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DLT and Innovations in Wholesale Settlement in Central Bank Money: A Comparative Guide for the UK

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What is happening

In our previous [Comparative Guide](#), we explored innovations in private forms of digital money and money-like instruments available to retail customers, including fiat-referencing stablecoins, e-money and tokenised deposits.

As the use of distributed ledger technology (DLT) expands into the wholesale space, regulators such as the Bank of England (BoE) are now actively experimenting with innovations in public money.

Why it matters

Instruments such as stablecoins and tokenised commercial bank deposits generally do not allow for settlement on the central bank's balance sheet. However, central bank money, being the ultimate risk-free asset, plays an important, anchoring role in the context of wholesale settlement.

In this guide, we compare innovations allowing for settlement in central bank money such as wholesale CBDCs, synchronisation, and private-public partnerships (i.e. so-called "synthetic CBDCs").

Policy considerations: settlement in central bank money

Two key principles are critical to the monetary and financial stability:

- **Singleness of money:** the principle that all different forms of money (e.g. coins, bank deposits) – must be exchangeable with each other at par value.
- **Finality of settlement:** the principle that when parties pay for something with money, they can be assured that it has actually been paid for.

Additionally, of importance is principle 9 of [the BIS and IOSCO Principles for financial market infrastructure](#) which states that, where possible, FMIs should use central bank money to settle transactions (and strict controls are required to manage credit and liquidity risk where commercial bank money is used).

Today, transfers in commercial bank money are supported by a number of mechanisms such as the complementary use of wholesale central bank money as a settlement asset, in order to ensure financial stability. In this vein, although private forms of digital payment instruments (e.g. stablecoins) can also be used for wholesale transactions, they typically would not result in settlement on the central bank's balance sheet. To address potential risks posed to financial stability where such instruments are used for wholesale transactions, innovations in private forms of money or money-like instruments would need to be complemented by solutions allowing for **settlement in central bank money**.

What do we mean by “wholesale” transactions (versus “retail” transactions)?

Broadly speaking:

- **Transaction parties:** wholesale transactions are considered to be between eligible financial institutions (e.g. banks), as opposed to transactions between individuals and businesses.
- **Value:** wholesale transactions are generally high value and low volume, while retail transactions are high volume and low value (e.g. day-to-day bank transfers).

A Comparison

The table below sets out a high-level comparison of different approaches in wholesale payments innovation.

| | Wholesale CBDC | Synchronisation | Public-private partnerships |
|---------------------|---|---|--|
| Summary | While there is no settled definition, “wCBDCs” typically refers to new technologies (e.g. a DLT-based platform), which enables the distribution of wholesale central bank money (in contrast to CBDCs intended for retail transactions such as a “digital pound”, or the Bahamian Sand Dollar). | Instead of building a new DLT-based platform for the issuance of tokenised central bank money, this approach would involve developing a solution to allow for interoperability between the Real Time Gross Settlement (RTGS) system, and external programmable platforms. | Also sometimes known as “synthetic CBDCs”, this refers to private sector solutions backed by central bank money. |
| Examples | In a recent Discussion Paper , the BoE proposed a programme of experiments in wCBDC technologies. The Banque de France continues to experiment with a DLT-based solution operated on behalf of the Euro-system. | The BoE has proposed a “synchronisation” approach, where assets are transferred via an external (DLT-based) platform, while the cash leg of the transaction takes place on the existing RTGS ledger. Also, the BoE and the BIS have experimented with synchronisation as part of Project Meridian . | The DLT-based Sterling Finality Payment System (£FnPS) is developed and operated by Finality UK and is regulated by the BoE. The solution leverages the Omnibus Account introduced by the BoE in 2021, which allows banks to pool money held at the BoE, and enables DLT-based settlement which is fully funded by central bank money. |
| Key features | A wCBDC would allow for atomic settlement of interbank transfers and wholesale transactions involving tokenised assets and tokenised central bank money, on DLT rails. | This process is enabled by a “synchronisation operator”, which facilitates communication between the external asset ledger and the RTGS. Synchronisation would also allow for atomic settlement. | Operating models can vary. Generally, a synthetic CBDC envisions a digital instrument (e.g. a token or coin) issued by a private entity, where such instrument is fully backed by central bank reserves and is supervised by the central bank. |

| | Wholesale CBDC | Synchronisation | Public-private partnerships |
|--|--|---|--|
| DLT-based? | A wCBDC is likely to—but does not necessarily—involve a DLT-based platform operated by the central bank, and tokenised central bank money. | This approach allows for interoperability with DLT-based platforms but does not require RTGS itself to be migrated to a DLT platform. | Likely to be DLT-based, but is ultimately subject to the operating model. |
| Settlement in central bank money? | Yes - akin to existing central bank money, tokenised central bank money represents a direct claim against the central bank. | Yes – this approach relies on the RTGS, which enables settlement to take place on the BoE balance sheet. | Likely to allow for settlement in central bank money (but ultimately subject to the design and operating model of the solution). |
| Timing | The BoE proposed its programme of experiments in August 2024, noting that it intends to commence the programme within six months. We would not expect a wCBDC solution in the UK to be launched in the short term. | As with wCBDC technologies, the BoE proposed its programme of experiments in August 2024, noting that it intends to commence the programme within six months. | Private sector solutions tend to be developed more quickly. For example, £FnPS has already launched (note that first live transactions were announced in December 2023). |

Infrastructure solutions: how does it all fit together?

Innovations relating to private forms of money (e.g. stablecoins and tokenised bank deposits) will coexist alongside innovations in public forms of money (e.g. tokenised central bank money).

The vision of “unified ledgers” and the “Finternet” (as described in a [BIS Working Paper](#)), for example, envisions a two-tier monetary system where tokenised deposits would function as a means of payment for individuals and businesses, while wholesale tokenised central bank money would enable settlement of commercial banks’ accounts on the central bank’s balance sheet.

It is worth noting that across the globe, there are now a number of infrastructure solutions available or in development, which have the potential not only to allow for interconnectivity between DLT-based assets and payment instruments but also tokenised central bank money, including:

- Shared ledger solutions such as Partior, the Regulated Liability Network (RLN), and [Project Agorá](#) (which builds on the unified ledger concept [proposed by the BIS](#) and brings together seven central banks including the BoE and private sector firms); and
- Interoperability solutions such as Ownera (which [announced](#) a partnership with Fnality last year).

See also [Tokenized Deposits, Stablecoins, and E-money: A Comparative Guide for the UK](#)

Find out more



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