollar and the euro, and bank liabilities, including customer deposits, onto programmable, secure distributed ledger technologies (DLT).

This transformation is further accelerated by two enabling forces: cloud computing and artificial intelligence (AI). Cloud infrastructure provides the scalability, interoperability, and resilience required to support 24/7, cross-border digital payment systems. AI enhances fraud detection, compliance, and programmable financial logic, from conditional payments to behavioral analytics.

Each of these tracks addresses distinct objectives and faces unique regulatory, technological, and adoption challenges. Understanding their differences, synergies, and growing interdependence is critical to shaping the architecture of tomorrow's financial ecosystem. The future of money is digital, programmable, and already unfolding. A closer look at the characteristics of each track reveals how they contribute to the digital money landscape.

“Understanding their differences, synergies, and growing interdependence is critical to shaping the architecture of tomorrow’s financial ecosystem.”

1 CENTRAL BANK DIGITAL CURRENCIES

CBDCs are digital forms of a nation's sovereign currency, issued and backed directly by its central bank, carrying the full faith and credit of the state.

CBDCs are digital forms of a nation's sovereign currency, issued and backed directly by its central bank, carrying the full faith and credit of the state. They aim to combine the efficiency of digital payments with the unwavering trust and stability inherent in central bank money. Over 130 countries are actively exploring or implementing CBDCs.¹ Examples range from China's extensive digital Yuan (e-CNY) pilot for retail use to wholesale CBDC initiatives such as the Bank for International Settlements' (BIS) Project Jura, which targets more efficient cross-border settlements.^{2,3}

3 TOKENIZED DEPOSITS

Tokenized deposits represent commercial bank deposits issued as blockchain-based tokens.

They remain direct liabilities of regulated commercial banks. They are fully backed and governed under existing banking laws and deposit insurance schemes. Tokenized deposits transform a traditional bank deposit into a programmable digital token, retaining all the protections and legal clarity of conventional banking. JPMorgan's JPM Coin is a leading example, supporting instant, programmable dollar transfers for institutional clients⁵. Table 1 outlines the merits and limitations of the three tracks while highlighting the key aspects of each.^{1,6}

2 STABLECOINS

Stablecoins are privately issued digital tokens pegged to fiat currencies or asset baskets.

Asset baskets, in turn, are a collection of multiple financial assets that are grouped together and traded as a single unit, diversifying risk across all underlying assets. Stablecoins, therefore, combine the global accessibility of cryptocurrencies with the price stability of fiat currencies. Leading stablecoins, such as Tether (USDT) and USD Coin (USDC), are essential to the crypto economy and are increasingly being explored for mainstream payment use.

Now, a key shift has come about with the passage of the GENIUS Act of 2025 in the US. The Act establishes the first comprehensive federal framework for payment stablecoins, transforming a gray area into a regulated zone. It requires 1:1 reserve backing, clear audit standards and disclosures, as well as well-defined licensing pathways for both FinTechs and banks.⁴ The regulation signals growing official support for stablecoins, reflecting a broader transition from reactive oversight to orderly, proactive engagement with digital money.

