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THE FUTURE OF INVESTING SERIES

Future of Asset Management

Perspective from
Franklin Templeton Industry Advisory Services

ETFs and the pathway to real-world asset tokenization

"ETF-ization" of assets is likely to be the first step on the pathway to real-world asset tokenization

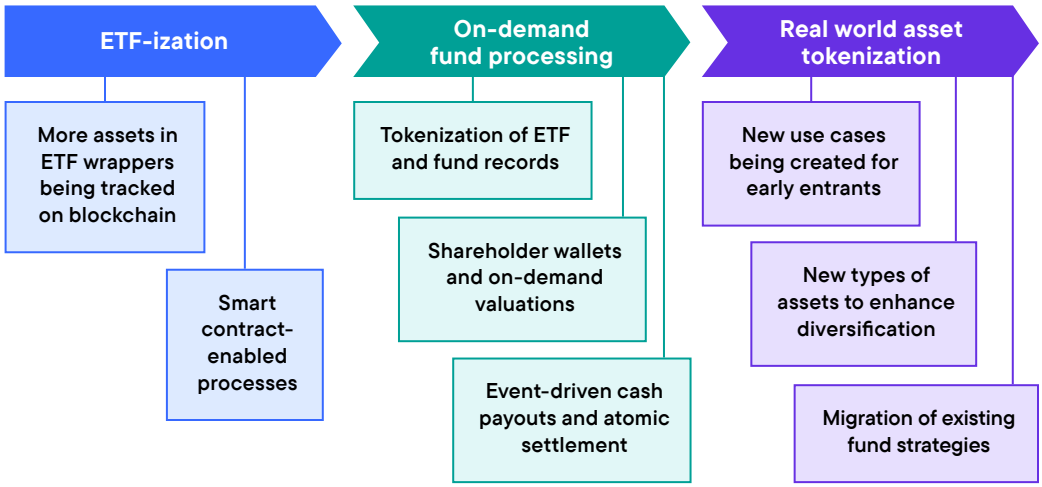
November 2024

This is the fifth 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.

However large and widespread the cost and efficiency advantages of adopting new technology, current technology and systems are too entrenched to be replaced wholesale. This is limiting the ability of the industry to tokenize "real world assets," i.e., traditional assets, such as equities, bonds and funds. Instead, based on feedback from survey respondents, we anticipate a multi-stage pathway to the migration of exposures, processes and ultimately instruments to tokenized forms able to run on blockchain rails. While the end goal will be to move toward an ecosystem where tokenized assets are exchanged on the same rails as digital currencies, there will likely be several intermediate steps. This pathway will be marked by key milestones in the coming years as shown in the following exhibit and unpacked in this article.

The first stage—the "ETF-ization" of the industry—is already underway, but as the new crypto-inspired infrastructure is being built and regulations being defined, there is likely to be a growing push to place more assets into exchange-traded fund (ETF) wrappers. As noted in Optimizing portfolio returns with new investing models, ETFs are being used to facilitate the efficient transport of sets of securities or assets and allow non-traditional assets to be processed and commingled in portfolios with traditional offerings. This can be seen as a steppingstone toward the even greater portability that tokenization would enable.

Envisioned Pathway to New Financial Ecosystem



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

> **"At the end of the day, ETF is just a wrapper and can be associated to whatever strategy you want. And as a wrapper, tokenization is even better."**
>
> **Asset Manager**
> <US$500 billion

ETFs can be created under a variety of regulatory guidelines and offer significant flexibility. BlackRock—the world's largest ETF provider—recently bought Preqin, the leading private markets data provider,[2] which could enable the creation and embedding of exclusive indexes into new types of private asset ETF exposures. State Street Global Advisors and Apollo Global Management announced a proposal for an ETF that invests in both public and private credit. A proposal for a private credit collateralized loan obligation ETF was put forward just a few days later by BondBloxx, a credit-oriented ETF issuer.[3]

As noted earlier, there are also already a variety of exchange-traded products (ETPs) that provide exposure to gold and other commodities. The SPDR Gold Trust ETF and iShares Gold Trust ETF have over US$100 billion in assets according to data from ETF.com.[4] The Investment Company Institute estimates that total net assets held in commodity ETPs more than doubled in the last four years.[5]

The inclusion of spot bitcoin into an ETP wrapper in 2024 resulted in the most successful launch of a new ETP ever in January 2024.[6] Nine months later, the total market cap across the top 11 offerings totaled more than US$49 billion.[7] In September 2024, the US Securities and Exchange Commission approved the listing and trading of options for Blackrock's spot bitcoin ETP (iShares Bitcoin Trust).[8]

