Economic Commentary

Settlement in central bank money from a financial stability perspective

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Summary

The traditional payments and securities markets are undergoing a structural transformation, driven by, among other things, increased competition through new technologies and new actors, as well as new legislation. As part of the structural transformation, current actors in the financial sector see an opportunity to improve efficiency and optimise costs. They are therefore reviewing their services offerings and exploring new innovative solutions to streamline transaction flows, especially across borders.

In times of change, it is important that the actors in the financial sector work to provide safe systems for the settlement of money and securities. One way to reduce settlement risk is to settle in central bank money. As a central bank cannot go bankrupt, this removes the credit risk for participants in a settlement system provided by a central bank.

However, it is not always possible to settle in central bank money, and in these cases so-called commercial bank money is instead used for settlement. Settlement in commercial bank money takes place in a commercial institution, such as a bank, which means that participants in the system may have a credit risk with regard to that institution.

When major changes occur in the traditional payments and securities markets, the Riksbank monitors and analyses how financial market infrastructures[1] and other actors work to offer safe systems for the settlement of money and securities, and how central bank money can be used to minimise risks.

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What is settlement in central bank money and why is it important?

Put simply, a distinction is made between settlement in central bank money and settlement in commercial bank money. In short, this is about who provides the accounts

[1] Financial market infrastructures include payment systems, central securities depositories and central counterparties.

[2] Thanks to Peter Kraemer, Reimo Juks, Mattias Gidoff Grahn and Johanna Stenkula von Rosen for their valuable input during the process.

in which the settlement of money takes place, and thus whom the participants in a settlement system take risk against.

Central bank money is money issued by a central bank and can include cash, i.e. physical banknotes and coins, or digital money, such as that held by banks in accounts with the central bank. An alternative to central bank money is commercial bank money. Commercial bank money is best defined as money issued by a commercial bank and held in accounts at that bank. Settlement means that money, securities or both change hands in a transaction by making a transfer between two parties.

CPMI-IOSCO[3] has published international principles, the Principles for Financial Market Infrastructures (PFMI), [4] to provide guidance for maintaining a safe and efficient financial infrastructure. These principles define settlement in central bank money and commercial bank money as follows:

Central bank money is a liability of a central bank, in this case in the form of deposits held at the central bank, which can be used for settlement purposes. Settlement in central bank money typically involves the discharge of settlement obligations on the books of the central bank of issue. Commercial bank money is a liability of a commercial bank, in the form of deposits held at the commercial bank, which can be used for settlement purposes. Settlement in commercial bank money typically occurs on the books of a commercial bank.

To carry out a settlement, money needs to be held in an account with the operator where the settlement takes place, a settlement institution. If the settlement institution is a central bank, the money in the account is central bank money. If it is a private settlement institution, such as a bank or a private financial market infrastructure, it is commercial bank money. By holding money in an account, the account holder has a credit risk towards the provider of the account, as that money ends up on that provider's balance sheet. The same risk may arise if a participant pledges securities to gain access to money for settlement. International principles and guidelines, as well as European legislation, favour the use of central bank money for settlement in financial market infrastructures.

However, it is important to distinguish between credit risk and counterparty risk here. The most efficient and safe way to settle securities is a method known as delivery versus payment (DvP), i.e. securities and money are exchanged between the counterparties in a transaction at the same time. In this way, the counterparty risk in settlement can be eliminated as the payment and the change of ownership are executed at the same time, so there is no risk of any party not receiving its share of the transaction. However, DvP does not eliminate the credit risk that exists between the settlement institution and the participants before the settlement of a transaction takes place.

[3] CPMI is a standard-setting body for central banks and IOSCO is the equivalent for financial supervisory authorities.

[4] Principles for Financial Market Infrastructures (bis.org)

If a participant has deposited money with a settlement institution and the settlement institution defaults before settlement can take place, this can have major consequences, mainly for the participant itself but also for the financial system as a whole. Participants risk losing the money they have in their accounts with the settlement institution and, in the case of large amounts, there may be spillover effects to the rest of the financial system. Therefore, settlement institutions dealing with large volumes and high values are of particular importance to the financial system. Settlement can take place without credit risk if it is in central bank money. As a central bank cannot go bankrupt, settling in central bank money eliminates credit risk. However, it should be noted that the financial system is based on a combination of, and interaction between, systems settling in central bank money and commercial bank money.

An example of a settlement system in Sweden that settles in central bank money is Euroclear Sweden, the Swedish Central Securities Depository (CSD). Euroclear Sweden's settlement of securities is based on a model in which central bank accounts belonging to the Riksbank are integrated into Euroclear Sweden's system, and settlement of securities can thus take place against money on the same technical platform. As the money is held in accounts provided by the Riksbank, the credit risk is on the Riksbank and not on Euroclear Sweden.

Euroclear Bank is an example of an institution that settles in commercial bank money. Euroclear Bank is a CSD with a banking licence, which means it can give and take credit from its participants. Participants can use securities held in their account with Euroclear Bank as collateral to access money to settle new transactions. This means that participants have a credit risk on Euroclear Bank and vice versa.

