13 December 2024

By email: ProjectAcacia@rba.gov.au.

Dear Project Acacia Team

Project Acacia – Exploring the Role of Digital Money in Wholesale Tokenised Asset Markets

AFMA welcomes the opportunity to provide comment on RBA and DFCRC's second phase of Project Acacia.

We are delighted to support RBA and DFCRC's Phase 2 of Project Acacia. We see flexible and proactive projects such as Project Acacia as an important step in developing Australia's potential as a financial centre.

Please find below our responses provided by our members to the questions in the first part of the consultation.

We thank you for considering our comments.

Yours sincerely

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Question 1

What are the key opportunities and challenges of asset tokenisation in wholesale domestic markets? How can the challenges be overcome?

Opportunities

Applying blockchain technology to tokenize deposits allows payments made with commercial bank money to benefit from programmability, instant and atomic transaction settlement, and improved transparency as to the status of transaction. These features help to address common pain points in liquidity management and cross-border payments.

Asset tokenisation in wholesale domestic markets can bring significant benefits to financial markets and investors, including:

- New functionalities and use cases, that might not be economic using traditional technologies.
- Enhanced tradability of assets while creating new liquidity pools for illiquid assets.
- Greater transparency and accountability throughout the trading processes, and potentially greater immutability of records which altogether can reduce the counterparty risk, especially for cross-border transactions.
- Faster settlement of assets post-trade can free trapped collateral for redeployment and improve the cash management capabilities of institutions.
- Streamlined and standardised post-trade processes and smart contract automation can lead to lower transaction costs. According to existing research tokenisation of bonds can reduce underwriting fees by an average of 22 basis points (bps) of the bond's par value and borrowing costs by an average of 78 bps compared to similar conventional bonds issued by the same issuers[1].
- Programmability creates new possibilities by allowing clients to deploy their logic in the form of programmable instructions in a bank's environment to automate potentially complex financial operations. It is expected that bank-side programmability will provide benefits over client-side programmability on conventional systems, such as the following:
    - Improve execution and response time as the triggers, logic and actions are all performed within a single environment. This minimizes the "technical" lag of communicating across platforms, and the "business" lag where updates are typically pushed in batches or polling is limited in frequency.
    - Improve certainty of execution and minimize failures, as instructions are housed and performed within a single environment, and there is no dependency on clients' systems.

[1] Hong Kong Monetary Authority, *An Assessment on the Benefits of Bond Tokenization,* 2023, p. 9, https://www.hkma.gov.hk/media/eng/publication-and-research/research/research-memorandums/2023/RM04-2023.pdf

- Improve traceability and auditability, as execution is performed in a single environment and data is maintained in a common format.
- Broaden the range of programmability by granting access to data and event triggers that were typically not available or transmitted to clients, and allowing for programmable instructions to be processed within a payment, rather than after a payment. This is possible due to the improved execution time and certainty of programmable instructions, which allow them to be integrated into a payments flow, without significant negative impact on the overall processing time and certainty.
- Enable payment instructions to be performed close to, or even after typical bank cut-off time, as compared to conventional channels. This is possible as programmable instructions are executed with higher certainty and lower possibility of failures, and hence require lower time buffers and no additional input from other parties.
- Enable interactions of programmable instructions or composability, which could support more complex use-cases. Atomic operations of such linked instructions ensure that they either completely succeed or completely fail. This is particularly useful for linked obligations, such as a Delivery-versus-Payment or Payment-versus-Payment transactions where it is important that the linked obligations are discharged either altogether or not at all, to minimize counterparty risks during settlement. Eliminating partially completed transactions ensures transaction and state consistency, which reduces system complexity, need for reconciliation, and the need for manual recovery processes.

To achieve these benefits, we invite market participants and regulators to work alongside academia and standard-setting bodies, identify use cases for asset tokenisation and address challenges that serve as barriers to adoption.

Challenges

We note that Project Acacia deployments need not be DLT-based. However, for those that are according to the Financial Stability Board (FSB), *vulnerabilities of DLT-based tokenisation are linked to three factors, individually and in combination: the underlying "reference asset" that has been tokenised; the participants in DLT-based tokenisation projects; and new technology as well as its interaction with legacy systems".*[2] Hence, some of the key challenges that need to be addressed are:

1. Develop synergies among market participants, as well as public-private partnerships to boost adoption.

2. Ensure scalability of asset tokenisation projects when investor demands are relatively unclear.

3. Ensure compliance with anti-money laundering/counter-terrorist financing (AML/CFT) laws and regulations while meeting privacy requirements.

[2] Financial Stability Board, *The Financial Stability Implications of Tokenisation*, p. 1, https://www.fsb.org/uploads/P221024-2.pdf

4. Introduce regulatory frameworks that will encourage innovation and early adoption but also market integrity.

5. Avoid regulatory fragmentation due to differences in legal and regulatory frameworks, especially for cross-border projects.

6. Meet long-term investment commitments for research and development which are necessary for scalability.

7. Mitigate cybersecurity and other IT-related risks.

8. Consider the lack of interoperability among DLT platforms as well as between DLT platforms and traditional financial infrastructure.

