



Digital money: market perspectives from across the digital assets ecosystem

Insights on digital money drawn from conversations with
TradFi, Fintech, and Crypto-native firms



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Foreword



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KPMG runs frequent digital assets industry events and regularly engages directly with market participants to discuss the latest developments and challenges within the digital assets industry.

Our intention is to facilitate cross-market collaboration and foster greater innovation and adoption across the financial services market.

We are committed to supporting firms to test, build and scale solutions which can drive market-wide business and technology transformation.

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This report summarises KPMG observations from market conversations and interactions in KPMG digital assets events. The report aims to provide an overview of market perspectives on digital money from TradFi, Fintech, and Crypto-native firms.

References to ‘participants’ throughout the report refer broadly to market participants that we have interacted with on the topic of digital money. These are intended to provide broad market sentiments and do not represent any particular firm’s views.



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Executive summary



KPMG has engaged with key market participants over recent months to discuss the development and use of new forms of digital money, specifically considering, CBDCs, tokenised deposits and stablecoins.

This report provides an account of current market perspectives on the future of our monetary system, considering such new forms of digital money.

Further, it considers the potential impacts of a technology-enabled market transformation, powered by digital money, and suggests where the market is on the adoption curve.

Key takeaways

Widespread trialling of digital money solutions, in both the public and private sector suggests we can expect major shifts in the functioning of financial markets in the coming years.

Firms are still contending with which instruments are most suited to which use cases and how they can strategically position themselves against the backdrop of an evolving regulatory environment.

However, market participants do seem relatively confident about the value that could be unlocked by a market transformation enabled by distributed ledger technology (DLT). Though, they are still yet to see clearly how these changes will take effect and what the future state is likely to look like.

Read on the full report to explore the topics and discussions in detail.



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Different forms of digital money



Most participants subscribed to the view that multiple forms of digital money – largely CBDCs, tokenised deposits, and stablecoins – will be in use across financial markets over the next five to ten years. It was suggested that different forms of digital money will be driven by specific use cases and will therefore co-exist within markets, rather than one or more forms dominating across use cases. There was a suggestion that certain use cases may see convergence, but that more efficient, automatable solutions would be preferred by users.

Participants also suggested that the development of digital money will need to be carefully considered. In particular, highlighting the need to respond to regulators' concerns over monetary fragmentation, preserving the singleness of money, and maintaining overall financial stability.



CBDCs

Participants noted that widespread CBDC testing and pilot schemes represented an acceptance from central banks and governments that a shift towards a tokenised financial system was underway. On the user side, it was suggested that traditional financial institutions were likely to view wholesale CBDCs favourably, as a trusted, low-risk instrument for a tokenised financial ecosystem. However, there was some scepticism over the likelihood of widespread CBDCs being launched in the near term given prevailing macroeconomic and political headwinds along with technical and practical challenges.

Further, it was not considered likely or desirable for CBDCs to provide the levels of programmability and composability which stablecoins and tokenised deposits purport to offer. Additionally, it was proposed that CBDCs still do not have clearly defined use cases and that generally, stablecoins or tokenised

deposits may deliver similar benefits to CBDCs. Therefore, it was contended by some participants that the rise of other forms of digital money could call into question the need for any form of CBDC.

More specifically, it was argued that the use cases for retail CBDCs were less clear than for wholesale CBDCs and it was suggested that concerns around privacy and restrictions on individual freedoms are valid and should be given due consideration.



Tokenised deposits

Participants viewed tokenised deposits as a relatively straight forward solution for banks to test and build given the compatibility with pre-existing banking regulation. Participants were positive about the potential for traditional deposits to benefit significantly from DLT solutions, particularly, via enhanced cross-border payment capabilities and automation which are expected to create significant operational efficiencies, reduce costs and drive new value creation.

However, some participants were less sure about the use cases for tokenised deposits and debated whether tokenised deposits would mainly represent cash equivalents 'on-chain' or collateral or some other form of value. It was suggested that this nuance should receive greater focus as part of the value proposition. Additionally, there was concern that each bank issuing its own form of tokenised deposits could lead to a fragmented market lacking in standardisation.