One of the keys to enabling new types of ETF products is the ability to track ownership of the underlying assets that are being held in the vehicle. Today's securities processing infrastructure provides a ready ecosystem to facilitate such tracking for equities and bonds. As more types of assets are included in ETFs, however, the challenge grows. The ability to identify the holder or custodian of the actual asset and the ability to verify its safekeeping are critical. Already, the launch of spot bitcoin and Ethereum ETPs has forced traditional financial institutions to add new crypto-enabled partners into their operations. For these structures, the actual supplies of spot cryptocurrency are being held in custody in cryptographically protected wallets on blockchain to help track the underlying assets and provide "proof of holdings."

This is an important milestone in how today's financial ecosystem operates. Collaborations across crypto-native firms and traditional financial organizations are yielding important lessons for the industry and for regulators on the mechanics of the new blockchain-affiliated technologies. It is creating real-time use cases that introduce new concepts such as

> **There are good lessons learned from the bitcoin ETF. We have identified a lot of pressure points around the movements of money in and out of fiat and the dusting."**
>
> **Asset Manager**
> >US$1.0 trillion

"dusting" into the industry's vernacular. This is a new type of account attack where unknown entities send tiny amounts of cryptocurrency known as dust to a cryptographically protected wallet to uncover the identity of the wallet's owner. Learning to identify and deal with these new practices will be an important key to more widespread use of the new technologies.

Such lessons and the affiliations being forged between digitally native and traditional financial firms, would pave the pathway for the industry extend its focus and use the ETF wrapper to include many other types of digital and physical assets.

For example, art can be an effective diversification tool, exhibiting a low correlation to returns from traditional security holdings and can provide stability amid market shifts. While there are private art funds such as MasterWorks that can acquire blue-chip art at auctions on behalf of its investors, there are, at time of writing, no art ETFs. Costs on funds like MasterWorks are high in part because they create a holding company for each piece of art they acquire.[9] Tokenizing the art and using blockchain to administer and provide proof-of-holdings for the asset could substantially lower the costs of running a fund and provide transparency for investors.

Perhaps more importantly, moving aspects of the ETF process onto blockchain could significantly enhance operational functions and enable new types of automation. A natural starting point might be the tokenization of ETF shares. The atomic settlement enabled by having tokenized versions of shares and payments on the same blockchain would reduce counterparty risk, enhance liquidity and allow the use of collateral across time zones. Moreover, it would offer the option of fractionalizing shares as well as breaking out interest payments, dividend streams and voting rights into separate assets.[10]

Smart contracts could be designed to automate processes that involve tokenized ETF shares or assets. Activities such as the preparation and transmission of the asset file, or Portfolio Composition File—which is akin to the DNA or the blueprint for the ETF—could be programmed into a smart contract construct. Arbitrage pricing models that keep the price of the ETF and its underlying assets in synch could be embedded into smart contracts and run as an algorithm until certain volatility or spread parameters are observed at which point the control could be passed back to the authorized participant team. Key aspects of the create/redeem process may begin to move on-chain. These upgraded processes could be easily ingested by any blockchain—public or private—that are being developed in parallel to ETF advances.

> **I see a lot of potential at the intersection of AI and crypto. A lot of exploration is likely to take place here. I think we will start to see fully automated workflow for on-chain operations."**
>
> **Hedge Fund/Private Investment Manager**

As the ETF-ization of the industry proceeds, a parallel set of advances are also likely to occur around the securities processing infrastructure. Several industry participants are already working to improve activities across the broader set of securities and funds using blockchain technologies, making them accessible 24/7/365 and enabling processing on demand.

J.P. Morgan's private Onyx blockchain has developed a new offering called the Tokenized Collateral Network. This facility has been used to tokenize shares in money market funds for both BlackRock and Fidelity. BlackRock's inaugural trade on the network in October 2023 saw its tokenized shares transferred to Barclays as collateral for an over-the-counter derivatives trade.[11] HSBC has introduced their private blockchain, Orion, that allows clients to create, settle and record digital bonds as well as facilitate tokenized ownership of physical gold. The European Investment Bank used this platform to launch its first-ever digital bond issuance in pounds sterling.[12]

> **“Tokenization will have a profound effect on our use of capital and liquidity. If I can redeploy capital to higher ROE use cases then everyone benefits.”**
>
> **Asset Manager**
> >US$1.0 trillion