9. Consider how to incorporate legacy infrastructure into tokenized systems to ensure smooth transition and wide market adoption.

Question 2

What regulatory obstacles exist to an efficient settlement mechanism for wholesale tokenised asset markets, including the development of new forms of money to support this? What solutions do you suggest?

Inconsistent approaches globally

Policy makers and regulators have approached asset tokenisation from different angles depending on the market characteristics and the stage of development of the market for tokenised assets. These different regulatory approaches include:

- Applying existing financial regulations to tokenised assets.
- Introducing new frameworks that focus explicitly on asset tokenisation.
- Adjusting existing regulations to address the application of DLTs in tokenisation.

We also see different regulatory approaches preferred by different jurisdictions, i.e. prescriptive, results-oriented, or risk-based. Consequently, many asset tokenisation initiatives, given their cross-border nature must comply with multiple regulatory frameworks across different jurisdictions, which can include varying AML/CFT requirements, KYC processes and inconsistent compliance procedures. At the same time, the novel nature of asset tokenisation can make it difficult to assess whether the regulatory perimeter has sufficiently captured all the requirements to ensure market development and regulatory compliance. Such potential gaps or uncertainties about the regulatory treatment of asset tokenisation can hinder adoption and scalability and potentially pave the way to regulatory arbitrage. The risk of regulatory arbitrage can be further exacerbated by the fact that tokenisation can expand the cross-border availability of financial products on a 24/7 basis.

Unclear legal status of smart contracts

The legal status of smart contracts varies across jurisdictions, and the potential lack of enforceability of such contracts and the absence of dispute resolution mechanisms give rise to concerns around market integrity and investor protection. In the same context, regulators need to address issues related to the auditability of the code used by smart contracts as well as data protection and privacy concerns including digital IDs, storage, and use of data.

Legal uncertainty in recognition of tokens for off-chain purposes

Regulatory gaps or uncertainties over the legal recognition of a token for off-chain purposes and the absence of legal enforceability or dispute settlement mechanisms for asset redemptions can also give rise to risk of price divergence between the token and the reference asset or between identical tokens on different DLT platforms or issued by different entities.

Uncertainty around the treatment of digital currencies

Regulatory uncertainty surrounding the status and treatment of digital currencies can stifle innovation and deter investment, this can be resolved by clear regulatory guidelines.

A comprehensive regulatory framework that can effectively accommodate new forms of digital money, such as stablecoins, (and their diverse risk profiles), can support efficient settlement mechanisms for wholesale tokenized asset markets, their adoption and integration into existing financial systems.

Regulatory treatment of 'oracles'

Regulators also need to determine the regulatory treatment of service providers that offer DLT connectivity to information on events that take place on external systems (known as oracles) as they can have an impact on the execution of smart contracts, the assessment of asset prices and the quality of tokenisation.

According to the FSB, "the existing regulatory and supervisory frameworks that apply to data providers in traditional markets may not entirely cover oracles in the context of DLT platforms, or oracles could be operating in non-compliance with applicable frameworks. Oracles may be vulnerable to hacks and manipulations exploiting smart contracts and implementation errors, which could compromise the accuracy of data supplied to DLT platforms. In addition, the multi-party and multi-asset nature of DLT platforms may introduce new risks……. Thus, obtaining an accurate picture of asset price and quality of tokens may be hindered by reliance on unregulated or non-compliant oracles for pricing and valuation".[3]

Interoperability challenges

There are currently challenges in the interoperability between traditional financial systems and DLT-based platform, which limit the potential efficiencies and benefits of tokenised assets.

Discussion

To address the above, we support a risk-based and technology-neutral regulatory approach for asset tokenisation, based on the "*same activities, same risk, same regulation*" principle. We also invite regulators to maximize clarity around the regulatory treatment of asset tokenisation, through close collaboration with market participants, academia, and other external stakeholders. To maximize the interoperability of tokenisation of regulatory regimes across multiple jurisdictions we encourage collaboration with other jurisdictions and global standard setting associations, as well as drawing lessons from international best practices.

We support a regulatory framework that applies the same regulations to digital assets but that makes appropriate allowances for the unique aspects of DLT-based money. This framework should provide clear guidelines for the issuance and use of digital currencies. Consider the specific risk profiles of different digital currencies will help manage their unique challenges effectively.

Global standards for interoperability

[3] Financial Stability Board, *The Financial Stability Implications of Tokenisation*, 2024, p. 17, The Financial Stability Implications of Tokenisation

Industry should adopt, and government should support, global standards for the interaction between traditional and digital financial systems. Regulatory sandboxes and pilot programs can provide a controlled environment for testing and refining these frameworks, allowing for innovation while managing potential risks.

Collaboration with international standards, industry, and regulatory bodies should help ensure to ensure alignment in standards and practices, particularly for cross-border transactions.

Question 3

Should efforts to support tokenised markets be focused on large existing asset classes or newer ones, and why?