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Stablecoins

Of the forms of digital money currently being explored, participants felt that stablecoins had emerged most strongly to meet a specific need. While initially demonstrated at scale within speculative cryptocurrency markets, participants viewed their long-term utility in established use cases such as cross-border payment solutions.

Participants subscribed to the view that stablecoins could be a useful tool to address other industry challenges, such as achieving T+0 through atomic settlement. It was highlighted that any investment into legacy system transformation would need to be considered carefully given more holistic DLT transformations could be expected over the short to medium term.

However, concerns were also raised in relation to likely regulatory requirements, reserve management, redemption demands, prior losses of confidence and collapses. Regulatory guidance, like that provided in New York, and regulation such as that under discussion within the UK, suggest a range of requirements be imposed on

stablecoin issuers, including reserve requirements and the segregation of assets. Such requirements would likely impact the current business models of some stablecoin issuers, but could provide valuable confidence to the wider market.



Financial revolution or technology evolution?

Though participants viewed the emergence of new forms of digital money as a potential paradigm shift in financial markets, they cautioned that this shift would likely only become apparent over decades rather than years.

Positive signs of scalability and maturation were highlighted, including: JPM Coin's daily transactions exceeding £1 billion, Broadridge's intraday repo platform averaging \$31 billion worth of transactions per day, and Société Générale Forge stablecoin issuance demonstrating stablecoin innovation at an institutional level.¹

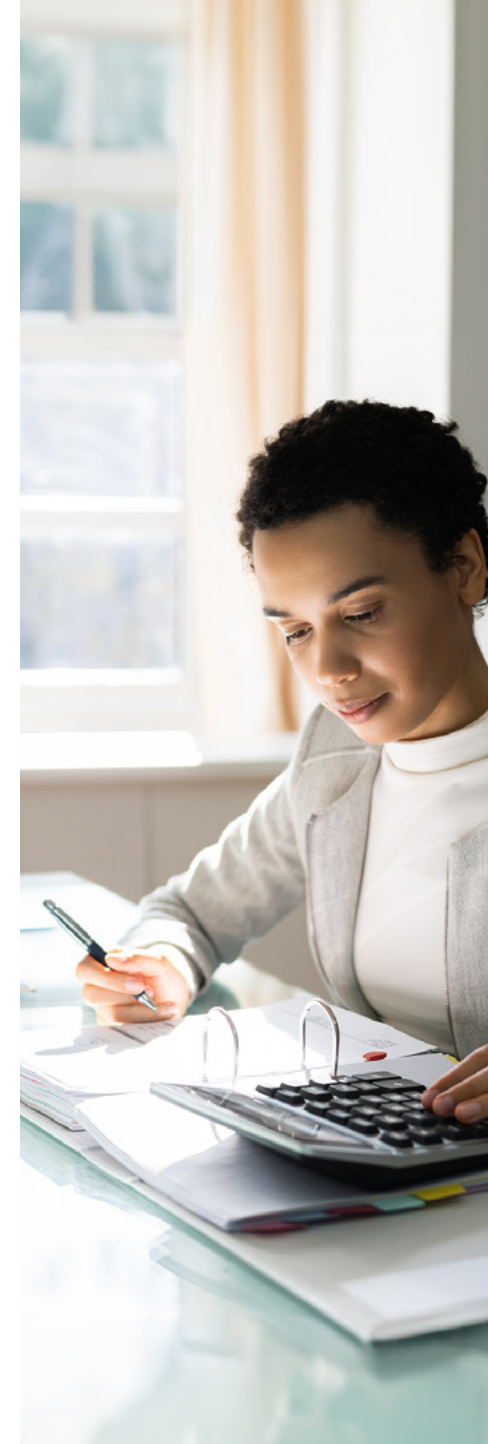
Participants subscribed to the view that the potential to leverage 24/7 payments with atomic settlement would be revolutionary for financial markets. Transforming cross

border payments, traditionally expensive, slow, and involving many intermediaries was viewed as a frontrunner of use cases. Participants emphasised the potential benefits of improved credit utilisation and collateral management, reductions in punitive charges, and simplified multi-currency management.

