Tokenization of Money Market Funds

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Executive Summary

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Digitalization and finance have long evolved together. Over recent decades, electronic systems have replaced physical trading of stocks and bonds, while online platforms have empowered investors to manage portfolios directly. Today, digital assets – from cryptocurrencies to tokenized securities – are driving the next wave of financial innovation and rapidly entering the mainstream.

This shift reflects both the growing digitalization of finance and rising acceptance of decentralized, nonbank transactions. It is also fuelled by central banks and governments advancing regulation around digital currencies and assets. While cryptocurrencies and stablecoins are leading adoption, tokenized money market funds (MMFs) are emerging as the next frontier in digital finance.

MMFs have long provided investors with liquid, yield-bearing, and stable assets. As demand for digital solutions grows, tokenized MMFs naturally extend the evolution from stablecoins and deposit tokens, meeting similar investor needs in a digital format while unlocking new benefits. These include greater settlement flexibility, portability, and collateral efficiency, potentially enhancing financial stability through faster, more transparent redemptions.

J.P. Morgan Asset Management's $1.4 trillion Global Liquidity business, including $1.1 trillion in MMFs, has delivered results across market cycles for over 30 years.[1] We continue to innovate, including developing a tokenized MMF to help clients optimize liquidity management in the digital era.

This report introduces the fundamentals of digital assets, then explores tokenized MMFs, including use cases and benefits, and evolving considerations, such as identity, privacy, infrastructure and regulation. The paper concludes with the current state of the industry and key terms.

[1] Source: J.P. Morgan Asset Management, as of September 30, 2025.

Understanding digital assets

The rapid evolution of financial markets is increasingly shaped by digital assets, which are redefining how value is created, transferred, and managed. Just as traditional assets transitioned from physical to digital records, a new generation of technologies, such as blockchain and distributed ledger systems, is further transforming how records are maintained and transactions are recorded. Understanding the fundamentals of digital assets is essential for market participants seeking to navigate this dynamic landscape and unlock new opportunities in global liquidity management.

Digital asset technology

Traditional assets, such as currency, stocks and bonds, often no longer exist as physical items – banks do not have piles of cash sitting in a vault and stocks no longer come with physical certificates. However, these assets are still recorded centrally and on traditional technology, typically the computer systems of a bank, transfer agent or securities depository.

Digital assets, such as cryptocurrencies, stablecoins and tokenized assets, are recorded using a shared digital ledger. It is helpful to understand the basic technology behind digital assets to better understand how they work and how they differ from traditional assets.

Distributed ledger technology (DLT) is a database that is shared, replicated and synchronized across multiple computers (nodes) in a network.

Blockchain is a key type of DLT that securely records transactions and data changes across a network of participants in a transparent and immutable manner. Some network participants are responsible for validating transactions. In a traditional centralized system, a single party, such as a bank, conducts this role. Some of the most widely used blockchains are Ethereum, Bitcoin, Solana, and Avalanche. In recent years, interest has increased in "Layer 2" solutions such as Optimism and Arbitrum, which connect to the Ethereum network.

Several types of DLT networks exist:

Public/permissionless DLT

In an open network, such as Ethereum, anyone can interact with the network or operate a node. However, some specific programs issued onto Ethereum may have restricted access and may be referred to as permissioned assets on public networks. Public/permissionless networks offer the greatest scalability but may face privacy, security and operational challenges, including network congestion.

Public/permissioned DLT

This type of network is also open to all users to interact but is operated by a select group of nodes, who are chosen via a process subject to the approval of the existing nodes. Similar to public/permissionless DLT, specific assets can have restrictions. This type of network offers similar potential as permissionless networks to scale but with added security and regulatory controls. Hedera Hashgraph is an example of this type of network.

Private/permissioned DLT

These networks restrict access and who can operate them. For example, large financial enterprises have created these types of networks to enable secure transactions between known counterparties. These networks may provide efficiency, privacy and security benefits for their operators, but the networks may be less scalable due to onboarding requirements. Some examples of private/permissioned DLT networks include Fnality and J.P. Morgan's Kinexys.

Understanding digital assets (continued)

Digital assets most relevant to the global liquidity industry

The variety of digital assets is expanding, however, we will focus on explaining and comparing several different types of digital assets most relevant to the global liquidity universe.