While tokenisation offers a string of benefits that could drive implementation, identifying strong use cases to drive adoption remains of importance. Market participants and regulators should work alongside academia and standard-setting bodies and identify use cases that will:

1. Stimulate innovation and add value to Australia's non-financial and capital markets.
2. Comply with AML/CFT regulations and meet privacy requirements.
3. Create a lower risk payment architecture.
4. Be feasible and scalable from an operational and financial perspective.

Today, we can assess existing asset classes and use cases depending on their adoption feasibility, business benefits, and the market demand. As a result, some asset classes such as fixed income, funds and commodities already have a track record of tokenisation initiatives and significant turnover. For example, the HKMA's recent pilot projects Evergreen 1 & 2, included the issuance of respectively tokenised green bonds and digitally native bonds. Both projects have been successful, with the total deal size of Project Evergreen 2 reaching USD750m.

We encourage the RBA and DFCRC to focus on asset classes such as these and ensure that any initiatives for further market development will not be limited to pilot projects and will include policies to increase transaction flows and attract issuers, investors, and intermediaries.

For other asset classes while there may be interest in tokenizing, feasibility can be more limited due to technological limitations, regulatory barriers, or other market limitations.

Question 4

What role could central bank money play to best support the development of tokenised asset markets, and what policy and operational questions would such a role pose?

What role could central bank money play to best support the development of tokenised asset markets?

Central bank money can support the development of tokenised asset markets by providing a stable and trusted settlement medium. This could enhance liquidity, reduce counterparty risk, and increase market confidence.

Tokenised central bank money could facilitate new payment channels and improve the efficiency and accessibility of financial services..

We see a key use case in wholesale CBDCs that are used for interbank settlement linking tokenized deposits issued by different banks. We would also consider exploring the commercial bank liability model, in which the CBDC represents a claim against a private financial institution and these payment liabilities will be matched by funds held by them at the central bank.

While several central banks are exploring the hybrid model, there are deposit loss and the associated monetary policy and financial stability risks. The commercial bank liability model significantly reduces these risks, while still ensuring the singleness of money. It could support innovation through interoperability with a CBDCs, while commercial bank money and other regulated liabilities can leverage the enhancements that are underway with payment systems.

What policy and operational questions would such a role pose?

Regulatory Framework: How should central banks regulate tokenised assets and ensure compliance with existing financial regulations? See our above comments on the need to develop such a framework.

Interoperability: How can central bank money be integrated with various tokenised asset platforms?

Security and Privacy: What measures will be in place to protect against cyber threats and ensure user privacy? Implementing robust security protocols and privacy measures is necessary to safeguard the integrity of transactions and user data.

Monetary Policy Implications: How will the issuance of CBDCs affect traditional monetary policy tools? Central banks need to consider the potential impact on monetary policy and financial stability, including how digital currencies might influence interest rates, money supply, and inflation.

Access and Inclusivity: Who will have access to central bank digital currencies, and how will this access be managed? Determining the eligibility criteria for accessing

CBDCs and ensuring inclusivity for a broad range of market participants is important.

Operational Readiness: What infrastructure and technological capabilities are required to support the issuance and management of central bank digital currencies? Central banks must assess their operational capabilities and invest in the necessary technology to support digital currency initiatives.

Question 5

What are the most important capabilities or attributes that central bank money would need to have, to realise the potential of tokenisation in wholesale markets? This could include, for example, that central bank money is deployed in a tokenised form directly on tokenised asset ledgers; that it is directly accessible (irrespective of its form) by a wider range of institutions than those who are currently eligible for an ESA; or that it can be transacted outside of normal business hours. Please be specific and rank the capabilities by their relative importance.

Several key capabilities and attributes of central bank money are recommended to realize the potential of tokenisation in wholesale markets:

- **Deployability on DLT Platforms**: Central bank money should be seamlessly deployable on distributed ledger technology (DLT) platforms. This interoperability is important for integrating central bank money with tokenised asset markets, enabling efficient and secure transactions. Leveraging DLT platforms and smart contracts would enable programmability and the atomic settlement of transactions by linking assets or funds and allowing simultaneous and irreversible transfer between parties. By introducing Payment versus Payment (PvP) and delivery versus payment (DvP) mechanisms, the infrastructure can reduce counterparty risk and enhance payment efficiency.

- **Interoperability**: Interoperability could be an important feature of CBDCs to meet future payment needs in a digital economy and improve the resilience and efficiency of the payment system. CBDCs should be developed in a way that will ensure connectivity among other service providers and allow future extensions vis-à-vis unseen use cases. Notwithstanding the significant benefits of interoperability, it does not come without challenges and policy trade-offs. Based on our observations and in line with the 2021 BIS report on CBDCs, we believe that fragmented data standards and inconsistent standards for numbering and coding systems, security protocols, scalability or throughput capacity and opening hours are technical barriers that result in a lack of interoperability and prevent the broader adoption CBDCs.[4] Against this backdrop, we agree with the BIS recommendations for:

    1. Common (international) technical standards and/or application programming interfaces.

    2. Stronger or at least minimally viable security standards.

[4] Bank of International Settlements, *Central bank digital currencies: system design and interoperability*, 2021, https://www.bis.org/publ/othp42_system_design.pdf

3. Early and frequent communication with other systems to estimate volumes and throughput.

4. Rules for CBDC payments during the closing hours of other systems.

- **Availability of a wCBDC**: The development of a production-ready wCBDC is highlighted as an important step. A wCBDC would provide an efficient and programmable solution for distributing central bank money in a tokenised form, enhancing the ability to conduct transactions directly on asset ledgers.