Further value is expected to lie in reducing credit risk and market risk exposure, enabling firms to hold less Tier 1 capital thereby freeing up capital for more productive deployment. However, it was noted that the shift towards atomic settlement may introduce new risks (e.g., market risk, replacement risk, liquidity risk).

As the wider tokenised ecosystem develops the growth in key use cases will be another major driver for new forms of digital money. Tokenised bonds and funds were highlighted as instruments likely to gain traction at scale which would require digital money to serve as the cash leg 'on-chain' to unlock the benefits of asset tokenisation.

1. JPMorgan Says JPM Coin Now Handles \$1 Billion Transactions Daily - Bloomberg; Broadridge's 'Blockchain' Platform Is Already Averaging \$31 Billion In Daily Repo Volume (forbes.com); Société Générale to become first big bank to list a stablecoin (ft.com).



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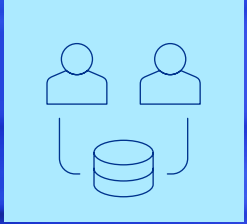
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The market architecture dilemma





Private, shared and unified ledgers

There was debate about the overall architecture of a tokenised financial ecosystem, with participants considering evolving roles, relationships and interconnectivity.

Participants cited conflict between different visions of future developments. These can be broadly distinguished as models leveraging private ledgers connected through interoperability solutions, and novel models which leverage public permissioned, shared or unified ledgers.

There was acceptance that firms face significant challenges operating within siloed systems with limited liquidity and substantial friction when attempting to engage with external markets. Despite some firm's desire to maintain independent infrastructure, it was noted that they will rely on some form of external or public infrastructure to participate in tokenised markets.

Some participants highlighted a preference for shared or unified ledgers citing attainment of benefits beyond siloed systems while also citing scalability, security and recourse

concerns of public ledgers. Examples like the Regulated Liability Network, Project mBridge and Project Agorá were flagged as promising developments.

The primary challenge associated with implementing shared or unified ledgers involving central banks was reported to be sensitivity over data sharing and the security of the specific technical architecture. It was noted that the current geopolitical climate called for political and security sensitivity - while the levels of technological connectivity envisaged between central banks and financial markets also required careful consideration in relation to current central bank practices and risk appetites.

Participants also flagged increasing consideration of public DLT systems that offer control, privacy, and security with additional scaling solutions to meet the demands of financial markets. Ultimately, it was noted that firms will gravitate towards solutions where liquidity is strong, transaction processing is resilient at scale, and where regulatory and compliance requirements can be readily met.



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Financial market infrastructure

Participants stressed the importance of interoperability for effective tokenised financial markets, particularly during the early phases of transformation, where transitional solutions will be required between legacy and new systems. Participants highlighted two approaches; evolving legacy Financial market infrastructure (FMI) to connect with tokenised environments; and the rise of new targeted interoperability solutions.

Views favouring solutions to rearchitect current FMI to accommodate DLT were contrasted by those seeking a redesign to create new fit-for-purpose architectures which could allow firms to innovate independently of legacy structures. In any case, it was suggested that traditional FMI will play a crucial role in enabling a smooth transition by integrating legacy messaging systems with any future architecture, bridging the gap between current practices and a future state.

It was suggested that interoperability approaches for legacy systems, for example connecting RTGS systems to tokenised environments, could even provide a mechanism to integrate central bank money into a tokenised financial ecosystem without the need for a CBDC.



Digital asset innovation around the world

Most participants anticipated that emerging markets, which typically have less entrenched legacy systems, would experience more rapid adoption rates of digital money. Participants expected this trend to be more pronounced in emerging markets where mobile-first solutions are prominent and where stablecoin payments have already gained traction for real-world use cases rather than cryptocurrency trading (e.g., Argentina, Nigeria).

