

# FOREIGN EXCHANGE: DIGITAL MONEY AND THE FUTURE OF FX

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## Executive summary

This report provides an overview of the key discussions from a roundtable on the future of foreign exchange (FX) markets, focusing on the impact of digital money and emerging technologies. The roundtable gathered insights from industry experts on current solutions, frictions, and regulatory challenges in FX trading and settlement, as well as ongoing central bank projects and the future outlook for technologies such as digital assets, Central Bank Digital Currencies (CBDCs), and Decentralised Finance (DeFi) protocols.

### Key points:

- 1. Current state of FX markets:** The FX market has grown significantly, but challenges such as settlement risk, market complexity, and the need for faster, cheaper, and more secure cross-border payments persist.
- 2. Regulatory and technological solutions:** Innovations like Distributed Ledger Technology (DLT), smart contracts, and CBDCs are seen as potential solutions to reduce risks and improve efficiency, but they must be applied with careful consideration of their relevance to specific problems.
- 3. Central bank initiatives:** Various central banks are exploring digital currencies and blockchain technology through projects like Bank for International Settlements Innovation Hub's (BISIH) Rialto, aiming to improve cross-border payment systems and FX settlements.
- 4. Future outlook:** The future of FX markets may involve greater adoption of digital assets, the role of stablecoins, and the integration of DeFi protocols for more transparent, decentralised, and efficient trading environments.

## Introduction

The foreign exchange (FX) market is a critical component of the global financial system, facilitating the exchange of currencies necessary for international trade, investment, and economic stability. Over the past two decades, the FX market has experienced substantial growth, with daily turnover increasing from \$1.5 trillion in 1998 to \$7.5 trillion in 2020. This expansion has been driven by several factors, including the rise of electronic trading venues, the proliferation of high-speed trading firms, and the increasing complexity of financial instruments.

However, this growth has also brought about new challenges. The FX market's complexity has introduced heightened risks, particularly in areas like settlement risk, where the failure to properly settle transactions can have significant repercussions for financial stability. Moreover, the need for faster, cheaper, and more secure cross-border payments has become an explicit policy target for many stakeholders, including central banks, financial institutions, and regulatory bodies.

In response to these challenges, the financial industry has been exploring various technological and regulatory solutions. Innovations such as Distributed Ledger Technology (DLT), smart contracts, digital assets, and Central Bank Digital Currencies (CBDCs) have been identified as potential tools to enhance the efficiency and security of FX markets. These technologies promise to reduce settlement times, minimise risks, and provide new opportunities for smaller transactions, thereby making FX trading more accessible and cost-effective for a broader range of participants.

At the same time, regulatory frameworks are evolving to keep pace with these technological advancements. Financial institutions are under increasing pressure to demonstrate best execution in FX transactions, particularly in the context of electronic trading and the use of dark pools. The need for greater transparency, connectivity, and interoperability across different platforms and jurisdictions is driving efforts to modernise the FX market's infrastructure.

This report delves into these issues by summarising the discussions from a recent roundtable that brought together experts from the financial industry, central banks, and academia. The roundtable explored the current state of the FX market, the potential of emerging technologies to address existing challenges, and the future outlook for digital money and FX trading.

## Current solutions, frictions, and regulatory challenges in FX

The FX market, despite its growth and sophistication, still grapples with significant frictions and regulatory challenges. A key focus of the discussion was the complexity and risk inherent in the current system, particularly concerning settlement processes.

One of the most pressing issues identified is settlement risk. This risk arises when one party in an FX transaction fails to deliver the agreed currency after the counterparty has already fulfilled its obligation. The shorter settlement cycles brought about by advancements in trading technology have reduced this risk to some extent, but it remains a critical concern, especially in high-frequency trading environments. The discussion highlighted that although technologies like DLT and smart contracts have the potential to mitigate these risks through atomic settlement and programmability, their application must be targeted and relevant to the specific challenges they are intended to address.

Participants also noted the uneven pace of digitalisation across the FX market. While there has been significant growth in electronic trading, a substantial portion of the market remains non-electronic. This disparity creates inefficiencies and hinders the full realisation of the benefits that digitalisation can offer. The market must first achieve a higher level of digitalisation to ensure that the foundational infrastructure is in place before tokenization can be widely applied.

Regulatory challenges also featured prominently in the discussion. With the proliferation of electronic trading venues, ensuring best execution has become increasingly difficult. This challenge is exacerbated by the existence of dark pools, where transparency is limited, making it hard for regulators and market participants to verify that trades are being executed at the best possible prices. The need for improved connectivity and transparency across different trading platforms was emphasised as a critical area for future regulatory focus.

## Central bank projects: BISI, Nexus, and Rialto

Central banks are actively exploring how digital currencies and blockchain technology can be leveraged to improve FX markets. The Bank for International Settlements Innovation Hub (BISI) has been at the forefront of these efforts, working with a wide array of central banks on several projects aimed at enhancing cross-border payments and FX settlements.

One such project, Nexus, is designed to create a scalable model for multilateral links between fast payment systems across different countries. This project is particularly relevant for emerging market economies, where efficient cross-border payments are crucial for economic stability and growth.

Project Rialto, another BISI initiative, focuses on the use of wholesale CBDCs (wCBDCs) for FX settlement. The project aims to demonstrate how CBDCs can make FX transactions more efficient by reducing the need for correspondent banking relationships and shortening settlement times. However, the project also raises important questions about the governance and regulatory frameworks needed to support a multi-currency CBDC platform, especially in terms of managing financial stability risks.

