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DeFi and FX markets

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Introduction

During Point Zero Forum (PZF) on 26-28 June 2023 in Zurich, the BIS Innovation Hub Swiss and Singapore Centres hosted a roundtable discussion on decentralised finance (DeFi) and foreign exchange (FX) markets. Roundtable participants were drawn from central banking, academia and the private sector (including DeFi platforms, banks supporting crypto services and stablecoin operators).

The roundtable discussion covered (i) the current state of DeFi and FX and (ii) DeFi and the future financial system. This document summarises the discussion. It is not a chronological summary. The discussion was held under Chatham House rules and comments are not attributed. The opinions expressed herein are the personal views of the Roundtable participants and do not necessarily reflect the official views of the hosts or participants' respective organisations.

Key Takeaways:

1. Today's foreign exchange (FX) markets are highly digitised, fast, efficient and decentralised. They are characterised by a high degree of sophistication and specialisation of participants. However, settlement risk remains an issue.

2. Automated market makers (AMMs) are different from traditional FX arrangements, in particular, they (i) increase transparency, (ii) eliminate settlement risk, (iii) but suffer from much lower latency.

3. DeFi may provide a new foundation to build a financial system through (decentralised) governance, openness, transparency, programmability and composability. Regulatory uncertainty is seen as one of the key impediments to the development of the ecosystem.

4. The product-market fit of typical DeFi products and services is inadequate at the current stage. In search of use cases and target users, collaboration and further experimentation will be key.

AMMs – yet another arrangement for trading and settling FX?

Today's FX market is digitised, fast, efficient and decentralised. Trading takes place in a variety of over-the-counter markets. Post-trading involves netting, clearing and settlement, with settlement usually taking place two business days after trading (t+2 settlement).

Interbank FX markets, where vast amounts are traded each day, operate on thin margins and are dominated by a small number of large banks. FX business models are sophisticated and driven by a variety of factors, including a bank's position in the market, its market intelligence, its use of technology and risk management. While the FX market is generally less regulated than other financial markets, the FX Global Code sets out principles for market arrangements and conduct.

Settlement risk, ie the risk that one party to a trade of currencies fails to deliver the currency owed, remains an issue in today's FX markets. The risk mainly arises from the t+2 settlement, which offers significant benefits in terms of capital efficiency. The risk can be mitigated partially through pre-settlement netting. However, almost a third of deliverable FX turnover is at risk.

AMMs could be seen as just another FX arrangement. Yet they are different in three key dimensions. First, AMMs enable transparency in FX trading and settlement driven by the underlying blockchain technology.

Second, AMM collapses the trading and settlement into one single transaction, eliminating settlement risk. This makes netting and clearing redundant but requires the pre-funding of trades. Third, driven by the underlying decentralised infrastructures, AMMs suffer from comparatively poor latency and throughput for trading. Time intervals are typically measured in seconds (~12 seconds for a block of transactions in Ethereum), as compared with milliseconds in traditional FX markets.

AMMs may thus imply significant changes to existing FX business models and bank-internal processes such as liquidity management. While costs may outweigh the benefits of changing in-market arrangements in the short term, the assessment may change in the longer term.

DeFi – where is the product-market fit?

Today's centralised markets build on trust, which may give rise to risks and fragility. DeFi may provide a new foundation to build a financial system, leveraging the new technological opportunities. Several aspects of DeFi were discussed during the roundtable, highlighting the benefits and challenges of today's DeFi ecosystem.

First, DeFi may democratise access to finance, eg to FX markets, through its openness (ie "censorship-resistance") and the ability to encode governance mechanisms into smart contracts. However, the complexity of DeFi applications is high, requiring expert know-how, and risk management tools to navigate the ecosystem. Overall, its potential may be in the institutional sector rather than serving the retail end user directly. Exploring and identifying promising use cases and target users are important in the further development of the ecosystem.

Second, transparency, programmability and composability may generate benefits through efficiency gains (eg process automation) and risk reduction on the one hand. On the other hand, it may generate new challenges (eg how to contain front running of transaction validators and to increase data and transaction privacy) and risks (eg possible systemic and security risks through smart contract interdependencies). These aspects need to be better understood going forward.

Third, DeFi may potentially improve markets that may be underserved (eg FX markets for less liquid currencies and remittance payments) and/or that suffer from risks (eg the lack of payment-versus-payment arrangements). However, financial market participants may have a strong interest in keeping existing arrangements, as (i) they run profitable business models on top of them and (ii) transformation costs may be significant and not pay off in the short term.

Fourth, despite the promises of technological opportunities, broad (institutional) adoption may be restricted by regulatory uncertainty. Regulatory and compliance questions (including identity) are seen as key enablers for the development of the DeFi ecosystem.

Roundtable participants largely agree that public blockchains and DeFi may build a basis for the future financial system. However, at this early stage of development, product-market fit is inadequate, eg driven by unfavourable user experience. In search of use cases and target users, ecosystem participants need to continue exploring the benefits and risks of DeFi products and services and their transformative potential for commercial banking. Collaboration of ecosystem participants and further experimentation will be key in this iterative journey.

The BIS Innovation Hub together with its central bank partners is currently evaluating Project Mariana, taking the outcomes of this roundtable as input. It aims to publish results later this year, with a view to contribute to the ongoing discourse on the benefits and challenges of using DeFi concepts as a basis for the future financial system. It is looking forward to continued engagement between private sector participants, regulators and the central bank community, eg at the upcoming Singapore Fintech Festival.

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