- **Programmability and Automation**: Central bank money should support programmability, allowing for the automation of complex financial transactions through smart contracts. This capability would improve operational efficiency and reduce the need for manual intervention.

- **24/7 Availability**: To support global and round-the-clock trading, central bank money should be available for transactions outside of normal business hours, and offline capabilities. This would enhance liquidity management and provide greater flexibility for market participants.

- **Security and Trust**: Central bank money must maintain high levels of security and trust, ensuring that transactions are protected against cyber threats and that users have confidence in the integrity of the system. To ensure greater safety and operational efficiency, we believe that cold wallets should be mandatory during the first phase of the wCBDC introduction. This would reduce cybersecurity risks and will ensure operational efficiency even in remote areas or areas without internet access or in the event of internet or power outages. Later, the regulators could consider allowing hot wallets while encouraging end users to opt for offline storage for most of their tokens and keep only a small percentage of their CBDCs in hot wallets that would be used for immediate transaction needs.

- **Reliable redemption:** There needs to be a mechanism that will ensure a reliable redemption and withdrawal. Regulators should take into consideration a list of risks which include:

  1. The digital nature of CBDC means that funds could be spent more than once. This is also known as the double-spend risk.

  2. While programmability features could add important value to CBDC circulations, introducing them would require certain software capabilities that entail inherent code vulnerabilities and, therefore, IT risks.

  3. Cybersecurity risks in a decentralised environment; a key consideration of the architecture is whether the CBDC issuance process can be sufficiently isolated from other activities based on the principle of privilege separation and network segmentation. To this end, we recommend that the regulators draw lessons from international best practices; for example, the Bank of England recommends that the redemption process of CBDC can also be decoupled from the wholesale system.

4. Ensure that the system remains intact in the event of natural disasters, power outages, etc. Such risks can impact the sustained downtime or lead to a breach of CBDC system integrity.

5. Reputational damage stemming from operational failures in the redemption and withdrawal of CBDCs, such as failures impacting the confidentiality, integrity, availability, and/or authenticity of CBDC infrastructure, data, and funds.

6. Difficulties ensuring seamless withdrawal and redemption due to high number of transactions. The latter can occur due to multiple reasons, such as increasing adoption of the CBDCs and increases in transaction volume on certain dates (e.g., New Year's Eve, Black Friday).

- **Privacy and protection**: CBDC design should include data privacy and protection safeguards to coexist with and support the broader legal and regulatory framework for the financial sector and the overall integrity of the financial system. This will be based on the acknowledgment that consent may not be possible or desirable under certain circumstances (e.g., AML/CFT screening during onboarding). In other circumstances, it must be clear that only specific actors can access certain types of customer data (e.g., bank-level transaction data). In addition, there should be requirements regarding the segregation of data access rights. Regulators can leverage international best practices and existing research to ensure that they meet privacy expectations while adhering to AML/CFT requirements. For example, over the past years, central banks and the industry have developed several technological solutions to address the privacy and confidentiality challenges within a DLT environment. Privacy-enhancing technologies (PETs) cater to the privacy and confidentiality aspects by limiting access to information by unauthorised parties.

By incorporating these capabilities and attributes, central bank money can effectively support the growth and efficiency of tokenised asset markets.

Allowing CBDCs to be used to manage liquidity. This is particularly relevant for cross-border transactions and corridor networks. CBDCs could also be used as intraday liquidity by their holders, as they have significant advantages compared to other liquidity-absorbing instruments. According to BIS, currently, CBDCs could serve as valuable short-term money market instruments given their liquidity and creditworthiness.[5]

Compatibility with international cross-border initiatives CBDC infrastructure should be interoperable with other cross-border CBDC initiatives such as Project Guardian, a collaborative initiative led by the Monetary Authority of Singapore that brings together policymakers and the financial industry to enhance liquidity and efficiency of financial markets through asset tokenisation. We encourage regulators to continue pursuing international partnerships that explore interoperability and promote the adoption of digital across borders.

Allowing participating financial institutions to serve as liquidity providers. This could reduce concentration risk as liquidity will be provided by multiple actors. Moreover, such

[5] Bank of International Settlements, *Central bank digital currencies*, 2018, https://www.bis.org/cpmi/publ/d174.htm

an arrangement would enhance competition and improve payment efficiency, including cross-border transactions. On the other hand, we acknowledge that such a choice would result in higher market integrity risks as some liquidity providers might fail to meet their obligations. It is therefore essential to introduce a robust regulatory framework for liquidity providers, with stringent requirements such as minimum capital and liquidity requirements, mandatory asset fragmentation and requirements regarding the quality of assets that could be used for liquidity purposes.