Tracks	✓ Pros	✗ Cons
<div>1</div> <div>CENTRAL BANK DIGITAL CURRENCIES</div>	<p>Efficiency and speed: Enables near-instant, cost-effective transactions with atomic settlement, where assets like securities and cash are either exchanged simultaneously and instantly or not at all</p> <p>Financial inclusion: Extends secure, low-cost services to underserved populations</p> <p>Reduced cash costs: Lowers expenses and risks associated with physical currency</p> <p>Programmability: Supports predefined usage rules, enhancing policy effectiveness</p> <p>Monetary and fiscal tools: Introduces new tools for policy implementation and enhanced transaction transparency</p>	<p>Privacy concerns: Raises fears of 'surveillance state' in the absence of strong safeguards</p> <p>Financial disintermediation: Triggers potential deposit outflows from commercial banks, affecting financial stability</p> <p>Adoption challenges: Faces adoption barriers due to digital illiteracy and public mistrust</p> <p>Cybersecurity risks: Presents a high-value target for cyberattacks, thus requiring unprecedented security</p>
<div>2</div> <div>STABLECOINS</div>	<p>Borderless 24/7 transactions: Supports instant, low-cost international transactions, overcoming banking limitations</p> <p>Crypto and DeFi gateway: Serves as a primary on/off-ramp for crypto markets and essential collateral in decentralized finance (DeFi), converting fiat into crypto and vice versa</p> <p>Value preservation: Offers a digital 'escape hatch' in high-inflation economies for agile capital movement</p> <p>Innovation and agility: Drives rapid innovation in payment solutions through private issuance</p>	<p>Regulatory uncertainty: Lacks consistent regulatory oversight and transparency across global jurisdictions</p> <p>Counterparty risk: Exposes users to counterparty risk due to the absence of deposit insurance</p> <p>Peg volatility: Fails in some cases to maintain a stable peg, threatening financial stability and raising systemic concerns</p>
<div>3</div> <div>TOKENIZED DEPOSITS</div>	<p>Regulatory compliance and trust: Provides full regulatory compliance, including adherence to Know Your Customer (KYC) and anti-money laundering (AML) requirements, as well as deposit protection</p> <p>Enhanced efficiency and programmability: Enables programmable, near-instant settlement and automated workflows</p> <p>Seamless interoperability: Facilitates interoperability between traditional finance and digital assets</p> <p>Maintains banking system role: Preserves the central role of commercial banks in money creation and credit intermediation</p>	<p>Permissioned networks: Limits openness by operating on permissioned networks with restricted access</p> <p>Implementation complexity: Demands complex integration with legacy core banking systems and infrastructure</p> <p>Evolving regulatory interpretations: Encounters uncertainty in regulatory frameworks for cross-border use</p>

Table 1 | Pros and cons of CBDCs, stablecoins, and tokenized deposits

CONVERGENCE AND INTEROPERABILITY

While distinct in their characteristics and purpose, CBDCs, stablecoins, and tokenized deposits are converging through the use of DLT to improve interoperability, efficiency, security, and accessibility.

They collectively address gaps in the current financial system by digitalizing national currencies and integrating traditional banking with blockchain innovation.

Tokenized deposits are emerging as the indispensable bridge within this evolving digital monetary landscape. They transform bank liabilities into blockchain-native instruments, vital for connecting conventional financial systems with blockchain platforms, in many ways.^{8,9,10}



Linking traditional and blockchain finance:

Enable regulated banks to extend trust and legal robustness onto DLT for interacting with tokenized real-world assets.



Complementing CBDCs: Maintain the two-tiered monetary system, preserving the role of commercial banks while leveraging the trust and settlement power of central banks, particularly through wholesale CBDCs for interbank settlement of tokenized deposits.



Providing a stablecoin alternative: Offer a superior, fully regulated option for institutional use, operating within defined banking regulations and supported by explicit deposit insurance.

This synergy is vital for a cohesive and resilient financial ecosystem. The trend points to a 24/7, atomic settlement-capable digital architecture, moving beyond fragmented legacy systems. The likely future state is complementarity: stablecoins operating in open, retail-focused crypto networks, while tokenized deposits anchor the institutional and regulated domains, potentially settling on wholesale CBDC rails.

THE ENABLING ROLE OF AI AND CLOUD IN DIGITAL MONEY

Cloud computing and AI are central to the development and operation of digital monetary systems.

Cloud platforms offer flexible infrastructure for deploying CBDCs, stablecoins, and tokenized deposits at scale, enabling high availability, real-time performance, and cross-border integration.¹¹

AI brings intelligence and automation to financial infrastructure. It supports anomaly detection, dynamic risk scoring, regulatory reporting, and programmable behavior.¹² In programmable money systems, AI can optimize liquidity, enforce conditional transactions and flag suspicious activity in real time. As these technologies continue to evolve, their convergence with DLT will shape a new generation of financial systems that are not only digital but also autonomous, adaptive, and globally interoperable.

INDUSTRY IMPACT AND OPERATIONAL TRANSFORMATION

The emergence and convergence of CBDCs, stablecoins, and tokenized deposits are poised to reshape various segments of the financial industry, presenting both significant opportunities for innovation as well as complex challenges.

