



Innovation in Financial Markets and Financial Market Infrastructure

A Landscape Review

June 2026

Prepared by the Digital Finance Cooperative Research Centre for the
Australian Securities and Investments Commission

DFCRC DIGITAL
FINANCE
CRC

About this report

This report was prepared for the Australian Securities and Investments Commission (ASIC) by the Digital Finance Cooperative Research Centre (DFCRC).

About the Digital Finance Cooperative Research Centre

As a participant in the Australian Government's Cooperative Research Centres Program, DFCRC's mission is to unlock the significant economic potential of digital finance innovation for Australia by bringing together industry, government and research.

Contributors

- Dustin Weiss
- Franziska Gmeiner
- Maximilian Brandl
- Talis Putniņš

Disclaimer

This Report has been prepared by Digital Finance CRC Limited (DFCRC) for ASIC in accordance with the agreement between them. DFCRC has exercised all reasonable skill and care and is not responsible and will not be liable to any other person in relation to any matter related to or arising from any matter dealt with in this Report or for any loss or damage suffered by any other person in connection with this Report.

For ASIC purposes, this is ASIC Report 835 and is available on the ASIC website at asic.gov.au.

Executive summary

Innovation in financial markets and market infrastructure is currently occurring at a pace that exceeds historical norms. This reflects the early-stage adoption of a set of technologies, notably distributed ledger technology (DLT), asset tokenisation, and artificial intelligence (AI). These technologies are reshaping how assets are issued, traded, settled, and held. They are expanding the set of tradable instruments, altering trading and settlement processes, and transforming how investors access markets and make decisions. At the same time, the boundaries between traditional exchanges, post-trade infrastructure providers, technology platforms, and even crypto-native venues are becoming increasingly blurred.

This report examines how these developments are unfolding across major jurisdictions and the implications for the future of financial markets and Australian regulators. Drawing on evidence from the United States, Canada, the United Kingdom, the European Union, Switzerland, Hong Kong, and Singapore, it highlights both how regulators are responding to these changes and, in many cases, actively shaping their direction.

What is changing

Innovation in financial markets can be grouped into four interrelated areas.

1. Traded assets are evolving

Globally, real-world assets are increasingly being tokenised, transforming how they are recorded, transferred, and traded. Tokenisation of money has progressed the most, with stablecoins exceeding US\$300 billion in circulation and annual on-chain transfer activity estimated at as much as US\$35 trillion, driven by demand for programmable, tokenised settlement assets. Deposit tokens and wholesale central bank digital currencies (CBDCs), remain at an earlier stage but are advancing. Beyond money, tokenisation is gaining traction in asset classes where operational frictions are most acute, particularly fixed income, money market funds (MMFs) (approximately US\$10 billion outstanding), and repurchase agreements (volume exceeding US\$1 trillion p.a. on tokenised platforms). Activity in public equities remains more limited, though momentum is building as major exchanges file proposals for tokenised equity products.

In addition to enabling new market structures and settlement mechanisms, tokenisation is changing how assets are used in financial services more generally, including embedding compliance, automating asset servicing, and real-time collateral substitution. Thus, tokenisation is changing what a financial instrument can do, not merely how it is held.

At the same time, these technologies have given rise to new tradable assets such as crypto assets with no clear issuer and backing structure, and driven growth in other new assets such as perpetual futures and event contracts that trade in prediction markets.

2. New market architectures are emerging

The separation between trading, clearing, settlement, custody, and record-keeping is being reconfigured as trading platforms built on DLT tend to integrate and simultaneously perform some of these functions. This is being done to eliminate some risks, costs, and inefficiencies. While this represents a significant shift from current market structures where these functions tend to be performed by distinct intermediaries under different regulatory regimes, historically these functions were not always separate.

For example, market platforms are emerging in which trade execution and settlement occur simultaneously and atomically (as one inseparable function) through smart contracts. In these real-time settlement architectures, delivery of the asset and payment for it are executed synchronously on a shared ledger. By design, this eliminates settlement risk and materially reduces reliance on clearing or margin-based mechanisms to manage counterparty exposure. At the same time, these architectures raise new supervisory challenges, including accountability where market functions are embedded in code or distributed across multiple participants rather than performed by a clearly identifiable intermediary. They also raise new considerations about the trade-offs between different types of risk, because although they reduce or eliminate certain risks, they may introduce others.

Tokenisation also enables entirely new trading mechanisms, including decentralised exchanges (DEXs) and automated market makers (AMMs), where it is difficult or in some cases impossible to pinpoint an operator – the ‘market’ is software running on a distributed ledger platform maintained collectively by participants in a network. Among the novel properties of these new market types, they enable passive liquidity provision through automatically managed liquidity pools, which has the potential to reduce trading costs in many asset classes and change the breadth of participants supplying liquidity in markets.

In parallel, centralised crypto platforms are vertically integrating functions – combining brokerage, trading, custody, settlement and ancillary services. They are also expanding into traditional asset classes. The result is a bidirectional convergence: tokenised real-world assets (RWA) are moving onto crypto-native infrastructure, while crypto platforms are increasingly offering tokenised versions of traditional financial instruments, giving rise to ‘everything exchanges’ that span both ecosystems, despite differing regulatory requirements and disclosure standards.

3. Existing financial markets are evolving

Incumbent exchanges and infrastructures are progressively extending trading hours and compressing settlement cycles, driven by risk reduction, capital efficiency, global investor participation, and advances in digital infrastructure and real-time payments. Extended trading hours are being proposed or implemented in some markets, driven by various factors, including competitive pressure from markets that already operate on near-continuous models.

At the same time, settlement cycles are shortening (for example, from T+2 [two-day settlement] to T+1), reducing counterparty and liquidity risks, while placing greater demands on post-trade coordination and operational readiness. These developments largely reflect innovation within existing clearing, settlement, and custody frameworks, rather than tokenisation per se, although tokenised systems may provide one pathway for implementing more continuous processing and, over time, real-time settlement.

4. Approaches to trading, compliance and surveillance are changing, driven by AI and information technologies

AI is increasingly being embedded across the full market lifecycle, from adaptive order types, AI-driven portfolio construction, and execution algorithms at the trading layer, to predictive settlement analytics, machine-learning-based surveillance, and automated compliance in the back office.

While algorithmic trading is not new, the current wave represents a qualitative shift. AI systems are more complex, often operate with limited transparency or explainability, and increasingly adapt their behaviour in response to changing conditions. The emergence of agentic AI, being systems that autonomously design and execute trading strategies with limited human intervention, blurs the boundary between a sophisticated execution algorithm and an autonomously acting market participant.

At the same time, reliance on a concentrated set of model providers, data vendors, and cloud platforms raises the prospect that AI-related risks may become systemic. Data-driven technologies are also transforming compliance and supervision, enabling continuous oversight in place of periodic reporting, while a rapidly expanding ecosystem of alternative data sources is generating investment signals well beyond conventional financial statements and market prices.

These developments expand the scope and speed of decision-making in markets but also introduce challenges that existing regulatory frameworks were not designed to address. Concepts such as intent, causation, and individual accountability become harder to apply when significant trading decisions are made by adaptive systems rather than humans.

How regulators are responding to and supporting innovation

Regulatory approaches differ in detail but share two common threads: responding to the risks that innovation introduces and actively supporting and shaping the conditions under which innovation can develop.

Major jurisdictions are creating new regimes or adapting existing regulatory frameworks to accommodate tokenised assets and markets, and regulate the use of AI or modernising legacy infrastructure.

For example, the EU's Markets in Crypto-Assets Regulation (MiCA) establishes a comprehensive framework for stablecoins and crypto-asset service providers, while the Guiding and Establishing National Innovation for U.S. Stablecoins Act (GENIUS Act) in the United States introduces federal licensing and reserve requirements for stablecoins. Both regimes reflect a broader regulatory trend toward creating bespoke digital asset regimes. By contrast, Switzerland's DLT Act creates a dedicated licensing category for DLT trading facilities within the existing regulatory framework. Across jurisdictions, these initiatives bring digital assets and related services within regulatory perimeters through new regimes or by adapting existing regimes. At the same time, settlement cycle compression (now T+1 in the US, with the EU and UK targeting implementation by 2027) is acting as a regulatory forcing mechanism, accelerating post-trade modernisation by exposing the limits of legacy infrastructure. On AI, the EU's AI Act imposes binding requirements on high-risk systems, while the UK and US have adopted more principles-based and sector-specific approaches.

In supporting innovation, regulators and central banks have moved beyond policy statements and are increasingly providing operational pathways for financial market innovations to move from pilot to production, in some cases even actively being involved in the co-design of market infrastructure. This represents a notable shift in posture.

For example, the EU's DLT Pilot Regime provides a controlled environment for businesses to test combined trading and settlement models for tokenised securities under temporarily modified rules. The UK's Digital Securities Sandbox (DSS) offers a structured path from testing through to live activity and ultimately to a permanent licensing regime. In Asia, Singapore's Project Guardian has moved from pilots toward commercial-scale, cross-border tokenised asset transactions, while Hong Kong's Monetary Authority (HKMA) has launched sandbox programmes alongside the direct sovereign issuance of tokenised green bonds.

Central banks are also acting as infrastructure anchors, building interoperability bridges between real-time gross settlement systems and DLT platforms, building interchange facilities to promote interoperability of tokenised money, exploring wholesale CBDCs, and signalling that DLT-issued securities may be eligible as collateral in regulated markets. Several governments have introduced

direct incentive schemes to overcome first-mover disadvantages and accelerate ecosystem development. In parallel, regulators are enabling experimentation with AI in financial services. The FCA, for instance, has launched an AI Lab to help businesses test and adopt AI safely within supervised boundaries.

This dual posture (regulating risk while actively catalysing innovation) reflects a recognition that new markets and market infrastructure exhibit strong network and learning externalities. Without coordinated public-sector involvement, private businesses are likely to underinvest in early digital market infrastructure not only because they cannot fully capture the ecosystem-wide benefits of their experimentation, but also because of coordination failures among market participants and high upfront transition and integration costs amid regulatory and legal uncertainty.

Looking ahead

The evidence that modernising market infrastructure delivers material efficiency gains is now well established.

For example, the Digital Finance Cooperative Research Centre (DFCRC) estimates that digital finance innovations for real-world wholesale financial assets could generate gains of around US\$2.7 trillion per annum globally and AU\$24 billion annually in Australia. These estimates largely reflect material, solvable inefficiencies in existing markets and market infrastructures, including manual processing, fragmented record-keeping, duplication of reconciliations, settlement failures and constrained collateral mobility, that can be reduced through tokenisation, more automated processing, and digitalisation. Accordingly, the adoption of these improvements in market infrastructure is expected to continue to grow. Multiple forms of digital money are likely to co-exist, with stablecoins, deposit tokens and wholesale CBDCs each serving different functions. Beyond money, adoption is expected to continue to scale first in asset classes where the economic impact potential is most immediate and measurable. This includes MMFs, repos, and fixed income issuance, where gains translate directly into liquidity, balance-sheet, and collateral benefits.

Increasingly, tokenisation is extending into the most liquid and standardised segments of capital markets, with major stock exchanges now filing proposals to list tokenised equities and exchange-traded products. Over time, the structural advantages of programmability, atomic settlement, and real-time collateral mobility suggest native tokenised representations are likely to become the default for new issuance. In the interim, regulatory frameworks will need to accommodate the coexistence of tokenised and traditional assets across licensing, disclosure, market integrity, and custody.

For new market architectures, the most likely outcome is the coexistence of multiple models.

New digital financial market infrastructures (DFMIs) that combine trading and settlement, centralised platforms, and architectures linked to legacy systems are likely to grow in parallel, with incumbents now playing an important role in innovation besides fintech and crypto-native businesses. As these models scale, interoperability is likely to become a defining market-structure issue, both domestically and across borders. Concurrently, regulators are likely to supervise a more fragmented post-trade landscape, with settlement occurring across multiple infrastructures operating under differing technological, governance, and risk-management models.

Within existing markets, innovation is likely to remain largely incremental rather than transformational.

Settlement cycles are likely to continue to compress, but within the limits of legacy infrastructure. Moving materially beyond T+1 toward intraday or real-time settlement would require deeper changes to underlying trading, clearing and settlement architectures, rather than process optimisation alone. Extended trading hours are also likely to expand gradually, particularly where supported by global investor demand and competitive pressures, but broader adoption will depend on coordinated changes in clearing, settlement, market data, surveillance and downstream operations.

In trading approaches and compliance, the direction of change points toward greater automation, more personalised forms of intermediation, and increasingly continuous oversight.

Delegation of trading decisions is likely to deepen as adaptive and autonomous systems become more capable, while growing reliance on a relatively small number of AI models, data providers, and cloud platforms is elevating concentration risk from a business-level issue to a more systemic concern. In parallel, copy trading, social trading, and gamified interfaces are becoming more embedded in mainstream retail platforms, while direct indexing and customised portfolio products blur traditional distinctions between passive and active investment. On the supervisory side, more granular data and real-time monitoring tools are narrowing the boundary between business-level compliance and regulatory oversight, shifting supervision toward a more continuous, data-driven model.

Issues for Australia and ASIC to consider

The trends identified in this report have implications for Australia's regulatory and supervisory agencies in each of the four streams of innovation below.

Tradable asset innovation

Tokenised fixed-income products are likely to be among the first tokenised instruments to gain traction in Australia (besides tokenised money such as stablecoins), as demonstrated by Project Acacia, a joint DFRC and Reserve Bank of Australia (RBA) research project exploring the role of digital money in wholesale tokenised asset markets, though adoption will depend on parallel development of supporting market architectures. A key priority is clarifying whether distributed ledgers can operate as appropriate registries for issuance, which would support native tokenisation and shift away from digital twin models that limit regulatory visibility of ownership and settlement finality. Novel crypto-native products, such as perpetual futures and event contracts, typically offered to Australians through offshore venues, may sit outside existing perimeters and warrant closer attention.

New market architectures and types

The development of dedicated DFMI frameworks across major jurisdictions underscores the importance for Australia defining its own structured pathway. Without one, some innovation could migrate offshore and domestic participants risk falling behind in a fast-moving global sector. As the traditional linear sequence of trading, clearing, settlement and custody erodes, ASIC may need to consider how its regulatory architecture can adapt to DFMI models that do not map neatly onto existing licensing categories. The rise of 'everything exchange' models may also call for a shift from activity-by-activity supervision toward a more holistic assessment of integrated ecosystems and the risks arising from interactions between functions.

Innovations in existing markets

Most innovations in incumbent markets operate within existing structures, suggesting ASIC's current supervisory approach remains broadly appropriate. However, the international shift toward shorter settlement cycles creates pressure for Australia to articulate a credible pathway, with the main challenge lying in coordinated post-trade change across intermediaries. On incumbent modernisation and private tokenisation, the regulatory role lies less in creating new frameworks than in providing clear pathways within existing ones, including proactive guidance on when incumbent operators using new technologies and business models might fall within novel categories such as DFMIIs.

Innovation in trading approaches and compliance

Agentic AI, increasingly autonomous trading systems, and trading systems with limited explainability are hard to assess through traditional notions of trader intent or fixed algorithm design, placing pressure on ASIC's surveillance capability and requiring continued investment in data, analytics and technical expertise. Such trading systems also raise legal/enforcement questions about how to define and prove misconduct that is distinguished by intent, such as market manipulation.

In retail markets, the growth of gamification, copy trading and customisable indices raises the question of whether existing categories, such as execution-only brokerage, advice and portfolio management still fit where investor decisions are increasingly shaped by platform design and automated prompts. As businesses themselves lean more on AI for compliance and monitoring, ASIC may also consider building its own AI supervisory technology while staying alert to risks from vendor concentration and shared model infrastructure.

What ties the implications of the four streams together is the recognition that innovation in financial markets rarely respects existing regulatory boundaries. As new tradable assets, market architectures, trading approaches and regulatory and supervision technologies emerge, it might become less clear where regulatory responsibility sits, necessitating closer coordination between regulatory authorities domestically and across borders. Also important is strong engagement with industry. Dedicated regulatory working groups could provide an effective forum for such cooperation, while also signalling to industry a shared commitment to supporting innovation in Australia and unlocking the economic impact potential.

Table of contents

Executive summary	3
What is changing	3
How regulators are responding to and supporting innovation	5
Looking ahead	6
Issues for Australia and ASIC to consider	7
1. Introduction	11
1.1 Background and objective	11
1.2 Report scope	11
1.3 How to read this report	11
1.4 Methodology/approach	11
2. Taxonomy of innovations in markets	13
3. Tradable asset innovations	15
3.1 Tokenised real-world assets	15
3.2 Crypto assets	24
3.3 Perpetual futures	25
3.4 Event contracts	27
3.5 Developments in major jurisdictions	29
3.6 Regulators' response to and support for innovation	30
3.7 Outlook and issues for Australia and ASIC to consider	32
4. New market architectures and types	34
4.1 Digital Financial Market Infrastructures (DFMIs)	34
4.2 Decentralised exchanges	37
4.3 DLT registries	39
4.4 CEX and 'everything exchanges'	40
4.5 Developments in major jurisdictions	41
4.6 Regulators' response to and support for innovation	42
4.7 Outlook and issues for Australia and ASIC to consider	44
5. Innovation in existing markets	47
5.1 Settlement cycle compression	47
5.2 Private tokenisation initiatives	49
5.3 Extended trading hours	51
5.4 Developments in major jurisdictions	54
5.5 Regulators' response to and support for innovation	55
5.6 Outlook and issues for Australia and ASIC to consider	56

6. Innovation in trading approaches and compliance	58
6.1 Trading approaches	58
6.2 Compliance	65
6.3 Developments in major jurisdictions	67
6.4 Regulators' response and support for innovation	69
6.5 Outlook and issues for Australia and ASIC to consider	70
7. Conclusion and recommendations	73
8. References	75

1. Introduction

1.1 Background and objective

Innovation in financial markets is reshaping how assets are issued, traded, settled, and held, as well as how market participants access services across the capital-markets lifecycle. Advances in DLT, tokenisation, AI and information technology (IT) are driving structural change in both private- and public-sector market infrastructures. The implications extend from instrument design and issuance through to liquidity formation, risk management, collateral mobilisation, market integrity supervision and the organisation of core trade- and post-trade processes.

This report was prepared by the Digital Finance Cooperative Research Centre (DFCRC) to provide ASIC with a structured overview of innovation in financial markets across major international jurisdictions, with particular attention to how innovation trajectories differ across markets, the respective roles of DLT-based and AI-driven technologies, and where these innovations are likely to evolve.

1.2 Report scope

The report examines innovation across two overarching themes: Asset tokenisation enabled through DLTs and innovation in financial markets and market infrastructure. It covers seven jurisdictions: the US, Canada, the UK, the EU, Switzerland, Hong Kong, and Singapore. The analysis focuses on market innovation in the last decade.

1.3 How to read this report

This report provides a structured overview of the major innovation themes identified across global capital markets. Chapter 2 introduces the taxonomy used throughout the report and outlines the key drivers behind the innovations discussed in the subsequent chapters. The remainder of the report is structured thematically around four streams: tradable asset innovation (Chapter 3), new market architectures and types (Chapter 4), innovation in existing markets (Chapter 5), and innovation in trading approaches and compliance (Chapter 6). Each of these chapters examines the underlying drivers of innovation with reference to relevant academic literature, draws on concrete examples from both established incumbents and emerging players across major jurisdictions to illustrate the novelty and significance of each development, and explores the likely trajectory of market innovations in the coming years.

Within each chapter, the thematic discussion is complemented by three recurring sections.

'Developments in major jurisdictions' provides a comparative overview of how innovation is manifesting across the jurisdictions defined above. **'Regulators' response to and support for innovation'** examines how policymakers are both adapting regulatory frameworks to address new risks and actively supporting the conditions under which innovation can develop. **'Outlook and issues for Australia and ASIC to consider'** identifies the trends most likely to shape Australian markets and highlights areas where regulatory attention or action may be warranted.

1.4 Methodology/approach

This report is based on structured desk research covering regulatory publications, industry reports, academic literature, and public domain data. The analysis synthesises evidence from regulators, market operators, financial institutions, and international standard-setting bodies to identify key innovation themes, assess their maturity, and compare how they are manifesting across markets.

The approach is comparative and qualitative in nature. Rather than providing exhaustive technical detail, the report focuses on identifying common patterns, points of divergence, and emerging trends in the evolution of financial markets, post-trade infrastructure, and public-sector initiatives. Jurisdictional examples are used illustratively to anchor broader themes and to highlight differences in sequencing, implementation, and regulatory approaches.

In line with the report's objectives, the methodology focuses on developments that are already being implemented or are in the early stages of adoption, whilst also drawing on policy discussions in individual countries to contextualise likely future trajectories.

2. Taxonomy of innovations in markets

The innovations examined in this report can be organised into four areas:

1. **Tradable asset innovation** (Chapter 3): changes in how existing assets are represented and how they can be used, such as the tokenisation of existing real-world assets (RWAs), and the emergence and growth of new asset types, such as perpetual futures, event contracts which underpin prediction markets, and crypto.
2. **New market architectures and types** (Chapter 4): changes in how markets themselves are structured, including DFMLs, decentralised exchanges (DEX), and vertically integrated centralised exchanges (CEXs).
3. **Innovation in existing markets** (Chapter 5): changes in how existing markets and infrastructures operate, including shortened settlement cycles, extended trading hours, and the modernisation of core systems.
4. **Innovation in trading approaches and compliance** (Chapter 6): changes in how trading decisions are made and how regulatory compliance and supervision are implemented, including agentic AI in trading, copy trading, customisable indices, and the broader regulatory technology (RegTech) and supervisory technology (SupTech) landscape.

Across these four areas, two technological developments are shaping the pace and direction of change, to varying degrees.

1. **DLT** enables shared record-keeping across a network of participants, a core attribute of blockchain systems. Its programmability supports the creation of digital tokens representing value, rights, or claims, and the deployment of smart contracts – code that carries out pre-defined logic once specific conditions or triggers are met. Together, these capabilities enable new forms of asset representation and new models for trade and post-trade infrastructure.
2. **AI and IT**, combined with continued advances in computing power, enable a new generation of data-driven and partially autonomous financial systems. Machine learning and AI models process structured and unstructured information at a scale previously unattainable, supporting pattern recognition, prediction, and decision-making across trading, compliance, and supervision. Increasingly, these capabilities are being embedded into agentic systems that can execute trades, manage risk, and interact with market infrastructure with limited human intervention.

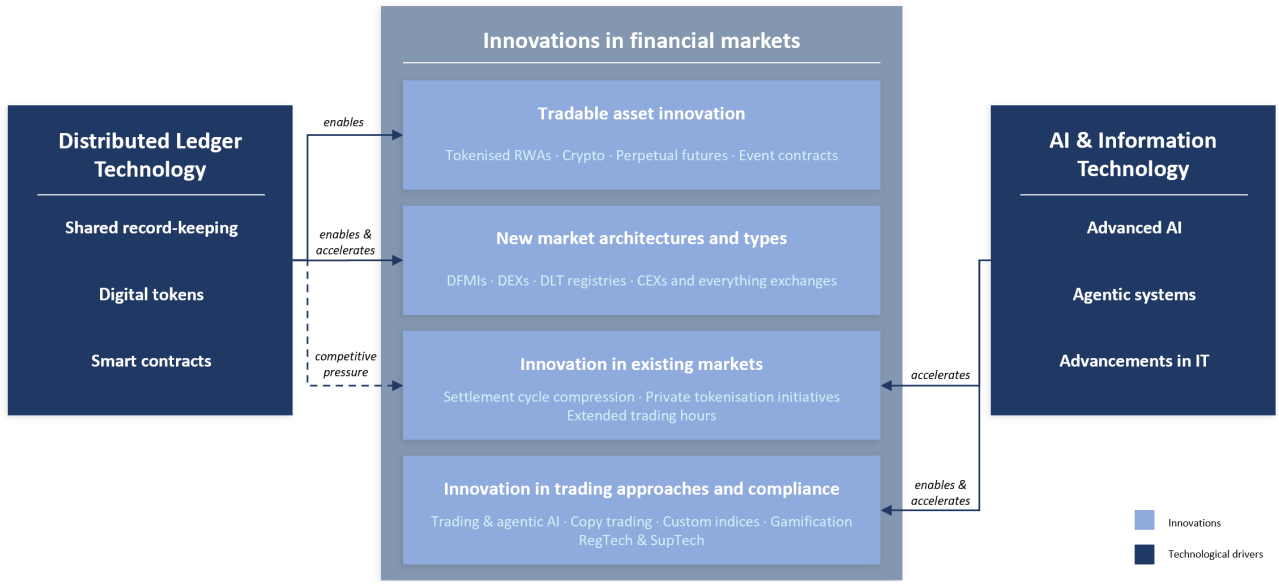
The two technological drivers relate to the four areas in different ways.

DLT is the foundational driver of many of the innovations in **tradable asset innovation**, where tokenisation and the emergence of digital-native asset classes rely directly on programmable ledgers, and is also an enabler and accelerator of **new market architectures and types**, where it underpins the new market architectures and venue types that have developed around tokenised and crypto assets. DLT also exerts an indirect influence on **innovation in existing markets**, as the new market architectures and venue types it enables create competitive pressure that prompts incumbent venues and infrastructures to modernise.

AI and advancements in IT, by contrast, are enablers and accelerators of **innovation in existing markets** and **innovation in trading approaches and compliance**, where they support the modernisation of incumbent market infrastructures and reshape how trading decisions are made and supervised.

These mappings of the technologies to the innovation areas shown in Figure 1 are indicative rather than exhaustive: in practice, the boundaries between the two drivers blur at the edges, and the subsequent chapters examine where and how each technology shapes the specific developments within its stream.

Figure 1: Taxonomy of innovations in markets



3. Tradable asset innovations

Innovation in tradable assets is being driven primarily by the tokenisation of RWAs, including money, fixed income products, MMFs, repurchase agreements and collateral, equities, and other RWAs. Within this broader shift, crypto assets represent a distinct subset of tokenised assets that are natively issued on distributed ledgers and often lack an identifiable issuer or claim. These novel asset types, including cryptocurrencies, governance tokens, and certain utility or protocol tokens, differ fundamentally from tokenised RWAs in their economic characteristics, governance structures, and regulatory treatment.

Alongside tokenisation, other notable innovations in tradable assets have emerged that do not strictly require DLT, but whose growth has been materially accelerated by decentralised financial applications. Perpetual futures redesign traditional derivatives to support continuous trading without fixed expiry dates, while event contracts allow market participants to trade directly on the outcomes of future events rather than on conventional financial assets. Together, these developments expand the set of tradable claims available in modern markets and challenge traditional distinctions between asset classes, derivatives, and venues, raising important questions for market structure, risk allocation, and regulatory supervision that are examined in this chapter.