Cost: CBDCs (wCBDCs) are provided at a nil or low cost to commercial banks for PvP settlement. This would reduce counterpart and settlement risk and therefore facilitate and encourage real-time final settlement of large value transactions.

Question 6

Are there any settlement models that are not encompassed in the 'design space' diagram (Figure 1) above and should be considered in relation to wholesale tokenised asset markets? If so, please outline the models and explain why they are relevant.

AFMA holds that a multilateral platform can potentially enable banks and other payment service providers (PSPs) to participate in different jurisdictions either directly or indirectly to send or receive payments.

According to BIS, a multilateral platform is a *payment system intended for payments between payers and payees in different jurisdictions. Participants are typically located in several countries. Also, since several jurisdictions are involved, multilateral platforms often process multiple currencies and may also offer cross-currency services, i.e. services that facilitate currency exchanges. Such services let the beneficiary receive funds in a currency other than the one in the payment order submitted by the payer, and this may be a functionality of the MLP itself or it may be performed by an intermediary.*[6]

Multilateral payment platforms offer several benefits, particularly in the context of international trade and finance. Key advantagesl include:

- By centralizing and streamlining transactions among multiple parties, multilateral payment platforms reduce the need for multiple bilateral agreements and transactions. This can lead to lower transaction costs and reduced administrative burden.
- These platforms facilitate better liquidity management by enabling participants to net their transactions. This means that only the net difference between debits and credits needs to be settled, reducing the amount of liquidity each participant needs to hold.
- Multilateral platforms can reduce counterparty risk by providing a more secure and transparent settlement process. They often include risk management mechanisms such as collateral requirements and default handling procedures.

[6] Bank of International Settlements, *Can Multilateral Platforms Improve Cross-Border Payments?,* 2022, https://www.bis.org/cpmi/publ/bb17.pdf

- By providing a central repository for transaction data, multilateral platforms enhance transparency and provide participants with better market insights.

- Multilateral payment platforms can provide broader access to payment services, especially for smaller entities and markets that might be unable to participate in multiple platforms.

- By standardizing protocols and promoting interoperability, multilateral platforms encourage innovation.

- They can enhance efficiency, security, and inclusiveness of the payments and therefore they can support asset tokenisation settlement by consolidating the number of steps from payment initiation to crediting the payee. Moreover, the use of a common infrastructure facilitates the harmonisation in standards and procedures, reducing the cost and processing time for asset tokenisation settlement.

- They reinforce and streamline compliance procedures by providing comprehensive monitoring and transaction screening as well as by monitoring more transactions than any single platform could do. Multilateral platforms are commonly governed by stakeholders from several jurisdictions and overseen by multiple public authorities, often through a cooperative oversight arrangement. The participants of a multilateral platform must adhere to a single rulebook established for that platform.

One potential example that regulators should consider exploring is the Regulated Liability Network (RLN) model. The concept of RLN is to explore the potential for a regulated Financial Market Infrastructure (FMI) that could deliver an interoperable network of all facets of the sovereign currency system operating on a shared ledger, including central bank money, commercial bank money (including tokenized deposits), and other forms of digital money.

The RLN aims to establish a new platform for sovereign currencies that is "always on", “programmable”, and “multi-asset”. It can also provide finality of settlement between participating institutions in sovereign currencies on the shared ledger.

We believe that the RLN is a relevant concept as it seeks to enable 24x7 real-time settlement of tokenized liabilities and other assets between participants over a shared ledger, operated by a regulated FMI provider and leveraging wholesale CBDC as a settlement utility. Some key benefits of the RLN model include:

- Enabling 24x7 transfer and settlement of liabilities.

- Supporting interoperability, ensuring tokenized, programmable money is interoperable across different regulated issuers.

- Ensuring that RLN is compatible across multiple currencies to address a broader range of use cases, while maintaining the two-tier structure of public and regulated private balance sheets.

- Financial messaging has largely been solved through structured ISO20022 messages flowing at high speed. RLN may facilitate creating the missing piece of the puzzle - a global solution for settlement.

- RLN may be extensible in potentially interesting directions: (1) including stablecoins when they are within the regulatory perimeter, (2) incorporating multiple currencies to solve for cross-border payment efficiency, and (3) representing multiple asset types.

Question 7

Do you see a role for privately issued forms of digital money in enabling tokenisation in wholesale markets? If so, what types of privately-issued digital money – for example, deposit tokens, RBDCs or fiat-backed stablecoins – are best suited to play this role, and why? What are the market characteristics that will enable privately issued forms of digital money to be utilised and the design features of such forms to be effective and efficient?

Yes, we do see a role for privately issued forms of digital money in enabling tokenization in wholesale markets.

An optimum settlement mechanism will combine the benefits of both central bank money and privately issued money, ideally tokenised deposits. In particular, the participation of central banks and regulator will ensure the overall integrity and stability of the financial system. As part of this, CBDCs can serve as an anchor for the settlement of tokenised asset transactions. At the same time, we need to ensure that the use of CBDCs will not lead to any crowd-out effect that could hinder innovation and business activity. To this end, market participants should be encouraged to be actively involved by leveraging the infrastructure and regulatory frameworks provided by governments and regulators. Having privately issued forms of digital money alongside central bank money would enhance innovation, boost competition, and empower the broader financial ecosystem.