Broader, industry-wide initiatives are also emerging. The Monetary Authority of Singapore is collaborating with international policymakers and financial institutions including BNY Mellon, DBS, J.P. Morgan and MUFG to explore the design of an open, digital infrastructure that will host tokenized financial assets and applications. This new Global Layer One initiative would facilitate seamless cross-border transactions and enable tokenized assets to be traded across global liquidity pools, while meeting relevant regulatory requirements and guidelines.[13]

Each of these initiatives, as well as those other market leaders are undertaking, would generate immediate benefits, in our opinion. Today, mutual funds and UCITS trade shares back and forth during the trading session—not the underlying assets—and shares are valued only once per day after the close of the session. Tokenizing these fund records would initially allow for more frequent valuations (e.g., hourly) and then on-demand valuation, leading eventually to continuous real-time valuation.

Investment payouts are also likely to become more event-driven. Currently, interest on yield-generating assets or dividend payments is calculated and credited to shareholders at the start of the day’s trading session and paid out only once per 24-hour window. In an upgraded ecosystem, interest payments could be calculated and paid out on demand each time a block is added to the chain’s ledger. This would be an event-driven approach. Like valuations, these improvements are likely to first happen at increasingly frequent intervals and ultimately instantly upon demand.

Facilitating real-time investment valuations and payouts would help put into place the infrastructure and processes required to eventually allow for atomic settlement, i.e., the instant and simultaneous exchange of assets between parties. For the first time ever, both payments and assets would share the same transaction rails rather than working across parallel ecosystems. If realized, this advancement would remove the need for “clearing” transactions which are often disjointed, as the book-entry approach would be replaced with a transaction-by-transaction approach.

> **“We are seeing active funds moving into an ETF chassis and then eventually up into a tokenized structure. There is an acknowledgement that all intellectual property should be leveraging that ETF chassis and then the chassis itself should evolve to be tokenized.”**
>
> **Asset Manager**
> >US$1.0 trillion

Once these ETF and processing advances are underway and the outlines of the new financial market infrastructure become clearer, the final step on the pathway could be realized. With a new backbone in place, it will become increasingly easy to justify the wholesale tokenization of real-world assets. While there have been many individual pilots that show the potential of tokenizing assets, such as bonds, mutual funds and UCITS, the impetus to broadly re-platform such offerings is currently lacking. This could change if the processing of ETFs and funds begins to become more blockchain-based.

Advances in these areas would by necessity require cryptographically protected wallets. As noted in Applying the technology being explored in payments to modernize financial markets infrastructure, such wallets might also solve many of the operational issues evident with today’s approach. To unlock these benefits, we could see a migration of strategies into tokenized wrappers just as we are seeing with the growth of active ETFs today. This process could start with the creation of a new tokenized share class that then provides a destination to more broadly transfer in shareholders.

Beyond the securities and funds included in the real-world asset category, it is possible to consider other types of real-world assets and ownership rights being embedded in a token wrapper. Many assets are investible today but are not easily traded. We expect an entire category of “cultural assets” to become portfolio holdings in the foreseeable future.[14]

> **“We are likely to see a growing set of tokenized real-world assets. This may take a little more time, but the day when we are having assets only issued and managed on chain is fast approaching.”**
>
> **Hedge Fund/Private Investment Manager**

For example, the tokenization of luxury cars is projected to reach a value of US$10 billion by 2025.[15] Luxury watches are being tokenized with brands like Rolex, Richard Mille and Beyer Chronometrie offering their vintage models as asset-backed non-fungible tokens (NFTs). Louis Vuitton also entered the market in 2023 with Via Treasure Trunks, an NFT collection linked to physical replicas and exclusive benefits. For roughly US$39,000, holders received a physical trunk replica and access to future products and events. The NFTs are non-transferable but grant access to future collections via digital keys.[16] While these examples highlight innovative ways to create new assets, it should be noted generally that investing in NFTs is considered speculative and involves substantial risks, as ownership rights lack legal recognition and enforceability in some jurisdictions.[17]

Perhaps more importantly, there is potential to tokenize intangible assets. Tokenization of patents, copyrights and other forms of intellectual property could unlock significant new investment opportunities.[18] The estimated value of intangible assets in the S&P 500 Index alone was US$21 trillion in 2023, and these assets represented five times the value of the firms’ tangible holdings such as real estate and equipment.[19]

