Tokenisation of financial instruments and central bank money settlement

9 May 2024
Central bank money at the core of the financial system

A financial market infrastructure should conduct its money settlements in central bank money where practical and available.

Central bank money settlement
- reduces risk
- establishes trust
- safeguards financial stability
Ensuring that central bank money remains an attractive means of settlement...

- for retail payments: digital euro
- for wholesale financial transactions: solutions for settling transactions recorded on DLT platforms
Retail and wholesale complement each other

**Retail payments**
- Central bank money now only available in physical form
- Great variety of stakeholders: consumers, merchants, payment service providers, legislators…
- Day-to-day payments: typically lower values, higher volumes

**Wholesale transactions**
- Digital central bank money has been available for decades
- Narrower set of stakeholders, mainly from (existing/new) financial sector
- Securities settlement, interbank payments: typically higher values, lower volumes
Industry is exploring distributed ledger technologies

- Increasing automation of conditional transactions
- Reducing reliance on intermediaries
- Increasing transparency

Centralised ledger <-> Distributed ledger

Financial market infrastructure
Potential benefits of DLT for the market

Efficiency gains through potential for:
- **trading, settlement and custody** on the **same ledger**
- automation via **smart contracts**
- **24/7** operation → overcoming time zone differences

Opening up new avenues:
- for financial instruments **not currently serviced by financial market infrastructures**
- for SMEs to **access capital markets**
Implications for central bank money settlement

Current TARGET Services:
• settlement of payments in central bank money in T2
• integrated settlement of securities in TARGET2-Securities (T2S)

With tokenisation, securities can be recorded and settled on distributed ledger technology platforms

Risk of market fragmentation if multiple DLT platforms co-exist in the long-term but lack interoperability

What is the best way to enable central bank money settlement of the cash leg?
## Multiple options for central bank money settlement

### Trigger/bridge approaches
Central bank money settlement in non-DLT infrastructures; interoperable with market DLTs

<table>
<thead>
<tr>
<th>Trigger solution</th>
<th>€ central bank money</th>
<th>Other assets</th>
<th>Full DLT approaches</th>
<th>€ central bank money</th>
<th>Other assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger solution</td>
<td>On T2 (RTGS)</td>
<td>On external DLT</td>
<td>On Eurosystem DLT</td>
<td>On external DLT</td>
<td>On external DLT</td>
</tr>
<tr>
<td>TIPS Hash-link</td>
<td>On TIPS-like platform</td>
<td>On external DLT</td>
<td>On Eurosystem DLT</td>
<td>On external/shared DLT</td>
<td>On external/shared DLT</td>
</tr>
</tbody>
</table>

### Full DLT approaches
Central bank money settlement on DLT platforms

<table>
<thead>
<tr>
<th>Interoperability</th>
<th>€ central bank money</th>
<th>Other assets</th>
<th>Integration</th>
<th>€ central bank money</th>
<th>Other assets</th>
<th>Distribution</th>
<th>€ central bank money</th>
<th>Other assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interoperability</td>
<td>On Eurosystem DLT</td>
<td>On external DLT</td>
<td>Integration</td>
<td>On Eurosystem DLT</td>
<td>On external DLT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distribution</td>
<td>On external/shared DLT</td>
<td>On external/shared DLT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Eurosysteem exploratory work

**Practical work with market stakeholders** planned from **May to November 2024** focusing on **interoperability solutions**:

- **Experiments**: mock settlement of the cash and asset legs in test environments
- **Trials**: actual settlement of transactions in central bank money in a limited setting for a limited period of time

We are among the first advanced economies to go beyond experimentation

N.B. the Eurosystem’s exploratory work does **not** constitute a commitment by the Eurosystem to provide any steady-state solution(s) in the future or to make any changes to its current infrastructure.
First wave of exploratory work starts on 13 May

Substantial response to call for expressions of interest

**Ten** market participants and **six** market DLT operators approved to participate

Business cases mainly explore the securities settlement cycle

Additional **financial firms** and **business cases** expected in Wave 2 (starting in July)
Work on a longer-term vision

Key objectives:

- Preserve the stabilising role of central bank money
- Strengthen the efficiency of European financial markets
- Avoid re-fragmentation

Analysis of “unified ledgers” will continue (cash and assets on the same platform)
Related documents

• Speech: Modernising finance: the role of central bank money
• ECB Economic Bulletin article: Central bank money settlement of wholesale transactions in the face of technological innovation
• Focus session: Potential use of new technology for wholesale central bank money settlement
• News item: Participants chosen to explore new technologies to settle wholesale transactions in central bank money
• Exploratory work on new technologies for wholesale central bank money settlement