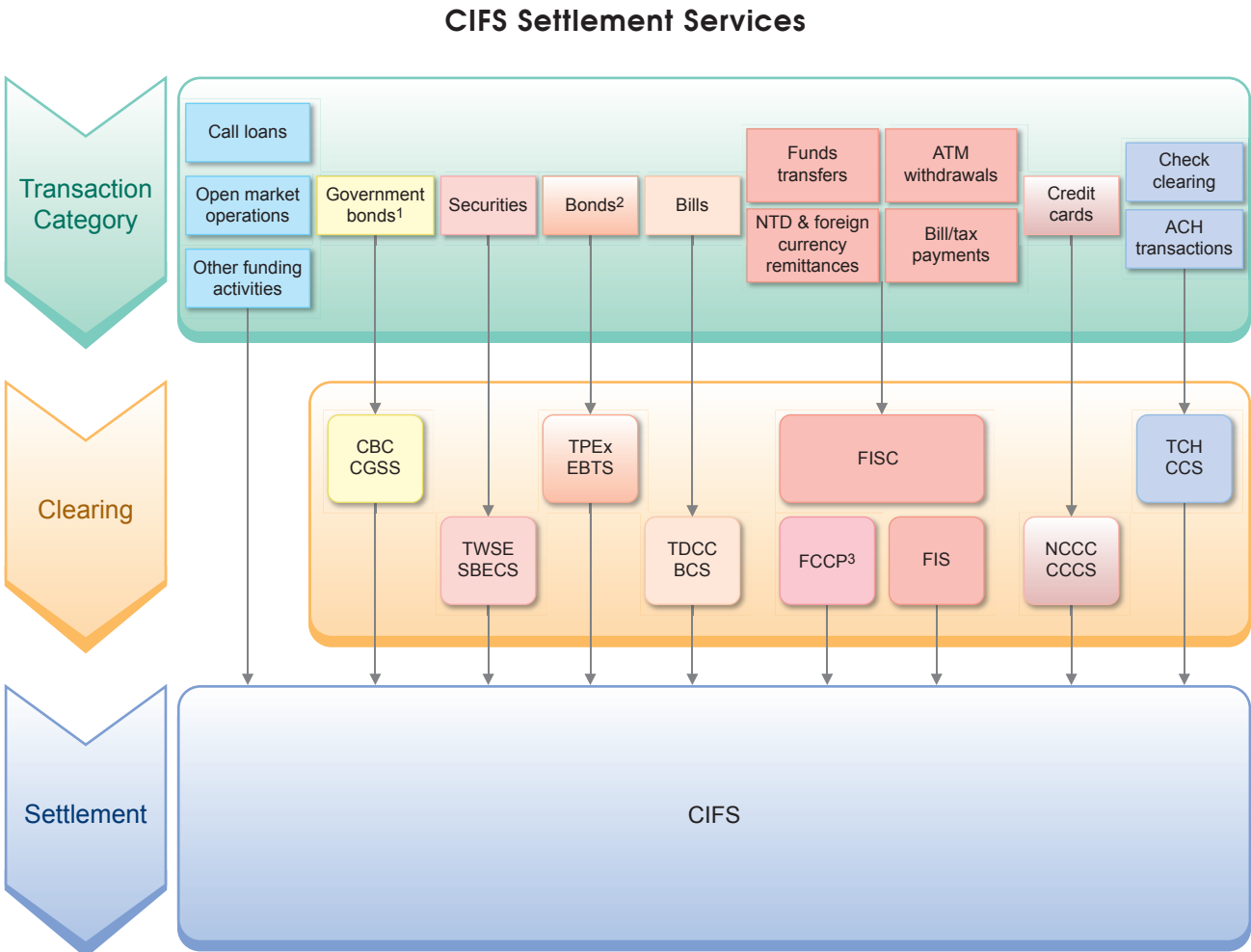


4. Payment and Settlement Systems

The Bank plays a crucial role in the functioning of Taiwan's payment and settlement systems and operates the CBC Interbank Funds Transfer System (CIFS) and the Central Government Securities Settlement System (CGSS).