Cryptocurrencies

Cryptocurrencies are digital currencies that operate independently from central authorities, such as central banks, and use cryptography to secure transactions. Transactions are verified by a distributed network of computers via a blockchain and the currencies are issued in limited supply. Cryptocurrencies can experience rapid price swings due to their nascent market structure, limited liquidity and shifting investor sentiment. Some key use cases are for cross-border payments, as a store of value and for investment. In addition, cryptocurrencies are needed to pay for services ("gas") on a blockchain. Examples include Bitcoin (BTC) and Ethereum (ETH).

Stablecoins

Stablecoins are digital assets that use various mechanisms to peg and maintain price to another reference, such as the U.S. dollar. These mechanisms may include holding cash or purchasing traditional money market securities and/or cryptocurrencies. Since stablecoins are designed to minimize price volatility, they are more suitable than cryptocurrencies for payments or as a store of value. They can also be used for remittances or as a settlement asset. Stablecoins are typically non-yield bearing and not Federal Deposit Insurance Corporation (FDIC) insured. Direct (P2P) transfers are permitted. Examples include Tether (USDT), Circle (USDC) and Sky (USDS).

Deposit tokens

Deposit tokens evidence a demand deposit claim for a fixed amount of cash by the token holder against the token-issuing bank. These tokens rely on the existing depository framework, providing seamless integration with banking infrastructure, which is a core benefit over stablecoins. Deposit tokens can be used for payments, remittances and liquidity management. They represent a deposit liability, can be yield bearing and eligible for FDIC insurance. Direct (P2P) transfers are permitted with restrictions. JPMD is an example of a deposit token.

Tokenized assets

Tokenized assets are digital representations of real-world assets on a blockchain that can be dynamically updated, tracked and serviced. They can be used to provide fractional ownership, investment diversification and collateral management. While many types of assets can be tokenized, including real estate, individual stocks or investment funds, we will be focusing on MMFs in this piece. Tokenized MMFs, like deposit tokens, are yield bearing. These investments accrue interest from underlying assets, which can be distributed digitally via tokens. Tokenized MMFs permit direct (P2P) transfers with restrictions, as all direct holders must be onboarded to the fund.

Understanding tokenized MMFs

With a basic understanding of the key digital assets in the global liquidity universe, we'll now look more closely at the use cases for these assets and some of the benefits they may bring to investors and the financial industry, particularly focusing on tokenized MMFs. We then explore some of the key operational questions around identity, privacy and infrastructure that are still being addressed, and which are critical for industry participants to understand. Lastly, we will share a high-level scenario for how tokenizing MMFs could work and review the current state of the industry.

Potential use cases and benefits of tokenized MMFs

When MMFs are tokenized on a blockchain, market participants can potentially realize additional utility and efficiencies, including:

Streamlined payments

When tokenized assets exist on the same ledger as on-chain money, such as deposit tokens, stablecoins and blockchain deposit accounts, investors can benefit from faster delivery versus payment (DvP) settlement cycles. For tokenized MMFs in particular, securities and cash can move at the same time, speeding up the trading and settlement process by about 60-90 minutes, which will lead to faster transaction turnaround times, significantly reduce trapped liquidity, improve visibility and lower transaction costs.

Programmability

Tokenized MMFs have the potential to further automate manual processes, enabling more complex logic and reducing errors. For example, tokenized MMFs can be designed in such a way that automates distribution of dividends to investors based on fund specific interest rate data. This increasing programmability can reduce manual processing, intermediaries and operational errors.

Decentralized finance (DeFi) integration

Tokenization can enable MMFs to operate within smart-contract protocols for lending and borrowing, trading and pooled asset management, enabling complex, multi-party interactions.

Trading and settlement

Blockchains can serve as a unified record of ownership and also as a venue for financial activity, allowing investors in tokenized MMFs to benefit from near-instant settlement with full transparency among parties, which reduces delays and reconciliations across intermediates.

Collateral

Tokenized MMFs could be utilized as collateral in both traditional and digital asset markets, subject to eligibility and receiver appetite. In addition, enabling collateral to move in real time and automatically would enhance intraday liquidity.

Understanding tokenized MMFs (continued)

Developing digital solutions for critical legacy processes

The efficiency and benefits of tokenized MMFs compound as digital infrastructure develops and is integrated into know-your-customer (KYC) processes and anti-money laundering (AML) screening, while preserving confidential information.

