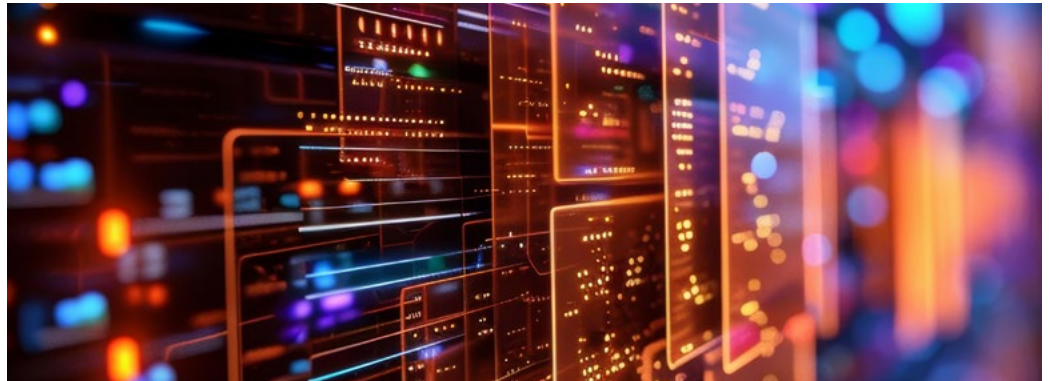


Perspective from
Franklin Templeton
Industry Advisory Services

Modernizing financial infrastructure with payments technology

Applying the same technology being explored by payments to today's 50-year-old financial market infrastructure and moving toward having money and assets on the same rails holds out the prospect of significant cost, accuracy and efficiency improvements.

November 2024



*This is the third article in the Future of Investing series, drawing insights from our annual industry-wide survey, *The Future of Investing*.¹ The Overview summarizing the top 10 key findings can be found [here](#) along with a series of articles, each exploring a key finding in more depth.*

Efforts to move cross-border payments onto crypto-inspired rails are advancing from pilot to minimum viable product phases across many regions of the world. While initiatives to move tradable assets onto these same rails are lagging, the speed of change is accelerating. The trajectory of the asset management industry points to today's financial market infrastructure migrating over time onto the same blockchain rails that the payment industry is adopting. This would significantly change the way that the global securities and fund industry operates.

Re-platforming the traditional financial market infrastructure has the potential to create significant operational efficiency in capital markets at a time when global asset management firms have seen, on average, an 80% increase in their net operating costs between 2010 and 2023, and a simultaneous 15% fall in their revenues.² Crypto markets, on the other hand, based on new technology and without legacy systems, operate far more efficiently, effectively and openly and with far less friction than today's 50-year-old financial market infrastructure.

Today's financial ecosystem is built around a session-based approach that sees regionally and temporally distinct markets open and close at set intervals and where no trading takes place over weekends or national holidays. Contrast this with crypto markets which are global and trade 24 hours a day, seven days a week, 365 days a year. Unlike crypto markets, where anyone can participate if they have access to an internet connection, only registered broker-dealers and market-makers can directly access the infrastructure of today's financial markets and trade securities, and these entities act as intermediaries, gate-keeping access for other participants. In the crypto ecosystem, all data is on-chain and openly available, allowing for real-time data and valuations: In traditional markets, many investments (especially private ones) price only on an intermittent schedule, leading to prices that are out of sync with other portfolio holdings.

This problem of data asymmetry and its creation of reconciliation needs also presents itself during settlement. Broker-dealers settle their daily transactions on a netted basis via a process known as book-entry, which is facilitated by a centralized clearing house. A second set of investor records for the beneficial owner of transactions is maintained by each broker-dealer individually to show account-level holdings. These records must be reconciled across firms, a process that inevitably results in some trade details not matching and then requiring additional manual operational inquiry before they can be processed. Without issues, this process takes a minimum of one or more days after a transaction occurs. Mismatched trades may take several days to process and may even end up being cancelled.