The CIFS serves as the hub of Taiwan's payment and settlement systems, linking the interbank clearing systems operated by the FISC, the Taiwan Clearing House (TCH), the National Credit Card Center of R.O.C. (NCCC), the Taiwan Depository and Clearing Corporation (TDCC), the TPEX, and the TWSE, as well as the CGSS, together to construct a comprehensive system.



Notes: 1. Including DVP settlements for interbank transactions of central government bonds and treasury bills.
2. Including netting settlements for outright trades of government bonds, corporate bonds, and bank debentures.
3. The CIFS is only responsible for settlements involving NT dollars, while settlements involving foreign currencies are performed by designated commercial banks.
Source: Department of Banking, CBC.

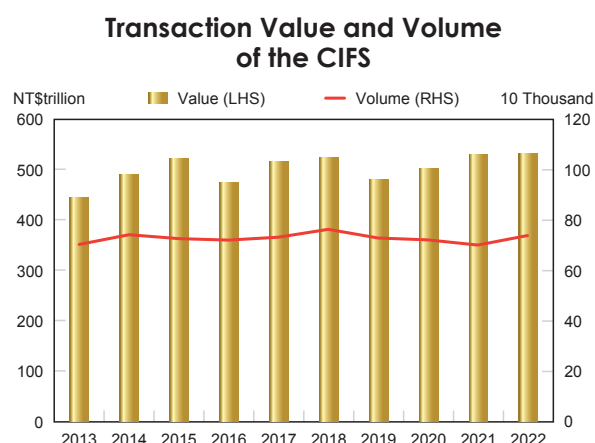
In addition, the Bank monitors major payment systems based on the *Principles for Financial Market Infrastructures* released by the Bank for International Settlements (BIS) to ensure sound operation of these systems and to promote stability of the financial system.

Operation of Payment and Settlement Systems

(1) Funds Transfers via the CIFS

As a large-value electronic funds transfer system, the CIFS not only deals with interbank funding, open market operations, and funds settlements in financial markets, but also provides interbank final settlement services for each clearing institution.

In 2022, two more banks joined the CIFS. At the end of the year, there were 86 participants of the CIFS, including 71 banks, eight bills finance companies, Chunghwa Post, and six clearing institutions, namely the FISC, the TCH, the TWSE, the TPEx, the TDCC, and the NCCC. In 2022, the number of transactions via the CIFS was 741,636, and the amount of funds transferred totaled NT\$535 trillion. Meanwhile, the daily average number of transactions via the CIFS was 2,978, increasing by 5.31% over the previous year, and the daily average amount of funds transferred was NT\$2.1 trillion, rising by 0.35% from a year before.



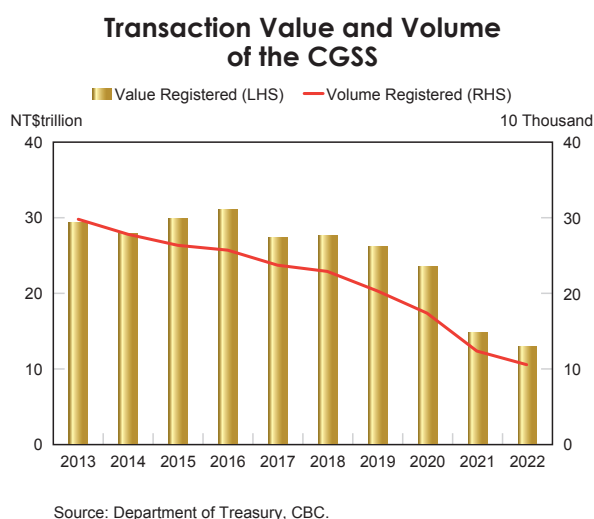
Source: Department of Banking, CBC.

(2) Transactions via the CGSS

Established in September 1997, the CGSS is a system for issuance, transfer, redemption, and interest payment of book-entry central government securities. Since its inception, central government bonds have been issued in book-entry form. Treasury bills were included in this system in October 2001 and have been issued in book-entry form ever since.