Identity: Integrating KYC and AML into digital/tokenization process

The absence of standardized approaches and infrastructure among market intermediaries for identity verification and compliance creates inefficiencies in asset interactions. Addressing this issue can accelerate the operational benefits that tokenization promises to deliver.

The trustworthiness of identity is critical to solving this challenge; identity attributes, such as a client's KYC status, are only as reliable as the trusted entity that made the attestation. While analog systems for validating trusted entities exist, these systems are not intrinsically compatible or integrated with blockchain networks. Additionally, the lack of consistent trust frameworks across financial market participants prevents compliance and onboarding verifications from being efficiently reused.

Storing personally identifiable information (PII) on a shared ledger presents another challenge because it compromises privacy and security, making it potentially unsuitable for regulated financial applications. The key issue is ensuring that an on-chain actor acquires relevant attestations and identity checks without revealing any PII.

The target state is a digital identity that can be repurposed, which could revolutionize the KYC and AML processes. Investors could efficiently verify their identities across multiple platforms and use cases, significantly reducing redundancy and enhancing the user experience while maintaining robust compliance standards.

Privacy: Transparency vs. confidentiality

Most public blockchains are transparent and permissionless. Anyone with the right infrastructure can run a node and validate transactions. Similarly, anyone with internet access can view transactions, balances and the mechanics of smart contracts.

Therein lie the privacy challenges for both participants and transactions. On-chain addresses appear random and unattributable, but they are pseudonymous and do not guarantee anonymity for participants. Full transparency of transactions raises the issue of alpha protection and runs on funds. These issues may be less critical for MMFs vs. other tokenized funds but still require thoughtful consideration as the industry develops.

Permissioned networks can ensure that only the operator can see private information to meet client needs. However, this constrains the efficiency of a DeFi system.

In the target state, participants should have the choice to shield important details and protect sensitive financial information. Data would be conditionally disclosed on a unified ledger with a shared state, ensuring transparency without compromising confidentiality.

Understanding tokenized MMFs (continued)

Infrastructure and expertise: Combining technological and process innovation

Building out the infrastructure to support the growth of digital assets is critical for further development and widespread adoption. Market participants need infrastructure or trusted partners in order to access public networks, manage their tokenized assets and manage their private keys.

Developing this infrastructure requires expertise in the relevant technologies and integrating them into key processes in global liquidity management. Operators must be able to scale across multiple chains and navigate cross-chain transactions. Fund managers need to have a solution for creating a tokenized fund that can be integrated with their transfer agent (TA) in a way that the TA can still perform its regulatory and administrative duties. In addition, fund managers must be able to control and maintain security of their tokenized fund systems on the public blockchain.

Regulation: Evolving regulations across regions

The rapid growth and adoption of cryptocurrencies, stablecoins, tokenization and other blockchain-based assets is driving change in the regulatory landscape for digital assets. Governments and regulatory bodies around the world are trying to set clear guidelines and frameworks to govern the use of digital assets on several fronts. Part of the regulation is addressing concerns around money laundering, fraud and consumer protection while other areas include the capital treatment of digital assets and the licensing and registration requirements for digital asset service providers and regulated financial institutions that engage with digital assets.

Efforts to develop global regulations across jurisdictions continue. For example, Europe's Markets in Crypto-Assets Regulation, or MiCAR, is working towards a unified regulatory framework in the European Union (EU) and came into effect at the end of 2024. The European Central Bank is progressing towards launching a central bank digital currency. International organizations like the Financial Action Task Force, IOSCO, the Basel committee and the Financial Stability Board (FSB) have issued guidelines to standardize regulatory approaches for digital assets.

A few regulatory "sandboxes," such as the UK's Digital Securities Sandbox (DSS) have been created over the past few years and allow companies to test new digital asset products and services in a controlled environment with regulatory oversight. Some of these sandboxes, including Hong Kong's Project Ensemble and Singapore's Project Guardian, can also facilitate cross-border collaboration between policymakers and the industry.

In the U.S., the current administration is promoting regulatory clarity and growth in the digital asset sector. The "Guiding and Establishing National Innovation for U.S. Stablecoins Act" (GENIUS ACT) provides a regulatory framework for U.S. payment stablecoins. This legislation defines the characteristics of U.S. stablecoins (they must be backed one-to-one by high quality liquid assets and non-yield bearing) and requirements for issuers (they must register with state regulators or the OCC, conduct audits and transparently report reserves on a monthly basis, and comply with consumer protection, AML/KYC and operational resilience rules). In addition, the Securities and Exchange Commission is currently focusing on updating regulations for digital assets, including the definition of a security and tokenized securities, and rules for broker-dealers, transfer agents, custody and other relevant players in the ecosystem.