“The traditional mutual fund industry is like your father's Oldsmobile. Nobody wants that. They want things that are going to end up in their digital wallet. We as an industry have not been able to unlock that yet.”

Asset Manager
>US\$1 trillion

Crypto markets avoid this issue by utilizing a wallet-based system where all assets are held on a blockchain and are always visible to all nodes that operate on that chain. These nodes process transactions as they occur, matching buyer and seller records in real-time and immediately rejecting any transactions if details are not aligned. Transactions that go through are settled as they are recorded with payments and assets being exchanged simultaneously.

The new crypto domain also utilizes “smart” technology to automate functions across the network, whereas operational teams in today's ecosystem work bi-laterally with limited automation. Smart contracts are programmable bits of templated code that can be read by all nodes and apps deployed on a blockchain. These technologies can monitor specific data triggers and then independently initiate and complete predetermined activities without human intervention. Increasingly, these offerings are being combined with artificial intelligence (AI) to enable decision-making on whether some conditionality may need to be considered before automatically invoking the encoded triggers. This promises increasingly intelligent automation and interoperability.

Finally, the cryptographically protected digital wallet that central bank digital currencies are already using has the potential to become a key part of the financial infrastructure. Unlike today's payment wallets that are simply a masked interface to a credit card or bank account, the cryptographically protected wallet is a piece of software able to securely hold any digital asset. This allows for a single view of a portfolio and its constituent holdings. It also allows wallet holders to directly access and utilize any asset in their wallet at will, transferring it in real-time to other wallets.

Market-leading asset managers are already deploying and managing regulated products using these new crypto-inspired technologies. J.P. Morgan's (JPM) Onyx network has tokenized US Treasury bonds, mortgage-backed securities and cash using JPM Coin and has processed over US\$900 billion in intra-day repos using tokenized collateral resulting in savings of US\$20 million a year.³ Goldman Sachs has created a digital securities platform on the Canton Network called GS DAP, and after having completed pilots with the European Investment Bank in 2021 and 2022, has announced plans to launch three tokenization projects by the end of 2024 in conjunction with major clients.⁴ iCapital has also created new offerings on the Canton Network to facilitate the issuance and administration of private funds with UBS being the first firm to launch a fund on the new platform in May 2024.⁵

While those efforts were created on private blockchains, other firms are deploying their offerings on public blockchains. Franklin Templeton has created a blockchain-based transfer agent system that maintains tokenized shareholder records for its US government money market fund across multiple public blockchains, having initially launched on the Stellar network in 2022, followed by the Polygon network in 2023, and most recently the Avalanche, Arbitrum and Aptos chains in 2024.⁶ BlackRock announced the launch of its first tokenized money market fund on the Ethereum network in the first quarter of 2024.⁷ Guggenheim Treasury Securities, a subsidiary of Guggenheim Capital, issued US\$20 million worth of digital commercial paper on Ethereum.⁸

“ Tradfi entrants coming into the space is an important step in the maturity of crypto. When leading institutions do so much and talk so positively about digital assets it gives it an aura of legitimacy. Franklin Templeton and BlackRock are not in this because of the hype or because they got duped or they don't understand how finance works.”

Academic/Author

Some of these firms, along with a broader set of asset managers, are engaging in regulatory sandboxes alongside other traditional intermediaries to see how new capabilities might be brought inside the regulatory perimeter. As part of the Monetary Authority of Singapore *Project Guardian* initiative, J.P. Morgan, WisdomTree and Apollo completed a proof-of-concept using a LayerZero protocol to integrate with the Avalanche blockchain to build a diversified, multi-token portfolio.⁹ SBI Digital Markets has partnered with 21X to list its Asian tokenized securities on 21X's distributed ledger technology (DLT)-based exchange that supports matching, trading and settlement of assets on a public blockchain as part of the European Union's DLT Pilot Regime.¹⁰

Efforts by global associations and financial market infrastructure organizations are furthering the push for standards and guidelines. In December 2022, the Basel Committee on Banking Supervision published a document laying out a comprehensive framework for the treatment of crypto asset exposures that will become effective in January 2025.¹¹ In May 2024, the Depository Trust & Clearing Corporation, Clearstream, and Euroclear, in collaboration with the Boston Consulting Group, unveiled a blueprint for establishing an industry-wide digital asset ecosystem to drive acceptance of tokenized assets.¹²

The Atlantic Council's cryptocurrency regulation tracker showed that in 2024, 70% of the countries they reviewed are in the process of making substantial changes in their regulatory framework¹³ to help bring these new technologies and assets into the mainstream.