Since April 2008, when the CGSS linked up with the CIFS, fund settlements, principal redemptions, and interest payments have been handled through the CIFS using a delivery-versus-payment (DVP) mode. The DVP mode, promoted by the BIS, is an arrangement in a securities settlement system to ensure that securities delivery occurs at the same time as the funds transfer, effectively eliminating potential principal risk during the transaction process.

As of the end of 2022, there were 19 clearing banks with 1,678 branches that handled the registration of central government securities transfers. During the year, as the Fed and the Bank announced policy rate hikes successively, leading to a surge in central government bond yields, dealers became more cautious about bond transactions in consideration of interest rate risk. As a result, transaction value and volume of the CGSS in 2022 continued the downtrend, falling to NT\$13.0 trillion and 106,218 transfers, respectively.



Oversight of Payment and Settlement Systems

To ensure sound operation of domestic payment and settlement systems, the Bank conducted the following oversight activities in 2022:

(1) Monitoring the Operation of the Large-Value Payment Systems

The Bank continued to monitor the operation of the large-value payment systems in 2022, and requested participating institutions which applied for the CIFS operation time extensions because of system malfunctions or other contingencies to improve the time extension issue.

(2) Requiring Payment Institutions to Submit Information on Electronic Payment Business

Payment system operators and electronic payment institutions were required by the Bank to submit reports on their operations and activities with regard to electronic payments on a regular basis. In 2022, the reports required to be submitted to the Bank was revised in accordance with the amendment to *The Act Governing Electronic Payment Institutions*.

(3) Supervising Contingency Drills Performed by Clearing Institutions

To ensure business continuity of payment and settlement systems, the Bank supervised clearing institutions conducting testing of business continuity plans and remote backup operations in case of emergency. Furthermore, the Bank, together with participants of the CIFS, performed system-wide testing of the operating procedures to ensure that the backup systems would operate smoothly when an emergency occurs and that relevant personnel would be familiar with contingency procedures in response to disruptions to the system network.

(4) Performing Backup Drills with Clearing Banks

Since 2019, the Bank has supervised all clearing banks performing backup drills annually in the event of malfunction or line interruption of a CGSS participant's mainframe system. In October 2022, this drill was conducted successfully with 19 clearing banks.

(5) Organizing Conferences to Enhance Payment System Operation

The Bank invites the FSC and clearing institutions to jointly hold two conferences on "Promoting Sound Operation of the Payment Systems" every year. However, in the first half of 2022, owing to the COVID-19 pandemic, the conference held for securities clearing institutions including the TDCC, the TPEX, and the TWSE was suspended and replaced with report submission by the aforesaid institutions. In the second half of the year, the conference was held as scheduled and attended by payment clearing institutions including the FISC, the TCH, and the NCCC. The Bank urged clearing institutions to enhance risk management, ensure resilience of core business operating systems, and strengthen contingency planning.

Continuing to Urge the FISC to Assist in Providing Sound Mobile Payment Infrastructure for Financial Institutions

To enhance information transmission and to facilitate transfer of funds between electronic payment institutions and between electronic payment institutions and financial institutions, the Bank required the FISC to construct a "shared platform for cross-institution electronic payment," which was launched in October 2021, to provide the funds transfer service. The platform started to offer tax and bill payment services in 2022 and is expected to provide a payment service for shopping in 2023. In addition, to improve the convenience of interbank funds transfer, the FISC continued to promote the "mobile number funds transfer" service to allow users to transfer funds by linking mobile phone numbers to bank accounts.

Proceeding with the CBDC Research Project

The Bank has conducted a two-phase CBDC research project since 2019 to explore the applicability of the underlying technologies regarding a wholesale CBDC and a general purpose CBDC. The second phase proof-of-concept study on a general purpose CBDC was completed in June 2022, which simulated CBDC retail payment scenarios in a closed environment. The experiment results were showcased through a physical presence, allowing participants to experience various payment functions of CBDC.

The Bank plans to solicit public comments on the simulation results of the second phase study and to take the following actions in order to proceed with the CBDC research project with thorough and comprehensive preparations: (1) enhancing communication to gain public support, (2) refining platform design and adopting technologies that are more robust and mature, and (3) drafting a solid legal framework and formulating relevant regulations.