> **As digital assets continue to grow in value and acceptance, we expect regulation will continue to evolve in the coming years as governments and central banks across regions make progress in adapting policies for digital assets.**

Understanding tokenized MMFs (continued)

How do tokenized MMFs work?

The many participants in global liquidity markets – from central banks to corporate treasurers, fund managers to transfer agents – are working to find solutions for identity, privacy and infrastructure considerations, which will shape the future of tokenized MMFs. While the process will continue to evolve, we have outlined some of the key elements we foresee regarding onboarding, subscription, redemption and transfers.

Tokenized MMFs are transferable solely among investors who have been approved under KYC regulation and onboarded. The process of obtaining AML/KYC approval for clients may continue to be processed off-chain until there are digital identity solutions in the future.

Once clients are approved and onboarded they will need to specify a digital wallet address and blockchain where they will receive shares. In a target state, investors will be able to purchase or redeem fund shares with traditional or digital currency.

To subscribe into a fund, investors can request a subscription through traditional channels or by directly interacting with the tokenized MMF on blockchain. Once a subscription has been approved by the transfer agent, tokenized MMF shares are minted to the investor's wallet address. Investors can similarly request a redemption: once the transfer agent approves the redemption, tokenized MMF shares are burned from the investor's wallet address. Investors will be able to transfer shares directly to another approved investor. The transfer agent will be able to pick up the transaction on the blockchain and record it based on the movement of the tokenized fund shares.

For transfers, the transfer agent takes the information from the blockchain and updates the off-chain books and records, which remain the official record for the fund. The transfer agent can reverse or cancel activity, which ensures no loss of value. Subject to regulatory acceptance, the on-chain record may be relied upon by the transfer agent to form part of their books and records (the unit register).

Target features for a tokenized MMF would include:

- Subscription and redemption requests via traditional channels or blockchain channels
- 24/7/365 investor-to-investor on-chain transfers
- Ability for investors to use transfers to offer other investors instant liquidity into stablecoins or deposit tokens
- Accessible via multiple blockchains
- Blockchain network-to-blockchain network transfers (interoperability)
- Settlement for subscriptions and redemptions in stablecoin or deposit token
- Atomic DvP settlement of subscriptions and redemptions
- Daily dividend payments
- Minutely interest entitlement
- Continuous real-time parity of the transfer agents unit register and the on-chain record of ownership or use of the blockchain as the official unit register

Understanding tokenized MMFs (continued)

Current status of tokenized MMFs across the industry

The tokenized asset landscape has evolved and grown significantly over the past few years and approximately $35 billion[2] in traditional assets are currently tokenized on public blockchain networks. While this represents less than 0.01% of industry assets under management (AUM), adoption is accelerating with AUM in on-chain products nearly tripling since early 2024.

Several asset managers have already launched tokenized MMFs and the nine largest funds have roughly $8 billion[3] in AUM. These funds span eight different providers and use a variety of fund administrators, custodians and transfer agents. While many are available on several different blockchains, currently the one common blockchain for all is Ethereum.

The funds currently in the market are operating in a variety of jurisdictions and under different regulatory frameworks; they also have a range of investor profiles. Client adoption is at an early stage but is expected to grow as the product offering matures.

[2] Source: RWA.xyz as of October 30, 2025.
[3] Source: RWA.xyz, Spikio.io, ledger insights, Arbitrum, oklink.com, Markets Media, press releases and internet research. Data as of July 18, 2025.

Conclusion

The tokenization of money market funds represents a significant milestone in the ongoing transformation of global financial markets. As digital assets and decentralized finance continue to gain traction, tokenized MMFs are poised to deliver meaningful benefits to institutional investors, fund managers, and market participants alike. By leveraging blockchain and distributed ledger technology, tokenized MMFs offer the potential for faster settlement, enhanced transparency, improved portability, and more efficient collateral management. These features not only streamline operational processes but also contribute to greater financial stability and resilience across the liquidity ecosystem.