In these circumstances, there is a notable opportunity for emerging economies to avoid incremental improvements to legacy infrastructure (e.g., existing

solutions to effect instant money transfers). Instead, they could embrace cutting-edge DLT-based solutions which could enable their own market to leapfrog legacy systems widely adopted in more developed economies. This could lead to the offering of novel technology-enabled benefits (e.g., automation) which, it is suggested, could make for more competitive global financial markets.

Further, the point was reinforced that in emerging markets the value proposition for some digital money solutions is arguably stronger than in developed countries (e.g., the need for instant payments, access to a global currency as a hedge to local currency inflation).

However, differing adoption rates and divergent regulatory frameworks raised concerns about the potential for fragmentation across different geographies. The need for interoperability and collaboration to create a new global financial system without the siloed infrastructure and inefficiency of current financial markets was reemphasised, in relation to this point.



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Barriers to digital money adoption





Technology risks

At a market level, participants noted that firms innovating in this space would need to navigate disparate centralised legacy IT systems, divergent approaches across the market, varying blockchain and smart contract standards and protocols, and competing motivations of market participants (incumbents, Layer 1, Layer 2, DApps and challenger institutions).

Participants noted that for companies managing trillions of dollars in assets across global footprints while meeting the demands of diverse customer bases, technology transformations of foundational systems can pose serious risks to their core businesses and reputation. However, it was also acknowledged that firms recognise the need for innovation to remain competitive and retain and grow their customer base.

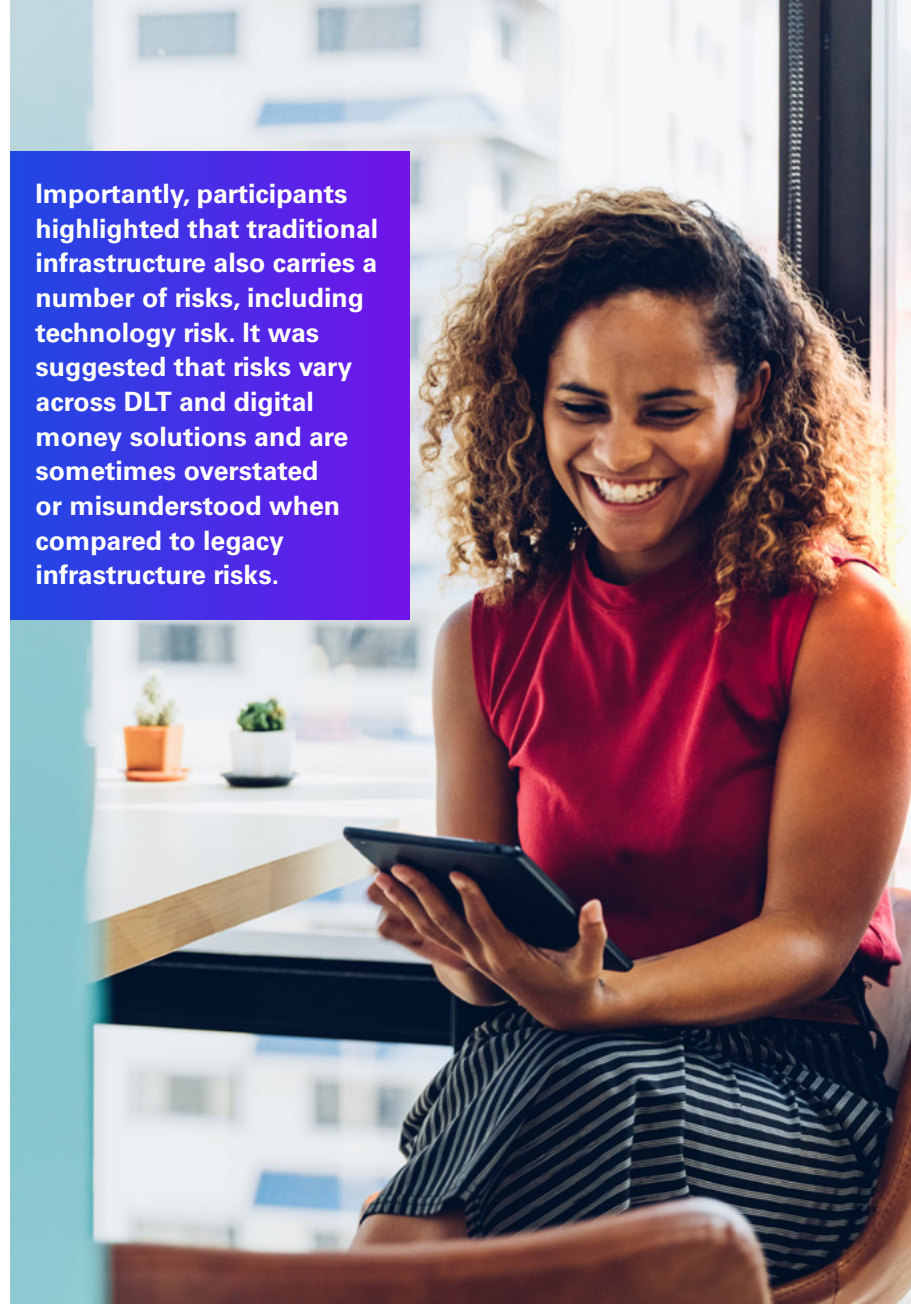
Participants flagged concerns over technology risks in relation to the management of transactions and systems through automation and smart contracts, as potentially slowing the rate of adoption of solutions. Specifically, participants highlighted risk factors including smart contract features,