Core business functions such as treasury, risk management, and product development must strategically adapt to remain competitive in the rapidly evolving environment. Key areas of transformation include:



Capital markets access and tokenization: Unlocks direct access to global investors through security token offerings (STOs), reducing intermediation, cutting costs, and accelerating time-to-market



Cross-border settlements and trading: Facilitates near-instant, atomic settlement that reduces counterparty and systemic risks, with stablecoin liquidity supporting new trading models



Mergers and acquisitions (M&A) and deal structuring: Streamlines complex transactions using smart contract-based automation for escrow, cross-border transfers, and milestone-based payouts, challenging traditional ancillary services



Asset management and fund services: Faces disruption from DeFi protocols that offer round-the-clock competitive, transparent, and lower-fee alternatives to traditional offerings

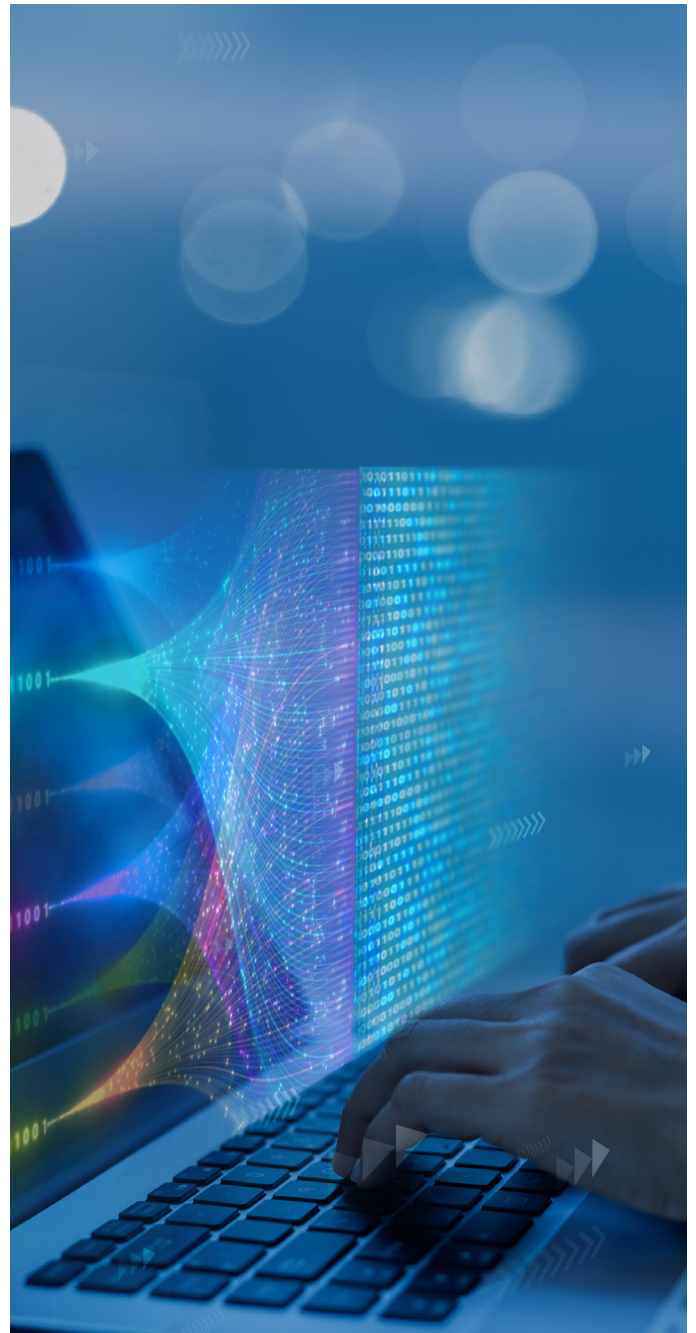


Custody and control: Requires the development of institutional-grade wallets, regulated custodians, and suitable tools for on-chain compliance, smart contract audits, and disaster recovery



Digital plumbing: Needs an overhaul of core IT infrastructure to enable interoperability between legacy systems and blockchain layers through application programming interface (API) and event-driven architectures

Despite the transformative potential, widespread industry disruption is unlikely to be immediate. Regulatory uncertainties, investor protection requirements, and inherent resistance will moderate the pace of such change. Further, the relationship-driven advisory model is not solely replaceable by technology. Proactive financial institutions that integrate digital money capabilities early will gain significant competitive advantages. Those that resist change, on the other hand, may face gradual erosion where automation, transparency, and speed become critical market demands.