3.1 Tokenised real-world assets

Tokenisation refers to the representation of RWAs, such as money, financial instruments, alternative assets, and services, as digital tokens on a distributed ledger and constitutes one of the most structurally significant trends in financial markets. At its core, tokenisation addresses several fundamental inefficiencies:

1. Asset issuance and transfer involve multiple intermediaries, each adding cost, time and operational complexity
2. Assets recorded in centralised registries are not easily movable across systems, limiting flexibility in how they can be held, transferred or pledged
3. Capital is frequently locked in assets that cannot be readily mobilised or used as collateral, reducing overall capital efficiency
4. Investor participation and secondary market activity remain constrained by limited access to illiquid asset classes
5. Asset tokenisation could provide an additional mechanism for fractional ownership by reducing the administrative costs of transferring smaller units in high-value, illiquid or traditionally hard-to-divide assets
6. Traditional registries offer limited programmability, constraining the automation of compliance, corporate actions and distributions.

By representing RWAs as programmable tokens on DLTs, assets can be transferred with minimal friction, thereby increasing capital efficiency and improving collateral management. Further, fractionalisation allows previously indivisible assets to be traded by a broader range of investors. Critically, programmability extends beyond settlement: compliance logic such as Know Your Customer (KYC) and Anti-Money Laundering and Counter-Terrorism Financing (AML/CTF) checks, investor eligibility restrictions, and reporting obligations can be embedded directly into the token itself using 'smart contracts', automating processes that currently require significant manual intervention across multiple intermediaries.

Beyond this, tokenisation opens new pathways for trade and settlement to operate more efficiently and to overcome the limitations of existing market architectures. Taken together, these mechanisms

underpin the substantial economic impact potential from tokenisation identified in DFCRC’s analysis, which estimates that full-scale adoption of tokenised wholesale financial assets could generate gains of around US\$2.7 trillion per annum globally and approximately AU\$24 billion annually in Australia.¹

3.1.1 Tokenisation structures

Tokenisation is not simply the creation of tokens. It is fundamentally about designing structures that connect the value of a RWA to a digital representation. Token structures describe how tokens represent assets, their legal character and operational relationship to off-ledger records.

Four principal models can be distinguished:

1. **Direct title tokenisation:** A digital asset that represents the primary record of value and ownership without reference to another ledger (digital native). The digital asset confers full legal rights inherent in the underlying asset to the holder.
2. **Digital twin tokenisation:** A digital asset that represents on a one-to-one basis an underlying asset immobilised on another registry and held in custody. The digital asset does not necessarily confer full legal rights inherent in the underlying asset to the holder. Two main legal-structural models exist: an evidence-of-title model, where the token functions as a cryptographic receipt of an off-chain position recorded in the traditional registry; and a beneficial-interest model, where an intermediary holds legal title on the traditional registry while the DLT serves as its internal register of beneficial holders.
3. **Collateralised tokenisation:** A digital asset that is backed by various assets under custody, which may differ from the underlying asset the token refers to. The digital asset does not necessarily confer rights associated with the underlying asset to the holder, but rather refers to a claim against the issuing entity similar to the registration of a security interest.
4. **Algorithmic tokenisation:** A digital asset in which algorithmic formulas that manage outstanding token balances maintain the value relative to the underlying asset it refers to. The digital asset does not confer rights associated with the underlying asset to the holder and might not have a legally identifiable issuer.

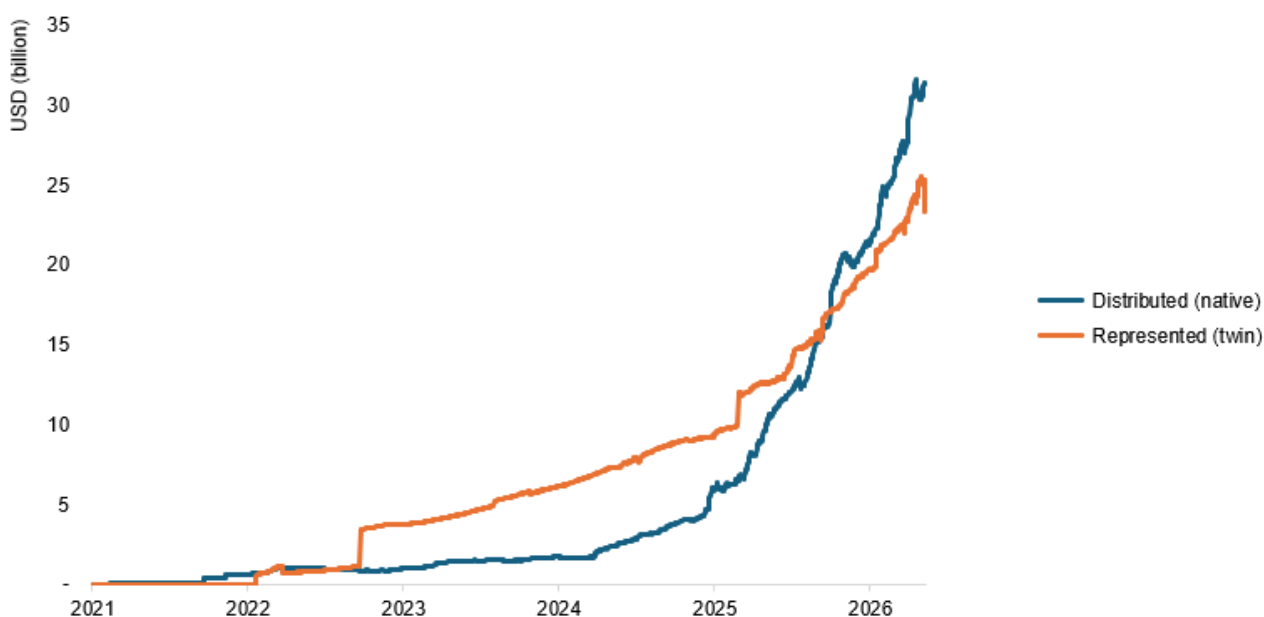
Achieving consistent classification and legal clarity across tokenisation structures is essential, as each model carries a distinct risk profile and cannot be subject to uniform regulatory treatment.² In decentralized finance’s (DeFi’s) early stages, native cryptocurrencies without an identifiable issuer or backing structure, along with algorithmic models, gained significant traction. As the benefits of applying DLT and digital tokens to RWAs became increasingly apparent, collateralised and intermediated structures emerged as pragmatic bridges between legacy registries and distributed ledgers. Especially intermediated tokenisation, in which tokens act as digital twins of an asset still recorded in a traditional registry, offers a practical near-term solution as it does not require migrating entire registries on-chain, a process that remains subject to considerable regulatory uncertainty in most jurisdictions. In the long run, however, direct title tokenisation represents the most optimised model, as it resolves the greatest number of infrastructure inefficiencies. As the distributed ledger serves as the sole authoritative register, there is no need for constant reconciliation with off-chain datasets, which could otherwise lead to uncertainty about settlement finality (see Chapter 4.3 for a broader discussion of DLT registries).

¹ The global estimate is in Baltais, Karlsen, Putniņš, and Sondore (2026), and the estimate for Australia is in the DFCRC report, “Unlocking Australia’s \$24b Digital Finance Opportunity” (March 2026) <https://dfcrc.com.au/2026/03/03/the-economic-impact-potential-of-digital-finance-innovation-in-australia/>.

² A systematic taxonomy of digital assets and a detailed discussion of tokenisation structures is provided in Gmeiner, F., & Putniņš, T.J. (2026). Toward a comprehensive and unifying digital asset taxonomy. Digital Finance CRC and University of Technology Sydney.

Notably, by 2025, digital native issuance had already surpassed intermediated tokenisation in volume, excluding stablecoins and repo transactions, as depicted in Figure 2.

Figure 2: Tokenisation structures on public networks³



3.1.2 Money

The tokenisation of money as a representation of monetary value in the form of digital tokens on a DLT is one of the most significant structural changes currently taking place in global financial markets. Three principal forms exist: Stablecoins, deposit tokens and CBDCs, each sitting at a different layer of the monetary system. Stablecoins are digital twin tokens issued by private, typically non-bank entities and pegged to a fiat currency, backed by cash and/or government securities. They do not carry deposit insurance or a central bank guarantee. Deposit tokens are issued by licensed commercial banks and represent on-chain assets that carry the same legal protections as ordinary deposits. CBDCs are issued directly by central banks and constitute a digital form of sovereign legal tender.

(i) Stablecoins

The stablecoin market (circulating supply) has grown tenfold in the last five years, from US\$28 billion in 2020 to over US\$307 billion in 2026 (Figure 3), while annual on-chain transfer activity of stablecoins is estimated at as much as US\$35 trillion.⁴ Originally developed as infrastructure for crypto asset markets, stablecoins have since found substantial adoption across traditional financial markets. A wave of targeted law reforms has been an accelerant:

- the US GENIUS Act⁵ established federal licensing and mandatory reserve backing;
- the EU's MiCA regulation⁶ came into full effect;

³ Data sourced from <https://app.rwa.xyz> (May 2026). Native tokenised assets exclude stablecoins, digital twin structures exclude repos.

⁴ See McKinsey, Stablecoins in payments: What the raw transaction numbers miss (18 February 2026 Article) <https://www.mckinsey.com/industries/financial-services/our-insights/stablecoins-in-payments-what-the-raw-transaction-numbers-miss>.

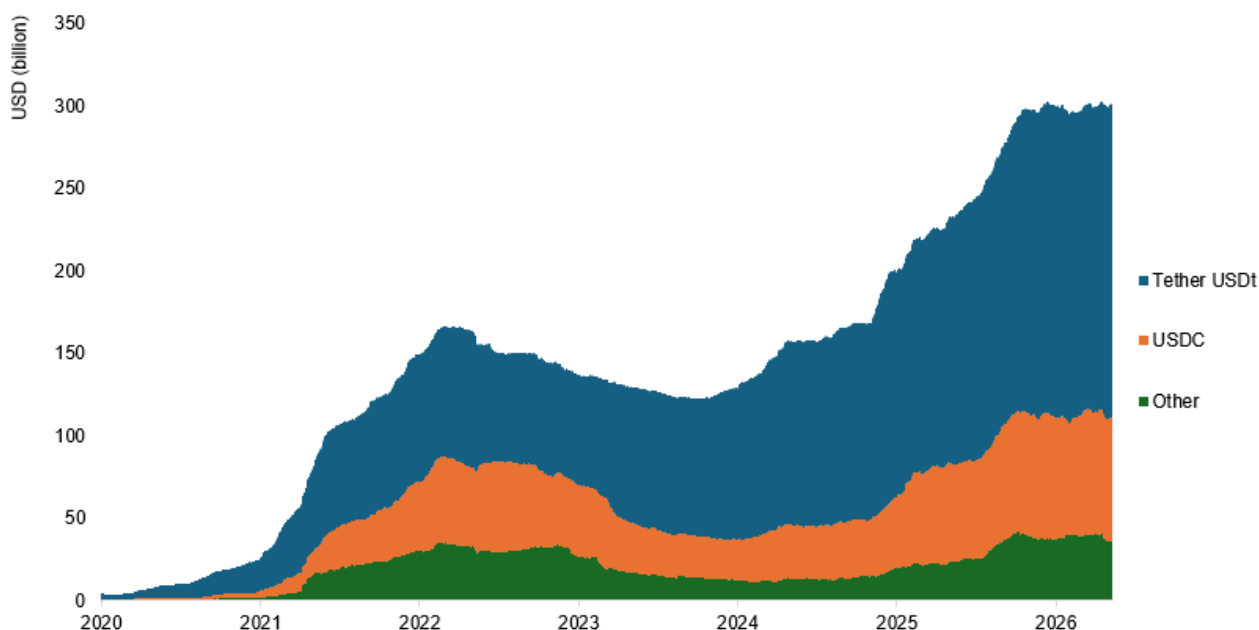
⁵ US GENIUS Act (July 2025) <https://www.congress.gov/119/plaws/publ27/PLAW-119publ27.pdf>

⁶ EU Markets in Crypto-Assets Regulation 2023/1114 <https://eur-lex.europa.eu/eli/reg/2023/1114/oj/eng>

- the UK,⁷ Canada⁸, Switzerland⁹ and Hong Kong¹⁰ are working on similar legislative bases for stablecoins.

To date, the market is heavily concentrated in US dollar-pegged stablecoins (over 90%): Tether (USDT) accounts for roughly 60% of the total market cap, at approximately US\$187 billion, while Circle's USDC holds around US\$75 billion.

Figure 3: Stablecoin market capitalisation¹¹



The financial stability implications of this form of money have attracted substantial academic and regulatory attention. Stablecoins and their increasing integration with traditional financial markets could, absent robust regulation, become a source of systemic stress during periods of dislocation (Grobys, Junttila, Kolari, Sapkota, 2021; Hoang and Baur, 2024; Lyons and Ganesh, 2023). Of particular concern is the composition and liquidity of reserve assets backing major stablecoins, where a sudden surge in redemption requests could necessitate rapid liquidation of holdings and transmit stress to short-term funding markets. Further research suggests a weakening of monetary policy transmission and potential erosion of monetary sovereignty with growing use of stablecoins (Altavilla, Boucinha, Burlon, Adalid, Fortes, Maruhn, 2026).

(ii) Deposit tokens

Deposit tokens remain orders of magnitude smaller than stablecoins, with activity largely confined to experimental pilots rather than to substantive commercial deployment, due to several structural barriers. Deposit tokens are counterparty-specific, and a token issued by one bank cannot easily be

⁷ Bank of England, Proposed regulatory regime for sterling-denominated systemic stablecoins (November 2025).

<https://www.bankofengland.co.uk/paper/2025/cp/proposed-regulatory-regime-for-sterling-denominated-systemic-stablecoins>

⁸ Canada Stablecoin Framework (March 2026) <https://www.canada.ca/en/department-finance/programs/financial-sector-policy/canadas-stablecoin-framework.html>

⁹ Swiss Federal Council, Federal Council moves forward with stablecoins and crypto: consultation launched (Press Release 22 October 2025) <https://www.news.admin.ch/en/newsb/x4TMWQ1SWofNoFx7XyHhY>

¹⁰ Hong Kong Stablecoins Ordinance (August 2025) <https://www.elegislation.gov.hk/hk/cap656>

¹¹ Data sourced from <https://app.rwa.xyz> (May 2026).

used in transactions settled by another. As a result, liquidity may naturally become more fragmented. Legal clarity remains lacking in most jurisdictions, with the Federal Deposit Insurance Corporation still developing supervisory guidance in the US and the EU still debating whether deposit tokens can serve as settlement assets for capital market transactions.¹² Further, core banking infrastructure was not built to interact with on-chain environments, and no unified technical standard has emerged across institutions.

That said, several jurisdictions are making tangible progress. The UK's Regulated Liability Network has moved from concept to a live multi-bank pilot (Great British Tokenised Deposits), designed to produce fungible tokenised sterling deposits that preserve the legal protections of conventional bank deposits.¹³ Singapore's Project Guardian has similarly progressed from its initial 2022 deposit token pilot toward commercialisation,¹⁴ while the London Stock Exchange Group's (LSEG) Digital Settlement House launched in early 2026, using tokenised commercial bank deposits on the Canton network for 24/7 settlement.¹⁵

(iii) CBDCs

Global adoption of CBDCs has advanced significantly, with 137 countries and currency unions, representing 98% of global GDP, now engaged in some form of CBDC work, spanning research, experimentation, or pilot phases.¹⁶ Progress remains largely pre-implementation, with most jurisdictions yet to issue a live CBDC, but development is accelerating across both retail and wholesale use cases. Notably, wholesale CBDCs are more advanced than retail CBDCs, reflecting a near-term focus on improving interbank settlement and cross-border payments. Key drivers of this momentum include the rise of private digital money, ongoing innovation in payment systems, and the need to preserve monetary sovereignty in an increasingly digital financial landscape (Illes, Kosse, and Wierds, 2025).

3.1.3 Other tradable assets

Beyond money, institutional adoption of tokenised financial assets has expanded steadily in recent years, particularly in traditional financial instruments such as fixed-income securities, MMFs, private credit, and repo markets. Early initiatives are also beginning to extend into public equities. By contrast, the tokenisation of alternative assets, including real estate, remains comparatively niche. The significant growth in issuance of tokenised RWAs, excluding stablecoins, is depicted in Figure 4.

¹² In Australia, deposit tokens have been a focal issue under Project Acacia, with the Deposit Token Working Group making substantive progress and expected to deliver concrete policy and regulatory recommendations.

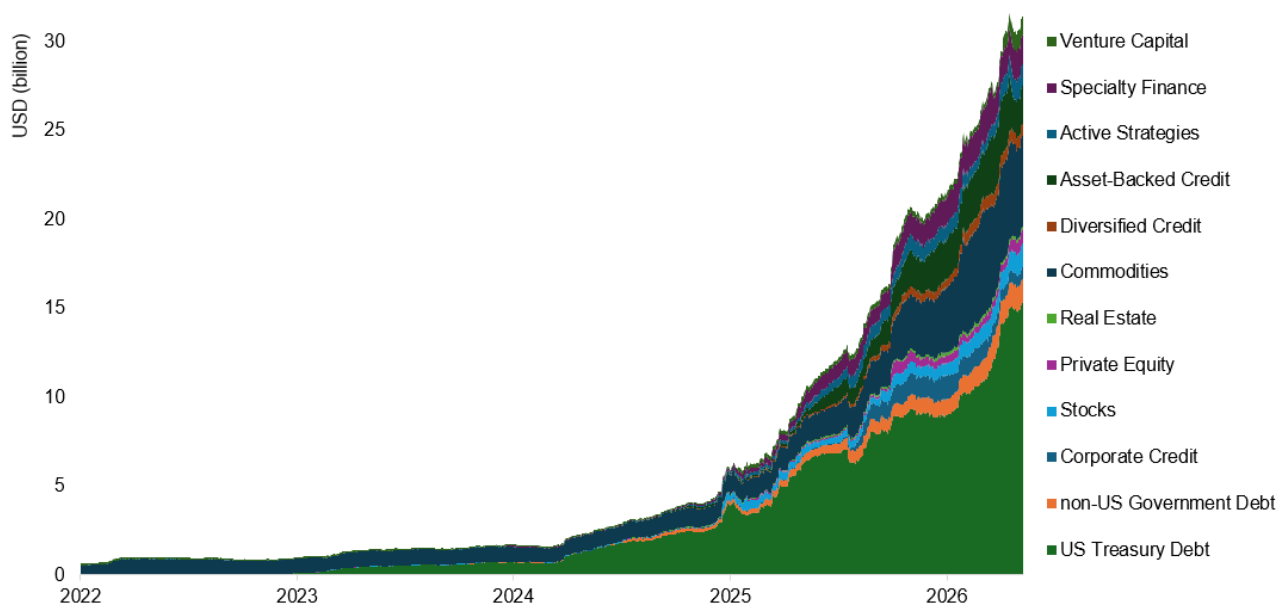
¹³ UK Finance, UK RLN Experimentation Phase Summary Report (2024) <https://www.ukfinance.org.uk/system/files/2024-09/UK%20Finance%20RLN%20Summary%20Report.pdf>

¹⁴ MAS, Project GUARDIAN Initiative (November 2025) <https://www.mas.gov.sg/schemes-and-initiatives/project-guardian>

¹⁵ LSEG, Digital Settlement House (Press Release, 15 January 2026) <https://www.lseg.com/en/media-centre/press-releases/2026/lseg-launches-digital-settlement-house>

¹⁶ See the Atlantic Council CBDC tracker (Web Page, February 2026) <https://www.atlanticcouncil.org/cbdctracker/>

Figure 4: Tokenised real-world assets market capitalisation (excluding stablecoins)¹⁷



(i) Fixed income products

Fixed-income instruments have emerged as one of the most active areas of tokenisation, with bond markets at the forefront. This reflects the fact that many fixed-income markets still rely on manual, operationally intensive processes, including collateral management, reconciliation, and subscription and redemption workflows within MMF structures. These frictions make the asset class a natural candidate for efficiency gains through tokenisation. Within this space, native issuance of tokenised bonds (both sovereign and corporate) has attracted growing attention from both public- and private-sector participants. This is particularly significant given the systemic importance of (government) bond markets and money market instruments. Government bonds serve as core collateral across the financial system, while corporate bonds are a key channel through which businesses raise debt capital from investors. With the global bond market valued at roughly US\$109 trillion, even limited technological improvements in issuance, settlement, and post-trade processing can have meaningful economic implications. Against this backdrop, tokenised bond markets have expanded steadily, with cumulative issuance and outstanding volumes continuing to rise.¹⁸

By mid-2025, more than 60 tokenised bonds had been issued, representing a total value of approximately US\$8 billion (Aldasoro, Cornelli, Frost, Wilkens, Lewrick, and Shreeti, 2025). Recent examples include Hong Kong SAR’s HK\$10 billion multi-currency digital green bond program, the European Investment Bank’s EUR100 million digital bond,¹⁹ the Republic of Slovenia’s EUR30 million inaugural EU sovereign digital bond,²⁰ the World Bank’s CHF200 million digital bond, issued in partnership with the Swiss National Bank,²¹ and Luxembourg’s digital treasury certificates issued via

¹⁷ Data sourced from <https://app.rwa.xyz> (May 2026).

¹⁸ OECD, Global Debt Report (2026) https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/03/global-debt-report-2026_59d2d627/e9d80efd-en.pdf

¹⁹ European Investment Bank (Press Release, 22 November 2024) <https://www.eib.org/en/investor-relations/press/all/fi-2024-14-eib-2nd-digital-bond-eurosystem-explanatory-work>

²⁰ Republic of Slovenia, Inaugural digital bond issuance (Press Release, 26 July 2024) <https://www.gov.si/en/news/2024-07-26-the-republic-of-slovenia-issues-its-inaugural-digital-bond/>

²¹ World Bank Group (Press Release, 15 May 2024) <https://www.worldbank.org/en/news/press-release/2024/05/15/world-bank-partners-with-swiss-national-bank-and-six-digital-exchange-to-advance-digitalization-in-capital-markets>

HSBC's Orion platform.²² In the private sector, Siemens has issued a EUR 300 million digital bond,²³ and KfW (the German state-owned development bank) has conducted multiple issuances across several platforms like Clearstream D7 or SIX Digital Exchange,²⁴ while J.P. Morgan has arranged a landmark US commercial paper issuance, notable for being executed on a public blockchain network (Solana).²⁵

(ii) Money market funds

Tokenised MMFs have also emerged as a prominent application of asset tokenisation (Aquilina, Lewrick, Ravenna, and Schönleber, 2025). Major financial institutions and asset managers, predominantly in the US, now issue fund units as digital tokens that maintain a stable net asset value backed by traditional fixed-income securities, primarily US government obligations. Their rapid growth is driven by demand for stable, yield-bearing on-chain assets that combine the safety of money market instruments with the programmability of tokenised assets. In addition, their interoperability with DeFi ecosystems enables them to be utilised as collateral and settlement assets, which further accelerates their adoption.²⁶ This integration between regulated tokenised funds and decentralised trading infrastructure is no longer theoretical. It is already visible in live market deployments (see Box A).

The tokenised MMF market reached approximately US\$16 billion in outstanding issuance across 80 products (Figure 5), held by over 60,000 investors as of May 2026. This growth reflects increasing participation by established institutions. BlackRock's BUIDL²⁷ fund and Franklin Templeton's BENJI²⁸ fund have each accumulated over US\$2 billion in assets under management.²⁹ In Europe, actors such as BNP Paribas Asset Management are actively exploring tokenised MMFs, further demonstrating the market's global adoption and growing maturity.³⁰

²² Luxembourg digital treasury note issuance (Media Article, 17 June 2025) <https://www.ledgerinsights.com/luxembourg-issues-its-first-digital-treasury-notes/>

²³ Siemens, Digital bond issuance (Press Release, 4 September 2024) <https://press.siemens.com/global/en/pressrelease/siemens-remains-pioneer-another-digital-bond-successfully-issued-blockchain>

²⁴ Clearstream, first KfW benchmark bond via Deutsche Börse's digital D7 platform (Press Release, 27 July 2024) <https://www.clearstream.com/clearstream-en/newsroom/240627-4012566>

²⁵ J.P. Morgan, US Commercial Paper issuance on Solana (Press Release, 11 December 2025) <https://www.jpmorgan.com/about-us/corporate-news/2025/jpmorgan-commercial-paper-issuance-solana-blockchain>

²⁶ For example, Deribit accepts tokenised money market funds as collateral. Securitize, "BlackRock's BUIDL, Tokenized by Securitize, Accepted as Collateral on Crypto.com and Deribit." (Press Release, 18 June 2025), <https://securitize.io/learn/press/BlackRocks-BUIDL-Tokenized-by-Securitize-Accepted-as-Collateral-on-Cryptocom-and-Deribit>

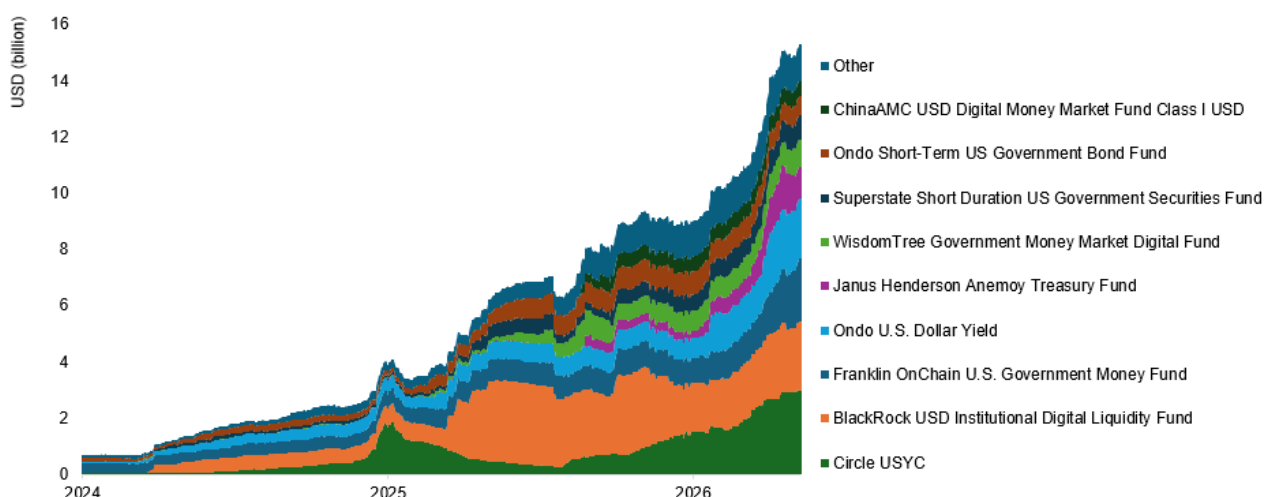
²⁷ See BlackRock USD Institutional Digital Liquidity Fund Information (March 2026) <https://securitize.io/blackrock/buidl>

²⁸ Franklin Templeton, Tokenized money market funds: The bridge to a new financial infrastructure (June 2025) <https://www.franklintempleton.com/articles/2025/disruption/tokenized-money-market-funds-the-bridge-to-a-new-financial-infrastructure>

²⁹ Data sourced from <https://app.rwa.xyz/treasuries> (May 2026).