auditing standards (frequency and openness of audits), code transparency (open vs. closed source), and settlement mechanisms (e.g., settlement finality on the Ethereum blockchain posing risks of settlement delays).

Participants were also particularly keen to understand how traditional liabilities may be changed by new DLT infrastructure. Similarly, in derivative and security markets, complexities were flagged for consideration (e.g., asset servicing, corporate actions), which could be simplified through smart contracts but would require a significant level of trust in new infrastructure and the development of new risk management frameworks.

Participants noted the need to grapple with the accessibility of public DLT platforms - which may pose compliance and security challenges - versus the compliance and control offered by private permissioned DLT platforms - but which may limit access to wider markets and therefore be less commercially attractive. Relatedly, there was concern that the centralisation of private systems would maintain the role of intermediaries, potentially undermining the proposed value of some solutions.

Importantly, participants highlighted that traditional infrastructure also carries a number of risks, including technology risk. It was suggested that risks vary across DLT and digital money solutions and are sometimes overstated or misunderstood when compared to legacy infrastructure risks.



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Operational barriers

Participants highlighted the challenges involved in firms going from proof-of-concept to wider testing and scaled solutions. In particular, high implementation costs were highlighted as a deterrent for firms trying to expand beyond narrow use cases. However, it was acknowledged that holistic testing will be crucial to assess how solutions impact businesses across functions and at various stages of the value chain and therefore that more expansive testing will be required across business functions.

Further, it was noted that addressing resourcing and staffing challenges remains a significant hurdle within the sector. The industry often encounters difficulties in recruiting and retaining talent with the requisite skills and expertise. One key issue is the need for crossover expertise between traditional finance and DLT, coupled with practical experience.

Firms are considerate of the need to provide additional upskilling to adapt to the evolving DLT landscape and to

hire effectively. It was noted that this is true across seniority levels, and importantly is a potential barrier to effective C-suite decision making.



Strategic challenges

Participants added that many institutions are likely to prefer to be second or third movers in the market to reduce risk and identify winning solutions, particularly in evolving regulatory environments. It was suggested that most firms who are not implementing solutions publicly are testing internally, taking stock of market developments, and determining the correct strategy and time to enter the market.