STRATEGIC IMPLICATIONS FOR LEADERS

For financial leaders, navigating the rise of digital money demands reimagining systems, governance, and trust. It requires new organizational capabilities and cultural shifts across several strategic priorities, such as:



Tokenizing trust with regulatory clarity: Define how tokenized liabilities, such as deposits and stablecoins, are issued, accounted for, and governed within evolving legal frameworks



Engaging regulators through proactive collaboration: Participate in policy co-design by embedding compliance, legal, and technology teams in regulatory sandboxes, pilots, and industry consortia



Building cloud-native digital infrastructure: Leverage secure, scalable cloud platforms and event-driven architectures to support real-time interoperability and resilience



Securing custody and risk management systems: Invest in or partner for institutional-grade digital wallets and develop on-chain transaction monitoring, including AML, KYC compliance, and disaster recovery planning



Investing in AI and cloud infrastructure: Build platforms that support programmable logic, compliance automation, and secure data exchange



Testing programmable solutions with user-first design: Launch targeted CBDC or tokenized deposit pilots, supported by intuitive digital portals and programmable payment logic



Establishing agile digital governance: Create responsive mechanisms for token lifecycle management, smart contract updates, and incident resolution, while fostering a culture of secure innovation

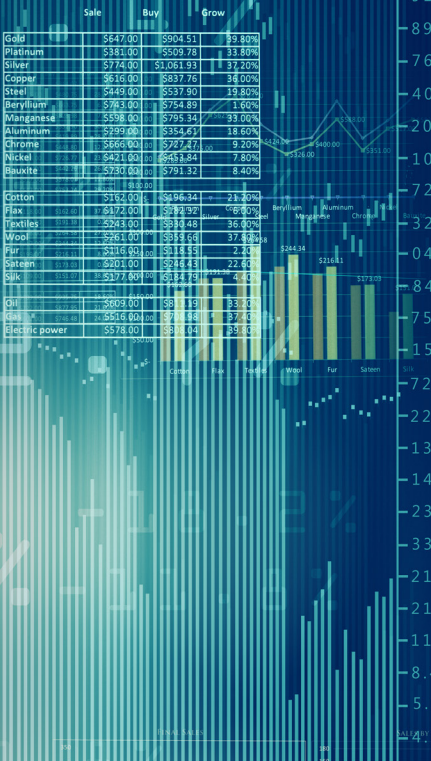
In this nascent era of digital money, even as trust remains fundamental its embodiment and transaction mechanisms are being redefined. Leaders who move early, securely, and with foresight, will define the future financial system and gain significant advantage. The shift to a programmable, globally interoperable digital monetary system is an unfolding reality that calls for strategic engagement without delay.

CONCLUSION

The evolution of digital money through CBDCs, stablecoins, and tokenized deposits marks a fundamental shift toward a more efficient, inclusive, and programmable financial ecosystem.

Further, with the GENIUS Act becoming law, stablecoins could emerge as a key focus area for governments and regulators around the world. While each track serves distinct needs, their convergence is accelerating, with tokenized deposits emerging as the critical bridge between the centralized trust of CBDCs and the decentralized innovation of stablecoins. This shift is being powered by cloud computing and AI, which provide the infrastructure and intelligence needed to scale, secure, and automate digital money systems. Cloud supports seamless connectivity and resilience, while AI enables compliance, fraud detection, and programmable financial logic.

As central banks, commercial banks, and fintech companies advance these innovations, leaders must focus on building secure infrastructure, fostering agile governance, and preparing for a future where money functions as a dynamic, data-rich layer of the global economy. The future of digital money is already unfolding and needs action with vision from all stakeholders.



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Dr. Ashok Hegde is a Vice President and the Delivery Head of the Domain Consulting Group for the financial services vertical at Infosys. He specializes in investment banking, investment management, and capital markets. He has led large-scale transformational engagements for leading investment banks and global investment management firms. Ashok brings deep expertise in delivery, consulting, and program management, as well as the development of centers of excellence (COEs), solutions labs, and competency centers. He has also led global teams in building platforms that support middle and back-office functions of capital markets. Click [here](#) to explore some of his recently published work.

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