The range of assets that might be included in future portfolios is tremendous. These assets, as well as the numerous forms of money and money-like instruments, may sit side by side with other assets in a future investor’s cryptographically protected wallet, offering new challenges and opportunities for the industry. In the next two articles in our Future of Investing series, we examine the Portfolio of 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 investment management 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: "BlackRock to Acquire Preqin, Leading Private Markets Data Solutions Provider." BlackRock. June 30, 2024.
3. Source: Celarier, Michelle. "Apollo-SSGA ETF Is Groundbreaking—But Questions on Valuation, Self-Dealing Remain." Institutional Investor. September 26, 2024.
4. Source: "Gold ETFs (List)." etf.com. Accessed on October 1, 2024.
5. Source: Longley, Alex. "Commodity ETFs Pull in Most Cash Since 2022 on Sticky Inflation." Bloomberg. April 30, 2024.
6. Source: Weber, Joel and Balchunas, Eric. "It's Been a Banner Year for ETFs." Bloomberg. June 20, 2024.
7. Source: "Bitcoin ETF Tracker." Blockworks. As of September 29, 2024.
8. Source: "SEC approves BlackRock's spot bitcoin ETF options listing." Reuters. September 20, 2024.
9. Source: Levy, Adam. "Investing in Art Stocks." The Motley Fool. April 5, 2024.
10. Source: Biancamano, Jay, Frank Koudelka and Jeff Sardinha. "Why digital tokenization is a priority for the ETF industry." State Street. July 2023.
11. Source: Allison, Ian. "Fidelity International Tokenizes Money Market fund on JPMorgan's Blockchain." CoinDesk. June 10, 2024.
12. Source: "HSBC Orion—The Global Solution for Digital Assets." HSBC. Accessed October 2024.
13. Source: "MAS Reveals Next Stage of Project Guardian." The Full FX. November 18, 2023.
14. There is no assurance that any estimate, forecast or projection will be realized.
15. Source: Cole, Jordan. "The Growing Trend of Tokenizing High-Value Collectibles." Blockapps. April 12, 2024. There is no assurance that any estimate, forecast or projection will be realized.
16. Source: McDowell, Maghan. "Louis Vuitton NFTs are back with a €7,900 phygital varsity jacket." Vogue Business. April 22, 2024.
17. The legal status of NFTs remains abstract and highly risky. NFTs are often governed by smart contracts and enforceability of these smart contracts can depend on whether they meet the legal requirements of a valid contract in the relevant jurisdiction.
18. Legal recognition of tokenization as a form of ownership is inconsistent across jurisdictions and involves significant risk as legal frameworks gradually evolve. It is essential to consult with legal experts who are familiar with the specific laws and regulations in the relevant jurisdiction to understand the legal implications of tokenization in that context.
19. Source: "Tokenized Intellectual Property Markets – A Quadrillion Dollar Opportunity." Medium. April 17, 2024.

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.

Spot ETP
A spot ETP is an exchange-traded product that tracks the current market price of an underlying asset, such as a commodity, cryptocurrency, or index. Instead of holding the asset directly, investors buy shares of the ETP, which represents a portion of the asset held by the fund. This allows investors to gain exposure to the asset's price movements without needing to purchase, store, or manage the asset themselves. Spot ETPs are traded on traditional stock exchanges during regular market hours, providing a regulated and convenient way to invest in various assets with benefits such as enhanced security and ease of access. However, they may come with higher fees, potential tracking errors, and are limited by traditional market trading hours, unlike the 24/7 cryptocurrency markets. A Spot Bitcoin ETP tracks Bitcoin's market price and a spot Ethereum ETP tracks Ethereum's market price. **These products are not an investment company registered under the Investment Company Act of 1940 (1940 Act), and therefore are not subject to the same regulatory requirements as mutual funds or ETFs registered under the 1940 Act.**

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.

UCITS
Undertakings for Collective Investment in Transferable Securities (UCITS) is a regulatory framework by the European Commission for managing and selling mutual funds across the EU. Similar to US mutual funds, UCITS are registered and regulated in EU member states, with guidance from the European Commission to ensure their safety and availability for EU citizens.

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.

Non-fungible token (NFT) investments carry substantial risks. The market is volatile, liquidity can be challenging, and regulations are evolving. Technological risks, such as smart contract bugs, hacking, and platform failures, can result in the loss of an NFT or its value. Transactions may also involve counterparty risks, including default by the other party. Unlike stocks or bonds, NFTs lack intrinsic value, with their worth solely based on market demand and sentiment.

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