What is more, CBDCs represent a significant innovation in the operation of the financial system, yet these come with certain limited risks. For example, an increasing demand for CBDCs could affect repo and government bill markets and reduce interbank activity. CBDC design choices could therefore have broader implications for the role of central banks in the financial markets and monetary policy transmission mechanisms. While we invite central banks and public authorities to take their time to consider and test the options before deciding how to proceed, we also believe that the use of privately issue forms of money can help markets hedge against those risks.

Tokenised Deposits:

Tokenised deposits could remove bottlenecks in the settlement of tokenised assets and create a step change in secure and efficient digital payments. Since they are based on distributed ledger technology, they can enable programmability and the atomic settlement of transactions.

There is already a widespread recognition about the benefits of tokenised deposits and regulators can draw useful lessons from ongoing projects such as the proof-of-concept (PoC) use cases under the HKMA-led Project Ensemble, a wCBDC project for the development of the tokenisation market in Hong Kong. At the core of Project Ensemble is a wCBDC Sandbox to conduct research and test tokenisation use cases that include, among others, settlement of tokenised real-world assets. The project initially focused on tokenised deposits as according to the HKMA, "*with wCBDC as the foundation, tokenised deposits can be used for tokenised asset transactions, unlocking new opportunities for optimisation and innovation in the tokenisation era"*.

Tokenized Deposits should be issued by banks with strong supervision, robust compliance and control programs and that are regulated with stringent minimum liquidity, capital, and risk management requirements that evolved over decades to create stable and reliable ecosystems. Such requirements include:

- Existing minimum liquidity requirements, such as the Liquidity Coverage Ratio, Net Stable Funding Ratio, and multiple internal liquidity stress test and cash requirements, account for a wide range of liability and asset structures with different liquidity and behavioral profiles under stressed conditions.
- Minimum capital levels which are determined following risk-based, leverage-based and stress scenario-based requirements to serve as buffer for unexpected market and bank specific risks. Globally systemically important banks are subject to even higher minimum capital requirements, bringing additional safety to their activities.
- Independent risk management practices ensure prudential approaches when identifying and managing financial and non-financial risks across all exposures.
- Other protections and contingency sources include large and diversified balance sheets backing deposit tokens, access to central bank contingency funding (e.g., discount window funding in the US, standing facilities in the Eurozone), and deposit insurance schemes for deposits below certain thresholds (where applicable).

- Suitability: Tokenised deposits are seen as a safe pathway towards digitizing money because they are issued by regulated financial institutions and align with traditional banking practices. They maintain the principles of "singleness of money" and "finality of settlement."
- Market Characteristics: The regulatory backing and compliance with existing financial regulations provide a high level of trust and stability, making them reliable for large-scale transactions in wholesale markets.
- Design Features: Tokenised deposits offer programmability, faster mobilization, and interoperability between traditional and DLT-based systems, which are important for seamless integration and efficient settlement.

Stablecoins:

With regards to other forms of digital money that can be used, we recognize that stablecoins today largely support a set of activities that are not currently satisfied by existing forms of payments, particularly within the VA domain and markets where access to USD is limited, but that they may widen into the general medium of exchange accepted by the public.

We, therefore, support stablecoins as privately forms of digital money, and we believe that they can coexist with CBDCs under the condition that stablecoins are:

- Denominated in national currency.
- Asset, rather than algorithmically, backed.
- Fully asset-backed at 100% of value.

- Regulated to the same standard as commercial bank money.

However, it is important to note that stablecoins come with higher risks as opposed to tokenised deposits. For example, in November 2023, the Bank of England Prudential Regulation Authority (PRA) published a *Dear CEO Letter* addressed to deposit-taking entities with regard to innovations in deposits, e-money and stablecoins.[7] This misperception could lead to contagion risks, even for stablecoins used in systemic payment systems.

We further note:

- Stablecoins, particularly those that are fiat-backed, offer additional optionality for innovation and can provide capabilities that do not currently exist in traditional financial instruments.
- The ability to maintain a stable value relative to a reference asset makes stablecoins attractive for use in wholesale markets. However, their regulatory treatment should depend on their specific risk profiles rather than a one-size-fits-all approach.
- Stablecoins should have a wide scope of eligible backing assets, including high-quality liquid assets, to ensure stability and trust.

Question 8

While cross-border settlements are not the focus of the current phase of Project Acacia, the RBA and DFCRC are interested in stakeholders' views on which settlement models may be particularly suited for cross-border settlements. Are any of the models better-suited than others to facilitate innovation in cross-border transactions?