³⁰ BNP Paribas Asset Management, first natively tokenised money market fund shares on Allfunds Blockchain (Press Release, 22 May 2025) <https://www.bnpparibas-am.com/en/press/mediaroom-en-bnp-paribas-asset-management-launches-first-natively-tokenised-money-market-fund-shares-on-allfunds-blockchain/>

Figure 5: Tokenised MMFs market capitalisation³¹



Box A: BlackRock, Securitize, Uniswap

In February 2026, Uniswap Labs partnered with Securitize to make BlackRock’s USD Institutional Digital Liquidity Fund (BUIDL) tradable on-chain via UniswapX, expanding liquidity options for BUIDL holders and strengthening the link between traditional finance and DeFi. Trading is enabled through UniswapX’s request-for-quote model, where pre-qualified, whitelisted investors can request competitive quotes from approved market makers and settle swaps atomically on-chain. The integration is designed to provide near-instant liquidity – especially between BUIDL and USDC – with 24/7 access while maintaining institutional-grade compliance standards. It also includes a strategic investment by BlackRock in the Uniswap ecosystem, alongside standard risk and non-endorsement disclosures.³²

(iii) Repurchase agreements (repos) and collateral

Repos and collateral management have emerged as one of the most active frontiers for the adoption of tokenised assets, driven by the operational and capital-efficiency gains that DLT can deliver in high-volume, time-sensitive transactions. By enabling atomic settlement and increasing the mobility of high-quality liquid assets, tokenised repos eliminate the settlement risk and intraday liquidity constraints that characterise conventional repo markets, which are characterised by manual and fragmented workflows, and ‘over-borrowing’ to manage collateral delivery cut-offs.

Tokenisation has significant implications for capital and operational efficiency:

- participants can unlock collateral that would otherwise be immobilised during settlement windows,

³¹ Data sourced from <https://app.rwa.xyz> (May 2026).

³² Uniswap, Uniswap Labs and Securitize Partner to Unlock DeFi Liquidity for BlackRock’s BUIDL (Press Release, 11 February 2026) <https://blog.uniswap.org/unlocking-defi-liquidity-for-buidl>

- the option to engage in short-duration intraday repos (instead of overnight) can reduce counterparty exposure and funding costs, and
- automated non-cash collateral selection and substitution processes through smart contracts increase operational efficiency.

Growth in this space has been substantial. For example, Broadridge's Distributed Ledger Repo platform achieved 508% year-on-year growth, processing an average of US\$365 billion in daily repo transactions in January 2026.³³ J.P. Morgan's Tokenised Collateral Network on the Kinexys platform³⁴ represents a parallel initiative, allowing institutions to transfer tokenised collateral across jurisdictions and time zones without the friction of conventional custodial processes.

The concentration of early adoption in repo and collateral management is not coincidental. In repo markets and collateral management, settlement efficiency translates directly into liquidity benefits, making the business case comparatively straightforward to quantify relative to other segments of capital markets.

(iv) Equities

Although activity in highly standardised assets such as cash equities remains more limited, momentum is gradually building. Major stock exchanges, including Nasdaq and the New York Stock Exchange, have filed proposals to list tokenised versions of equities and exchange-traded products to trade alongside traditional securities.³⁵ Concurrently, Deutsche Börse, in partnership with Kraken, provides access to tokenised 'digital twin' representations of US equities (see Box B).³⁶ These instruments (xStocks) replicate the price performance of stocks like Apple and Nvidia but do not convey full ownership rights, akin to the tokenised stocks employed by Robinhood, which are regulated as derivatives under European law.

Despite some momentum, several structural barriers exist:

- regulatory fragmentation across jurisdictions on tokenised securities,
- security classification requirements limiting access to sophisticated investors,
- legal challenges around custody and settlement, and
- liquidity fragmentation across incompatible venues.

³³ Broadridge (Press Release, 12 February 2026) <https://www.broadridge.com/press-release/2026/broadridges-dlr-platform-achieves-508-percent-year-over-year-growth-in-january>

³⁴ See kinexys information (March 2026) <https://www.jpmorgan.com/kinexys/digital-assets>

³⁵ See various articles on the development of a platform for tokenised securities by the New York Stock Exchange (January 2026) <https://ir.theice.com/press/news-details/2026/The-New-York-Stock-Exchange-Develops-Tokenized-Securities-Platform/default.aspx> and <https://listingcenter.nasdaq.com/assets/rulebook/nasdaq/filings/SR-NASDAQ-2025-072.pdf>

³⁶ 360x, xStocks launch on 360x (Press Release, 9 February 2026) <https://www.360x.com/insights/xstocks-launch-on-360x-extending-the-leading-standard-of-tokenised-equities-to-deutsche-börse-group-clients>

Box B: 360x, Deutsche Börse Group, Kraken

360X (backed by Deutsche Börse Group) has made tokenised securities a live, regulated secondary-market proposition by bringing Kraken-backed xStocks onto its DLT MTF. Since 9 February 2026, 360X participants can trade an initial set of tokenised equity/ETF exposures—CRCLx, GOOGLx, NVDAx, SPYx and TSLAx. The xStocks instruments use a ‘digital twin’ approach: the on-chain token is a regulated wrapper that tracks the value of an underlying listed share/ETF held off-chain. Subsequently, holders track price performance but do not receive shareholder rights (e.g., voting). The ‘real’ securities are held in licensed custody in a bankruptcy-remote structure, with the underlying equities/ETF used to collateralise the tokens. Legally, xStocks are classified as tokenised tracker certificates, a form of structured product in which each token is a bearer debt instrument. The distribution is explicitly multi-chain: xStocks are available on networks including Solana and Ethereum. Strategically, Deutsche Börse frames this as an early milestone in its partnership with Kraken, alongside the longer-term ambition to tokenise and distribute securities held in custody at Clearstream to Kraken’s client base.

(v) Other real-world assets

Beyond financial instruments, the tokenisation of alternative RWAs has only seen limited adoption. The most discussed asset classes include gold and real estate, where tokenisation promises fractional ownership and easier global transferability. Even so, while interest and activity continue to build, tokenisation remains in the early stages of its development. In commodities, gold has emerged as the most viable candidate for tokenisation:

- Paxos Gold (PAXG)³⁷ and Tether Gold (XAUT)³⁸ together represent approximately US\$5 billion in tokenised gold in circulation, accounting for the large majority of the tokenised commodity market.³⁹
- Real estate tokenisation, frequently cited as a key use case, has seen limited adoption. Many real estate tokens are traded in isolated and only partially regulated environments, where investor protection is unclear and liquidity is low. Further research shows that real estate tokens are significantly affected by negative shocks in the cryptocurrency market (Smith and Baur, 2025).

While the market has grown in recent years and continues to attract experimentation from fintech businesses and crypto platforms, tokenisation of alternative assets remains a relatively small and specialised segment of the broader financial system rather than a globally transformative movement.

3.2 Crypto assets

Crypto assets represent a distinct class of tradable tokens that differ fundamentally from tokenised RWAs. Their value is derived entirely from market supply and demand dynamics, rather than from any underlying RWA, contractual claim, or institutional guarantee. Unlike traditional financial instruments

³⁷ See Paxos Gold (March 2026) <https://www.paxos.com/pax-gold>

³⁸ See Tether Gold (March 2026) <https://gold.tether.to>

³⁹ Data sourced from <https://app.rwa.xyz> (May 2026).

such as equities or bonds, these assets can be ‘issuerless’, meaning they might not be created, managed, or backed by a central authority, government, or corporate entity. Instead, their value is intrinsic to the characteristics of the digital ecosystems in which they operate, including decentralisation, programmatic scarcity, and network utility (Bains, Melo, and Sugimoto, 2022). Bitcoin,⁴⁰ the first and most prominent example, established this paradigm by introducing a fundamentally new capability: the ability to transfer value directly between parties without the need for a trusted intermediary. This peer-to-peer functionality, secured through cryptographic proof and distributed consensus rather than institutional trust, represented a profound departure from existing financial infrastructure, where transactions had always required intermediaries.

Beyond Bitcoin, the crypto asset landscape has expanded to encompass a broad range of digital assets that introduce further innovations within decentralised ecosystems. Governance tokens, for instance, grant holders voting rights over the strategic and operational decisions of decentralised protocols, effectively enabling new forms of collective coordination and decision-making without centralised management structures. Their value is tied to the perceived importance and growth of the protocol they govern, rather than to any tangible backing or claim on revenue. Non-fungible tokens (NFTs) represent another innovation, enabling verifiable digital ownership and provenance of unique items such as art, collectibles, or in-game assets on a public ledger. In each case, what unites crypto assets is the introduction of capabilities that were previously impossible or impractical: ‘trustless’ value transfer, decentralised governance, and programmable, transparent ownership.

The fact that crypto-assets often have no issuer and are not backed by any assets has significant implications for how they are understood, valued and regulated. Without a central counterparty or underlying asset to anchor valuation, prices can be highly volatile and speculative, driven by network effects, community sentiment, and broader macroeconomic conditions. It also means that traditional frameworks for investor protection, which typically rely on identifiable issuers bearing disclosure and fiduciary obligations, do not always apply in a straightforward manner.

3.3 Perpetual futures

A perpetual futures contract, commonly referred to as a perpetual swap, perpetual contract or simply a ‘perp’, is a leveraged derivative with no fixed expiry date. Unlike traditional futures, perps trade continuously and use a funding-rate mechanism to keep the contract price close to the underlying spot price. When the perpetual price trades above spot, longs typically pay shorts and vice versa. The conceptual foundation predates crypto markets: Shiller (1993) first proposed ‘perpetual claims’ on real economic indicators, such as real estate prices or corporate profits, whose funding rate would depend on observable cash flows such as rental yields. What tokenisation and 24/7 crypto trading added was not the idea but a market environment in which it could be implemented at scale.

BitMEX pioneered the first live perpetual futures contracts on cryptocurrencies in 2015, and the design has since become the dominant derivative instrument in crypto markets.⁴¹ Ackerer, Hugonnier and Jermann (2025) show that this periodic funding transfer is central to the pricing of perpetual contracts. In practice, funding is typically exchanged at regular intervals, commonly every eight hours on major crypto exchanges. The key innovation is therefore not the concept itself but its pairing with a design

⁴⁰ Bitcoin was introduced in 2008 through a whitepaper titled "Bitcoin: A Peer-to-Peer Electronic Cash System" published under the pseudonym Satoshi Nakamoto. The Bitcoin network subsequently went live on 3 January 2009 with the mining of its genesis block.

⁴¹ See BitMEX and their implementation of perpetual futures: <https://www.bitmex.com/app/perpetualContractsGuide>

better suited to continuously traded markets, where 24/7 participation makes fixed expiry cycles less useful than in traditional derivative markets.

Perpetuals offer two important advantages over traditional futures. First, by eliminating contract expiry, they avoid the periodic fragmentation of liquidity and price discovery that occurs when activity migrates from one maturity to the next. Liquidity, therefore, remains concentrated in a single instrument rather than being redistributed across front-month and next-month contracts. Second, they eliminate the need to roll positions by closing exposure in an expiring contract and reopening it in the next most liquid maturity. In traditional futures markets, rolling generates transaction costs, slippage, and basis risk, particularly in stressed markets or when term structures are steeply in contango or backwardation. These frictions were exposed during the 2020 US Oil Fund (USO) episode, when extreme stress in front-month crude oil futures (WTI) and the costs of maintaining near-month exposure highlighted the operational and economic burdens associated with predictable and repeated rolling.⁴² Perpetuals are therefore not only a crypto-specific novelty. Instead, they represent a contract redesign aimed at making leveraged futures contracts more efficient in 24/7 trading markets.

Perpetuals can also be compared with contracts for difference (CFDs). Like CFDs, perpetuals provide leveraged synthetic exposure to an underlying asset without requiring ownership or delivery of that asset. Both allow traders to maintain directional exposure without holding the underlying instrument directly, and both typically involve leverage. The important distinction is that CFDs are bilateral over-the-counter (OTC) contracts between a client and a CFD provider, with the provider determining key terms, including fees, overnight financing charges, and margin requirements. This provider discretion has been a recurring regulatory concern. For example, the FCA has identified cases where CFD providers applied varying overnight funding charges without clear justification or adequate disclosure.⁴³ Perpetuals, by contrast, generally use a funding-rate mechanism under which long and short positions make periodic payments to each other rather than a financing charge imposed directly by the provider. However, because perpetuals provide exposure that is economically similar to CFDs, regulators have indicated that CFD rules may apply where products marketed as perpetual futures or contracts fall within the scope of existing product intervention measures on CFDs.⁴⁴

The global perpetual futures market remains highly concentrated on a small number of centralised exchanges, especially Binance, OKX and Bybit. In parallel, on-chain perpetual DEXs have emerged as a major venue. TokenInsight's 2025 annual exchange report identifies Binance as the largest centralised derivatives venue by average market share in 2025, while also showing that decentralised derivatives activity was increasingly driven by perpetuals.⁴⁵ On the DeFi side, Hyperliquid dominated the perpetual DEX segment for most of 2025, averaging 72% market share.

Recent developments also show that perpetuals are beginning to migrate into more regulated markets. In November 2025, the Singapore Exchange (SGX Group) launched Bitcoin and Ethereum perpetual futures for institutional, accredited and expert investors, explicitly presenting the product as a way to combine the no-expiry structure favoured in crypto markets with the clearing, margining and benchmark

⁴² See news articles on US oil ETFs, (April 2020) <https://www.forbes.com/sites/jimcollins/2020/04/20/the-us-oil-etf-uso-is-the-culprit-behind-oils-massive-plunge/>

⁴³ See FCA, (November 2025) <https://www.fca.org.uk/publications/multi-firm-reviews/contracts-difference-providers-provision-price-and-value>

⁴⁴ See, e.g., ESMA, (February 2026) <https://www.esma.europa.eu/press-news/esma-news/esma-reminds-firms-their-obligations-under-cfd-product-intervention-measures>

⁴⁵ Tokeninsight, Crypto Exchange 2025 Annual Report <https://tokeninsight.com/en/research/reports/crypto-exchange-2025-annual-report>

discipline of listed derivatives markets.⁴⁶ More recently, Hyperliquid launched the first officially licensed S&P 500 perpetual contract, through Trade[XYZ], extending the perpetual format from crypto assets to a flagship traditional financial benchmark and reinforcing the broader trend toward 24/7, on-chain synthetic exposure to mainstream market indices.⁴⁷

3.4 Event contracts

Prediction markets represent a distinct form of market innovation in which event contracts, i.e., tradable claims whose payoffs are contingent on the occurrence of future events, are listed and exchanged. Rather than conferring rights to cash flows generated by an underlying business or asset, these contracts typically pay out on the resolution of a specified state of the world, such as an election outcome, a macroeconomic release, or the occurrence of a particular event. Market prices can therefore be interpreted as aggregating dispersed beliefs about future probabilities, which gives prediction markets both a trading function and an informational role.

From a market-structure perspective, prediction markets are noteworthy because they broaden the scope of what can be traded. Traditional financial markets are largely organised around claims on businesses, debt obligations, currencies, or commodities. Prediction markets, by contrast, make it possible to trade directly on future events and probabilities. This expands the range of tradable exposures beyond conventional asset classes and brings market-based price discovery into domains that were previously outside mainstream financial intermediation.

The concept itself is not new. The Iowa Electronic Markets, established at the University of Iowa in 1988 and operating under CFTC no-action relief since 1992, is widely regarded as the first modern prediction market and has been the subject of extensive academic research demonstrating that market-aggregated probabilities can outperform traditional opinion polls as forecasts of electoral and economic outcomes.⁴⁸ Later attempts such as HedgeStreet (which became NADEX) extended the idea commercially in the 2000s, though regulatory uncertainty and limited scale kept these markets on the periphery of financial intermediation.⁴⁹ What has changed in recent years is not the idea but the scale and architecture at which it can operate.

Two models now dominate. Kalshi, the leading regulated prediction market in the United States, operates as a centralised venue and is regulated as a designated contract market by the US Commodity Futures Trading Commission (CFTC), demonstrating that event-based trading can scale within established regulatory and technological frameworks. Polymarket, currently the second-largest prediction market by volume, represents contingent claims as programmable tokens on a distributed ledger, using smart contracts to automate market creation, collateral management, and payout execution once an outcome is resolved. This architecture lowers the cost of creating and settling new event contracts, enables global 24/7 participation, and removes many of the intermediation layers that would otherwise constrain market breadth.

⁴⁶ SGX Group, SGX Derivatives breaks new ground with institutional-grade crypto perpetual futures (Press Release, 17 November 2025) <https://www.sgxgroup.com/media-centre/20251117-sgx-derivatives-breaks-new-ground-institutional-grade-crypto>

⁴⁷ S&P Global, S&P Dow Jones Indices Licenses S&P 500® to Trade[XYZ] for Perpetual Contracts on Hyperliquid (Press Release, 18 March 2026) <https://press.spglobal.com/2026-03-18-S-P-Dow-Jones-Indices-Licenses-S-P-500-R-to-Trade-XYZ-for-Perpetual-Contracts-on-Hyperliquid>

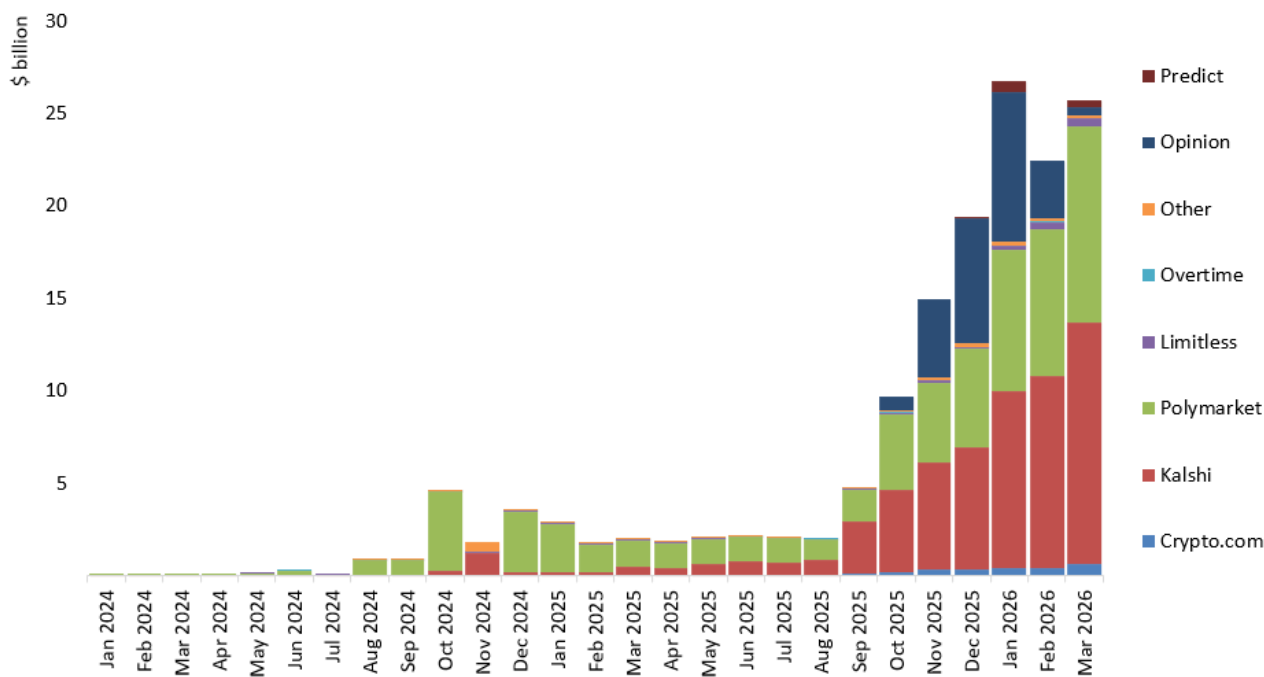
⁴⁸ The first regulated off-chain prediction market is the Iowa Electronic Market. <https://iem.uiowa.edu/iem/>

⁴⁹ See NADEX for later attempts to implement event contracts: <https://www.nadex.com/>

The coexistence of both models illustrates that tokenisation is not a prerequisite for prediction markets – IEM and Kalshi have shown that they can operate on classical infrastructure – but a catalyst that has materially accelerated their scalability, modularity, and accessibility.⁵⁰

Prediction markets have become markedly more prominent over the past year. As depicted in Figure 6, notional trading volume across all prediction markets has risen to over US\$25 billion in monthly trading volume, suggesting that these venues are moving from a niche format toward a more important part of market structure.

Figure 6: Monthly prediction market notional volume⁵¹



Transaction volumes have become increasingly sports-oriented, but the degree of concentration differs materially across platforms. Kalshi’s recent activity appears overwhelmingly concentrated in sports-event contracts, with sports accounting for roughly 85-90% of the notional volume. In addition, Kalshi has seen growing activity in so-called mention markets, which are contracts tied to whether a specified topic, individual, or phrase is mentioned in predefined public sources (such as official statements, speeches, or earnings calls). Polymarket is also increasingly sports-driven, but its activity remains more diversified, with sports, political/geopolitical events, and crypto markets each representing material shares of trading volume. This distinction is important because the economic and regulatory character of these platforms is not uniform: Kalshi’s recent growth increasingly resembles sports-betting substitution through event contracts, whereas Polymarket continues to function as a broader venue for trading new types of events.⁵²

Prediction markets raise distinctive questions for market design and regulation. Their functioning depends critically on reliable outcome determination, which makes governance over event resolution and the use of external information sources central to market integrity. They may also be vulnerable to

⁵⁰See Kalshi and Polymarkets as examples for modern prediction markets. <https://kalshi.com/> and <https://polymarketanalytics.com/>

⁵¹ Data sourced from <https://dune.com/datadashboards/prediction-markets> (March 2026).

⁵² The data is available at <https://classic.artemis.ai/asset/kalshi>

thin liquidity, strategic trading, and attempts to influence either market prices or the underlying event itself. In addition, prediction markets often sit uneasily within existing regulatory frameworks, since they may resemble financial derivatives in some respects (such as binary options) while also overlapping with gambling regulation and public-policy concerns.

3.5 Developments in major jurisdictions

The innovation activity of tradable assets is evolving across major financial centres, shaped by differences in legal frameworks, institutional priorities, and market structures. Table 1 provides an overview of aggregated activity in tradable assets across the seven jurisdictions analysed in this report, highlighting how developments are distributed across them.

Table 1: Developments in tradable asset innovation across major jurisdictions

Jurisdiction	Innovation activity
United States	Most active global market. Tokenised money market and Treasury funds are the dominant asset class, with multiple competing products from major asset managers across several public blockchains. Strong institutional focus on collateral mobility and DLT-based repo markets at significant daily volumes. Dollar-denominated stablecoins (led by Tether at ~\$184B) dominate global supply. In parallel, highly developed markets for perpetual futures (primarily crypto-linked) and activity in event-based contracts.
Canada	Cautious posture relative to peers. Activity concentrated in proofs of concept rather than commercial scaling. No domestic Canadian dollar (CAD) stablecoin at scale. Limited development in perpetuals and event contracts within the domestic regulatory perimeter.
European Union	Deepest pipeline of repeated, benchmark-scale digital bond issuance globally, spanning sovereign, supranational and corporate issuers. On stablecoins, Circle's USD Coin is MiCA-licensed in France, and bank-led stablecoins are emerging to fill the gap before the ECB's digital euro. Activity in perpetual derivatives and event contracts exists but remains fragmented and generally concentrated in offshore or lightly regulated venues.
United Kingdom	Innovation is organised around tokenised securities and multi-bank deposit token programs. Sovereign debt tokenisation advancing through a digital gilt pilot. Stablecoin activity remains early-stage, with a regulatory sandbox testing use cases but no domestic GBP stablecoin at scale. Limited but emerging engagement with event contracts and structured derivatives innovation within controlled regulatory environments.
Switzerland	Pairs tokenised issuance with regulated exchange/central securities depository (CSD) infrastructure and wholesale CBDC settlement in pilot settings. Distinctive

Jurisdiction	Innovation activity
	<p>extension into small and medium-sized enterprise (SME) equity tokenisation under dedicated DLT law. A six-bank CHF stablecoin sandbox launched in April 2026 represents a coordinated push toward regulated domestic tokenised money. Some activity in crypto-based perpetual derivatives through licensed venues, though event contract markets remain niche.</p>
<p>Singapore</p>	<p>Banks have moved tokenisation from pilots into repeatable issuance formats for bonds and commercial paper as standard infrastructure. Regulated platforms support private-market tokenisation with smaller ticket sizes. Regional hub for crypto derivatives trading, including perpetuals, largely through offshore-facing platforms. Event contract activity remains limited.</p>
<p>Hong Kong</p>	<p>Active across bonds, MMFs and stablecoins with unusually concrete public-sector involvement. The Stablecoins Ordinance established a comprehensive licensing regime, with a sandbox running since 2024 and first licences expected in early 2026 following strong market interest. Growing role as a regulated gateway for crypto derivatives.</p>

3.6 Regulators’ response to and support for innovation

The pace and shape of developments in tradable asset innovation depend significantly on the regulatory environment in which they evolve. Policymakers and regulators define the boundaries within which assets can be created, exchanged, and scaled, while also influencing adoption more directly:

- by providing legal clarity on novel asset types that encourages institutional participation
- by developing public infrastructure that supports and stabilises private-sector activity, and
- by lending credibility to emerging instruments through their own engagement with market frameworks and technologies.

Across jurisdictions, a range of regulatory and policy initiatives are converging to support the continued evolution and maturation of tradable assets more broadly.