Another key obstacle is identifying and developing the right solutions to align with the firm's objectives and strategies. A lack of clear business cases was flagged as a challenge to secure buy-in from senior leadership, which is clearly crucial for obtaining the necessary resources and support for proof-of-concept development and scaled implementation. As such, committed senior leadership

sponsorship was seen as a critical factor in driving forward initiatives without reliable return on investment projections.

However, it was contended that creating strong business cases, and securing senior stakeholder sponsorship, is a common challenge across innovation generally. Participants emphasised that it is often easier to gain internal support for the expansion of already successful propositions compared with new, innovative, but unproven, products or services.



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Digital money catalysts






Participants did also highlight several enabling factors which could facilitate the adoption of new forms of digital money.

Most participants strongly supported the scale of testing and trialling which is being carried out across the market. Specifically, initiatives that foster collaboration amongst firms and close engagement with regulators were viewed particularly positively (e.g., Hong Kong Monetary Network, Project Agorá).

However, firms did express an appetite for the development of clearer roadmaps to take promising proof-of-concepts beyond the trial stages and into scaled implementation.

The benefit of ratings agencies participating in the assessment of new monetary instruments was cited as a promising mechanism to provide confidence to the market and drive greater adoption. Stablecoins were seen as likely beneficiaries of rating agency participation, providing independent assessment of a range of metrics (e.g., risk profiles, reserve attestation, default likelihood) which would assist in market analysis of instruments.

Additionally, participants suggested that generational changes could accelerate the pace of digital money adoption. Participants cited younger generations' increasing expectations of control, immediacy and transparency in services, alongside a greater propensity to use DLT-related products and services, as factors which could lead to younger generations driving adoption across the market.


Finally, participants underscored the importance of professional services firms, especially advisory, in driving digital money and wider digital assets adoption. It was suggested that these firms will play a significant role in engaging with different market participants, particularly executives within incumbent businesses, to foster confidence in business transformation through digital money and digital assets.



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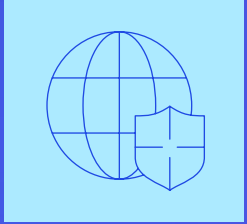
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Global regulatory landscape



It was highlighted that different forms of digital money will attract contrasting levels of regulatory scrutiny. Resultantly, it is expected that the distinct regulations affecting different forms of digital money will play a primary role in shaping which forms are used across which use cases.

Participants stressed that it is difficult to accurately assess the risk that new technologies present theoretically. There was therefore an emphasis placed on the need for a flexible regulatory approach that allows for innovation in the early stages of adoption to maximise the potential benefits while responding appropriately to emerging risks over time.

As 'trustless' systems begin to scale and become more prevalent (e.g., through zero-knowledge proofs) some participants suggested that regulatory approaches may need to be adapted to keep pace with such innovative, novel systems.



UK

Participants welcomed the UK regulators' consultative approach to developing regulation. Though there was concern about potential limitations placed on new forms of digital money which could stifle innovation (e.g., prescriptive rules on stablecoin issuance suggested in UK regulatory discussion papers).

However, it was noted that UK regulators have impressed with their technical expertise and ability to facilitate nuanced discussions on esoteric topics in this space. Further, firms still felt that the UK was seen as the 'gold standard' for safe and trusted financial market regulation and is generally viewed as a favourable jurisdiction across global markets.

There was some doubt levelled at the premise that 'same risk, same regulatory outcome' approach is the appropriate framing for digital money and broader DLT-related regulation. It was proposed that regulators may need to take a more adaptive and nuanced approach to define new regulatory outcomes which meet the particularities of new forms of digital money and DLT-related use cases.

Ultimately, it was suggested that meeting regulatory requirements will necessitate distinct risk management, control measures, and compliance processes, tailored to the characteristics of each asset and related regulations which may make utilising multiple forms of digital money cumbersome.