The nature of asset tokenisation projects is often cross-border, which entails significant benefits but also comes with challenges on critical areas such as complying with multiple regulatory frameworks and ensuring settlement efficiency while mitigating settlement risks. According to the FSB, several frictions contribute to the challenges of cross-border payments: *(i) legacy technology platforms; (ii) fragmented and truncated data formats; (iii) funding costs; (iv) long transaction chains; (v) weak competition; (vi) complex processing of compliance checks; and (vii) limited operating hours.*[8]

Improving cross-border payments became a global priority of the G20 in 2020, acknowledging the need for more efficient and transparent cross-border payments. Multilateral platforms can potentially enable banks and other payment service providers in multiple jurisdictions to participate in different jurisdictions either directly or indirectly to send or receive payments. What is more, they can serve as a single access point and

[7] Bank of England PRA, *Innovations in the Use by Deposit-takers of Deposits, E-money and Regulated Stablecoins,* 2023, https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2023/november/innovations-in-the-use-of-deposits-emoney-and-regulated-stablecoins.pdf

[8] Bank of International Settlements, *Exploring Multilateral Platforms for Cross-border Payments*, 2023, p. 12, https://www.imf.org/en/Publications/analytical-notes/Issues/2023/01/18/Exploring-Multilateral-Platforms-for-Cross-Border-Payments-528297

facilitate transactions with banks, other PSPs and end users in that region. One potential example is the RLN concept that has been described in question 6.

Echoing the advantages of multilateral platforms and in specific RLNs, the BIS identified high costs, low speed, limited transparency, and limited access as the main blockers of cross-border payments. According to BIS, multilateral platforms could address cross-border payment frictions. Tokenization can greatly support multilateral platforms' role in cross-border payments in the form of RLN.[9]

We would also like to draw the regulators' attention to the fact that cross-border transaction settlement would require liquidity support from central banks vis-à-vis the involved currency pairs in order to achieve 24x7 and real-time final settlement as it may not be feasible for the private sector to fulfil this role on a wholesale basis. Central banks may consider working with each other to consider leveraging bilateral currency swap lines to provide necessary liquidity in real-time and settled by commercial bank at a later window.

Lastly, we invite the regulators to leverage existing research, such as the ongoing Project Agorá, a public-private collaboration that brings together seven central banks, selected financial firms, the BIS and the Institute of International Finance. Project Agorá builds on the concept of unified ledger and explores the integration of commercial bank deposits with tokenised wholesale central bank money in a public-private programmable core financial platform. This integration can enhance the functioning of the monetary system and boost innovation with the help of smart contracts and programmability, while maintaining its two-tier structure[10].

Question 9

Are there any additional considerations that you believe are relevant to the evaluation of options for settlement in wholesale tokenised asset markets? Which (if any) of the considerations should be prioritised (weighted more heavily)?

We would invite the regulators to consider the following issues as well when assessing settlement options for wholesale tokenised asset markets:

- Trade-offs between compliance and operational efficiency.
- Cybersecurity risks and other challenges regarding operational continuity.
- What role for banks and other market participants and intermediaries.
- Interoperability and capacity to support cross-border transactions. We also wish to stress that interoperability across multilateral platforms is a key requirement for these platforms to survive. One case in point is Swift working on a CBDC

[9] Bank of International Settlements, *Enhancing cross-border payments: building blocks of a global roadmap*, 2020, https://www.bis.org/cpmi/publ/d193.pdf

[10] Bank of International Settlements, *Private sector partners join Project Agorá*, 2024, Private sector partners join Project Agorá

solution (Currently in Phase 2) with the objective of providing seamless transaction flow between traditional rails using fiat currency and multilateral platforms using CBDC. We would also invite the regulators to draw lessons from ongoing research and pilot projects such as HKMA's Project Ensemble.

- Scalability and investment needs for R&D.

Question 10

Are there particular trade-offs associated with different tokenised settlement models that you wish to highlight?

We would invite the regulators to continue exploring the trade-offs between using central bank money and privately issued forms of digital money as well as the trade-offs between different DLT network characteristics. Our members would be delighted to contribute to research discussions on the above topics.

Question 11

Could asset tokenisation in wholesale markets be effectively supported by a settlement model that uses a 'synchronisation coordinator' to coordinate delivery versus payment across tokenised asset platforms and existing RTGS infrastructure? Do you support the further exploration of a synchronisation coordination function for a potential tokenised economy? If so, what should be the focus of that exploration in the short term? For example, the role, functions and governance of the synchronisation coordinator, the technical channels for interaction between the synchronisation coordinator and the RBA's infrastructure, or the viability of this model for tokenised asset platforms.

If assets and tokens are not in the same ledger, a synchronisation coordinator is needed to interlink DLT and RTGS. This model can bridge the gap between traditional financial systems and emerging tokenised platforms, ensuring seamless and efficient settlement processes. Furthermore, this can be an interim step before issuing a wCBDC. We would therefore encourage the regulators to explore the role, functions, and governance of a synchronization coordinator. A synchronisation coordinator with a high degree of control over the movement of money and an asset in a transaction can enable the synchronised settlement of funds and an asset. Moreover, it can facilitate innovation beyond the direct benefits of synchronised settlement.

To this end, useful lessons can be drawn by ongoing research projects such as Project Meridian, led by BIS and Bank of England and supported by 48 market participants. The project explored the concept of synchronization and demonstrated how a DLT network could connect to the conventional centralised systems used by participants in a transaction – including the RTGS operator – using open-standard application programming interfaces (APIs).