Digital asset regulation

Jurisdictions are increasingly introducing dedicated stablecoin frameworks, such as MiCA in the EU and the GENIUS Act in the US, alongside broader regulatory regimes for digital assets linked to RWAs. These frameworks establish clear requirements around reserve composition, redemption rights, governance and disclosure, providing much-needed legal certainty for issuers and investors.⁵³ Further,

⁵³ For example, under MiCA (Regulation (EU) 2023/1114), EMT issuers must deposit at least 30% of reserves in credit institution accounts (60% for "significant" issuers), with the balance held in highly liquid, low-risk financial instruments such as government bonds. The GENIUS Act instead permits six categories of reserve assets without prescribing specific allocation ratios. Both frameworks require 1:1 backing and segregation of reserves, but MiCA is more prescriptive on composition compared to the GENIUS Act.

jurisdictions are increasingly clarifying how digital assets, particularly tokenised financial instruments, fit within existing regulatory frameworks. Because financial regulation is grounded in economic substance rather than technological form, these clarifications preserve its core principles (Bollen, 2026). By defining the regulatory perimeter for digital assets, regulators also help distinguish legitimate instruments from unregulated or opaque offerings, strengthening market confidence in tokenised assets.

Central bank CBDC exploration

Central banks are exploring CBDCs as potential settlement infrastructure for tokenised asset markets. A wholesale CBDC would provide a trusted, risk-free settlement asset on-chain, enabling delivery-versus-payment (DvP) for tokenised securities without the need to rely on commercial bank money or stablecoins. This would significantly reduce counterparty and settlement risk in tokenised asset markets while further bridging the gap between traditional and digital financial systems. Several central banks, including the RBA, the European Central Bank (ECB), the Bank of England and the Swiss National Bank, have advanced pilot programs, signalling that public money may ultimately serve as the foundational settlement layer for tokenised capital markets.

Sovereign bond tokenisation

Governments are also beginning to explore the native issuance of sovereign bonds on DLTs, initially on private ledgers but also increasingly on public ones, signalling institutional confidence in the underlying technology and establishing important precedents for capital markets. The UK is exploring the issuance of tokenised government bonds on HSBC's Orion platform⁵⁴ through the DSS,⁵⁵ while Hong Kong has already issued multiple tokenised green bonds under its Government Green Bond Programme, demonstrating how DLT-based issuance can reduce settlement times and streamline post-trade processes.⁵⁶ These initiatives aim not only to test the technology but catalyse broader market development by signalling to the industry that public authorities are involved in tokenisation initiatives.

Tokenised assets as collateral

Acceptance of tokenised assets as eligible collateral in regulated financial markets is gaining traction, with jurisdictions such as the US, EU and UK indicating that certain DLT-issued securities qualify for use in collateral frameworks. This reflects a broader trend of regulators actively integrating tokenised instruments into core financial plumbing. By anchoring DLT-based securities within the collateral frameworks that underpin monetary policy operations and derivatives margining, these decisions signal a meaningful shift in institutional posture towards tokenised assets.⁵⁷

Oversight of perpetuals and event contracts

Regulators are increasingly moving to clarify how perpetual futures and event contracts fit within existing derivatives frameworks. In the US, the Commodity Futures Trading Commission (CFTC)

⁵⁴ HSBC Orion has to-date enabled the issuance of over US\$3.5billion in digitally native bonds globally across sovereign, supranational, central bank, financial institutional and corporate sectors.

⁵⁵ UK Government, Update on the procurement for Digital Gilt Instrument (DIGIT) Pilot (Press Release, 12 February 2026) <https://www.gov.uk/government/news/update-on-the-procurement-for-digital-gilt-instrument-digit-pilot>

⁵⁶ HKMA, EvergreenHub: Navigating Bond Tokenisation (October 2025) <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/bond-market-development/digital-bond-knowledge-repository/>

⁵⁷ For instance, the ECB will accept DLT-issued marketable assets held in CSDs as eligible Eurosystem collateral from 30 March 2026, while the Bank of England has flagged tokenised collateral as a 2026 priority, including clarifying its use under UK European Market Infrastructure Regulation.

announced in early 2026 that it would establish a framework to bring perpetual futures onshore, seeking to recapture liquidity that has migrated to offshore venues, and has signalled that event contracts rulemaking is in place.⁵⁸ In the EU, European Securities and Markets Authority (ESMA) has clarified that perpetual futures offered to retail clients fall within existing rules on contracts for differences, while prediction markets using crypto-assets are captured by MiCA's market abuse regime. By drawing these fast-growing products into the regulatory perimeter rather than ceding them to offshore venues, authorities are signalling that even the more novel corners of digital asset markets will be held to established standards of investor protection and market integrity.

3.7 Outlook and issues for Australia and ASIC to consider

Asset tokenisation has accelerated rapidly over the past few years. While adoption remains in its early stages, the evidence suggests growth is expected to continue at high rates. The trajectory increasingly points toward a tokenised form becoming the standard way most financial assets are issued, held, and settled. Across tokenised forms of money and other RWAs, as well as tokenisation structures, the following trends below are expected to manifest.

Tokenised money

Multiple forms of digital money, such as stablecoins, deposit tokens, and CBDCs are likely to co-exist, with no clear single winner. Different forms of money will be used for different purposes, such as central bank money is used in wholesale securities settlement, while private forms of money dominate elsewhere. While some jurisdictions have progressed from experimentation toward defined implementation tracks, uncertainty is likely to persist regarding the timing, scope, and role of wholesale CBDC as a settlement asset across global wholesale markets.

Other tradable assets

- Yield-bearing MMFs are likely to expand rapidly as on-chain settlement assets, liquidity buffers, and collateral, driven by immediate economic value and institutional demand.
- Repos, collateral management, and securities financing markets are well suited to tokenisation because efficiency gains translate directly into balance-sheet and liquidity benefits, including intraday and cross-border collateral mobility. Consequently, growth in the tokenisation of fixed-income instruments is likely to be a main focus area globally.
- Sovereign, supranational, and repeatable corporate issuance programs are expected to grow as automation reduces issuance and asset servicing costs.
- Real estate and similar alternative RWAs are likely to remain niche, constrained by low secondary market liquidity.

Tokenisation structures

Native issuance will increasingly prevail over digital twins. As distributed ledgers are recognised as legally authoritative registries and legal ambiguities get resolved, native digital assets are likely to displace dual-record digital twin models, reducing reconciliation and increasing efficiency.

⁵⁸ See the public statement of CFTC chairman Michael S. Selig, "The Next Phase of Project Crypto: Unleashing Innovation for the New Frontier of Finance" (29 January 2026) <https://www.cftc.gov/PressRoom/SpeechesTestimony/opaselig1>

Perpetual futures and event contracts

Perpetual futures are likely to continue expanding as markets require reliable 24/7 liquidation and risk-management mechanisms across a broader range of products. Their continuously margined, non-expiring structure is well suited to always-on markets where price discovery and collateral valuation cannot be paused, making perpetuals a natural complement to tokenised assets traded on distributed ledgers. Prediction markets, by contrast, are likely to remain episodic and event-based rather than continuous. For example, around events that attract heightened public attention, such as elections, major economic releases, or geopolitical outcomes, and sporting events. While both market types may remain tailored to specialised investors, their growth reflects a broader shift toward continuous risk transfer and information aggregation in markets.

Issues for Australia and ASIC to consider

These trends have implications for ASIC's regulatory and supervisory priorities. Tokenised fixed-income products are likely to be among the first tokenised financial instruments to gain traction in Australia, given their clear economic advantages and broad applicability across use cases, as demonstrated by Project Acacia.⁵⁹ Their adoption, however, will depend heavily on the concurrent development of market architectures capable of supporting their trading and settlement.

A key regulatory priority for tokenisation could be to provide greater clarity on whether distributed ledgers can operate as appropriate registries for the issuance of financial instruments. This would help support a transition away from digital twin models and towards more efficient forms of native issuance. Where assets continue to be transacted as digital twins, regulators may not have a complete or authoritative view of ownership and settlement finality, which could create risks for market integrity and prudential oversight. In this context, regulatory guidance on the use of digital twin models would help support the orderly development of tokenised markets.

For crypto-assets, ASIC has issued guidance clarifying when they are likely to fall within the scope of existing financial regulations. Less settled, however, is the treatment of novel crypto-native products such as perpetual futures and various event contracts, which have grown rapidly and are typically offered to Australian investors through offshore venues. These products might sit outside of traditional perimeters, and ASIC may consider if/how such asset types should be treated under Australian law. This includes whether they fall within ASIC's remit or that of other agencies, as these markets continue to mature globally.

At the same time, this evolution may call for ASIC to strengthen its supervision capabilities to oversee traditional and new tradable assets in parallel. The coexistence of these markets provides opportunity for new forms of market misconduct (see Putniņš, 2025) including traversing traditional and new tradable assets to avoid detection. Consequently, ASIC faces the challenge of maintaining consistent investor protection and market integrity standards across parallel systems, without stifling innovation or creating regulatory arbitrage between new asset types and traditional off-chain assets.

Close coordination with the RBA, the Australian Prudential Regulation Authority (APRA), and Treasury on the treatment of different forms of digital money, as well as engagement with international peers on crypto assets and novel instruments, such as perpetuals and event contracts, would help ensure Australia's regulatory settings keep pace with the speed at which these markets are developing.

⁵⁹ In Project Acacia, the majority of use cases have explored both the tokenisation of fixed-income instruments and the supporting market infrastructure for their issuance, trading and settlement, through pilots and proof-of-concepts.

4. New market architectures and types

The most structurally significant innovations in new market architectures and types stem from the capabilities of programmable, distributed ledgers. When assets and settlement instruments are represented as digital tokens on shared ledgers, it becomes possible to redesign trading, settlement, custody, and record-keeping and, in some configurations, to combine these functions into a single, integrated process. As Adrian (2026) argues in the International Monetary Fund's (IMF's) analysis of tokenised finance, this represents not merely an incremental efficiency gain but a potential reconfiguration of financial market infrastructure itself.

The architectures examined in this section share this common foundation: they facilitate the trade of tokenised assets and depart from the linear trade and post-trade architecture of traditional financial markets. Four developments stand out:

1. DFMLs reconfigure or combine trade and post-trade functions on shared infrastructure, enabling new settlement models – including (real-time) atomic settlement – that are fundamentally distinct from traditional financial market infrastructures (FMIs). In real-time atomic settlement, trade and settlement become one inseparable process.
2. DEXs introduce new trading mechanisms, notably AMMs and on-chain limit order books (LOBs), that organise price formation and liquidity provision through smart-contract-based protocols rather than through traditional intermediation. Among the novel implications, AMMs enable passive liquidity provision, potentially expanding the breadth of participants involved in liquidity provision.
3. DLT registries provide the legal and operational foundation for native digital issuance by establishing distributed ledgers as authoritative, shared records of ownership.
4. Centralised digital-asset exchanges and 'everything exchanges' expand into multi-asset platforms that converge with core functions of the broader financial system, such as payments and lending.

4.1 Digital Financial Market Infrastructures (DFMLs)

The use of DLTs and smart contracts in the trading and settlement of tokenised assets is reshaping both trade and post-trade structures. These new market structures are often referred to as DFMLs. At their core, DFMLs aim to address long-standing inefficiencies in legacy financial markets, particularly in post-trade processes, including:

- heavy reliance on multiple intermediaries, increasing operational complexity, costs, and processing times
- delayed settlement cycles (e.g., T+2), which introduce counterparty risk and necessitate costly risk mitigation mechanisms, such as central counterparty (CCP) margining and participant monitoring
- extensive reconciliation requirements across fragmented systems, leading to operational inefficiencies and higher error risk
- fragmented and layered custody structures, reducing transparency and limiting real-time visibility of asset ownership
- separation of trade and settlement systems, preventing the risk-free and synchronous performance of DvP in the settlement process
- inefficient collateral management, as assets are not easily mobilised or reused across platforms.

By enabling atomic settlement, shared ledgers, and programmability, DFMLs offer the potential to streamline processes, reduce systemic risk, and significantly improve market quality. These new market architectures are performing critical post-trade functions such as settlement, custody and record-keeping with increased disintermediation, ultimately reducing settlement risk, liquidity requirements, operational dependencies and intermediation chains.

The novel market architectures tested globally span from ‘pure’ DFMLs, where tokenised assets and money are co-located on a single distributed ledger and settle via real-time atomic settlement, to hybrid architectures that interoperate with existing FMLs, and to vertically integrated models used by centralised digital asset platforms.⁶⁰

The Bank for International Settlements (BIS) suggests that major efficiency gains can be realised by co-locating assets and cash on the same ledger.⁶¹ By bringing tokenised assets and money onto a unified distributed ledger, the need for traditional intermediaries such as custodians, clearinghouses, and settlement agents is significantly reduced. This co-location has the potential to drive disintermediation of traditional financial market functions, enable atomic settlement, facilitate the direct exchange of assets between counterparties, and support non-custodial structures in which participants retain direct control over their assets. Taken together, these features represent a fundamental reshaping of the post-trade processing of financial transactions. The implications extend not only to operational efficiency but also to risk management, transparency, the overall structure of the financial markets, and systemic stability (Bech, Hancock, Rice, and Wadsworth, 2020; Chiu and Koepl, 2019; Feenan, Heller, Lipton, Morini, Ram, Swanson, Yong, and Zalles, 2021).

The greatest innovation in settlement systems is consequently enabled by having all legs of a transaction on a single infrastructure, which supports real-time atomic settlement – a mechanism that is distinct from shortening the settlement cycle.⁶² Shortening the settlement cycle changes when deferred settlement occurs, but settlement still relies on sequential, asynchronous, and coordinated processes across separate systems, leaving scope for settlement failures. Real-time atomic settlement instead changes how settlement occurs. Both legs of the transaction are executed synchronously as a single, indivisible action. Because trade execution and settlement are combined into a single, inseparable process, either all legs of the transaction settle, or none do. As a result, real-time atomic settlement is the only settlement model in which settlement failures cannot occur,⁶³ eliminating both replacement cost risk and the costs associated with mitigating ‘fails-to-deliver’.

The benefits from real-time atomic settlement depend on the asset class and market structure. In asset classes with central clearing and deferred net settlement, including public equities, not all participants are likely to benefit.⁶⁴ This is because real-time settlement requires cash and securities to be available at or before trade execution, which can remove the implicit lines of credit supplied by central counterparties, the time available to source securities through securities lending arrangements, and the multilateral netting benefits embedded in deferred net settlement systems. The liquidity cost is therefore likely to be most material for market makers, short sellers and other participants with relatively flat end-

⁶⁰ A classification of different DFML models is provided in Gmeiner, F., Putniņš, T.J. & Weiss, D. (2026). Digital Financial Market Infrastructures. Digital Finance CRC and University of Technology Sydney.

⁶¹ BIS, Annual Economic Report (2025), <https://www.bis.org/publ/arpdf/ar2025e.htm>

⁶² See Section 5.1. for developments in the compression of standard securities settlement cycles.

⁶³ A classification of different settlement mechanisms and their associated settlement integrity is provided in Putniņš, T.J. & Weiss, D. (2026). Digital Finance CRC and University of Technology Sydney.

⁶⁴ DFCRC Report, “Unlocking Australia’s \$24b Digital Finance Opportunity” (March 2026) for a more in-depth analysis on the varying incentives of market participants to move to pre-funded settlement in equities markets. Available at <https://dfcrc.com.au/2026/03/03/the-economic-impact-potential-of-digital-finance-innovation-in-australia/>

of-day exposures. By contrast, it is less problematic for investors who already hold the asset they intend to sell or cash they intend to invest, including many institutional and retail investors.

This helps explain why real-time atomic settlement has struggled to gain traction in public equity markets: not because existing infrastructure is unreformable, but because it is deeply entrenched. For participants who value deferred settlement, short, deferred settlement cycles,⁶⁵ explicit intraday credit facilities or settlement-liquidity bridges (SLBs)⁶⁶ that facilitate securities lending and borrowing may be needed where netting and liquidity efficiency remain important. This would allow participants who benefit most from deferred net settlement and implicit credit to bear the cost of those credit facilities more directly, rather than embedding those costs across all market participants.⁶⁷

DFMIs are emerging around the world. Integrated models such as 21X and Axiology within the EU's DLT pilot program combine trading and settlement within a single ledger infrastructure on public blockchains. A necessity here is that the EU's DLT pilot allows the use of regulated stablecoins as settlement assets, making the on-ledger architecture feasible (Box C). One of the more conventional hybrid approaches is BX Digital in Switzerland (Box D), which operates as a DLT settlement platform on Ethereum and is connected to the legacy payment system.

Box C: Trading and settlement systems (TSS) under the DLT Pilot Regime

Within the DLT Pilot framework, 21X is a prominent example of a combined DLT TSS model. It initially supports a tokenised MMF that can be traded and settled against regulated stablecoins such as USDC (Circle). 21X deployed on-chain limit order books (LOBs) on the Polygon network, enabling real-time atomic settlement. Settlement is deemed final once the Polygon blockchain reflects the updated balances of the relevant DLT financial instruments and stablecoins for the parties involved, and after a further 128 blocks have been confirmed.⁶⁸ Participants can retain self-custody of their assets, rather than relying on a centralised custody model.

In parallel, LISE⁶⁹ (France), Axiology⁷⁰ (Lithuania), and Securitize⁷¹ (Spain) have also been authorised to operate a Pilot Regime TSS, each with a slightly different initial asset focus and technology stack. LISE is positioning itself as a fully tokenised equity venue for SMEs and mid-caps, with trading and post-trade integrated on a permissioned blockchain; for the cash leg, it has publicly highlighted a partnership with Memo Bank to provide payment infrastructure (rather than naming a specific stablecoin). Axiology's initial scope is centred on tokenised bonds (including 'minibonds'), running on a permissioned version of the XRP Ledger with an integrated on-ledger DEX for secondary trading with stablecoins. Securitize has so far only publicly announced that it will cover tokenised shares and bonds, which will initially be deployed on Avalanche.

⁶⁵ McLaughlin (2024) shows that, in the US, 90% of netting benefits in equity markets can be achieved within 10 minutes.

⁶⁶ A SLB is a tokenised securities-lending mechanism that supports short-term, collateralised funding for settlement, allowing flexible deferred settlement while maintaining the operational and risk benefits of real-time markets. It enables users to choose settlement horizons aligned with their liquidity constraints and prices counterparty risk directly at the level of each SLB user.

⁶⁸ 21x, Rulebook (August 2025) <https://21x.eu/announcement/21x-ag-rulebook-amendment-announcement/>

⁶⁹ See Lightning Stock Exchange (March 2026) <https://www.lise.com>

⁷⁰ See Axiology (March 2026) <https://www.axiology.xyz>

⁷¹ Securitize, Full EU Regulatory Approval (Press Release, 27 November 2025) <https://securitize.io/learn/press/Securitize-Wins-Full-EU-Regulator-Approval>

Box D: BX Digital

BX Digital (a sister company of BX Swiss) secured the first DLT trading facility license, which was issued by the Swiss Financial Market Authority (FINMA).⁷² It is targeting natively issued, tokenised securities ('DLT securities' under the Swiss DLT Act) that are identified by International Securities Identification Numbers (ISINs) and admitted to trading for wholesale/professional participants. Trade execution and matching leverages BX Swiss's exchange-market infrastructure (off-chain LOB) while settlement is delivered via a DvP stack on public Ethereum with the cash leg settling in central bank money through the Swiss Interbank Clearing system operated on behalf of the Swiss National Bank.

Operationally, once a trade is matched, the seller authorises a DvP smart contract to lock the on-chain securities pending payment; upon confirmation that funds have moved in SIC, the contract releases the securities to the buyer's wallet – delivering settlement in roughly 30 minutes without a CCP. BX Digital does not provide custody of tokenised assets: participants remain responsible for wallet safekeeping and key management.⁷³

4.2 Decentralised exchanges

Another key trading innovation enabled by tokenisation is the emergence of DEXs. When assets are represented as programmable tokens on distributed ledgers, trading can be organised through smart-contract-based protocols rather than through separate, intermediated, traditional exchanges. In such settings where trade formation occurs on-chain, execution, settlement, and asset control can be more closely integrated, giving rise to new market architectures. One novel feature of such exchanges is they can operate without a distinct operator or entity intermediating the matching of buyers and sellers.

Two principal decentralised trading mechanisms have emerged. The first is the AMM, in which trading takes place against pre-funded liquidity pools, and prices are determined by an embedded pricing function. The second is the on-chain LOB, which seeks to replicate the familiar order-driven structure of traditional exchanges within a distributed-ledger environment. These models differ materially in how they generate prices, allocate liquidity, and manage trading frictions. The discussion below considers each in turn.

(i) Automated Market Makers

In traditional financial markets, liquidity is primarily facilitated through LOBs, where professional and designated market makers actively submit quotes and adjust spreads in response to information and inventory risk. AMMs introduce a structurally different mechanism: instead of matching individual buyers and sellers, trades are routed to a pre-funded liquidity pool and execute 'against the pool' as long as sufficient reserves are available. Prices are not formed through an order-matching process but are generated mechanically by a rule that maps the pool's current asset balances into an exchange rate,

⁷² FINMA, FINMA licenses first DLT trading facility (Press Release, 18 March 2025) <https://www.finma.ch/en/news/2025/03/20250318-mm-dlt-handelssystem/>

⁷³ See BX Digital (March 2026) <https://bxdigital.ch/en/home/>

with the canonical example being a constant-product invariant such as $x * y = k$. Intuitively, when a trader buys one asset from the pool, that asset becomes scarcer in the pool and therefore more expensive for the next trade, which is how AMMs can provide continuous, always-on liquidity without maintaining an order book.

An important implication is that AMMs can substantially expand the breadth of participation in liquidity provision by enabling 'passive' liquidity provision. This entails depositing tokenised assets into the AMM liquidity pool, and receiving a yield on those assets, derived from trading fees, as the reward for contributing to the liquidity pool.

This automation, however, changes how classic market-making risks appear. Because an AMM is passive and does not strategically revise quotes when information arrives, it can be 'picked off' when external prices move. Arbitrage traders update the pool's price by trading against it until the pool-implied price realigns with the broader market, and the resulting loss is borne by liquidity providers as an adverse-selection cost.

AMMs therefore rely on a different compensation mechanism than discretionary spread-setting in LOBs. Typically, this is done by setting a fixed transaction fee charged on each swap, which is intended to generate revenue that offsets these adverse-selection losses over time. From a market-design perspective, the implication is that AMMs are not universally superior to LOBs. Rather, their suitability depends heavily on the underlying instrument's volatility (which drives the intensity of adverse selection, see Brandl and Putniņš (2026)) and the level and stability of trading volume (which drives fee income). Consistent with this logic, Foley, O'Neill, and Putniņš (2025) argue that AMM-like designs are plausible for instruments that are both highly liquid and relatively stable, such as major foreign exchange pairs, government bond exposures, and certain large-cap securities, because these conditions jointly reduce the cost of being arbitrated while supporting sufficient fee generation.

Importantly, AMMs are no longer purely theoretical: the growth of RWA tokenisation is explicitly aimed at bringing traditional exposures on-chain and into DeFi market structures, including AMM-based liquidity pools. In practice, however, trading outcomes differ markedly across asset classes. The most mature "real-economy" use case in AMMs remains fiat-referenced stablecoins, where low volatility makes pool-based liquidity provision comparatively more robust. For example, Curve's Stableswap pools are explicitly designed for assets expected to maintain a very close peg and their largest stablecoin pool - the DAI/USDC/USDT pool on Ethereum - exhibits roughly USD 163 million in liquidity.⁷⁴ Beyond currencies, tokenised Treasury and fund-like instruments are increasingly discussed and, in some cases, integrated into DeFi venues, including products referenced in market commentary around tokenised Treasuries such as BlackRock's BUIDL.⁷⁵ Public-pool trading is also visible for some commodity-linked claims. Gold-backed token pools such as XAUT/USDT and PAXG/USDC on Uniswap v3 currently show multi-million-dollar liquidity,⁷⁶ but beyond these cases, the market remains much less uniform, with tokenised credit and real-estate activity still appearing comparatively fragmented and thin.

The current evidence suggests that AMM trading is not yet a generic solution for RWAs. It is strongest for claims with low fundamental volatility, transparent reference pricing, and sufficient trading intensity to offset adverse-selection losses through fees.

⁷⁴ The data is available at <https://www.geckoterminal.com/eth/pools/0xbebc44782c7db0a1a60cb6fe97d0b483032ff1c7> (March 2026).

⁷⁵ Uniswap, Uniswap Labs and Securitize Partner to Unlock DeFi Liquidity for BlackRock's BUIDL (Press Release, 11 February 2026) <https://blog.uniswap.org/unlocking-defi-liquidity-for-buidl>

⁷⁶ The data is available at <https://www.geckoterminal.com/eth/pools/0x6546055f46e866a4b9a4a13e81273e3152bae5da>

(ii) On-chain limit order books

While AMMs have dominated decentralised trading, a parallel development is the emergence of fully on-chain limit order books — DEXs that replicate the familiar order-matching logic of traditional exchanges on a distributed ledger, allowing participants to submit, modify, and cancel limit orders at specific prices. In principle, this preserves the price-time priority and strategic flexibility that institutional participants expect from conventional trading venues.

In practice, however, on-chain LOBs have faced persistent structural constraints. Maintaining a full order book on chain requires frequent state changes: every order submission, modification, and cancellation is a transaction that must be processed and recorded by the network. On earlier-generation blockchains, this made on-chain LOBs prohibitively expensive and slow. Gas costs penalised the continuous quoting behaviour that is essential for active market making, and block times introduced latency that exposed market makers to adverse selection without the ability to revise quotes quickly enough. The result was a structural disadvantage relative to both centralised venues and AMMs. The former offered superior speed and cost efficiency, the latter required no active order management at all. These constraints help explain why AMMs, despite their own limitations, became the dominant DEX model.

More recently, advances in high-performance blockchains and layer-2 scaling solutions have begun to relax these constraints, with platforms such as dYdX and Hyperliquid demonstrating that order book-based trading can operate on-chain with significantly improved latency and cost profiles.⁷⁷ Whether these improvements are sufficient to make on-chain LOBs competitive for a broader range of tokenised assets – particularly those requiring active price discovery – remains an open question.