Having these new capabilities could address many of the operational challenges driving costs in the industry today. Margin pressures are making it increasingly difficult for mid- and small-sized managers to keep up with rising operational, portfolio management and client demands. In 2010 in the United States, the world's largest investment market, the top 10 largest fund managers already captured 91% of the industry's net positive flows into passive mutual funds and 55% of the industry's positive net flows into actively managed mutual funds. By 2023, that concentration had increased to 67% of active flows and 95% of passive flows.¹⁴

Even the largest firms, however, are struggling to meet service levels for increasingly complex and multi-asset portfolios. Different asset types are processed on separate sets of systems, requiring dedicated operations teams that often cannot work cross-product. Many firms have asset-class-specific trading desks and legacy order management and portfolio management systems. Direct engagement with exchange-traded fund (ETF) issuers and authorized participants is becoming increasingly common. Firms with global operations must often wait for batch-processed updates, leaving some regions working off stale information until late in their trading day. Those managers incorporating alternative fund offerings alongside public securities funds often run those affiliates as standalone entities, requiring yet more resources. Many asset managers are poorly positioned to handle the bespoke data elements, processes and model-based pricing of privately valued funds. This results in delays in the updating of firm-wide risk and reporting systems.

Whereas investment management operations pre-2000 focused primarily on centralized financial market infrastructure providers, today's asset managers are having to work across a far broader set of intermediaries and partners; plug into a growing number of clearing, settlement and processing venues and systems; support a more varied set of processes; and manage a more extensive array of data.

As shown in Exhibit 1, moving the industry onto the same crypto-inspired infrastructure that global central and commercial banks are deploying holds out the prospect of mitigating many of today's most pressing portfolio challenges and frictions.

Exhibit 1: Today's Challenges vs. Potential Crypto Solutions

| Portfolio Needs | Today's Challenge | Crypto Solutions |
|--|--|---|
| View the Entirety of the Portfolio's Holdings | <ul style="list-style-type: none"> Asset-class-specific systems make aggregating positions difficult Account structures split investor holdings and require aggregation Data elements are often not standardized across investment types Valuation methodologies and timing differ for various assets | <ul style="list-style-type: none"> All assets co-mingled in cryptographically protected wallet All assets valued in real-time |
| Access and Utilize Each Portfolio Holding | <ul style="list-style-type: none"> Activities are limited to market hours in each region Clearing and settlement times vary by asset and extend past trade date Pricing on collective funds is not determined until end of day Owners of collective funds hold shares, no rights to underlying assets | <ul style="list-style-type: none"> Markets trade 24/7/365 Cash and assets move in real-time Holders control access and uses of assets in their wallet |
| Optimize or Hedge Portfolio Exposures | <ul style="list-style-type: none"> Difficult to analyze portfolio risks in real-time and across all holdings Derivatives and structured trading is limited to qualified investors Using leverage is limited to qualified investors Investors must be able to post and manage collateral Key activities may need to refer to terms held in bilateral agreements Managing the cost and tax basis for many investments is a challenge | <ul style="list-style-type: none"> All investors can execute derivative transactions All investors can choose to leverage their positions Smart contracts automate the management of agreement terms |
| Access Liquidity of Assets Held in Portfolio | <ul style="list-style-type: none"> Most assets must be liquidated and are not transferrable Many assets must be liquidated in full rather than selling just a portion Certain assets have designated lockup or tender periods Many funds set limits on amount that can be liquidated at one time | <ul style="list-style-type: none"> Assets can be fractionalized and ownership can be shared Rights associated with ownership transfer along with transactions |
| Generate Additional Yield from Assets | <ul style="list-style-type: none"> Yields on uninvested cash flow to fund manager, not investor Professionals, not investors, gain from adding liquidity to exchanges Few investors have an ability to directly lend their own assets Securities lenders share only a portion of their fees with supplier | <ul style="list-style-type: none"> All investors can stake, lend or join liquidity pools to earn returns Fees are distributed directly to investors based on contribution |