It is important to define the specific role and responsibilities of the synchronisation coordinator, including how it will manage and coordinate DvP transactions across different platforms. By focusing on the below areas, the exploration can provide valuable

insights into how a synchronisation coordinator can effectively support asset tokenisation in wholesale markets:

- Establishing governance structures is essential to ensure transparency, accountability, and compliance with regulatory standards.

- Developing the technical infrastructure required for interaction between the synchronisation coordinator and existing RTGS systems should be a focus. This includes creating secure and efficient communication protocols to facilitate real-time data exchange and transaction processing.

- Assessing the viability of this model for various tokenised asset platforms is essential. This involves evaluating the compatibility of different platforms with the synchronisation coordinator and identifying any potential technical or operational challenges.

Question 12

If tokenised money – public and/or private – was issued directly onto the same platform as tokenised assets, what types of benefits would you expect to arise from settlement on a common platform, compared with settlement using conventional forms of commercial bank money and ESA balances via a synchronisation coordinator? How significant might those benefits be, and to what stakeholder groups would they accrue (e.g. issuers, investors, platform operators)? If your response relates to a specific asset class or use case, please specify.

Issuing tokenised money—whether public or private—directly onto the same platform as tokenised assets could offer several significant benefits compared to conventional settlement methods using commercial bank money and Exchange Settlement Account (ESA) balances via a synchronisation coordinator. Some expected benefits and their potential impact on various stakeholder groups include:

- Increased Efficiency and Speed:
    - Benefit: Transactions can be settled atomically (ie instantly and simultaneously), and therefore reducing counterparty risk in settlements.
    - Stakeholders: This would benefit issuers and investors by improving liquidity and reducing the time capital is tied up in settlements. Platform operators would also benefit from increased transaction volumes and user engagement.
- Cost Reduction:
    - Benefit: By eliminating intermediaries and reducing the need for reconciliation processes, transaction costs can be significantly lowered.
    - Stakeholders: Investors and issuers would benefit from lower transaction fees, while platform operators could offer more competitive pricing structures.
- Enhanced Transparency and Security:

    - Benefit: A common platform provides a single source of truth, improving transparency and reducing the risk of fraud or errors. The immutable nature of blockchain technology ensures that all transactions are recorded transparently and cannot be altered.
    - Stakeholders: Investors would gain confidence in the integrity of transactions, while issuers would benefit from a more secure environment for asset issuance and management.
- Improved Liquidity Management:
    - Benefit: Tokenised money allows for more flexible and efficient liquidity management, as funds can be moved and settled instantly.
    - Stakeholders: Issuers and investors could better manage their cash flows and investment strategies, while platform operators could offer enhanced liquidity services.
- Innovation and New Use Cases:
    - Benefit: A unified platform can facilitate the development of new financial products and services, such as programmable money and smart contracts.
    - Stakeholders: All parties, including issuers, investors, and platform operators, could benefit from the ability to innovate and create new market opportunities.

The significance of these benefits can vary depending on the asset class or use case. For example, in high-frequency trading or derivatives markets, the speed and efficiency gains could be particularly impactful. In contrast, for long-term bond markets, the transparency and security benefits might be more valued.

Overall, the integration of tokenised money and assets on a common platform could lead to a more efficient, secure, and innovative financial ecosystem, benefiting a wide range of stakeholders across different market segments.

We note that not all market participants may wish to use a common platform, especially if this will be developed and/or operated by other market participants. This will become particularly challenging if regulators wish to attract offshore market participants and execute cross-border transactions.

We therefore hold, that it would be more feasible to opt for a multilateral platform that possesses highly versatile, agile capabilities that can both interoperate as well as complement conventional forms of money.

Question 13

Do you have experience or insights in addressing the challenges of interoperability between asset ledgers that may be relevant to the objectives of Project Acacia?

We would recommend the Bank also engages with some of the industry experiments and live platforms to leverage learnings, align and explore potential collaborations. Our members have indicated they are willing to facilitate or contribute any research discussions about interoperability between asset ledgers.

One such example is Partior. Partior was born in 2021 out of Project Ubin which explored the use of DLT for clearing and settlement of payments. The platform has developed a blockchain-based unified ledger for payments, enabling real-time clearing and settlement for instant liquidity and transparency. Partior is now a live global unified ledger and is used my multiple banks, to support cross-border payments, leveraging commercial bank money on chain. Partior aims to enable interoperability between multiple central bank money platforms and commercial bank money.

In addition, we would encourage the Bank to work with industry to explore the pros and cons of distribution versus interoperability models for central bank money. AFMA members have participated in ECB projects regarding interoperability of commercial bank money and central bank money, including Project Orchid by Monetary Authority of Singapore to explore application of controls for commercial bank money transfers and contributed to the Purpose Bound Money discussion paper issued. We support these industry initiatives and engagements by central banks which help the industry to explore pros and cons of various models.

Question 14

Are there any additional research questions which should be prioritised in Phase 2 of Project Acacia, over and above those described in Table 2? If so, please describe them.

We invite regulators to conduct further research on how to handle identity, privacy and programmability. Our members would be delighted to facilitate and support such research.