4.3 DLT registries

A novel element of tokenised asset markets is the recognition of DLTs as authoritative registries for the native issuance of RWAs. Several jurisdictions have begun to recognise DLT-based electronic recording systems as appropriate registers, granting third parties a right to rely on the shared ledger as conclusive evidence of title and a basis for good-faith acquisition.⁷⁸ Because the DLT register becomes the single source of truth for proprietary rights, some jurisdictions require the registration of tokens representing securities to be carried out by authorised, regulated entities. This reflects a principle already embedded in financial regulation: a registrar should be subject to governance requirements that safeguard the integrity of the record and mitigate conflicts of interest. The form of those requirements may, however, need to differ where the registrar oversees balances on a DLT network rather than operating a centralised system.

DLT registries also deliver concrete market-structure benefits. By anchoring legal title in a supervised on-chain register, it eliminates the need for layered custodial chains in which multiple intermediaries each maintain their own copy of ownership records – a structure that has historically relied on costly and often error-prone manual reconciliation. This facilitates self-custody of tokenised assets and materially reduces post-trade cost and settlement risk, while the prudential licence ensures that registrars remain accountable for the accuracy and availability of the register and bound by AML/CFT and KYC obligations.

⁷⁷ See dYdX and Hyperliquid for examples of layer-2 scaling solutions <https://app.hyperliquid.xyz> and <https://dydx.trade/>.

⁷⁸ See Table 1 for some jurisdictional evidence on DLT registries in ECB Report, The use of DLT in post-trade processes (April 2021) https://www.ecb.europa.eu/pub/pdf/other/ecb.20210412_useofdltposttradeprocesses~958e3af1c8.en.pdf

Emerging DFMI models are now integrating this record-keeping function directly into their market architecture, combining registry, trading and settlement within a single DLT-based system. Examples where regulation already reflects this include the German eWpG,⁷⁹ which subjects crypto-securities registrars to BaFin authorisation, as in the case of 21X and Cashlink,⁸⁰ and the Luxembourg dematerialised securities and circulation regimes, which require DLT-based account-keepers and control agents to hold an appropriate financial sector licence.⁸¹ Provided these conditions are met, a directly tokenised asset is regarded as operating under the same regulatory regime as its traditionally recorded equivalent, removing a significant barrier to institutional adoption.

4.4 CEX and ‘everything exchanges’

CEXs have emerged as another significant source of market innovation by collapsing functions that are currently often separated across distinct financial institutions and market infrastructures. Rather than operating solely as trading venues, many CEXs internally perform multiple financial market functions – including trading, settlement, custody, and in some cases payment and asset-servicing functions – within a single, vertically integrated off-chain platform. The DLT is primarily used for on- and off-ramping of assets. This internalisation compresses many legacy post-trade functions and enables near-real-time internal settlement, but concentrates operational, custody, and governance risks within a single entity.

On the user-facing side, this functional consolidation increasingly resembles digital ‘super-app’ models rather than conventional broker-dealer arrangements. Trading in spot and derivative crypto assets is commonly integrated with payments, consumer finance, reward programs, and wallet-based services within a unified interface. From a retail perspective, activities that would historically have been intermediated through separate exchanges, banks, custodians, and payment providers are now bundled within a single platform environment (See Box E).

At the same time, CEXs are extending beyond native crypto assets into more traditional financial markets, contributing to a convergence between crypto and RWA trading. Several platforms now offer access to tokenised versions of traditional securities such as equities and ETFs. This expansion positions CEXs as multi-asset venues that combine crypto-native markets with exposure to tokenised traditional financial instruments within the same operational and custody framework. Kraken, for example, now offers access to 11,000+ US-listed stocks and ETFs and separately markets tokenised stocks and exchange-traded funds (ETFs) through its xStocks offering.⁸² In this sense, CEXs are increasingly evolving into what might be described as ‘everything exchanges.’ Having built sophisticated trading infrastructure and large user bases in crypto-assets, many are now seeking to expand across asset classes and product lines, including tokens that mirror traditional equities,⁸³ perpetual futures, and prediction markets (see e.g. Coinbase).⁸⁴

⁷⁹ Germany’s Electronic Securities Act (eWpG, in force since June 2021) introduced the crypto securities register (Kryptowertpapierregister), a register typically operated on DLT, in which electronic securities are entered in lieu of a physical certificate. Operation of such a register requires a BaFin licence as a crypto securities registrar under the German Banking Act (Kreditwesengesetz), making Germany one of the first jurisdictions to provide a fully regulated pathway for native on-chain issuance of securities.

⁸⁰ 21x, 21X and Cashlink announce strategic collaboration (Press Release, 11 March 2025) <https://21x.eu/21x-and-cashlink-announce-strategic-collaboration-to-drive-tokenized-securities-trading-in-germany/>

⁸¹ CSSF, Guidance on Distributed Ledger Technologies & Blockchain (January 2022) https://www.cssf.lu/wp-content/uploads/DLT_WP.pdf

⁸² See Kraken’s tokenised stock offerings (March 2026) <https://www.kraken.com/en-au/stocks>

⁸³ These tokenised equities are often digital twins or regulated as derivatives if no claim on the underlying securities exists.

⁸⁴ Coinbase, System Update: The future of finance is on Coinbase (Press Release, 17 December 2025) <https://www.coinbase.com/en-au/blog/system-update-the-future-of-finance-is-on-coinbase>

Taken together, CEXs are no longer best characterised as standalone crypto trading platforms. They are increasingly becoming consolidated market infrastructures and challenge traditional distinctions between market operators, post-trade intermediaries, and payment providers. They also raise important regulatory questions, since vertically integrated, multi-function platforms may create conflicts of interest, concentration risks, and new forms of systemic dependence. Whether such ‘everything exchanges’ represent a durable structural shift or a transitional stage ahead of more regulated and institutionally specialised market structures remains an open question. Their emergence, however, is already pressuring traditional exchanges and brokerages to reconsider the boundaries of their own offerings.

Box E: Crypto.com

Crypto.com illustrates one path of market innovation driven by CEXs: the integration of financial and non-financial services within a single platform environment. Rather than functioning only as a crypto trading venue, Crypto.com combines a brokerage-style app and exchange for trading digital assets with a Visa card product, crypto-based payments, merchant payment services, and consumer-spending functions such as gift cards and mobile top-ups. From a market-structure perspective, this matters because activities that were traditionally separated across brokers, card issuers, payment providers, and consumer-finance interfaces are increasingly bundled into a single platform. The innovation is therefore not just the trading of crypto assets itself, but the creation of a more integrated retail market environment in which trading, payments, rewards, and spending are closely linked.⁸⁵

4.5 Developments in major jurisdictions

The regulatory and market landscape for new market architectures and types is evolving unevenly across major financial centres, reflecting differences in legal frameworks, institutional priorities and market structure. Table 2 provides an overview of selected developments across the seven jurisdictions analysed in this report, highlighting where progress is most advanced and where key building blocks remain under development.

Table 2: Developments in new market architectures and types across major jurisdictions

Jurisdiction	Innovation activity
United States	Active tokenised asset markets. End-to-end regulated platforms combining transfer agency, broker-dealer and alternative trading systems (ATs) for tokenised securities. Growing cluster of regulated ATs enabling secondary trading. Major exchanges filing to trade tokenised equities alongside traditional shares. Significant global CEX activity anchored in US market demand, although some entities operate from offshore jurisdictions (e.g. Cayman Islands) due to regulatory considerations.

⁸⁵ See Crypto.com as an example of a CEX <https://crypto.com/>.

Jurisdiction	Innovation activity
Canada	DLT settlement experiments conducted but not deployed live. Focused on upgrading existing infrastructure rather than building new architectures. Limited domestic CEX activity in advanced tradable asset innovation, with participation often occurring via international platforms.
European Union	Legislative pilot regime enabling fundamentally new DFMI models with assets natively issued on DLT registries. Diverse architectures in operation: atomic on-chain settlement venues, SME equity platforms, and bond DEXs. Shared neutral base-layer DLT infrastructure jointly owned by multiple institutions. Interoperability bridges connecting tokenised and traditional rails are planned. CEX activity developing under the MiCA regulation, with licensed exchanges beginning to operate within a harmonised regulatory framework.
United Kingdom	Regulatory sandbox testing new DFMI designs with a broad mix of incumbents and new entrants. Planned multi-chain on-chain depository. Planned exploration of payment system integration with tokenised markets. CEX activity is evolving, but mostly in global CEX markets.
Switzerland	Permissionless public-blockchain settlement with cash in central bank money without CCP. Bridge-first philosophy lowers adoption friction. Active ecosystem of regulated digital asset exchanges under Swiss DLT legislation, alongside participation in global CEX markets.
Singapore	Cluster of regulated digital venues: fractional bond exchanges, tokenised securities platforms, institutional digital exchanges. Multiple regulated or regulation-seeking venues connecting issuance, trading and custody. Strong regional hub for CEX activity, with major exchanges operating under licensing regimes while also serving international markets.
Hong Kong	Novel DLT-based exchange model for revenue-sharing micro-assets. Post-trade automation for cross-border equity connectivity. Active push to attract and regulate CEX operators through a licensing regime, positioning Hong Kong as a supervised gateway for digital asset trading in the region.

4.6 Regulators' response to and support for innovation

Policymakers and regulators play a critical role in shaping the emergence of novel market architectures and types. This role involves designing new regulatory frameworks or introducing flexibility within existing ones to accommodate innovations such as DFMI and novel markets such as integrated multi-asset platforms. In other instances, a more active form of intervention is required, including facilitating interoperability between legacy systems and DFMI, as well as expanding supervisory arrangements to cover new types of market participants and activities. In practice, effective policy operates across three

dimensions: enabling innovation in DFMLs through supportive regulatory settings, actively fostering interoperability between legacy systems and tokenised asset markets, and strengthening supervisory frameworks to ensure financial stability and investor protection are maintained as these new infrastructures scale.

Sandboxes and other regulatory initiatives

Major jurisdictions have moved beyond policy statements to establish dedicated regulatory frameworks designed to foster DFMLs, representing a notable and multi-year commitment to the long-term integration of DLT into capital markets. Taken together, these initiatives share a common logic: regulators are building structured, iterative pathways that allow businesses to operate under modified rules today while informing the design of permanent regimes.

- In the EU, the DLT Pilot Regime provides a controlled environment for trading and settling tokenised securities under a temporarily modified legal framework, with the European Securities and Markets Authority (ESMA) actively reviewing the regime to broaden its appeal.⁸⁶
- The UK followed with its DSS, launched jointly by the Bank of England and the FCA in September 2024 under powers conferred by the Financial Services and Markets Act 2023, running until at least December 2028 with a structured 'glidepath' through which businesses can progress from testing to live activity and ultimately to a permanent regime.⁸⁷
- Switzerland has taken a complementary legislative approach: the Swiss DLT Act, which entered into force in 2021, introduced a dedicated licensing category for DLT trading facilities under the FinMIA, creating a flexible legal framework for new forms of financial market infrastructure.⁸⁸
- In Asia, the Monetary Authority of Singapore (MAS) used Project Guardian to develop operational frameworks for tokenised funds, while Hong Kong's HKMA launched Project Ensemble as a sandbox for RWA tokenisation experiments.⁸⁹

Regulatory frameworks for centralised exchanges

Several jurisdictions have introduced dedicated regimes to bring CEXs within the regulatory perimeter. In the European Union, the MiCA regulation requires CEXs to be licensed as crypto-asset service providers, while in the US the proposed FIT21 Act seeks to establish a federal framework allocating oversight between the CFTC and SEC. The rationale is to address market failures repeatedly observed in unregulated crypto markets, such as misuse of client assets and operational failures, by aligning the treatment of centralised crypto intermediaries with that of traditional financial institutions.

Operational links to legacy infrastructure

Governments and central banks are increasingly working alongside the private sector to support the development of tokenised financial markets while maintaining continuity with existing financial infrastructure. A key focus has been the creation of interoperability bridges between legacy payment systems and DLT platforms, enabling DvP settlement using central bank money that remains off-chain. This approach is widely viewed as a pragmatic mid-term solution while debates around wholesale CBDCs continue. Several jurisdictions are exploring such models. For example, the Swiss National

⁸⁶ ESMA, DLT Pilot Regime <https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/dlt-pilot-regime>

⁸⁷ BoE, Digital Securities Sandbox (DSS) <https://www.bankofengland.co.uk/financial-stability/digital-securities-sandbox>

⁸⁸ SIF, Financial Market Infrastructure Act (FinMIA) <https://www.sif.admin.ch/en/financial-market-infrastructure-act-finmia>

⁸⁹ For example, selected grant schemes in Hong Kong and Singapore. <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/11/20241128-3/> and <https://www.mas.gov.sg/schemes-and-initiatives/global-asia-digital-bond-grant-scheme>

Bank has already implemented such a linking solution,⁹⁰ while the Bank of England through its Digital Securities Sandbox and synchronisation programme,⁹¹ and the ECB through Project Pontes,⁹² are actively developing interoperability between tokenised securities platforms and existing real-time gross settlement systems.

Government schemes

In addition, several governments have introduced direct incentives to accelerate the development of tokenised markets. For example, Hong Kong and Singapore have implemented grant schemes and regulatory support programs to encourage financial institutions and fintech businesses to build tokenisation infrastructure and pilot projects. The rationale for these policies is often framed in terms of overcoming the ‘first-mover disadvantage.’ Tokenised markets exhibit strong learning externalities, where early experimentation generates knowledge that benefits the broader ecosystem, and network externalities, meaning that the value of the system increases as more participants adopt it. Without public support, private businesses may underinvest in early development because they cannot fully capture these ecosystem-wide benefits.

4.7 Outlook and issues for Australia and ASIC to consider

Innovation in new market architectures is accelerating alongside asset tokenisation, including the emergence of DFMLs, DEXs, and exchanges that integrate a broad spectrum of asset classes. Current separation between trading, clearing, settlement, and custody is eroding, and market infrastructure is being redesigned to operate with shorter settlement cycles and higher degrees of automation and intermediation. Across market and settlement infrastructure, the following trends are expected to manifest.

Market structure

- Tokenised public markets are gaining momentum. Following early concentration in private markets and funds, experimentation is increasingly extending into public markets, including equities and exchange-traded index products, as incumbent exchanges (especially in the US) explore tokenised issuance and trading models.
- Real-time atomic settlement DFMLs, and various hybrid models interoperating with existing payment systems and FMs will continue to develop in parallel. There is likely not going to be convergence towards a single architecture type in the near term. In part, this is because real-time settlement is not optimal for all asset classes or participants. To support market-making, liquidity provision, and securities lending, market infrastructures are likely to combine faster settlement with mechanisms that preserve some features of deferred settlement, including liquidity-saving or credit-extension arrangements.
- Adoption of DEXs for tokenised RWAs is likely to grow if regulatory frameworks accommodate these new market structures. In the near term, innovation is more likely to concentrate on AMM models on public networks rather than fully on-chain limit order books, as AMMs are operationally simpler.

⁹⁰ See information on Project Helvetia https://www.snb.ch/en/the-snb/mandates-goals/payment-transactions/projekt_helvetia

⁹¹ BoE, Synchronisation Lab (February 2026) <https://www.bankofengland.co.uk/payment-and-settlement/rtgs-future-roadmap/synchro-lab>

⁹² ECB, Pontes link solution between DLT platforms and TARGET Services <https://www.ecb.europa.eu/paym/target/pontes/html/index.en.html>

- The separation between crypto-native venues and traditional markets continues to narrow. Crypto-asset markets have demonstrated that high-value transactions can be processed securely at scale. As a result, traditional market operators are increasingly partnering with crypto-native businesses, integrating tokenised real-world assets into crypto venues and adopting ‘always-on’ trading and market access models pioneered in DeFi.

Settlement and post-trade

- Settlement cycles are continuing to compress, but within structural limits imposed by legacy infrastructure. Markets can only move so far toward shorter settlement cycles using existing systems and technology. Transitioning from T+1 to real-time atomic settlement is not simply a further compression of the existing settlement cycle. While T+1 can largely be achieved through automation, standardisation and straight-through processing within existing post-trade arrangements, real-time atomic settlement – where trade execution and settlement are integrated, and the cash and securities legs settle synchronously on a shared ledger – requires a different architecture.
- Multiple settlement models are likely to coexist. Real-time settlement is not optimal for all asset classes or participants. To support market-making, liquidity provision, and securities lending, market infrastructures are likely to combine faster settlement with mechanisms that preserve some features of deferred settlement, including liquidity-saving or credit-extension arrangements.

Interoperability and fragmentation

- Interoperability is becoming a defining feature of market design. As tokenised markets scale across borders, interoperability between different forms of digital money, tokenised asset platforms, and legacy infrastructure is increasingly critical to market functioning.
- Market innovation is reshaping how competition and liquidity are balanced. New venues and infrastructures are proliferating, but economic consolidation increasingly occurs through interoperability rather than through a single dominant platform. These mechanisms allow physically fragmented infrastructures to function as a virtually consolidated market, analogous to the role played by consolidated tapes in traditional markets.
- Greater reliance on international coordination is emerging. As markets become more interconnected at the infrastructure level, global standards and cross-jurisdictional alignment are becoming more important in shaping how tokenised markets scale.

Issues for Australia and ASIC to consider

The development of dedicated regulatory frameworks for DFMI across major jurisdictions underscores the importance of Australia establishing its own structured pathway to accommodate tokenised markets. Without a comparable framework, there is a risk that innovation may slow or migrate to jurisdictions offering greater regulatory clarity, and that Australian market participants may fall behind in developing the operational expertise needed to compete in increasingly global tokenised markets.

As the traditional linear sequence of trading, clearing, settlement and custody begins to erode, and as it is not always clear which entity performs a given function, it may be appropriate for ASIC to consider how its regulatory architecture could adapt to new DFMI models that do not map neatly onto existing guidelines or licensing categories.

As centralised exchanges diverge into broader ‘everything exchange’ models, ASIC’s supervisory approach may also need to evolve beyond an exchange-focused lens toward one better suited to highly

integrated platforms performing multiple market-facing roles within a single structure. A key shift could involve moving from the supervision of centralised exchanges as relatively bounded trading venues toward a more holistic assessment of platforms operating as complex ecosystems, in which trading, custody, settlement, financing, product origination and other services may coexist. This could place less emphasis on reviewing individual activities in isolation and greater emphasis on understanding how risks arise from the interaction of functions within a single platform, particularly where traditional functional boundaries become blurred or provide a less clear basis for supervision.

Review of the research literature and identified misconduct cases indicates that most traditional forms of market misconduct – including manipulation, insider trading, and fraud – are found in recent CEX and DEX markets, but often in ways that differ markedly from their implementation in legacy financial markets (see Putniņš, 2025). The same research shows that new categories of misconduct have emerged that exploit the technological and structural features of blockchain-based systems, such as pre-trade transparency, immutability, and permissionless access. These include forms of frontrunning that exploit the decentralised process of transaction confirmation, flash loan attacks on decentralised markets, oracle manipulation, thefts of digital assets facilitated by the absence of centralised registries or issuers, and ‘rug pulls’ in which perpetrators drain investor funds from liquidity pools or decentralised exchanges. While many of the documented examples of such activity have to date been outside of ASIC’s regulatory perimeter, they highlight a need to consider extending and adapting market surveillance techniques, particularly as these new market types attract more participants and a broader range of assets.

The proliferation of new venue types and trading models, together with the narrowing boundary between crypto-native and traditional markets, may increasingly call for supervisory approaches that preserve market integrity across a broader and more diverse set of trading and settlement structures than ASIC has historically overseen. In this context, coordination with Treasury, the RBA and international counterparts could become increasingly important, particularly in relation to interoperability standards and the design of any future regulatory sandbox for DFMs, or equivalent mechanism.

5. Innovation in existing markets

The innovations examined in this chapter differ fundamentally from those in Chapters 3 and 4. Rather than introducing new tradable assets or reconfiguring market architecture from the ground up, these developments take place within established market structures, as incumbent exchanges, FMI, and regulators adapt existing systems to changing demands. The primary enabler of the concrete improvements discussed here is continued advances in computing power, IT, and data processing, without which faster matching and clearing, near-continuous market operation, and more responsive risk and collateral management would not be feasible at the scale required today. DLT plays only a secondary and largely indirect role: the emergence of always-on digital venues discussed in Chapter 4 has created competitive pressure to which incumbents are responding, and individual DLT components are being selectively incorporated into existing systems, typically without altering the underlying institutional architecture.

Three developments stand out:

1. Settlement cycle compression has emerged as a central focus of post-trade reform, with major jurisdictions transitioning from T+2 to T+1 and beginning to consider what lies beyond.
2. Private tokenisation initiatives involve established market operators modernising their core systems, often incorporating distributed ledger components, but typically within the boundaries of existing institutional and regulatory frameworks.
3. Extended trading hours reflect a gradual but persistent shift toward longer and, in some cases, near-continuous market operation, driven by global investor participation and competitive pressure from always-on digital venues.

5.1 Settlement cycle compression

Settlement cycle compression, i.e., the reduction in the time between trade execution and final settlement, has become a central focus of post-trade market reform across jurisdictions. The length of the settlement cycle determines how long counterparties remain exposed to credit and operational risk, how much margin and balance-sheet capacity intermediaries must commit to unsettled trades, and how quickly capital and inventory can be recycled through the financial system. Historically, settlement cycles of two or three business days reflected technological and operational constraints associated with manual processing, batch reconciliation, and fragmented post-trade infrastructure. Advances in automation, alongside heightened regulatory attention to systemic risk and capital efficiency, have driven an international shift toward shorter settlement cycles.

A primary motivation for settlement compression is risk reduction. Longer settlement windows increase exposure to counterparty default and market movements during the period between execution and final delivery, necessitating higher margin requirements and greater liquidity buffers to support clearing and settlement (Brunnermeier and Pedersen, 2009; Duffie, Scheicher and Vuilleme, 2015). By shortening the duration of unsettled obligations, faster settlement reduces the amount of capital tied up in margin and default funds, limits replacement-cost risk, and strengthens overall market resilience.

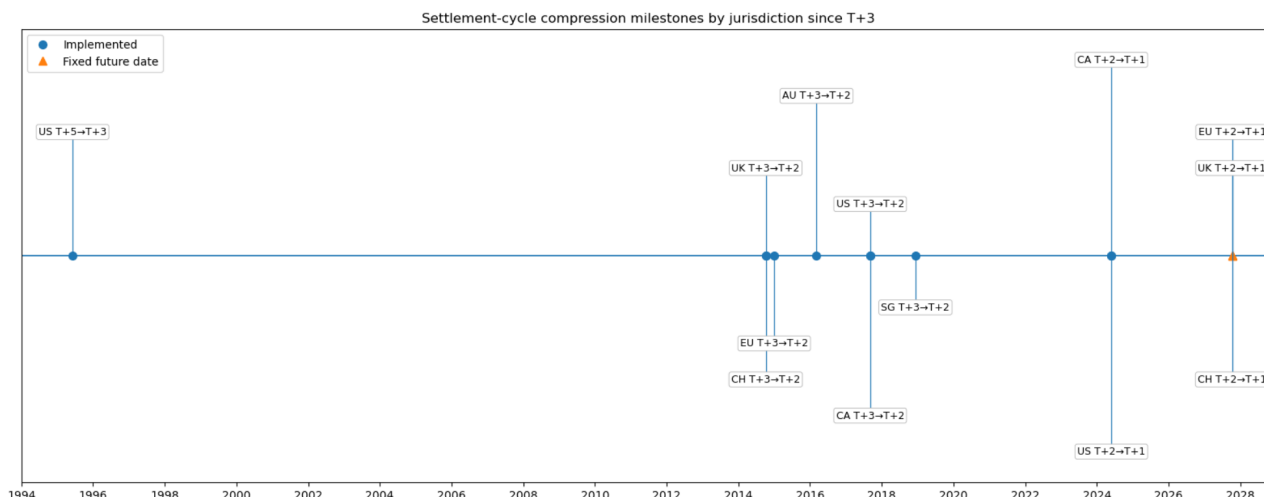
Recent empirical evidence from the US provides direct support for these mechanisms. The US transition from T+2 to T+1 settlement in May 2024 shortened the post-trade exposure window and was followed by persistent improvements in market liquidity, including narrower closing spreads, lower price impact, and increased trading activity (Félez-Viñas, Mālnieks, Putniņš and Siliņš, 2026). International experience points in a similar direction. Earlier settlement reforms, including the US move from T+3 to T+2 and India's transition to T+1, are also associated with improvements in liquidity and trading activity,

albeit with cross-sectional variation (Baig et al., 2022; Bhanu, Nath and Patnaik, 2024; Ainsworth, Weiss and Zhou, 2026).

At the same time, settlement cycle compression introduces important trade-offs. A shorter settlement window leaves less time for trade affirmation, funding, securities borrowing, and the resolution of operational mismatches. Theoretical work highlights that compressing the settlement horizon can tighten short-term funding constraints and increase the risk of settlement failures in stressed liquidity environments if complementary processes do not adjust accordingly (Khapko and Zoican, 2020). Empirical evidence shows that improvements in settlement outcomes under T+1 emerge gradually rather than instantaneously, reflecting the time required for intermediaries, custodians, and asset managers to adapt workflows, inventory management practices, and funding arrangements (Felez-Vinas et al., 2026).

The global nature and sequencing of settlement cycle reform are illustrated in Figure 7, which tracks major jurisdictions' transitions since the early move from T+5 to T+3 in the US and, more recently, toward T+2 and T+1 settlement standards. The figure highlights that settlement compression has not occurred in isolation, but rather through staggered, jurisdiction-specific milestones that nonetheless reflect a broadly convergent international trajectory with more coordination expected in the transition to T+1.

Figure 7: Settlement cycle compressions in selected jurisdictions



Early leadership in settlement cycle reduction to T+1 came from US markets, reinforcing a pattern in which reforms initiated in large, systemically important markets create pressure for alignment elsewhere, particularly where cross-border trading activity is significant. European markets have pursued settlement compression within a more complex, multi-jurisdictional environment characterised by fragmented post-trade infrastructures.

Importantly, settlement compression should be distinguished from more fundamental changes in market architecture. Moving from T+2 to T+1 reduces the duration of deferred settlement but does not eliminate it. By contrast, real-time atomic settlement models collapse trade execution and settlement into a single, inseparable process, fundamentally altering the allocation of risk, liquidity, and credit in market design (Bech et al., 2020; Lee, Martin and Müller, 2022). While tokenisation and DLT are often cited as potential enablers of such architectures, current settlement compression initiatives operate largely within existing clearing and custody frameworks rather than through full structural redesign.