Source: Franklin Templeton Industry Advisory Services. For illustrative purposes only.

“Financial intermediaries are providing trust as a service. Blockchain democratizes trust as a service through a distributed trust model. Blockchain could eat financial intermediaries’ lunch.”

Wealth Manager
>US\$1 trillion

This upgraded infrastructure will likely not just radically increase efficiency and decrease costs, but it could also expand the range of services that asset managers can offer as well as change the way they conduct, and even the focus of, their business. Whereas today’s financial market infrastructure comprises a series of key intermediaries and service providers, the future financial market infrastructure may instead consist of shared utilities that allow peer-to-peer engagement.

In our next article in this *Future of Investing* series we examine how increasing “portability” of assets in both public and private markets is changing the way that portfolios are managed, and we start to lay out the industry’s pathway to the future.

For more information or to request a presentation on the 2024/25 Future of Investing findings, please contact your Franklin Templeton representative or reach us directly at industryadvisoryservices@franklintempleton.com.

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Endnotes

1. On an annual basis, Franklin Templeton’s Industry Advisory Services team conducts off-the-record, unscripted interviews of leaders across the financial services industry. This year, we were fortunate enough to hear from 85 leading thinkers controlling over US\$50.1 trillion of assets under management across the financial services industry about their views on the future of investing between March and September of 2024. Input came from a broad cross-section of the industry—asset owners, private banks, wealth managers, consultants, investment managers, crypto firms, academics, industry leaders and fintech firms. Conversations took place formally as part of free-ranging, qualitative, off-the-record, survey interviews, and informally during one-on-one sessions where the implications and plans for each organization are discussed and explored. Each of these inputs added to an emerging picture of an industry that is changing rapidly and across multiple dimensions. Interviews were conducted globally with about two-thirds of discussions held with leaders of firms based in the United States, and the other third spread between Europe and Asia.
2. Source: Kitonyi, Nicholas. “JPMorgan’s Digital Assets Product Onyx Processing Up to \$2B Daily.” *NFTgators*. October 5, 2023.
3. Ibid.
4. Source: Schwartz, Leo. “Goldman Sachs to launch three tokenization projects by end of year, says digital assets chief.” *Fortune* published via Yahoo!Finance. July 10, 2024.
5. Source: “iCapital® Launches First Fund on Firm’s New Distributed Ledger Technology.” *iCapital*. May 23, 2024.
6. Source: Braun, Helene. “Franklin Templeton Adds Aptos Blockchain to Support Tokenized Money Market Fund.” *Cointelegraph*. October 2, 2024.
7. Source: Canny, Will. “BlackRock’s New Tokenized Fund Brings TradFi, Crypto Closer: Bernstein.” *CoinDesk*. March 26, 2024.
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10. Source: “SBI DM partners 21X to list tokenized securities on EU DLT exchange.” *Ledger Insights*. September 26, 2024.
11. Source: Francis, James B. and Peter Simcox. “BIS Prudential Treatment of Cryptoasset Exposures and Mandatory Capital Reporting for Financial Institutions.” *CRB Monitor*. March 7, 2024.
12. Source: “Framework to Advance Adoption of Digital Assets.” *Euroclear*. May 29, 2024.
13. Source: “Cryptocurrency Regulation Tracker.” *Atlantic Council*. Accessed September 19, 2024.
14. Ibid.