The industry is evolving rapidly, with financial institutions, regulators, and technology providers working collaboratively to address key challenges around privacy, identity, infrastructure, and compliance. As regulatory frameworks mature and digital identity solutions become more robust, the adoption of tokenized MMFs is expected to accelerate, unlocking new opportunities for innovation and growth. Early movers in this space are already demonstrating the value of tokenized assets, and the lessons learned will help shape best practices and standards for the broader market.

For institutional clients and qualified investors, the emergence of tokenized MMFs offers a compelling opportunity to rethink liquidity management strategies and explore new ways to optimize cash reserves and operating capital. Whether you are seeking to enhance settlement efficiency, improve access to collateral, or participate in the growing decentralized finance ecosystem, tokenized MMFs have the potential to provide a flexible and forward-looking solution tailored to your needs.

J.P. Morgan is committed to supporting our clients as they navigate this evolving landscape. Our Global Liquidity business continues to innovate, developing digital solutions that address the unique requirements of institutional investors and help unlock the full potential of tokenized assets. We believe that collaboration across the industry will be critical to realizing the transformative benefits of tokenization and ensuring a secure, efficient, and resilient financial system for the future.

If you have any questions about tokenized money market funds, digital assets, or how these solutions can support your organization's liquidity objectives, we encourage you to reach out to your J.P. Morgan representative or contact our Global Liquidity team directly. We welcome the opportunity to discuss your specific needs and explore how our expertise and product offerings can help you achieve your goals in this dynamic environment.

Glossary

Atomic Settlement: A process where the transfer of assets (such as fund shares and payment) occurs simultaneously, ensuring that either both sides of a transaction are completed or neither is, eliminating settlement risk.

Blockchain: A type of distributed ledger technology (DLT) that records transactions across a network of participants in a secure, transparent, and immutable way. Examples include Ethereum, Bitcoin, Solana, and Avalanche.

Collateral: Assets pledged as security for a loan or other credit. In the context of tokenized MMFs, these digital assets can be used as collateral in both traditional and digital markets.

Cryptocurrency: A digital currency that operates independently of central authorities, using blockchain technology for transaction verification. Examples: Bitcoin (BTC), Ethereum (ETH).

Decentralized Finance (DeFi): A financial system that enables peer-to-peer transactions without intermediaries, often using blockchain and smart contracts.

Deposit Token: A digital token representing a claim on a fixed amount of cash held at a bank. These tokens are integrated with existing banking infrastructure and can be yield-bearing and FDIC insured. Example: JPMD.

Distributed Ledger Technology (DLT): A digital system for recording transactions in multiple places at the same time. DLTs can be public or private, permissioned or permissionless.

Ethereum: A widely used public blockchain platform that supports smart contracts and decentralized applications.

FDIC Insurance: Insurance provided by the Federal Deposit Insurance Corporation, protecting depositors against the loss of their insured deposits.

KYC (Know Your Customer): A process used by financial institutions to verify the identity of their clients and assess potential risks of illegal intentions.

Layer 2 Solution: Technologies built on top of existing blockchains (like Ethereum) to improve scalability and efficiency. Examples: Optimism, Arbitrum.

MMF (Money Market Fund): A type of mutual fund that invests in short-term, high-quality debt securities and provides liquidity and stability for investors.

Onboarding: The process of registering and verifying new investors, including KYC and AML checks, before they can participate in a fund.

Permissioned DLT: A distributed ledger where only approved participants can validate transactions or access certain data. Can be public or private.

Permissionless DLT: A distributed ledger open to anyone to participate in transaction validation and network operations.

Private/Permissioned DLT: A restricted network where only selected participants can access and operate the ledger, often used by financial institutions for secure transactions.

Glossary (continued)

Programmability: The ability to automate processes and set rules for digital assets using smart contracts, reducing manual intervention and errors.

Public/Permissioned DLT: A network open to all users for interaction but operated by a select group of nodes.

Public/Permissionless DLT: A fully open network where anyone can participate and operate a node, such as Ethereum.

Redemption: The process by which investors sell or exchange their fund shares for cash or other assets.

Stablecoin: A type of cryptocurrency designed to minimize price volatility by pegging its value to a stable asset, such as the US dollar. Examples: Tether (USDT), Circle (USDC).