Overall, settlement cycle compression represents one of the most concrete and measurable forms of post-trade market innovation. The growing body of empirical evidence indicates that shorter settlement cycles can reduce settlement risk and improve liquidity over time, particularly in market segments where funding and inventory constraints are most binding. At the same time, the transition places greater demands on operational timeliness and coordination across the post-trade chain. For regulators, the key challenge is to balance these benefits and trade-offs as markets continue to adapt to faster settlement and consider the feasibility of further acceleration beyond T+1.

5.2 Private tokenisation initiatives

Beyond the compression of settlement cycles, a broader set of innovation efforts is underway within established FMIs. These initiatives are led not by new entrants seeking to reconfigure market functions, but by incumbent FMI providers upgrading or extending their existing systems, typically by incorporating private programmable ledgers into established operational and legal structures.

In general, these efforts share a common characteristic: they preserve the core architecture of financial markets. Rather than reconfiguring functions such as issuance, trading, clearing, and settlement into new, integrated models, incumbents tend to wrap existing processes with digital layers. In the US, for example, DTCC's Project Ion operates as a parallel DLT-based settlement environment that coexists with, rather than replaces, the legacy settlement system (deferred net settlement). Similarly, the SEC's no-action relief for DTCC's tokenisation pilot allows securities entitlements to be represented as tokens, but explicitly within the boundaries of the existing centralised custody framework. In both cases, DLT enhances efficiency to a limited degree without altering the fundamental role of the CSD.

A key limitation of these upgrades lies in their reliance on private, permissioned environments. Initiatives such as DTCC's Corda-based network (see Box F) or industry consortia like the Regulated Liability Network operate within restricted participant sets designed to ensure regulatory compliance and risk containment, but they also constrain the potential for broader network effects, interoperability, and system-level innovation. Rather than eliminating existing silos, they tend to replicate them in digital form.

Box F: DTCC's initiatives

DTCC's Project Ion is a distributed-ledger initiative designed to operate alongside, rather than replace, existing US post-trade infrastructure. Launched into a parallel production environment in August 2022, Ion processes more than 100,000 bilateral equity transactions per day on a private, permissioned R3 Corda network, with peak days approaching 160,000 transactions. DTCC describes it as one of the largest DLT initiatives in equities settlement. However, in its current form Ion should not be characterised as a standalone settlement system. DTCC states that the Depository Trust Company's (DTC) classic systems remain the authoritative source of books and records and continue to process the actual movement of cash and securities, while Ion operates as a parallel book and infrastructure for limited bilateral activity.

DTCC has also been explicit that Ion is being built to support a netted T+0 environment, as well as T+1, T+2 and extended cycles.⁹³ Since Ion's launch, DTCC in 2023 completed the acquisition of Securrency, which was subsequently renamed DTCC Digital Assets. DTCC described the transaction as a means of accelerating the development of digital post-trade infrastructure and enabling end-to-end digital lifecycle processing for tokenised assets, digital currencies and related instruments.⁹⁴ In 2024, together with Clearstream, Euroclear and BCG, DTCC published Building the Digital Asset Securities Ecosystem, a framework setting out six principles for digital asset securities markets – legal certainty, regulatory compliance, resilience and security, safeguarding of customer assets, connectivity and interoperability, and operational scalability – alongside associated risk-management controls.⁹⁵ In 2024 DTCC launched DTCC Digital Launchpad, an industry sandbox intended to bring market participants together to collaborate on proofs of concept with a path to scalable adoption.⁹⁶

In 2025, DTCC widened its digital-asset strategy beyond standalone DLT pilots. In February, it launched ComposerX, an end-to-end platform for digital asset issuance, distribution, servicing and reporting,⁹⁷ and in April, it unveiled a tokenised real-time collateral management platform built on its AppChain architecture for institutional DeFi use cases. Together, these initiatives point to a broader shift from isolated experimentation toward integrated digital market infrastructure spanning tokenisation, lifecycle management and collateral mobility.⁹⁸

A major regulatory step followed in December 2025, when the SEC staff issued a no-action letter for a preliminary version of DTCC Tokenization Services.⁹⁹ The no-action position applies for three years from launch and supports a controlled rollout expected from the second half of 2026. Eligible assets are limited to Russell 1000 securities, major-index ETFs, and US Treasury bills, notes and bonds. The SEC letter is careful to frame the service initially as the tokenisation of security entitlements in eligible DTC-held securities, and it states that these tokenised entitlements would not initially have settlement or collateral value at DTC. In May 2026, DTCC announced initial limited production trades of tokenised real-world assets in July 2026 and a full-service launch in October 2026. The service is being designed in collaboration with a DTCC Industry Working Group of more than 50 businesses spanning traditional finance (TradFi) and DeFi, with participants such as BlackRock, Goldman Sachs, J.P. Morgan, Anchorage and Circle. DTCC has emphasised that tokenised holdings will carry the same entitlements, investor protections and ownership rights as the assets in their traditional form. The scale of what this represents is underscored by the fact that DTC currently custodies assets valued at over US\$14 trillion.¹⁰⁰

⁹³ DTCC, DTCC's Project Ion Platform now Live in Parallel Production Environment, Processing Over 100,000 Transactions per Day on DLT (Press Release, 22 August 2022) <https://www.dtcc.com/news/2022/july/27/project-ion>

⁹⁴ DTCC, DTCC Comments on Acquisition of Securrency (Press Release, 11 December 2023) <https://www.dtcc.com/news/2023/december/11/dtcc-comments-on-acquisition-of-securrency>

⁹⁵ DTCC, DTCC, Clearstream, and Euroclear Develop Framework to Advance Adoption of Digital Assets (Press Release, 29 May 2024) <https://www.dtcc.com/news/2024/may/29/dtcc-clearstream-and-euroclear-develop-framework-to-advance-adoption-of-digital-assets>

⁹⁶ DTCC, Annual Report 2024 <https://www.dtcc.com/annuals/2024/files/DTCC-Annual-Report-2024-Print.pdf>

⁹⁷ DTCC, DTCC Announces ComposerX (Press Release, 4 February 2025) <https://www.dtcc.com/news/2025/february/04/dtcc-announces-composerx>

⁹⁸ DTCC, DTCC Announces New Platform for Tokenized Real-time Collateral Management (Press Release, 2 April 2025) <https://www.dtcc.com/news/2025/april/02/dtcc-announces-new-platform-for-tokenized-real-time-collateral-management>

⁹⁹ SEC, No-Action Letter Request Related to The Depository Trust Company's Development of the DTCC Tokenization Services (December 2025) <https://www.sec.gov/files/tm/no-action/dtc-nal-121125.pdf>

¹⁰⁰ DTCC, DTCC Advances Development of New Tokenization Service, Convenes 50+ Firms to Drive Digital Assets Adoption (Press Release, 4 May 2026) <https://www.dtcc.com/news/2026/may/04/dtcc-advances-development-of-new-tokenization-service>

This pattern of updating legacy systems extends across jurisdictions. SDX in Switzerland, although often presented as a next-generation FMI, remains tightly integrated with SIX's existing infrastructure and regulatory perimeter.¹⁰¹ Hong Kong Exchanges and Clearing's (HKEX) Synapse platform¹⁰² reduces settlement friction for Stock Connect using DAML smart contracts, yet operates firmly within the existing institutional and regulatory framework. Another example are alliances, such as Regulated Layer 1 (see Box G), in which regulated institutions join forces to build an internal infrastructure on private chains. In each case, the incumbent model is extended into a digital domain rather than fundamentally reconfigured. Broadly, incumbent FMIs have strong incentives to maintain their central role in market structure, and their innovation strategies reflect a need to balance efficiency gains with institutional continuity. In this sense, incumbent upgrades can be understood as a form of defensive innovation.

Box G: Regulated Layer One (RL1)

A notable infrastructure move is the Regulated Layer One (RL1) initiative, which aims to provide a shared, neutral, regulated 'base layer' DLT rail that multiple banks and market participants can use for tokenised securities workflows (issuance, transfers, lifecycle-events, and DvP connectivity). RL1 is designed to be jointly owned, operated, and governed by European financial institutions (to avoid single-vendor lock-in and support credible neutrality), and it is explicitly positioned as a common interoperability layer rather than a standalone exchange or CSD. The initiative is being built on the production-proven SWIAT network and was announced with 10 founding institutions, including ABN AMRO, DekaBank, DZ BANK, KfW, LBBW, Natixis CIB, NatWest, SC Ventures, Seturion and V-Bank. The underlying network is reported as having already completed 40+ transactions and processed €600m+ in volume.¹⁰³

5.3 Extended trading hours

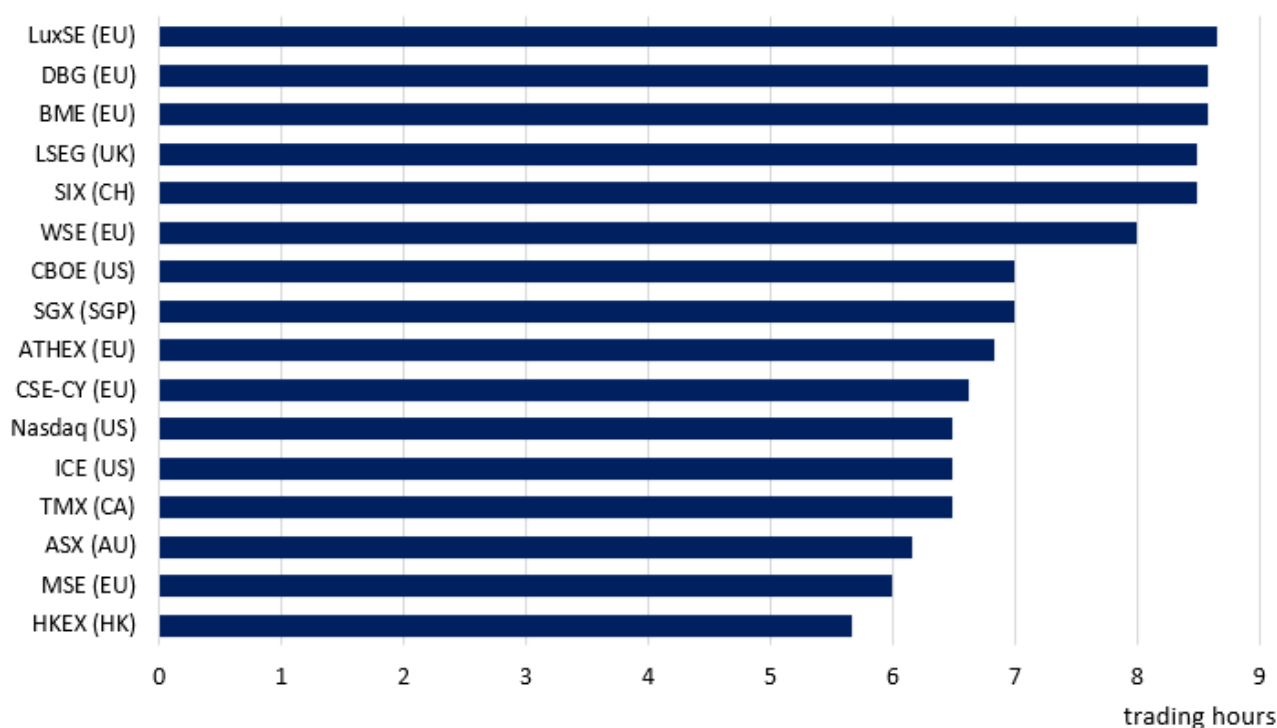
Extended trading hours are best understood as an evolution in market design rather than a discrete technological innovation. Historically, most equity markets concentrated trading within bounded domestic sessions in order to concentrate liquidity and price discovery in a limited window. That design reflected operational constraints, the need to align trading with clearing, settlement, and central-bank payment system operating hours, but it also served an economic function. When trader attention and order flow are pooled in time, bid-ask spreads tend to be narrower and prices more informative. Figure 8 illustrates this convention in practice, showing that major equity exchanges continue to operate bounded daily trading sessions, typically between around six and eight hours.

¹⁰¹ See SDX information on central securities depositories on DLT (March 2026) <https://www.sdx.com/#:~:text=The%20tokenization%20of%20bonds%2Fshares,registry%20on%20SDX's%20distributed%20ledger.>

¹⁰² See HKEX information on Synapse (September 2023) <https://www.hkex.com.hk/synapse>

¹⁰³ KfW, "Regulated Layer One" initiative to start with 10 European financial institutions at launch (Press Release, 29 September 2025) https://www.kfw.de/About-KfW/Newsroom/Latest-News/News-Details_864832.html

Figure 8: Trading hours across selected jurisdictions¹⁰⁴



What is now changing is not simply the availability of the technology to trade for longer, but the broader expectation that financial markets should be accessible across time zones and outside conventional business hours. This shift is driven by growing global investor participation across borders, retail demand for greater 24/7 access, and competitive pressures from markets that already operate on continuous models.¹⁰⁵ In traditional markets, these pressures are now beginning to reshape the institutional organisation of exchange trading itself. Recent US developments illustrate the point clearly (see Box H).

Box H: Exchanges adopting longer trading hours

US exchanges have now articulated concrete models for 23x5 trading. Cboe has proposed extending EDGX trading to 23 hours per weekday, framing the change as expanding global access while preserving an exchange-centric market design.¹⁰⁶ Nasdaq has similarly filed with the Securities and Exchange Commission (SEC) to extend trading on the Nasdaq Stock Market to 23 hours a day, five days a week, targeting implementation in the second half of 2026, subject to regulatory approval and industry readiness.¹⁰⁷ NYSE Arca has gone further procedurally,

¹⁰⁴ The data is sourced from World Federation of Exchanges (WFE) Research, “Extending Exchange Trading Hours” Report (February 2026) https://wfe-live.lon1.cdn.digitaloceanspaces.com/org_focus/storage/media/WFE - Extending Exchange Trading Hours wCover.pdf

¹⁰⁵ Ibid.

¹⁰⁶ See article “Cboe submits proposal to launch near 24x5 U.S. equities trading”, Reuters (17 March 2026) <https://www.reuters.com/business/cboe-submits-proposal-launch-near-24x5-us-equities-trading-2026-03-16/>.

¹⁰⁷ SEC, Order Rule: Notice of Filing of Proposed Rule Change to Extend the Exchange’s U.S. Equities Trading Hours to 23 Hours a Day, Five Days a Week (10 April 2026) <https://www.sec.gov/rules-regulations/self-regulatory-organization-rulemaking/sr-nasdaq-2025-109>

becoming the first major US exchange to receive SEC approval for substantially extended weekday trading hours, with a targeted launch in 2026 once market data, clearing, and other dependencies are aligned.¹⁰⁸ In parallel, 24X National Exchange has received SEC approval to operate as a national securities exchange designed around 23-hour weekday trading, although its launch remains conditional on data and regulatory coordination.¹⁰⁹

These exchange-led initiatives are distinct from broker-led or ATS-based overnight trading, which is already live. Robinhood, for example, offers 24/5 trading in selected US stocks and ETFs using alternative trading systems.¹¹⁰ The regulatory and structural significance of the new exchange proposals lies not in the novelty of longer trading hours per se, but in the potential migration of extended-hours activity into formalised exchange, market-data, clearing, and surveillance frameworks, rather than remaining fragmented across broker overlays.

The operational burden of extended trading hours often lies in the clearing and settlement infrastructure. Credible near-continuous exchange trading requires coordinated extensions of market-data dissemination, trade reporting, clearing, surveillance, corporate-action processing, and downstream broker-custodian operations. DTCC's NSCC has announced plans to extend clearing hours to support extended trading, underscoring that post-trade infrastructure is a binding constraint, not merely exchange matching technology.¹¹¹

Outside the US, extended trading has generally been more targeted and incremental. The UK has engaged in exploratory discussions, with no implemented market-wide move toward extended cash-equity trading. In the EU, Deutsche Börse has introduced extended trading windows for retail orders on Xetra (early morning and late evening). Switzerland has extended trading hours selectively, notably for structured products on SIX Swiss Exchange, again favouring product-specific expansion over market-wide overnight trading.

As noted in Box H, extended-hours trading is already available in fragmented form via broker-led and ATS-based arrangements. The significance of the recent exchange proposals therefore lies less in the novelty of after-hours access itself than in the possibility that extended-hours trading could migrate from a fragmented overlay into more formalised exchange, market-data, and settlement arrangements. That would represent a more consequential structural shift, because credible extended trading at scale depends not only on a venue remaining open, but on coordinated post-trade, data, surveillance, and liquidity provision arrangements across the broader market ecosystem.

Longer trading windows, however, do not eliminate the underlying trade-off between accessibility and liquidity concentration. The core market-design question is not whether trading can be made available around the clock, but whether meaningful liquidity and reliable price formation can also be sustained outside the main trading session. In practice, many markets continue to rely on a combination of continuous trading and auction mechanisms to concentrate liquidity at key points in the day. One of the more significant parallel trends in equity market structure has been the growing practical importance of

¹⁰⁸ See NYSE information on extended hours trading (March 2026), <https://beta.nyse.com/extended-hours-trading>

¹⁰⁹ See 24x information on extended hours trading (March 2026) <https://equities.24exchange.com/faqs>

¹¹⁰ See Robinhood information on extended hours trading (March 2026) <https://robinhood.com/us/en/support/articles/24hour-market>

¹¹¹ DTCC, DTCC's NSCC to Increase Clearing Hours to Support Extended Trading (Press Release 18 March 2025) <https://www.dtcc.com/news/2025/march/18/dtccs-nscc-to-increase-clearing-hours-to-support-extended-trading>

closing auctions. Their role has expanded as passive investment, benchmark-sensitive execution, and end-of-day valuation have become more central to market activity. While this does not imply that trading is becoming less continuous overall, it does mean that a larger share of economically significant trading is often concentrated at the market close.

A further implication of extended and potentially continuous trading hours relates to collateral management and risk control. Where assets can be traded continuously and reliably priced, the pledging, revaluation, and liquidation of collateral can be fully automated, because a contemporaneous market price is available whenever margin requirements are assessed. This is particularly relevant where tokenised instruments, such as tokenised MMFs, are used as collateral across trading and settlement infrastructures. The ability to trade and reprice such collateral on a near-continuous basis can support more timely margining and liquidation processes, reducing reliance on static valuation points or end-of-day prices. In this sense, extended trading hours, when combined with tokenised assets, may enhance risk management and systemic resilience.

For regulators and market operators, the policy challenge is therefore not merely whether to permit longer trading hours, but how to ensure that any extension of trading windows remains compatible with market quality, liquidity provision, surveillance, orderly price formation, and market resilience.

5.4 Developments in major jurisdictions

The direction of innovation in existing markets and market infrastructures is broadly convergent across major financial centres, though jurisdictions differ in pace and emphasis. Key areas of modernisation include settlement cycle compression, extended trading hours, and modernisation of post-trade processes. Table 3 provides an overview of selected developments across the seven jurisdictions analysed in this report.

Table 3: Modernisation of existing market and market infrastructure across major jurisdictions

Jurisdiction	Innovation activity
United States	T+1 live since May 2024. Multiple exchanges pursuing ~23-hour weekday trading; broker-led 24/5 already operational. Largest post-trade provider running DLT-based parallel settlement and developing tokenised collateral infrastructure under regulatory no-action relief. Evidence of improved liquidity and market quality following settlement compression.
Canada	T+1 live since May 2024 alongside the US. Infrastructure modernisation focused on alignment with the US market structure and incremental upgrades to existing post-trade systems. Crypto trading platforms are transitioning to full investment dealer registration.
European Union	T+1 transition coordinated for October 2027 within a fragmented multi-jurisdictional post-trade landscape. Selective extensions of trading hours on major exchanges, but a cautious approach. Multi-institution consortium building a shared neutral DLT base layer for tokenised securities workflows, alongside interoperability initiatives connecting legacy and digital infrastructure.

Jurisdiction	Innovation activity
United Kingdom	T+1 confirmed for October 2027. Extended trading hours remain exploratory, with no market-wide implementation. Post-trade upgrades are proceeding within existing frameworks, supported by regulatory sandbox activity and incremental infrastructure modernisation.
Switzerland	T+1 recommended for October 2027, aligned with the EU and UK. Extended trading hours applied selectively (e.g. structured products). Infrastructure strategy combines the integration of DLT components with existing exchange and CSD systems, maintaining continuity of market structure.
Singapore	Move to T+1 in assessment. DLT-enabled bond issuance platform is live through the national depository. Shared-ledger initiative developing cross-border infrastructure standards. Broader focus on enhancing efficiency of existing market infrastructure rather than extending trading hours.
Hong Kong	Smart-contract platform reducing Stock Connect settlement friction. Formal T+1 consultation launched in 2025 with technical readiness expected 2026–2027. National exchange exploring gradual extensions of trading hours. Continued focus on post-trade automation and cross-border infrastructure integration within existing frameworks.

5.5 Regulators' response to and support for innovation

Regulators across major jurisdictions are shaping the pace of market structure change, though their posture varies across reform areas. On settlement, the US completed its move to T+1 in May 2024. ESMA recommended and the European Commission proposed a transition to T+1 by 11 October 2027.¹¹² ESMA's assessment frames the project as a fundamentally ecosystem-wide change requiring harmonisation, standardisation, and modernisation across a complex trade and post-trade environment, alongside legal changes (including amendment of the core settlement-cycle requirement and the settlement discipline framework). Importantly, ESMA states that T+1 is the near-term objective, while T+0 is characterised as a longer-term possibility.¹¹³ In parallel, the UK has moved decisively toward settlement-cycle compression, with the government committing to mandate T+1 as the standard settlement period from October 2027.¹¹⁴ The plan also anticipates adjustments by financial market infrastructures, including CREST opening hours on T+0 being extended to 21:00 to allow later

¹¹² ESMA, ESMA proposed to move to T+1 by October 2027 (November 2024) <https://www.esma.europa.eu/press-news/esma-news/esma-proposes-move-t1-october-2027>

¹¹³ ESMA, Report „ ESMA assessment of the shortening of the settlement cycle in the European Union“ (November 2024) https://www.esma.europa.eu/sites/default/files/2024-11/ESMA74-2119945925-1969_Report_on_shortening_settlement_cycle.pdf

¹¹⁴ UK Government, Accelerated Settlement (T+1) (February 2025) <https://www.gov.uk/government/publications/accelerated-settlement-t1>

instruction submission where businesses can do so.¹¹⁵ Hong Kong has opened a public consultation without setting a formal date.

On extended trading, US regulators are the most advanced, having approved NYSE Arca's 23-hour model and 24X National Exchange, while also reviewing comparable filings from Nasdaq and Cboe. NSCC has extended its clearing hours accordingly. By contrast, the EU has taken a more cautious approach to extended trading hours,¹¹⁶ while Switzerland has permitted more targeted, segment-specific extensions.

A parallel track relates to the modernisation of incumbent market infrastructure through the use of novel technologies like DLTs. The SEC's December 2025 no-action letter concerning DTCC's tokenisation services reflects a broader pattern of allowing limited experimentation within existing legal parameters, rather than reconfiguring them. Similarly, regulatory engagement with tokenisation initiatives involving Euroclear in the EU and SDX in Switzerland shows that regulatory learning remains important even where formal regulatory changes or actions are not required.

5.6 Outlook and issues for Australia and ASIC to consider

Within existing market structures, innovation is expected to remain incremental rather than transformational:

- Settlement cycles are likely to continue to compress, but within structural limits imposed by legacy infrastructure. Market infrastructures can only move so far toward shorter settlement cycles using existing systems and technology. Moving beyond T+1 toward real-time or intraday settlement would require changes to underlying market architectures, rather than incremental process optimisation alone.
- In response, major exchanges, CSDs, custodians, and clearinghouses are actively developing DLT-based infrastructures that enable (real-time) atomic settlement, signalling a shift from pilots toward strategic, long-term redesign of core market plumbing. Many of these initiatives focus on private permissioned systems that operate alongside existing market infrastructure, allowing experimentation with new settlement models while preserving established governance, risk-management, and regulatory arrangements.
- Growing global investor participation across borders, retail demand for greater 24/7 access, and competitive pressures from markets that already operate on continuous models are pushing exchanges to explore longer trading windows, particularly in the US. Outside the US, the adoption of extended trading hours is likely to be slower and incremental, reflecting the ongoing need to concentrate liquidity.
- The binding constraint on longer trading hours lies in post-trade and market-wide coordination, not matching technology. Meaningful extensions of trading hours depend on aligned changes in clearing, settlement, market-data dissemination, surveillance, and downstream broker-custodian operations. Without this coordination, extended trading is likely to remain fragmented and limited in scale.

¹¹⁵ The Accelerated Settlement Taskforce Technical Group, UK Implementation Plan for first day of trading for T+1 settlement – 11th October 2027 (February 2025) https://assets.publishing.service.gov.uk/media/67a4974aa9f973ede06b3c1c/Accelerated_Settlement_Technical_Group_report_-_Feb_2025.pdf

¹¹⁶ EU T+1 Industry Committee, High-Level Roadmap (June 2025) https://www.esma.europa.eu/sites/default/files/2025-06/High-level_Roadmap_to_T_1_Securities_Settlement_in_the_EU.pdf

Issues for Australia and ASIC to consider

The innovations discussed in this chapter largely operate within existing market structures rather than pushing their boundaries, suggesting ASIC's current supervisory approach to incumbent exchanges and clearing and settlement facilities may remain broadly appropriate. However, the international shift toward shorter settlement cycles, extended trading hours and incumbent-led tokenisation may create pressures that a reactive approach alone cannot address. Australia is absent from several of the key developments outlined above. On the current trajectory, Australian financial markets may face increasing friction in cross-border activity as T+1 becomes the global baseline.

With the US having moved to T+1 in May 2024 and Europe and the UK targeting October 2027, pressure is likely to grow for Australia to articulate a credible pathway. The main challenge is less about trading or clearing technology than about coordinated changes across all intermediaries in post-trade processing. This may point to a more active coordinating role for ASIC across the broader post-trade ecosystem.

On incumbent modernisation and private tokenisation, the regulatory role may lie less in creating new frameworks than in providing clear pathways within existing ones. ASIC already has experience licensing businesses such as FCX, where traditional market functions are delivered through new technologies, but it should remain alert to the point at which existing licensing requirements become unnecessarily burdensome. Given the small number of clearing and settlement facilities in Australia, there would also be value in ASIC taking a more proactive approach to guidance, including clarifying when incumbent operators using new technologies might fall within novel categories such as DFMIIs. Greater regulatory clarity of this kind would help support domestic innovation in existing as well as new market architectures.

6. Innovation in trading approaches and compliance

A further set of innovations in financial markets is tied not to how assets are represented or settled, but to how trading decisions are made and how compliance with regulatory requirements is achieved and supervised. These developments are driven and accelerated by advances in AI and the broader expansion of data available to market participants.