Curated glossary of relevant terms

Blockchain

A blockchain is a digital record or ledger of transactions, duplicated and distributed across an entire network of computer systems. Blockchains represent complete records of all transactions ever performed within that system. Every node in the blockchain network has a real-time, simultaneously updating copy of this ledger. Every node sees new blocks of transactions being appended to the existing chain of verified blocks and could re-create the entire sequential history of transactions on that chain stretching back to the very first (genesis) trade on the ledger. Blockchain is sometimes described as “distributed ledger technology” or DLT.

Cryptocurrency

Cryptocurrency is a form of digital or virtual currency that uses cryptographic techniques to ensure security, making it nearly impossible to counterfeit or double-spend. Most cryptocurrencies operate on decentralized networks powered by blockchain technology, which is a distributed ledger maintained by a network of computers. Cryptocurrencies typically not issued by any central authority, making them theoretically resistant to government interference or manipulation.

Smart contracts

Smart contracts are self-executing contracts in the form of code that are housed on a blockchain. Just as a transaction is recorded on the blockchain, the terms of the transaction are also recorded on the blockchain.

Tokens

Tokens are used to facilitate payments, initiate services, bestow ownership, authorize voting, convey rights and transfer assets. Specialized tokens are used for each of these functions. Broadly, these specialized tokens can be broken down into two categories: cryptocurrency tokens and app-issued tokens.

Tokenization

Tokenization is the process of converting, through symbolic representation or encoded rule sets and attestations, something of value into a digital token that can be transacted on a blockchain. These tokens can represent tangible assets like gold, real estate and art, or intangible assets like voting rights, ownership rights or content licensing.

WHAT ARE THE RISKS?

All investments involve risks, including possible loss of principal.

Companies in the **technology sector** have historically been volatile due to the rapid pace of product change and development within the sector. **Artificial Intelligence** is subject to various risks, including, potentially rapid product obsolescence, theft, loss or destruction of cryptographic keys, the possibility that digital asset technologies may never be fully implemented, cybersecurity risk, conflicting intellectual property claims, and inconsistent and changing regulations.

Blockchain and cryptocurrency investments are subject to various risks, including inability to develop digital asset applications or to capitalize on those applications, theft, loss or destruction of cryptographic keys, the possibility that digital asset technologies may never be fully implemented, cybersecurity risk, conflicting intellectual property claims, and inconsistent and changing regulations. Speculative trading in bitcoins and other forms of cryptocurrencies, many of which have exhibited extreme price volatility, carries significant risk; an investor can lose the entire amount of their investment. Blockchain technology is a new and relatively untested technology and may never be implemented to a scale that provides identifiable benefits. If a cryptocurrency is deemed a security, it may be deemed to violate federal securities laws. There may be a limited or no secondary market for cryptocurrencies.

Digital assets are subject to risks relating to immature and rapidly developing technology, security vulnerabilities of this technology (such as theft, loss, or destruction of cryptographic keys), conflicting intellectual property claims, credit risk of digital asset exchanges, regulatory uncertainty, high volatility in their value/price, unclear acceptance by users and global marketplaces, and manipulation or fraud. Portfolio managers, service providers to the portfolios and other market participants increasingly depend on complex information technology and communications systems to conduct business functions. These systems are subject to a number of different threats or risks that could adversely affect the portfolio and their investors, despite the efforts of the portfolio managers and service providers to adopt technologies, processes and practices intended to mitigate these risks and protect the security of their computer systems, software, networks and other technology assets, as well as the confidentiality, integrity and availability of information belonging to the portfolios and their investors.

ETFs trade like stocks, fluctuate in market value and may trade above or below the ETF's net asset value. Brokerage commissions and ETF expenses will reduce returns. ETF shares may be bought or sold throughout the day at their market price on the exchange on which they are listed. However, there can be no guarantee that an active trading market for ETF shares will be developed or maintained or that their listing will continue or remain unchanged. While the shares of ETFs are tradable on secondary markets, they may not readily trade in all market conditions and may trade at significant discounts in periods of market stress.

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