Other jurisdictions

Market participants broadly welcomed the Markets in Crypto-Assets (MiCA) regulation, citing the degree of certainty it provides to drive innovation in digital money, particularly in institutional settings. However, there was concerns that limits placed on stablecoins (e.g., transaction volume limits) may stifle innovation and restrict the use of well-established stablecoins. Market participants were wary of such restrictions and were keen to understand what the impacts would be in practice.

Jurisdictions such as Singapore, UAE, and Switzerland were highlighted for their DLT-friendly approaches, exemplified by investment, targeted tax breaks, support in attracting talent, clearer regulatory positions, and good

regulatory outcomes. Broadly, there was interest in the growing regional trends across LATAM, Africa and Asia towards digital money and DLT adoption.



Perspectives on regulatory sandboxes

Though participants welcomed the UK Digital Security Sandbox, they raised challenges to its form, including the restriction of solutions to be denominated in Sterling, excluding those using other currencies from meaningful involvement. It was posited that this limitation highlights the difficulty of regulating solutions designed for global collaboration at the national level.

It was noted that the EU DLT Pilot Regime has also faced challenges, with limited options for cash settlement layers noted as impeding firms' ability to engage effectively in the initiative. Notably, despite the European Union launching a pilot sandbox last March, no firms have been authorised to participate in it thus far.



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It is clear that market participants generally view the adoption of digital money as a useful tool in the development of faster, more efficient financial markets and a key pillar in future tokenised financial markets. It seems likely that multiple forms of digital money will co-exist, with their usage driven by particular use cases and related regulation.



01 Forms of digital money

KPMG concurs with the broader market view that new forms of digital money represent an opportunity for financial markets to capitalise on new commercial opportunities as well as drive operational efficiencies. In the short term, we expect more financial institutions to commercialise tokenised deposit solutions as well as increase stablecoin usage. In the medium to long term, the emergence of CBDCs is expected to support the growth of the digital money ecosystem globally.

02 Digital assets adoption

A set of clear priority use cases within financial services, which foster the adoption of DLT, will significantly enable wider industry ecosystem development and DLT technology evolution.

KPMG views strong collaboration amongst all industry participants as a key enabler for the adoption of digital money and DLT use cases. Key participants include - professional services firms, technology providers, FMIs, corporates, regulators and most importantly, end users. Various industry forums are effectively driving forward digital assets adoption and fostering collaboration. It is crucial that market participants more broadly also drive market-wide cooperation, and engage productively with regulators, particularly in light of incoming policies and regulations.

03 Digital assets market architecture

KPMG views it likely that both private and public permissioned ledgers will be used in the near to medium term to support wider adoption of DLT and digital money.

Legacy FMIs and emerging interoperability solutions will play a critical role in defining and enabling this transitional period. Furthermore, DApps developers and DLT solution providers will need to consider the adaptability of their technology to suit evolving market architecture which may leverage multiple forms of FMI and use a range of different kinds of ledger (i.e., private, public permissioned, shared or unified).

04 Regulatory landscape

UK regulators' consultative approach has been well received and appreciated by industry market participants. However, there is a notable suggestion from market participants that more could be done from a regulatory perspective to accelerate digital money adoption (e.g., regulatory clarity on stablecoins, further detail on the Digital Pound).

Comparatively, other jurisdictions such as Singapore, UAE, and Switzerland are often perceived to be market leading because of regulatory clarity alongside other enabling factors (e.g., tax incentives, access to investment, ease of attracting talent).



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Acknowledgements

In this report, KPMG has brought together insights drawn from numerous conversations with key industry participants over recent months.

We would like to thank all of the market participants that we have engaged with on this topic, and in particular, Onyx by J.P. Morgan, State Street, BNP Paribas (Securities Services division), S&P Global Ratings, Digital Asset, Ripple, GSR, UDPN, Moonpay, and GFO-X. Please note that the perspectives outlined within this report have been compiled from multiple sources by KPMG and are not attributable to any other specific firms.



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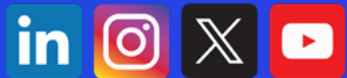
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