In some cases, AI is a genuine enabler: agentic trading systems, AI-driven portfolio construction, and machine-learning-based market surveillance would not be feasible without recent advances in machine learning and the computational infrastructure that supports it. In other cases, AI and big data primarily accelerate trends that were already underway: copy trading platforms, direct indexing, and automated compliance workflows existed in simpler forms before modern machine learning, but have scaled rapidly as data processing costs have fallen and as platforms have embedded analytics, personalisation, and automation into their core operations.

This chapter groups these innovations into two categories.

The first concerns trading approaches: how market participants arrive at investment decisions. Four developments stand out: the rise of increasingly autonomous AI-driven trading systems, the gamification of retail trading interfaces, the platform-based replication of trading strategies through copy and social trading, and the personalisation of index exposure through customisable indices and direct indexing. Each of these changes the way investment decisions are reached – by delegating them to algorithms, by shaping them through interface design, by outsourcing them to other traders, or by distributing them across individualised portfolios.

The second category concerns compliance: how businesses meet their regulatory obligations and how supervisors monitor market activity. Here, AI and data-driven technologies are reshaping post-trade processing, market surveillance, and the broader RegTech and SupTech landscape, enabling continuous, data-driven oversight in place of periodic, document-based reviews. Across both categories, a common theme is that the speed, scale, and informational depth of decision-making and supervision are changing in tandem, raising questions about how existing regulatory frameworks – largely designed around human decision-makers and rule-based systems – can keep pace.

6.1 Trading approaches

The four developments examined in this section share a common characteristic: each changes how investment decisions are reached, even though the nature of the change differs substantially across them.

1. Trading and agentic AI concern the delegation of decision-making to increasingly autonomous algorithmic systems, where the boundary between ‘smart execution’ and ‘autonomous trading agent’ is becoming harder to draw.
2. Gamification concerns the design of the interface itself, using notifications, rewards, visual cues, and social features to shape how – and how often – retail investors make trading decisions.
3. Copy and social trading concern the delegation of decisions to other human traders, mediated by platforms that embed social-network functions, leaderboards, and automated replication into retail brokerage.
4. Customisable indices and personalised portfolio products concern the granularisation of passive investment strategies, allowing investors to deviate from standard benchmarks at the level of individual securities rather than through selection among pre-packaged funds.

Taken together, these developments illustrate how the decision-making process in financial markets is being restructured from multiple directions at once: it is becoming more automated, more behaviourally engineered, more social, and more personalised, sometimes simultaneously within the same product.

6.1.1 Trading and agentic AI

Among the four developments considered in this section, the delegation of decision-making to algorithmic systems has progressed furthest in trading and execution. Machine learning techniques are used to design adaptive order types, construct portfolios, and optimise the placement and timing of large trades – tasks that were previously handled by static algorithms or human traders relying on rule-based heuristics.

The economic case is straightforward: in markets where execution costs, slippage, and information leakage materially affect returns, even modest improvements in decision-making translate into measurable performance gains. Academic research has explored these applications for nearly two decades, beginning with the foundational work of Nevmyvaka, Feng, and Kearns (2006) on reinforcement learning in trade execution and extended more recently by Karpe, Fang, Ma, and Wang (2020) to complex multi-agent LOB environments. What is new is that this research is now visible in live market infrastructure rather than confined to academic simulation.

Three categories of application stand out:

- First, adaptive order types embed machine-learning logic directly into the order itself, adjusting behaviour in response to real-time market conditions. IEX's D-Limit order and Nasdaq's Dynamic M-ELO both adapt their behaviour to reduce adverse selection or information leakage when toxic flow is detected.¹¹⁷
- Second, AI-driven portfolio construction uses proprietary models for security selection and dynamic weighting, as exemplified by products such as WisdomTree's AIVL (see Box I) and QRAFT's AMOM.¹¹⁸ While such products remain a small fraction of the broader fund market, they demonstrate that AI-based portfolio management has moved from research desks into publicly listed, regulated investment vehicles.
- Third, AI-enhanced execution algorithms are increasingly deployed by sell-side institutions to optimise order placement, venue selection, and execution style. J.P. Morgan's machine-learning-based foreign exchange execution algorithms are a prominent example, designed to improve execution quality across heterogeneous liquidity conditions.¹¹⁹

¹¹⁷ See IEX's Sec filing (August 2020) and Nasdaq's announcement (September 2023) for AI powered order types <https://www.sec.gov/files/rules/sro/iex/2020/34-89686.pdf> and <https://ir.nasdaq.com/news-releases/news-release-details/nasdaq-announces-first-exchange-ai-powered-order-type-approved>

¹¹⁸ For examples of AI-driven portfolio construction, see <https://www.wisdomtree.com/investments/etfs/equity/aivl/> and <https://www.graftaief.com/amom>

¹¹⁹ See article "How to train your machine J.P. Morgan FX algos learn to trade better", Reuters (30 April 2019) <https://www.reuters.com/article/business/how-to-train-your-machine-jpmorgan-fx-algos-learn-to-trade-better-idUSKCN1S61IT/>

Box I: WisdomTree U.S.

WisdomTree U.S. AI Enhanced Value Fund (AIVL) provides a useful case study of an AI-enabled investment product that is both operationally real and commercially relevant. Unlike thematic AI funds that simply invest in businesses expected to benefit from AI, AIVL embeds AI directly in the investment process: the fund seeks income and capital appreciation by investing in US equities selected from a value-oriented universe using a proprietary quantitative AI model developed by Voya Investment Management. As of 31 December 2025, the fund had 101 holdings, USD 379.4 million in net assets, and an expense ratio of 0.38%.

According to WisdomTree and Voya, the strategy is built on a broad data architecture that starts with a universe of 1,000+ stocks, narrows this to roughly 400–500 qualified names, and ultimately produces a portfolio of 50–200 positions. The model draws on 10,000+ aggregate data points per company and uses 250+ in-house features spanning market and macro variables, sentiment, fundamentals, and ESG-related inputs, with multiple forecast horizons ranging from short-term signals to longer-horizon fundamental patterns. Importantly, the strategy is not presented as a fully autonomous black box: Voya explicitly describes it as a ‘human-in-the-loop’ process in which the machine performs stock selection and portfolio analytics, while human portfolio managers oversee portfolio construction, risk management, and execution.

From a market-innovation perspective, AIVL is therefore significant because it shows how AI can move beyond research support and become part of a scalable public-market product while still being embedded in a conventional governance structure. At the same time, the fund’s realised returns illustrate the limits of simple ‘AI outperformance’ narratives. As of 31 December 2025, AIVL’s net asset value return was 9.63% over one year and 10.07% annualised over three years, compared with 13.19% and 15.82% for the S&P 500 Value Total Return Index, and 17.75% and 23.24% for the MSCI USA Index over the same horizons. In other words, AIVL is large enough to show that AI-driven asset management is no longer a niche proof of concept, but its performance also underlines that AI does not automatically deliver superior benchmark-relative returns; rather, it introduces a different way of processing information, selecting securities, and governing portfolio decisions.¹²⁰

A more recent and forward-looking development is the emergence of agentic AI. These systems go beyond optimising individual decisions within a predefined task and instead autonomously design and execute trading strategies, interact with market environments, and adapt their behaviour over time. Unlike conventional execution algorithms, which operate within tightly specified parameters set by human traders, agentic systems are increasingly capable of choosing what to trade, when, and how, with limited human intervention.

Live deployment of agentic trading in regulated markets remains limited, and much of the current evidence is simulation-based (see, for example, Xiao, Sun, Luo, and Wang, 2024). Nonetheless, the trajectory is significant: the boundary between a ‘smart execution algorithm’ and an ‘autonomous

¹²⁰ See information on Wisdom Tree U.S. AI Enhanced Value Fund (December 2025) <https://www.wisdomtree.com/-/media/us-media-files/documents/resource-library/fund-fact-sheets/us-equity/wisdomtree-factsheet-aivl-1010.pdf>

trading agent' is becoming increasingly difficult to draw, and the regulatory and accountability frameworks designed for the former may not extend cleanly to the latter.

These developments reintroduce and amplify market abuse risks in ways that challenge existing enforcement frameworks. One channel is straightforward: an AI system may learn that certain order-placement and cancellation patterns improve execution or profitability, even if no human explicitly programmed a manipulative strategy. This matters because existing enforcement frameworks often rely heavily on concepts such as intent and causation (e.g., Putniņš, 2020). The legal literature has therefore warned that increasingly autonomous 'black box' traders may subvert traditional market-abuse tests (Azzutti, Ringe, and Stiehl, 2021) – including by adapting their behaviour to avoid triggering participant-level pre-trade filters and post-trade surveillance alerts, raising the question of whether gatekeepers' compliance infrastructure is evolving at the same pace as the trading systems it is meant to oversee.

Complementing this concern, recent finance research by Dou, Goldstein, and Ji (2025) shows that reinforcement-learning traders can autonomously sustain collusive supra-competitive profits without agreement, communication, or intent. This further complicates the application of conventional antitrust and market-manipulation frameworks.

Beyond business-level conduct, AI in trading raises systemic and operational questions. The main concern is not a single 'AI flash crash,' but the possibility that AI increases market speed, behavioural correlation, and common dependence across businesses. Where participants rely on similar models, training data, vendors, or cloud infrastructure, AI may produce convergence rather than diversity of behaviour, increasing the risk of herding, procyclical liquidity withdrawal, and rapid cross-market contagion in stressed conditions. The resulting vulnerability is therefore systemic as much as technological: disruption may arise not only from the failure of a single algorithm, but from the simultaneous interaction of many adaptive systems whose collective behaviour becomes harder to predict, supervise, and stabilise.

6.1.2 Gamification

The second development considered in this section shifts attention from what algorithms decide to how the decision environment is designed. Gamification in financial markets refers to the use of game-design elements or features to engage retail investors on digital platforms.¹²¹ The aim is to shape how users engage with financial products and trading interfaces. Today it is most visible in mobile brokerage and trading apps, but it is also present in copy-trading networks, crypto platforms, micro-investing apps, 'cashback-and-invest' products, savings apps, and educational 'learn-and-earn' features.

These practices are often discussed more broadly as digital engagement practices (DEPs), and they can be understood as a form of digital choice architecture: the platform is not only offering investment opportunities, but also structuring the context in which investor choices are made through prompts, rankings, colours, rewards, and social cues. International Organization of Securities Commissions (IOSCO) notes that DEPs can include notifications, nudges, gamification, and other tools that improve access and choice, attract younger investors, and potentially build financial literacy.¹²²

¹²¹ See Deterding, Dixon, Khaled, and Nacke (2011) as well as Securities and Exchange Commission, "Request for information and comments on broker-dealer and investment adviser digital engagement practices, related tools and methods, and regulatory considerations and potential approaches; information and comments on investment adviser use of technology to develop and provide investment advice." (Release Nos. 34-92766, October 2021) <https://www.sec.gov/files/rules/other/2021/34-92766.pdf>

¹²² The Board of the International Organization of Securities Commissions, "Digital Engagement Practices (DEPs)" (Final Report FR/07/2025, May 2025) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD794.pdf>

At the same time, the same practices can also steer investors toward more frequent trading, riskier products,¹²³ and conflicts of interest when intermediaries optimise for revenue or time-on-platform rather than investor welfare. In this respect, gamification also sits close to the literature and regulatory concern on ‘dark patterns’. Dark patterns are generally understood as interface choices that manipulate, frustrate, or steer users in ways that impair autonomous decision-making.¹²⁴ The key issue is therefore not whether design affects behaviour but whether it does so in a way that is consistent with investor welfare, fair treatment, and market integrity.

The empirical evidence suggests that, in practice, digital engagement practices materially increase trading activity and risk-taking:

- Gathergood, Gilchrist, Hayes, Karapetyan, O’Neill, and Stewart (2024) present evidence from a large-scale randomised experiment involving over 9,000 consumers and show that digital engagement practices, particularly push notifications and points-and-prize-draw mechanisms, increase both trading frequency (by 11-12%) and risk-taking (by 6-8%), with stronger effects among users with lower financial literacy and younger investors (18–34).
- An experiment by the Ontario Securities Commission found that points and badge-style rewards on a simulated trading platform led participants to execute nearly 40% more trades, despite the incentives having negligible economic value.¹²⁵
- Experimental evidence in Grant, Hobson, and Sinha (2024) demonstrates that interface design alone can influence investment behaviour, with higher investment levels observed when trades could be executed via swiping rather than clicking and confirming, and when information was presented using salient visual cues such as green colouring.

This is also consistent with a wider body of research showing that more active individual investors tend, on average, to earn lower net returns after costs (see, e.g., Barber and Odean, 2000; Barber, Lee, Liu, and Odean, 2009; Barber, Huang, Odean, and Schwarz, 2022). In that sense, DEP-induced increases in turnover may also worsen investor outcomes when they encourage excess trading.¹²⁶

However, the policy concern is not that all interface design is harmful. IOSCO, the Ontario Securities Commission and Dhawan, Loos, Navone, and Putniš (2020) emphasise that the same design toolkit can also be used to improve investor outcomes, e.g., by making risk information more salient, adding friction before high-risk actions, supporting learning, or steering users toward more deliberative choices. The regulatory objective is therefore better design, rather than the absence of design.¹²⁷

The commercial importance of gamification is reflected in the fact that many retail-oriented brokers and trading platforms now incorporate digital engagement features as a routine part of the user experience (e.g., Robinhood, Webull, eToro). Across mobile brokers and crypto trading apps, these design elements are no longer confined to a small set of speculative platforms but appear as a common

¹²³ For example, online trading providers can nudge retail traders by advertising shares trading (e.g., ASX-listed cash equities), but are then redirected to leveraged derivative products (CFDs). See ASIC, “Review of online trading providers” (Report 778, December 2023) <https://download.asic.gov.au/media/lqsfve5y/rep778-published-6-december-2023.pdf>.

¹²⁴ Some analyses treat dark patterns as a harmful subset of DEPs, while others treat them as a related category within the broader domain of online choice architecture. For example, the UK refers to many terms associated with DEPs as dark patterns. See IOSCO, Report “Digital Engagement Practices (DEPs)” (May 2025) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD794.pdf>

¹²⁵ See Ontario Securities Commission, “Digital Engagement Practices in Retail Investing: Gamification & Other Behavioural Techniques.” (Research Report, November 2022) https://www.osc.ca/sites/default/files/2022-11/inv_research_20221117_gamification-of-retail-investing_EN.pdf

¹²⁶ Chapkovski, Khapko, and Zoican (2026) show that investors who prefer gamification have “noisy” trading strategies.

¹²⁷ See OSC releases findings on digital engagement practices in online investing (October 2025) <https://www.osc.ca/en/news-events/news/osc-releases-findings-digital-engagement-practices-online-investing>

feature of retail intermediation. A second cluster of innovation sits in social and copy trading platforms.¹²⁸ Here, gamification is not only about rewards but about status, imitation, and visible peer performance. Platforms use social feeds, follower counts, trader rankings, copy buttons, and creator-like reward schemes to turn investment intermediation into a networked activity.

These features also have implications beyond retail investor decision-making. Where interface design and social amplification generate highly correlated retail order flow, they can complicate surveillance for intermediaries and market operators and heighten the importance of monitoring for misleading promotions, manipulation and conflicts in execution design. The meme-stock episode in early 2021 also illustrated how abrupt, one-sided surges in retail trading can transmit quickly into clearing and settlement systems, affecting client access and market functioning. In US markets, the Robinhood episode highlighted that even when retail clients effectively pre-fund trades, brokers may still be required to fund substantial CCP initial margin calculated at the clearing participant's portfolio level. Because these costs cannot easily be passed through to individual clients (margins in cash equity markets are not segregated on a house vs client level, in contrast to derivatives markets), margin requirements can represent a material cost of servicing retail flow, and in stress scenarios, brokers may respond by restricting trading if internal liquidity is insufficient to service CCP margin requirements.

6.1.3 Copy trading

Copy and social trading represent platform-based forms of imitative trading that change how retail investors access investment strategies. IOSCO defines copy trading as an online imitative trading practice in which a 'copy trader' replicates trades executed by one or more 'lead traders', often with some degree of automated execution and without the copy trader necessarily being aware of each trade as it is placed.¹²⁹ Social trading is broader and less automated. It refers to online communities in which users share trades, performance records, commentary, or investment ideas, potentially influencing other investors' decisions without automatic execution. The innovation is therefore not simply lower-cost brokerage, but the embedding of social-network functions, leaderboards, automated execution, and quasi-delegated investment decision-making within trading platforms. These models primarily focus on short-term trading, often involving leveraged products in forex, contracts for difference (CFDs), and crypto-assets, which can make them attractive but also expose inexperienced investors to potentially unsuitable risks.

The copy and social trading market is global but difficult to size precisely because copy trading is often provided cross-border by a small number of businesses as one of several service offerings. The largest dedicated player is eToro, which reported 40 million registered users from 75 countries, 3.9 million funded accounts and US\$17.6 billion in assets under administration for FY2025.¹³⁰ eToro further reports more than 5,000 investors in the copy trader program, of which 17 have over USD 10 million and 125 have over USD 1 million in 'assets under copy'.¹³¹ The regulatory implications are substantial because copy trading can blur the line between execution-only brokerage, investment advice, portfolio management, financial promotion, and influencer activity.

An emerging DeFi-native variant of copy trading that further complicates regulatory treatment is Hyperliquid's vault architecture, through which anyone can deposit capital into a vault to receive a share

¹²⁸ Section 6.1.3. discusses copy trading in more detail.

¹²⁹ IOSCO, Report "Online Imitative Trading Practices: Copy Trading, Mirror Trading, Social Trading" (May 2025) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD793.pdf>

¹³⁰ eToro, eToro Group Reports Selected February Business Metrics (Press Release, 9 March 2026) <https://investors.eto.com/news-releases/news-release-details/etoro-group-reports-selected-february-business-metrics>

¹³¹ eToro, Shareholder Update 2025 (February 2026) <https://investors.eto.com/static-files/c0fc6aac-8bce-4103-977a-7a1f1961a734>

of its profits, while the vault owner receives 10% of total profits.¹³² Vaults may be managed either by an individual trader or by liquidity providers in an AMM, making them a programmable vehicle for strategy-following rather than a conventional broker account feature. Besides vaults, third-party tools enable users to automatically copy trades from other Hyperliquid traders without depositing funds into a vault. These tools operate through Hyperliquid agent (API) wallets, which the user authorises to trade on their behalf but which cannot withdraw funds, so users retain custody of their assets in their own wallet.¹³³ Consequently, DeFi is beginning to produce blockchain-native forms of copy and social trading in which strategy following, performance visibility and automated execution are embedded directly into on-chain market infrastructure. These DeFi models may intensify the responsibility allocation problems described above by complicating the identification of responsible entities.

Where copy or social trading is channelled into leveraged derivatives, such as CFDs, additional spillover risks arise that can affect market stability, depending on how CFD providers hedge the exposure generated by copied signals. In direct-market-access models, each copied trade is passed through to the underlying market. By contrast, market-making CFD providers may internalise positions or hedge exposure periodically on a net basis, while hybrid models hedge exposures for example when internal limits are breached.

These hedging choices shape how imitative trading propagates beyond the platform. When large numbers of clients copy the same lead trader, crowded and highly correlated positions can emerge. If this exposure is hedged in the underlying spot, futures, or securities-lending markets (for example, borrowing stock to hedge short CFD positions), copy-trading activity can exacerbate price pressure, liquidity demands, and margin calls. As a result, spillovers may extend into clearing and settlement infrastructure via margining or increased settlement obligations.

6.1.4 Customisable indices and personalised portfolio products

The fourth development in this section concerns how investors access passive exposure. Whereas conventional index investing requires investors to choose among pre-packaged funds that replicate a standard benchmark, customisable indices and personalised portfolio products allow index exposure to be tailored to individual preferences at the level of individual securities. The central example is direct indexing, in which investors own the individual component securities of a benchmark in a separately managed account rather than holding a commingled fund or ETF. This ownership structure enables individualised tax-loss harvesting, the exclusion of specific securities or sectors on values-based grounds, factor tilts, and the integration of multiple benchmarks into a single bespoke portfolio—customisations that are not feasible within the pooled structure of traditional index funds (see Sosner, Gromis, and Krasner, 2022). A further step is custom indexing, which allows investors to construct entirely bespoke benchmarks from the ground up rather than replicating an existing index, combining market-cap and factor exposures, thematic overlays, and environmental, social and governance (ESG) criteria into portfolios that no off-the-shelf product could match.

The underlying techniques are not new. Portfolio customisation, tax optimisation, and benchmark-aware rebalancing have long existed in institutional asset management. What has changed is the cost of delivering them at scale. Lower trading costs, automated and more frequent rebalancing, and cloud-based portfolio systems have made it economically viable to manage large numbers of customised

¹³² See Hyperliquid documentation on HyperCore vaults (March 2026) <https://hyperliquid.gitbook.io/hyperliquid-docs/hypercore/vaults/hypercore-vaults-legacy>

¹³³ Hyperliquid, "Nonces and API wallets", Hyperliquid Docs (accessed June 2026), <https://hyperliquid.gitbook.io/hyperliquid-docs/for-developers/api/nonces-and-api-wallets>. On Hyperliquid's self-custodial trading model, see also "How to start trading", <https://hyperliquid.gitbook.io/hyperliquid-docs/onboarding/how-to-start-trading>

portfolios. As a result, direct indexing is slowly moving from a niche institutional service to a mainstream wealth management mechanism. According to Cerulli Associates, direct indexing assets under management reached approximately US\$864.4 billion at the end of 2024.¹³⁴

From a market-structure perspective, customisable indices represent a shift in how index-based investing is delivered rather than a change in what is traded. Index providers such as S&P Dow Jones¹³⁵ and MSCI¹³⁶ have responded by licensing their benchmarks directly to wealth platforms for use in customised applications, and have launched their own customisation tools that allow advisors to apply sector, factor, and ESG overlays to standard indices. The practical result is a blurring of the boundary between passive and active management: direct indexing clients hold positions that track a benchmark in aggregate, but each individual portfolio deviates from the benchmark in ways that reflect the client's specific circumstances.

Further, from a market integrity perspective, the ability to construct highly customised portfolios also introduces a surveillance consideration. Recent research has shown that basket products can be used to conceal informed trading: Eglīte, Štaermans, Patel, and Putnins (2023) find evidence suggesting that traders in possession of material non-public information about upcoming merger and acquisition (M&A) announcements may trade in ETFs containing the target stock rather than trading the underlying shares directly, estimating at least USD 212 million of such shadow trading per annum. Direct indexing could in principle extend this logic further, since individually customised portfolios are less standardised and therefore harder for surveillance systems to screen than trades in widely held ETFs. Hence, the broader point – that basket and portfolio-level products can obscure the link between a trading decision and its underlying motivation – is relevant as personalised portfolios scale.

6.2 Compliance

The innovations examined in this section mirror those in trading approaches: as the decisions made in financial markets become faster, more data-intensive, and more algorithmically mediated, the tools used to supervise those decisions must adapt accordingly. The broader field in which these developments sit is typically referred to as RegTech and SupTech, encompassing the data-driven technologies used by businesses to meet regulatory obligations and by supervisors to monitor markets, analyse regulatory data, and identify emerging risks. The common thread is a shift away from periodic, document-based oversight toward more continuous, data-driven supervision, enabled by the same advances in machine learning and data processing that underpin the trading innovations discussed above.

6.2.1 RegTech and SupTech

RegTech encompasses the tools that help financial institutions meet their regulatory obligations more efficiently, including automated know-your-customer and anti-money-laundering checks, transaction reporting, regulatory change management, and machine-readable compliance workflows. SupTech, by contrast, refers to the technologies adopted by regulators themselves to monitor markets, analyse supervisory data, and identify emerging risks. Both share a common premise: as financial markets generate ever larger volumes of structured and unstructured data, manual approaches to compliance and supervision become increasingly untenable.

¹³⁴ Cerulli, Direct Indexing Assets Close Year-End 2024 at \$864.3 Billion (April 2025) <https://www.cerulli.com/press-releases/direct-indexing-assets-close-year-end-2024-at-864.3-billion>

¹³⁵ See S&P Global information on Direct Indexing (March 2026) <https://www.spglobal.com/spdji/en/landing/topic/direct-indexing/>.