The roundtable also discussed the implications of these projects for the broader financial system. Central banks have a duty to provide safe and reliable settlement mechanisms, but there is a risk that private digital assets could take over this role if central banks do not act quickly enough. The discussion underscored the need for central banks to collaborate with private sector partners to develop and implement these new technologies, ensuring that they are both secure and accessible to a wide range of market participants.

## The role of DeFi and AMMs in FX markets

Decentralised Finance (DeFi) and Automated Market Makers (AMMs) are emerging as significant forces in the evolution of FX markets. These technologies offer new ways to structure trading and settlement processes, potentially reducing costs and increasing market efficiency.

AMMs, in particular, represent a fundamental shift from traditional exchange models. Unlike traditional exchanges, where buy and sell orders are matched directly, AMMs rely on liquidity pools, where trades are executed against the pool rather than another market participant. This model has proven to be highly scalable and effective, particularly for mid-tail and long-tail assets, where traditional central limit order books may struggle to provide sufficient liquidity.

The roundtable highlighted the potential for AMMs to reform FX markets by providing a global, trustless network that operates 24/7, independent of traditional banking infrastructures. This could reduce the dependency on correspondent banks and enable faster, more cost-effective cross-border transactions. However, participants also noted that AMMs may not be suitable for all markets, particularly highly liquid ones like the USD/EUR pair, where traditional market structures may still offer advantages.

In the context of FX, the programmability and composability of DeFi protocols were also discussed as key advantages. These features allow for the creation of more complex financial products and services, which can be customised to meet the specific needs of different market participants. The roundtable emphasised the importance of developing stablecoin liquidity pools in non-USD currencies to support these innovations, as most existing pools are heavily concentrated in USD.

## Challenges and opportunities in digital money adoption

The adoption of digital money, including tokenized deposits, stablecoins and CBDCs, presents both challenges and opportunities for the FX market. On one hand, these digital forms of money offer the potential for faster, more secure, and more efficient transactions. On the other hand, they raise significant questions about market quality, regulatory oversight, and the role of traditional financial institutions.

A key challenge identified in the roundtable is the need for liquidity in digital money systems. Prefunding requirements for instant settlement can create significant frictions, particularly in markets where liquidity is already constrained. This issue is particularly relevant for smaller currencies and emerging market economies, where access to liquidity can be limited. The discussion suggested that central banks could play a crucial role in providing the necessary liquidity, although this would require careful management of central bank balance sheets.

Another challenge is the lack of a global regulatory framework for FX markets, which currently rely on domestic regulations that may not be fully equipped to handle the complexities of digital money. Roundtable participants called for greater international collaboration to develop a coherent regulatory approach that can support the growth of digital money while ensuring market stability and fairness.

Despite these challenges, the roundtable also identified significant opportunities for digital money to improve market quality. Digital money systems can provide a fairer market by offering broader access to financial services, reducing transaction costs, and increasing price transparency. The discussion highlighted that decentralised exchanges, such as those based on AMM protocols, are already competitive with traditional exchanges in terms of transaction costs, particularly for larger transactions where blockchain gas fees are less significant.

## Future technologies and trends in FX trading and settlement

Looking ahead, roundtable participants identified several key trends and technologies that are likely to shape the future of FX markets. With tokenized deposits and tokenized central bank money on the horizon, the continued development and adoption of stablecoins could provide a glimpse into the future of FX. They are increasingly being used as an alternative form of Real-Time Gross Settlement (RTGS) for cross-border transactions.

Stablecoins like USDC and EURC are already being integrated into DeFi protocols, where they provide a stable store of value and a medium of exchange for FX transactions. The composability of DeFi allows these stablecoins to be used as building blocks for more complex financial products, offering instant settlement and reducing the need for traditional intermediation.

Another important trend is the potential for smart contracts to automate and streamline FX transactions. Smart contracts can reduce the need for manual intervention in the trading and settlement process, lowering costs and minimising the risk of human error. However, roundtable participants cautioned that smart contracts must be carefully designed to ensure they are secure and reliable, both from the technological and legal perspective. Finally, the roundtable discussed the long-term perspective for digital money and its impact on market quality. While digital money offers the potential for greater efficiency and fairness, it also requires careful consideration of trading costs, price efficiency, and the incentives for market participants. The discussion highlighted the need for ongoing research and experimentation to better understand how digital money can be integrated into the FX market in a way that enhances its overall quality and stability.

## Conclusion

The future of the FX market is poised for significant transformation, driven by the adoption of digital money, the integration of new technologies like DeFi and AMMs, and the continued evolution of regulatory frameworks. While these innovations offer the potential for greater efficiency, security, and transparency, they also present new challenges that must be carefully managed.

Central banks, financial institutions, and regulators all have a role to play in shaping this future. By collaborating on the development and implementation of new technologies, and by ensuring that regulatory frameworks are adapted to meet the needs of a digital economy, the FX market can continue to evolve in a way that supports global trade and economic stability.

The roundtable discussions underscored the importance of a balanced approach, where the benefits of innovation are maximised while the risks are carefully mitigated. As the FX market continues to evolve, it will be essential to maintain a focus on market quality, fairness, and the broader goals of financial stability and inclusion.





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