View on CBDCs – Central Bank of the Republic of Türkiye

This paper provides an overivew of the latest developments in **payment ecosystems, and specifically central bank digital currencies (CBDCs).**

Payment ecosystems are the fastest-changing area relevant to the societal functions of central banks. A resilient and competitive payment ecosystem has become another important pillar among central banks' main responsibilities. This trend has been supported by rapid development in information systems and mobile technologies which provide lower costs and scale economies enhancing the efficiency and reach of financial services.

Compared to advanced economies (AEs), many emerging market economies (EMEs) have a relatively less developed financial sector and a larger percentage of financially excluded population. If properly utilised, innovative technologies can provide EMEs a chance to leapfrog in financial services digitalisation. Thus, it is important for central banks and the regulatory community to keep track of current developments and to keep regulatory frameworks up to date and adaptive to leapfrog potential.

With the digitalisation of economic activity continuing to accelerate faster than non-adaptive payment methods can evolve, instant payment systems (IPS) and central bank digital currencies (CBDCs) have risen up the agenda of central banks. As societies demand safe, efficient and 24/7 instant payments, central banks cannot ignore new technologies. In our case, we responded to the urgent need to design, develop and operate an IPS by launching an in-house system, called FAST, in January 2021. FAST has become so popular that 15.6 million customers had used it to initiate instant payments via a national ID number, phone number or email address within 12 months of its launch.

In recent years we have also noticed that although quantitative and digital data collection has become the new norm in central banking, the technical capacity to mine the data has not caught up with the expectations. Analytical tools have not matched the speed of data accumulation. It has looked like there was a bottleneck in human resource capabilities.

This encouraged us to make a change to turn challenges from technological developments into opportunities. We felt that the gap between the massive data pile and limited data processing capacity could be closed with a renewed approach to human resource management. Therefore, we established a new department that is totally dedicated to innovation. Then we moved beyond the traditional central banking human resource strategies and hired from an area that is not typical for central banks: engineers.

We decided to increase our efforts to experiment with the limits of technologies by utilising technologies such as blockchain, which are emerging fast with potential to play a role in payments. We define our basic strategy as managing the change in our favour to catch up with the most efficient and effective strategies for digitalisation of payment services.

Enabling cheaper cross-border payments is one area where desperation for innovation is so high. Higher global trade and investment with lower costs is critical for Türkiye's future economic potential. We support rule-based free trade and investment. We also support cheaper payments to eliminate payment cost barriers to trade and investment.

BIS initiatives already cover decreasing the cost of cross-border payments through instant payments. The focus should not only be kept on one type. CBDCs as a complementary alternative should also stay on the agenda. As far as the final aim is to close any gap on cheaper payments for cross-border trade and investment, the BIS should stay in the field to encourage all sorts of initiatives along these lines.

We appreciate the BIS initiatives such as Project Nexus and Project Dunbar, implemented in order to cover key issues and challenges in achieving interoperability in IPS and CBDCs. These projects present a useful analytical framework for addressing issues around multilateral cross-border retail payments. We welcome all kinds of initiatives to create a compatible payment system infrastructure to support free trade and investment for all.

One problem that will stay with us longer than expected seems to be interoperability. We are conducting extensive research on this issue and one of our findings is that empowering interoperability speeds up with the direct involvement of regulators. Fintech companies enjoy a clarified roadmap for background work and maximise innovative capacities with preset standards.

In order to speed up the adoption of interoperability, one strategy is to support emerging open banking strategies. We are conducting extensive research in this particular area as well: our internal research findings on a successful launch of open banking identified six pillars, including: standardised application programming interfaces (APIs) and shared platforms; IPS; public-private partnerships; public governance; mandatory provision of APIs; and specific licensing regimes. The first three components support "fast penetration by design". The remaining three are related to the "governance of an open banking system''. Analysis of these six parameters encourages optimal conditions for open banking to function smoothly as well as in harmony. To capture the true potential of open finance, direct involvement and governance by regulators is going to play a critical role.