¹³⁶ See MSCI information on Direct Indexing (March 2026) <https://www.msci.com/indexes/direct-indexing>

On the business side, RegTech adoption has been driven by the cumulative weight of post-crisis regulation and the rising cost of compliance. Machine learning is now widely used to flag suspicious transactions in AML monitoring, automate the classification of trades for regulatory reporting, and screen client communications for misconduct risks. Natural language processing tools parse regulatory texts to identify obligations relevant to specific business lines, reducing the manual effort required to track regulatory change across jurisdictions. Predictive analytics have also begun to move into operational compliance: tools such as Clearstream's Settlement Prediction Tool and BNY's 'digital employees' anticipate settlement failures before they occur, analysing historical behaviour and liquidity patterns to flag high-risk trades and allow businesses to intervene proactively.¹³⁷

A parallel trend is the increasing use of programmable assets and smart contracts to embed compliance directly into financial transactions and the assets themselves. By coding transfer restrictions, investor-eligibility rules, and certain reporting or workflow requirements into tokenised RWAs or market protocols, substantial parts of compliance can shift from manual, ex-post reviews towards automated, ex-ante enforcement at the point of transactions. Currently, many tokenised RWA implementations remain hybrid, combining on-chain controls with off-chain KYC/AML, identity verification, and legal checks. However, embedded 'compliance-by-design' approaches are one of the most important functional advantages of smart-contract-based assets. They can reduce compliance and monitoring costs, lower manual processing errors, and improve the consistency and timeliness of reporting and enforcement. Consequently, the direction of travel is toward compliance becoming an increasingly native feature of tokenised asset markets. For example, Global Layer One (GL1), a public-private initiative focused on building open, interoperable shared-ledger infrastructure for tokenised assets, is developing a Programmable Compliance Toolkit to support automated, real-time enforcement of regulatory and policy requirements in digital-asset transactions.¹³⁸

On the market surveillance side, AI is the area that has been adopted most visibly. Legacy rule-based surveillance systems suffer from two persistent weaknesses: high false-positive rates and limited ability to detect novel forms of misconduct. Machine learning addresses both by scoring and prioritising alerts based on patterns in historical escalation data and by extending surveillance to unstructured sources such as emails, chat messages, and voice transcripts. Nasdaq's SMARTS surveillance platform, used by more than 190 banks and regulators and over 50 exchanges, has integrated machine learning since 2017 to score and prioritise alerts based on the likelihood of analyst escalation.¹³⁹ Similar developments are visible at the business level through vendors such as NICE Actimize, which combine machine learning with natural language processing to parse unstructured communications data.¹⁴⁰ IOSCO's 2025 thematic review on technological challenges to market surveillance confirms that such techniques are now widely deployed by market participants.¹⁴¹

On the regulator side, several authorities have made substantial investments in data analytics capabilities. The UK's Financial Conduct Authority (FCA) has established an Advanced Analytics team within its Chief Data, Information and Intelligence Office, which applies web scraping, network analytics, and natural language processing to supervisory data, and has migrated its analytical infrastructure to

¹³⁷ See examples of AI use to prevent risks in settlement <https://www.clearstream.com/clearstream-en/newsroom/250728-4582598> and <https://www.bny.com/corporate/global/en/institute/trusted-evolution-financial-system-modernization-2026.html>

¹³⁸ More information is available at <https://global-layer-one.org>

¹³⁹ See information on Nasdaq Trade Surveillance (SMARTS) <https://www.nasdaq.com/solutions/fintech/nasdaq-trade-surveillance>

¹⁴⁰ See information on NICE Actimize <https://www.niceactimize.com/>

¹⁴¹ IOSCO, Report "Thematic Review on Technological Challenges to Effective Market Surveillance Issues and Regulatory Tools" (February 2025) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD786.pdf>

the cloud.¹⁴² In Singapore, the MAS, in collaboration with the BIS Innovation Hub Singapore Centre, has developed Project Ellipse, a prototype supervisory analytics platform that integrates structured regulatory data with unstructured sources such as news and research to identify emerging risks.¹⁴³ ESMA's Data Strategy 2023–2028 sets out a roadmap for data-driven supervision across the EU, including SupTech proof-of-concepts for anomaly detection on reporting data, the use of natural language processing, and the establishment of a dedicated Data Intelligence and Technology Department in 2023.¹⁴⁴

The limitations of these applications mirror concerns raised in Section 6.1.1 but take a distinctive form in the supervisory context. Supervised models trained on historical misconduct data are more effective at identifying known patterns than at detecting genuinely novel forms of abuse, and require continuous retraining as bad actors adapt their strategies. The concentration of surveillance and compliance technology in a small number of vendors raises the familiar risk that a systematic blind spot in a widely deployed model could be replicated across many institutions simultaneously. The opacity of 'black-box' models also sits uneasily with enforcement processes that require evidence to be explained, contested, and reviewed in legal proceedings. Predictive operational tools such as settlement prediction reduce costs and improve workflow management but cannot resolve the structural causes of settlement failures, which typically lie in coordination problems across counterparties rather than in any individual businesses' risk management.

6.3 Developments in major jurisdictions

The direction of innovation in trading approaches and compliance is broadly convergent across major financial centres, with AI and data-driven technologies reshaping both how investment decisions are made and how they are supervised. Jurisdictions nevertheless differ markedly in pace and emphasis, reflecting distinct approaches to balancing innovation with investor protection and market integrity. Table 4 provides an overview of selected developments across the seven jurisdictions analysed in this report.

Table 4: Innovation activity in trading approaches and compliance across major jurisdictions

Jurisdiction	Innovation activity
United States	<p>Most advanced and commercially mature across all fronts: AI execution, AI-managed funds, gamified retail trading, and direct indexing are embedded in mainstream market infrastructure. Innovation is market-led with minimal AI-specific regulation.</p> <p>Private-sector RegTech/SupTech leadership globally; regulators apply technology-neutral rules and extend existing supervision frameworks to GenAI and agentic AI rather than issuing new rules.</p>

¹⁴² FCA, Speech by Jessica Rusu "Innovation, AI & the future of financial regulation" (17 April 2023) <https://www.fca.org.uk/news/speeches/innovation-ai-future-financial-regulation>

¹⁴³ BIS, BIS Innovation Hub and Monetary Authority of Singapore develop prototype supervisory analytics platform (Press Release, 31 March 2022) <https://www.bis.org/press/p220331.htm>

¹⁴⁴ ESMA, Data Strategy 2023-2028 https://www.esma.europa.eu/sites/default/files/2023-06/ESMA50-157-3404_ESMA_Data_Strategy_2023-2028.pdf

Jurisdiction	Innovation activity
<p>Canada</p>	<p>Follower rather than leader: adoption is modest and concentrated in incumbents, with no globally significant domestic trading products. Policy emphasis is on understanding and mitigating retail-facing gamification risks.</p> <p>Focus on compliance automation, fraud detection, and behavioural-science-informed investor protection rather than large-scale SupTech build-out.</p>
<p>European Union</p>	<p>Regulator actively integrating AI into the existing MiFID II algorithmic-trading framework. Direction is convergence and harmonisation across member states under a dual MiFID II + AI Act stack. Moving from periodic reporting toward continuous, data-driven supervision through a multi-year ESMA data strategy.</p>
<p>United Kingdom</p>	<p>Principles- and outcomes-based approach; regulator keeps retail gamification and finfluencer activity under active scrutiny without new prescriptive rules. Institutional AI adoption is broad and maturing. FCA is a frontrunner in applying AI internally and running collaborative testing environments (AI Lab, Live Testing).</p>
<p>Switzerland</p>	<p>AI adoption rising steadily within institutions, predominantly human-in-the-loop rather than autonomous. No significant retail gamification or domestic AI-trading products.</p> <p>Principles-based, technology-neutral governance model; FINMA chairs the IOSCO SupTech initiative and treats SupTech as strategic priority for cognitive augmentation of supervisors.</p>
<p>Singapore</p>	<p>Institutional orientation: focus on responsible AI adoption within regulated businesses rather than retail-facing innovation. Direction set by MAS through cross-border partnerships and guided experimentation.</p> <p>Early and sustained SupTech leader; direction is toward supervisory risk monitoring platforms that combine structured regulatory data with unstructured external signals.</p>
<p>Hong Kong</p>	<p>Positioning as an AI-first financial hub through listing reforms, ecosystem infrastructure, and dedicated AI strategies from both HKEX and HKMA. Strong push to attract AI and tech-sector capital formation.</p> <p>Direction is proactive SupTech adoption combined with surveillance modernisation.</p>

6.4 Regulators' response and support for innovation

Regulators across jurisdictions have adopted different approaches, varying in form and objective, to address the wide range of AI applications and technology-driven developments that are fundamentally transforming financial markets.

Trading, agentic AI and compliance

The EU has taken the most prescriptive path through the AI Act,¹⁴⁵ which entered into force in August 2024 and introduces binding requirements for high-risk AI systems in financial services, including credit scoring and automated decision-making, with compliance obligations phasing in through 2026 and 2027. The UK has adopted a contrasting, principles-based approach: the FCA has signalled that it will not introduce AI-specific rules, instead relying on existing regulatory frameworks and outcomes-focused supervision,¹⁴⁶ while investing in practical initiatives such as its AI Lab¹⁴⁷ and AI Live Testing program to help businesses navigate regulatory expectations through direct engagement. Alongside this, the FCA is actively deploying SupTech within its own operations, applying advanced analytics, natural language processing, and predictive AI to supervisory data. In the US, the regulatory landscape remains fragmented, with the SEC expanding its examination priorities to cover AI-related representations, supervisory controls, and third-party model risk, but without a comprehensive federal AI governance framework for financial services.

At the international level, IOSCO published a consultation report in March 2025¹⁴⁸ examining AI use cases, risks, and challenges in capital markets, with a second phase expected to consider whether additional recommendations or tools are needed to support regulatory responses. IOSCO has also launched a dedicated SupTech initiative, chaired by FINMA, which conducted its first global stock-take on supervisory technology in 2025 and covers authorities representing over 75% of global securities market value. The FSB has complemented this work with reports on AI's financial stability implications,¹⁴⁹ while the BIS Innovation Hub has launched several projects focused on supervisory technology and AI explainability for financial regulators, including Project Ellipse¹⁵⁰ with MAS on integrated supervisory analytics and Project Noor¹⁵¹ with HKMA and partner central banks on explainable AI toolkits. Common themes are emerging across jurisdictions: the need for human oversight and accountability in AI-driven decision-making, concerns around vendor concentration and third-party dependency in AI infrastructure, the challenge of maintaining market integrity in the context of algorithmic and potentially agentic trading, the shift from periodic, document-based supervision toward continuous, data-driven oversight enabled by SupTech, and the importance of explainability and auditability in AI systems that affect investors and market outcomes.

¹⁴⁵ EU, AI Act (Regulation (EU) 2024/1689) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1689>

¹⁴⁶ UK, Implementing the UK's AI Regulatory Principles (February 2024) https://assets.publishing.service.gov.uk/media/65c0b6bd63a23d0013c821a0/implementing_the_uk_ai_regulatory_principles_guidance_for_regulators.pdf

¹⁴⁷ FCA, AI Lab information (October 2024) <https://www.fca.org.uk/firms/innovation/ai-lab>

¹⁴⁸ IOSCO, Report "Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges" (March 2025) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD788.pdf>

¹⁴⁹ FSB, The Financial Stability Implications of Artificial Intelligence (November 2024) <https://www.fsb.org/2024/11/the-financial-stability-implications-of-artificial-intelligence/>

¹⁵⁰ BIS, Ellipse: regulatory reporting and data analytics platform (March 2022) https://www.bis.org/about/bisih/topics/suptech_regtech/ellipse.htm

¹⁵¹ BIS, Project Noor: explaining AI models for financial supervision (August 2025) https://www.bis.org/about/bisih/topics/suptech_regtech/noor.htm

Copy trading

In the EU, ESMA classifies copy trading under existing MiFID II investment services – typically as portfolio management where trades execute automatically, or investment advice where client action is required – triggering suitability assessments, product governance, cost disclosure, and conflict-of-interest obligations.¹⁵² The FCA takes the same functional approach.¹⁵³ In the US, the question is largely moot because the SEC restricts retail CFD trading; where copy trading does occur, it falls within the investment adviser registration and fiduciary framework. Further, copy trading is featured prominently in IOSCO's May 2025 Final Report on Online Imitative Trading Practices¹⁵⁴ as part of its Roadmap for Retail Investor Online Safety.

Overseas approaches distinguish between at least two models. ESMA describes (i) an in-house model where the same business services both signal providers and copy traders and executes orders, and (ii) variants involving external platforms or outsourcing arrangements where signal generation and execution are split across entities. The Netherlands' AFM further distinguishes signal platforms, software-based copy trading, and manual signal-following models.¹⁵⁵ This distinction matters because it determines who supervises lead-trader conduct and who followers can identify as accountable. In vertically integrated models, IOSCO's 2025 good practices place responsibility on the intermediary to select, monitor, and remove lead traders. In third-party models, responsibility fragments across signal provider, platform operator, and executing broker, creating uncertainty about where supervisory duties sit and increasing the risk of inadequate oversight, unmanaged conflicts, and remuneration incentives tied to trading volumes rather than follower outcomes. ESMA states that such models require case-by-case assessment to allocate supervisory responsibility.

Gamification

Regulatory engagement with gamification sits at an earlier stage. IOSCO's May 2025 Final Report on Digital Engagement Practices recognises that techniques such as badges, leaderboards, and celebratory messaging can both improve market access and steer retail investors toward more frequent trading and riskier products. Work so far has concentrated on establishing the evidence base rather than concrete rule-making, though IOSCO's good practices call on businesses to ensure digital engagement techniques are not used in ways that prioritise commercial interests over investor protection.

6.5 Outlook and issues for Australia and ASIC to consider

The developments examined in this chapter are unlikely to slow in the coming years. Several trends are likely to define their trajectory:

- Delegation of trading decisions is likely to deepen as adaptive and partially autonomous systems become more capable. Agentic AI represents a qualitative shift that challenges existing assumptions around intent, causation, and human accountability in market regulation.

¹⁵² ESMA, Supervisory Briefing on Copy Trading (March 2023) https://www.esma.europa.eu/sites/default/files/2023-03/ESMA35-42-1428_Supervisory_Briefing_on_Copy_Trading.pdf

¹⁵³ FCA, Copy Trading guidance (September 2023) <https://www.fca.org.uk/firms/copy-trading>

¹⁵⁴ IOSCO, Report "Online Imitative Trading Practices" (May 2025) <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD793.pdf>

¹⁵⁵ AMF, "Gamification and copy trading in finance: an experiment" (November 2023) <https://www.amf-france.org/en/news-publications/publications/reports-research-and-analysis/gamification-and-copy-trading-finance-experiment-full-report>

- Growing reliance on a relatively small number of AI models, data providers, and cloud platforms is elevating concentration risk from a business-level issue to a more systemic concern, as correlated failures or blind spots in widely deployed models could transmit risks across many institutions simultaneously.
- Platform-mediated forms of quasi-delegated trading are becoming more embedded in mainstream retail participation. Copy trading, social trading, and DeFi-native strategy-following vaults combine social-network functions, automated execution, and peer-driven decision-making in ways that sit uneasily between execution-only services, investment advice, and portfolio management.
- Gamified interfaces are increasingly a standard feature of retail brokerage apps and crypto platforms rather than an outlier. Engagement-design features such as notifications, rewards, and visual cues, have been shown to materially increase trading frequency and risk-taking – particularly among less financially literate and younger investors.
- Personalisation of index exposure is moving from institutional to retail. Direct indexing and customised portfolio products continue to blur traditional distinctions between passive and active management, supported by falling transaction costs and cloud-scale portfolio infrastructure, and are likely to capture a growing share of wealth management assets.
- On both the business and the regulator side, data and technology capabilities are advancing rapidly. RegTech tools are enabling businesses to monitor compliance in near real time rather than through periodic reviews, while SupTech investments are giving supervisors access to increasingly granular and timely data. The practical effect is that the informational gap between what businesses observe about their own activity and what regulators can see is progressively narrowing – creating opportunities for earlier risk detection, but also raising questions about how supervisory expectations and data-sharing arrangements should evolve to reflect these capabilities.

Issues for Australia and ASIC to consider

For trading and agentic AI, the central challenge is likely to be supervision of systems that are increasingly adaptive, partially autonomous and difficult to evaluate through traditional concepts of trader intent or static algorithm design. ASIC's recent work shows awareness of governance and control issues in AI deployment, but future pressure may fall more heavily on surveillance capability: detecting emergent behaviour, model-driven coordination, and risks arising from increasingly complex automated trading environments. Continued investment in market data, analytics and technical capability is therefore likely to become more important.

In retail markets, gamification and copy trading are likely to remain important areas of regulatory focus because of the concrete harms they can generate for consumers. Platform designs that combine gamified interfaces, social signals, and automated prompts can materially shape investor behaviour, including by cross-selling higher-risk or leveraged products, funnelling clients from lower-risk investments into complex instruments, and increasing trading frequency and risk-taking. One key regulatory issue is whether current regulatory tools are sufficient to prevent, detect and remediate consumer harm arising from digitally mediated choice architectures. This includes assessing whether additional tools are needed to address dark patterns and harmful digital engagement practices.

Customisable indices and direct-indexing style products may present a quieter but still important challenge. As personalised index exposure becomes more accessible, ASIC may need to pay closer attention to where the line sits between passive exposure, product design, advice and portfolio construction. The regulatory issue here may not be novelty alone, but whether disclosure and governance settings remain effective when 'index' products become increasingly tailored, dynamic and

user directed. This is an area where existing frameworks may still be workable, but clearer interpretive guidance could become more valuable over time.

Finally, in compliance and supervision, the outlook points toward a more data-intensive model on both sides of the regulatory relationship. As businesses increasingly use AI in compliance, monitoring and decision-making, ASIC may need to continue building its own supervisory technology while also considering the risks created by vendor concentration, cloud dependence and common model infrastructure.

7. Conclusion and recommendations

Financial market innovation is advancing across multiple dimensions simultaneously. The two technological developments at its core – DLT and AI/IT – are reshaping what can be traded, how existing and new markets are designed and operated, and how trading decisions are made and supervised. Across the four streams examined in this report, the cumulative effect is not simply incremental modernisation but a broader reconfiguration of market structure, in which the boundaries between trading and post-trade functions, between legacy and digital-native venues, and between human and algorithmic decision-making are becoming increasingly fluid.

Major jurisdictions have responded by adapting regulatory frameworks to address new risks while simultaneously supporting and facilitating innovation through sandboxes, pilot regimes, and collaborative infrastructure initiatives (such as the EU DLT Pilot Regime or the UK Digital Securities Sandbox). The pace and form of these responses vary considerably, but a common pattern is emerging: jurisdictions that combine regulatory clarity with active engagement in market development are attracting a disproportionate share of innovation activity and institutional participation.

For Australia, these international developments carry direct implications. Tokenisation of financial assets, new market architectures, and AI-driven trading and compliance tools are not confined to offshore markets. Instead, they increasingly also shape the competitive environment in which Australian market participants, venues, and regulators operate.

The analysis presented in this report suggests that a structured and forward-looking approach to these developments, one that balances market integrity and investor protection with openness to innovation, is likely to be important in maintaining the competitiveness and relevance of Australian financial markets in the years ahead. The report points to four areas where ASIC is well placed to help shape this trajectory, as follows.

1. Financial market infrastructure and competition. A comparable Australian pathway to those now emerging internationally could accommodate new trading and settlement architectures, clarify the legal status of distributed ledgers as registries, and support coordinated modernisation of existing infrastructures. ASIC's existing engagement with Project Acacia and its regulatory sandbox experience provide a foundation on which such a framework could build.

2. Novel products and retail investor protection. The emergence of tokenised fixed-income instruments, crypto-native products accessible through offshore venues, and platform-based intermediation models, such as copy trading and gamified brokerage, raises questions about whether existing regulatory categories, e.g., execution-only brokerage, investment advice, portfolio management, and financial product promotion, continue to capture the ways in which retail investors now access markets. Reviewing and, where appropriate, updating these categories would help ensure that investor protection keeps pace with evolving market practice while remaining proportionate to the risks involved.

3. Supervisory capability for AI-driven markets. As adaptive and autonomous trading systems become more prevalent, including systems with limited explainability, supervisory tools and expertise may need to evolve accordingly. Investing in data science capacity, analytics infrastructure, and technical expertise would position ASIC to oversee markets in which traditional concepts of intent and accountability are harder to apply. Monitoring the systemic concentration risks arising from shared AI models, data providers, and cloud platforms is a related area where early attention could prove valuable.

4. Cross-regulator coordination. Many of the innovations discussed in this report cut across regulatory boundaries – spanning market conduct, prudential supervision, payments, and competition policy, and not only domestically but across borders. Standing coordination with the RBA, the Australian Prudential Regulation Authority (APRA), Treasury, the Australian Competition and Consumer Commission (ACCC), and international counterparts could reduce uncertainty for industry participants and signal a shared commitment to supporting financial market innovation in Australia.

8. References

- Ackerer, D., Hugonnier, J., & Jermann, U. (2025). Perpetual futures pricing. *Mathematical Finance* (forthcoming).
- Adrian, T. (2026). *Tokenized finance* (IMF Note No. 2026/001). International Monetary Fund.
- Aldasoro, I., Cornelli, G., Frost, J., Wilkens, P. K., Lewrick, U., & Shreeti, V. (2025). *Tokenisation of government bonds: Assessment and roadmap* (BIS Bulletin No. 107). Bank for International Settlements.
- Ainsworth, A., Weiss, D., & Zhou, I. (2026). Margin constraints, liquidity, and return premia: Evidence from stock-level margin revisions. Working paper.
- Altavilla, C., Boucinha, M., Burlon, L., Adalid, R., Fortes, R., & Maruhn, F. (2026). *Stablecoins and monetary policy transmission* (ECB Working Paper No. 3199). European Central Bank.
- Aquilina, M., Lewrick, U., Ravenna, F., & Schönleber, L. (2025). *The rise of tokenised money market funds* (BIS Bulletin No. 115). Bank for International Settlements.
- Azzutti, A., Ringe, W. G., & Stiehl, H. S. (2021). Machine learning, market manipulation, and collusion on capital markets: Why the "black box" matters. *University of Pennsylvania Journal of International Law*, 43(1), 79–135.
- Baig, A., Breeze, S., Cox, J., & Griffith, T. (2022). Settling down: T+2 settlement cycle and liquidity. *European Financial Management*, 28(5), 1260–1282.
- Bains, P., Ismail, A., Melo, F., & Sugimoto, N. (2022). *Regulating the crypto ecosystem: The case of unbacked crypto assets*. International Monetary Fund.
- Baltais, M., Karlsen, J. R., Putniņš, T. J., & Sondore, E. (2026). Economic gains from tokenizing real-world assets. Working paper.
- Barber, B. M., Huang, X., Odean, T., & Schwarz, C. (2022). Attention-induced trading and returns: Evidence from Robinhood users. *Journal of Finance*, 77(6), 3141–3190.
- Barber, B. M., Lee, Y. T., Liu, Y. J., & Odean, T. (2009). Just how much do individual investors lose by trading?. *Review of Financial Studies*, 22(2), 609–632.
- Barber, B. M., & Odean, T. (2000). Trading is hazardous to your wealth: The common stock investment performance of individual investors. *Journal of Finance*, 55(2), 773–806.
- Bech, M. L., Hancock, J., Rice, T., & Wadsworth, A. (2020). On the future of securities settlement. *BIS Quarterly Review*, March.
- Bhanu, A., Nath, G. C., & Patnaik, T. (2024). Unlocking liquidity through shortened settlement cycle: Empirical evidence from India. *Economics Letters*, 239, 111736.
- Brandl, M., & Putniņš, T. J. (2026). Quantifying risk for liquidity providers in automated market makers (AMMs). Working paper.

- Brunnermeier, M. K., & Pedersen, L. H. (2009). Market liquidity and funding liquidity. *Review of Financial Studies*, 22(6), 2201–2238.
- Bollen, R., (2026). When history rhymes: Regulating digital assets. Australian Securities and Investments Commission.
- Chiu, J., & Koepl, T. V. (2019). Blockchain-based settlement for asset trading. *Review of Financial Studies*, 32(5), 1716–1753.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: defining "gamification". In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments* (pp. 9–15).
- Dhawan, A., Loos, B., Navone, M., & Putniņš, T. J. (2020). Getting burned by frictionless financial markets, Working paper, University of Technology Sydney.
- Dou, W. W., Goldstein, I., & Ji, Y. (2025). *AI-powered trading, algorithmic collusion, and price efficiency* (NBER Working Paper No. 34054). National Bureau of Economic Research.
- Duffie, D., Scheicher, M., & Vuilleme, G. (2015). Central clearing and collateral demand. *Journal of Financial Economics*, 116(2), 237–256.
- Eglīte, E., Štaermans, D., Patel, V., & Putniņš, T. J. (2023). Using ETFs to conceal insider trading. Working paper available at SSRN 4343579.
- Feenan, S., Heller, D., Lipton, A., Morini, M., Ram, R., Sams, R., Swanson, T., Yong, S., & Zalles, D. B. (2021). Decentralized financial market infrastructures: Evolution from intermediated structures to decentralized structures for financial agreements. *Journal of FinTech*, 1(2), 2150002.
- Félez-Viñas, E., Mālnieks, R. L., Putniņš, T. J., & Siliņš, T. (2026). Faster settlement, better markets: Liquidity and settlement reliability under T+1. Working paper.
- Foley, S., O'Neill, P., & Putniņš, T. J. (2025). A better market design? Applying automated market makers to trading real-world assets. Working paper.
- Gathergood, J., Gilchrist, C., Hayes, L., Karapetyan, D., O'Neill, S., & Stewart, N. (2024). *Digital engagement practices: A trading apps experiment*. Financial Conduct Authority Research Note.
- Grant, S. M., Hobson, J. L., & Sinha, R. K. (2024). Digital engagement practices in mobile trading: The impact of color and swiping to trade on investor decisions. *Management Science*, 70(3), 2003–2022.
- Grobys, K., Junttila, J., Kolari, J. W., & Sapkota, N. (2021). On the stability of stablecoins. *Journal of Empirical Finance*, 64, 207–223.
- Hoang, L. T., & Baur, D. G. (2024). How stable are stablecoins? *European Journal of Finance*, 30(16), 1984–2000.
- Illes, A., Kosse, A., & Wierst, P. (2025). *Advancing in tandem: Results of the 2024 BIS survey on central bank digital currencies and crypto* (BIS Papers No. 159). Bank for International Settlements.

- Karpe, M., Fang, J., Ma, Z., & Wang, C. (2020). Multi-agent reinforcement learning in a realistic limit order book market simulation. *In Proceedings of the First ACM International Conference on AI in Finance* (pp. 1–7).
- Khapko, M., & Zoican, M. (2020). How fast should trades settle? *Management Science*, 66(10), 4573–4593.
- Lee, M. J., Martin, A., & Müller, B. (2022). What is atomic settlement? Liberty Street Economics 20221107, Federal Reserve Bank of New York.
- Lyons, R. K., & Viswanath-Natraj, G. (2023). What keeps stablecoins stable? *Journal of International Money and Finance*, 131, 102777.
- McLaughlin, D. (2023). The trade-off between shorter settlement times and multilateral netting benefits in deferred net settlement. *Journal of Financial Market Infrastructures* (forthcoming).
- Nevmyvaka, Y., Feng, Y., & Kearns, M. (2006). Reinforcement learning for optimized trade execution. *In Proceedings of the 23rd International Conference on Machine Learning* (pp. 673–680). ACM.
- Putniņš, T. J. (2020). An overview of market manipulation, in C. Alexander and D. Cumming (eds.) *Corruption and Fraud in Financial Markets: Malpractice, Misconduct and Manipulation* (John Wiley & Sons: West Sussex, UK), 13–44.
- Putniņš, T.J. (2025) Market misconduct in cryptocurrency and digital assets, Working paper, UTS and DFRC.
- Shiller, R. J. (1993). Measuring asset values for cash settlement in derivative markets: Hedonic repeated measures indices and perpetual futures. *Journal of Finance*, 48(3), 911–931.
- Smith, R., & Baur, D. G. (2025). Real estate tokenisation: Benefits, limitations and market dynamics. Working paper.
- Sosner, N., Gromis, M., & Krasner, S. (2022). The tax benefits of direct indexing: Not a one-size-fits-all formula. *Journal of Beta Investment Strategies*, 13(2).
- Xiao, Y., Sun, E., Luo, D., & Wang, W. (2024). Trading Agents: Multi-agents LLM financial trading framework. Working paper arXiv preprint arXiv:2412.20138.