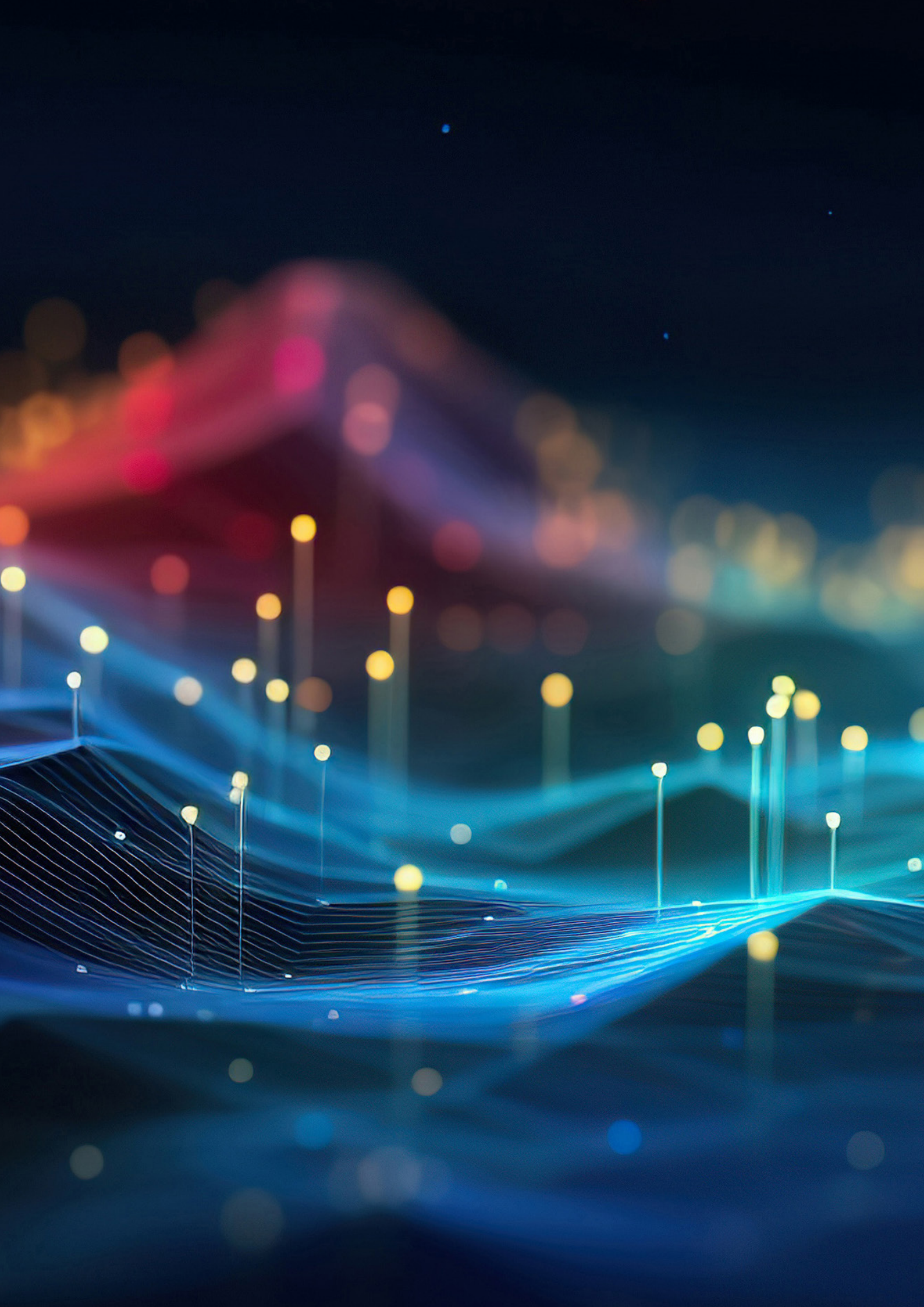
Subscription: The process of purchasing shares in a fund.

Tokenization: The process of converting ownership rights in a real-world asset (such as a money market fund) into a digital token on a blockchain.

Tokenized Asset: A digital representation of a real-world asset on a blockchain, allowing for fractional ownership, easier transfer, and enhanced programmability.

Tokenized MMF: A money market fund whose shares are issued and managed as digital tokens on a blockchain, offering benefits such as faster settlement, programmability, and potential use in DeFi.

Transfer Agent: An entity responsible for maintaining records of investor ownership, processing subscriptions and redemptions, and updating books and records for a fund.



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