In the Turkish case, we announced Turkish QR code standards in advance. Private initiatives welcomed our strategy. We see this as a good example of public-private partnership to speed up adoption.

Sustaining national interoperability is no panacea for cross-border transactions. Domestic APIs cannot close the gap. We need global initiatives to set the standards. We need to maintain transparent data-sharing to empower cross-border payments without any inconvenience under democratic data flows.

Almost every day, we see a new cryptocurrency proposal coming to the cross-border payments ecosystem, most probably due to unobservable gaps in the global payment digitalisation market. Also, with the side effects of the Covid-19 pandemic, ever increasing digitalisation of life is the new norm. Payments have to follow the same level of digitalisation. Public-private partnership is the right option to close the gap between the speed of digital life and digital payments.

In order to improve international cooperation while considering jurisdiction-specific conditions and circumstances, the BIS should increase activities around the Innovation Network. In this context, Innovation Hub activities should be supported.

Central banks need to face the challenges of digital life as the new norm. Our staff need to adapt as well. One way of sustaining public-private partnership synergies to solve problems globally is to support the BIS as the umbrella institution. The BIS can make the adjustments that fit us all best. This will surely be the globally optimal solution to our joint problems with regard to global cross-border retail payments in the digital age.

As regards our CBDC initiatives, we have not yet reached a final decision regarding the issuance of a digital Turkish lira. We are continuing our research on the potential benefits of introducing a digital Turkish lira to complement the existing payments infrastructure. Our basic proof of concept study regarding existing technologies is already completed.

All our research follows the patterns and principles of experimental R&D utilising a technology-agnostic approach. After assessing the capacity, scalability, interoperability and resillience of different technological alternatives, we will finalise the architectural setups. Finally, we will decide whether the existing technologies can meet the economic, legal and financial requirements of the digital Turkish lira. The results of our first phase initiatives will be announced in 2022 after our tests are completed.

The next stage is the participation of our technology stakeholders. For this purpose, we have signed bilateral memorandums of understanding with ASELSAN, HAVELSAN and TÜBİTAK BİLGEM, technology companies with very effective and efficient talent pools, and established the "Digital Turkish Lira Collaboration Platform".

We will first develop a prototype "Digital Turkish Lira Network". Then, we will run limited closed-circuit pilot tests with technology stakeholders. Based on the results of those tests, we will proceed to advanced phases to reflect a broader participation. We also plan to carry out tests that may diversify the coverage of the digital Turkish Lira project. We will look into areas such as blockchain technology, the use of distributed ledgers in payment systems, and integration with IPS.

We need to remember that only sovereign money in the form of cash enables real-time payments with ultimate finality. Cash as banknotes and coins provides unconditional finality of debt or due payments. This is a societal function of money that no other alternative can fulfil yet. However, cash also represents a perfection with a limitation: it simply does not function in a fully fledged digital economy. We are not aiming to replace cash but compliment it.

Central banks need to adapt to the changing market dynamics. Governments, households and corporates demand safe, resillient, efficient and 24/7 instant payments with finality.

We have been developing our skills to adapt to the speed of change in the technology. During the technical design and development of our fast payment system, we considered the future requirements as well as today's payment capabilities. We relied on certain facts: payments should be made available in the recipient's account within seconds; the system should scale well against annual volume growth; peak times should be taken into consideration; the scheme should be independent of the existing payment systems; there should not be any strict vendor or product dependency; and the system should be robust, secure and continuous, and operate seamlessly on a 24/7 basis.

We also identified three critical areas to improve on our instant payments: first, technologies for offline payments; second, integration of a digital Turkish lira; and third, working models for connecting all of these into a single cross-border platform. Our aim is to enable international payments instantly.

The challenge is not only national but also international. And the job is not done yet. The gap is still there. It will stay there until we can operate a fully fledged digital payment infrastructure, nationally, regionally and globally. We need to guarantee digital payments which are perfectly compatible with the fully digital way of life. We need to work together until all stakeholders' expectations from central banks are delivered once and for all.