An institution that settles in commercial bank money can limit the credit risk of participants by allowing them to deposit money for settlement in an account with the central bank and limiting their settlement capacity to the amount they have deposited with the central bank. This refers to a settlement model in commercial bank money that is *backed* by central bank money. In the event that the settlement institution does not provide or take credit, no credit risk arises between the settlement institution and its participants.

What does legislation and international principles say?

The Riksbank oversees the financial market infrastructures to identify and limit the risks they may pose to financial stability[5]. For this oversight work, the Riksbank applies the international CPMI-IOSCO Principles for Financial Market Infrastructures (PFMI), which provide guidance on how to maintain a safe and efficient financial infrastructure. In addition to the international principles, the Riksbank also takes into account

[5] The Riksbank's oversight of the financial infrastructure

the EU regulations for financial market infrastructures, such as central counterparties (EMIR[6]) and central securities depositories (CSD Regulation[7]).

According to the PFMI's ninth principle, which explains how money should be settled in systemically important financial market infrastructures, companies should settle in central bank money, if "practical and available". This requirement is also included in EU regulations. What is considered "practical and available" is a subjective assessment that supervisory and oversight authorities need to make. In this assessment, they shall take into account, for instance, that it is not always possible for financial market infrastructures and their participants to access central bank money. We will come back to this in the section Obstacles to settlement in central bank money.

The reason why EU legislation and international principles advocate settlement in central bank money is that it eliminates credit risk for the participants in the settlement system.

If it is not considered practical and available for a financial market infrastructure to settle in central bank money, measures should be taken to manage and limit potential risks. In particular, it is important that participants in the system are made aware by the financial market infrastructure that the risk of settlement may increase when it is made in commercial bank money.

Obstacles to settlement in central bank money

There are potential obstacles that may make settlement in central bank money impractical. Some examples are given below.

Central banks typically impose high standards on actors wishing to participate in their settlement system, partly to protect themselves against potential losses or disruptions, and partly to protect the system as a whole and its participants. This may make it more difficult for financial market infrastructures and their participants to access the systems so that they can settle in central bank money.

There may also be operational obstacles, such as central banks opening hours, which make settlement in central bank money impractical. This is the case, for example, for the company CLS. CLS provides FX settlement of 18 currencies globally, and since the central banks settling the currencies have different opening hours, it is difficult to settle them in central bank accounts at the same time. Another example is instant payments around the clock. If they are to be settled in central bank money, the central bank's system must be open 24 hours a day, which is currently not common. Securities settlement is also moving in the direction of shorter settlement cycles, and many

[6] Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

[7] Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories.

players are global, leading to demands regarding the operating hours of central bank payment systems.

There may also be legal obstacles that prevent or hinder a settlement institution and its participants from accessing central bank money, in particular if they offer settlement in another jurisdiction or currency.

Another obstacle that may arise is linked to new technologies. The simplest way to efficiently and safely settle money and securities in one transaction at the same time is a solution where both securities and money are on the same technical platform. A large number of initiatives are currently underway in which securities are registered and settled on distributed ledgers using blockchain technology. In addition, there are initiatives where central banks are working on offering central bank money with similar technology. However, given the different pace of development, we are likely to see a market characterised by hybrid models, i.e. a combination of players using 'old' and 'new' technologies for the foreseeable future. Tests have been conducted in which the central bank provides an account that allows a commercial settlement institution to tokenise the money in the account for settlement, i.e. the money is digitally represented on the distributed ledger where securities settlement takes place. Such a solution can be described as settlement in commercial bank money but backed by central bank money as described earlier.

General principles for settlement in central bank money

The Riksbank monitors and analyses market developments from a financial stability perspective to ensure that central bank money is used in a way that contributes to minimising risk in the settlement of money and securities.

In its work on analysing and assessing risks, the Riksbank therefore follows the following principles:

- Settlement in central bank money shall comply with the CPMI/IOSCO’s PFMI definition, i.e. a transfer shall result in a debit or a credit to an account at the central bank.
- Those financial market infrastructures that are important for maintaining the stability of the financial system shall comply with the ninth principle of the PFMI, which states that they shall always settle in central bank money where practical and available.
- Settlement of securities in CSDs should be done on a delivery versus payment basis, i.e. money and securities should be exchanged at the same time.
- When settlement takes place in commercial bank money because it is not practical to settle in central bank money, the settlement institution should manage and limit potential risks. In particular, it is important that the settlement institution makes participants in the system aware that the risk in the settlement may increase when it is made in commercial bank money.

Settlement should take place in central bank money whenever possible

The safe settlement of money and securities is essential for the smooth functioning of the financial system. Settlement in central bank money is favoured by both legislation and international principles as it eliminates the credit risk for the participants in the system where the settlement takes place. However, it is not always easy or even practical to settle in central bank money and therefore settlement in commercial bank money may sometimes be necessary. In the face of major changes in traditional payment and securities markets, it is important that actors work to maintain safe and efficient systems for the settlement of money and securities. The Riksbank monitors and analyses developments to see when and how settlement in central bank money should be used to minimise the risks associated with settlement.

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