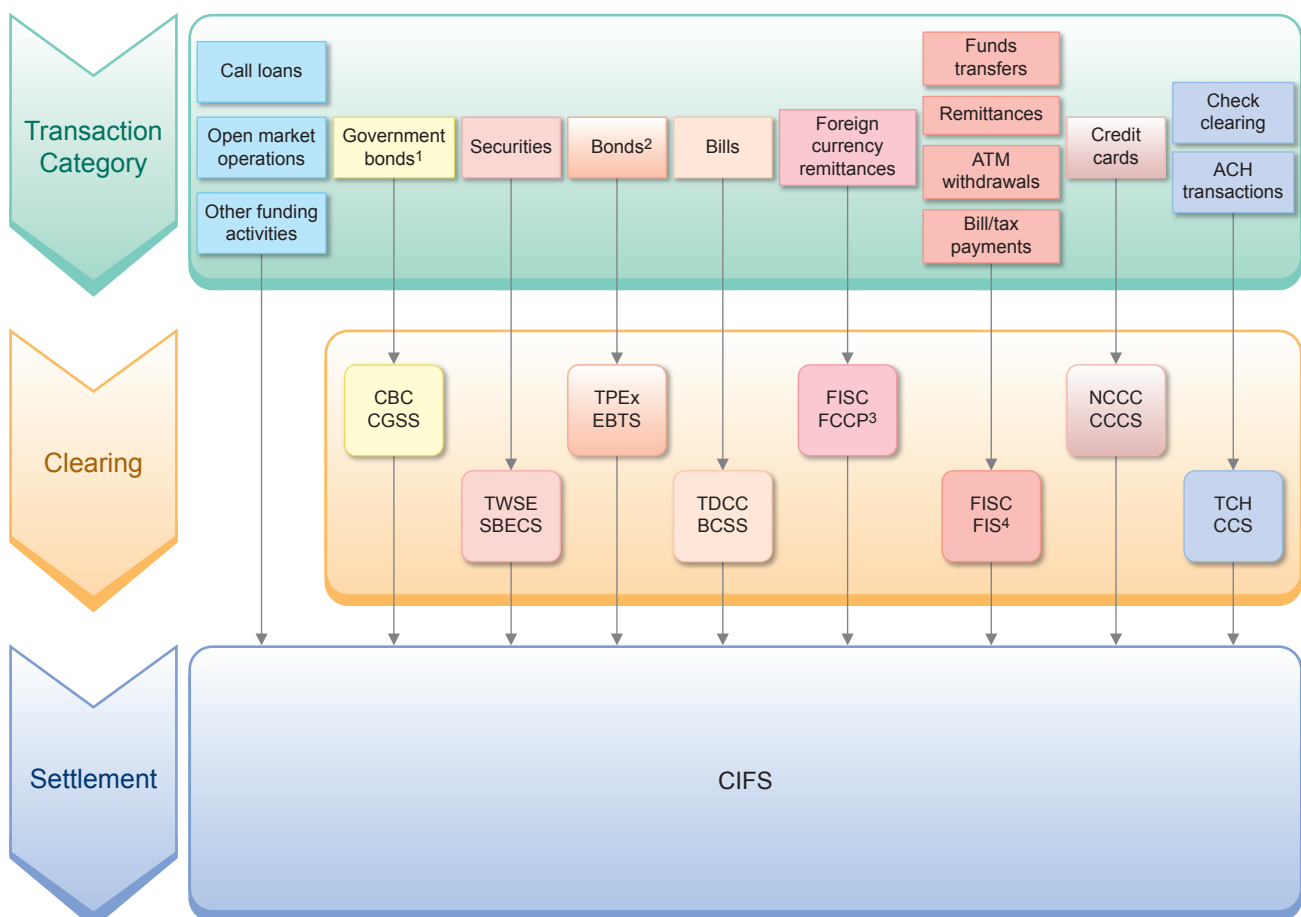


4. Payment and Settlement Systems

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.

Payment and Settlement System Infrastructure



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 responsible for settlements involving NT dollars, while settlements involving foreign currencies are performed by designated commercial banks.
 4. The FISC's Financial Information System (FIS) provides fast payment service on a 24/7 basis.
 Source: Department of Banking, CBC.

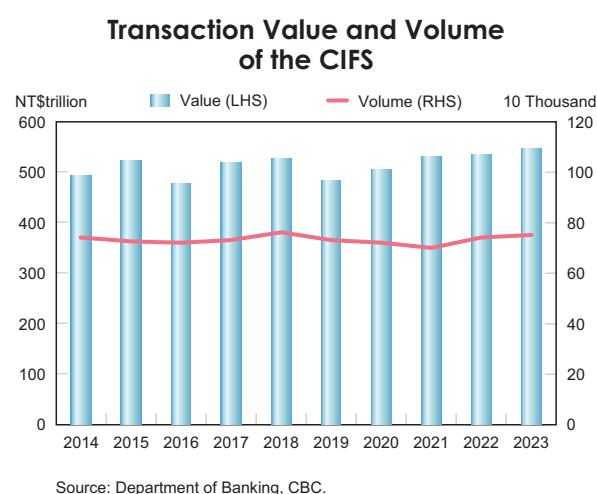
In addition, the Bank monitors major payment systems based on the *Principles for Financial Market Infrastructures* released by the Bank for International Settlements (BIS) to ensure sound operation of these systems and to promote stability of the financial system.

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.

At the end of 2023, there were 85 participants of the CIFS, which included 70 banks, eight bills finance companies, Chunghwa Post, and six clearing institutions, namely the FISC, the TCH, the TDCC, the TWSE, the TPEX, and the NCCC. In 2023, the number of transactions via the CIFS was 753,017, and the amount of funds transferred totaled NT\$547 trillion. Meanwhile, the daily average number of transactions via the CIFS was 3,049 and the daily average amount of funds transferred was NT\$2.2 trillion, increasing by 2.36% and 3.1% from a year before, respectively.

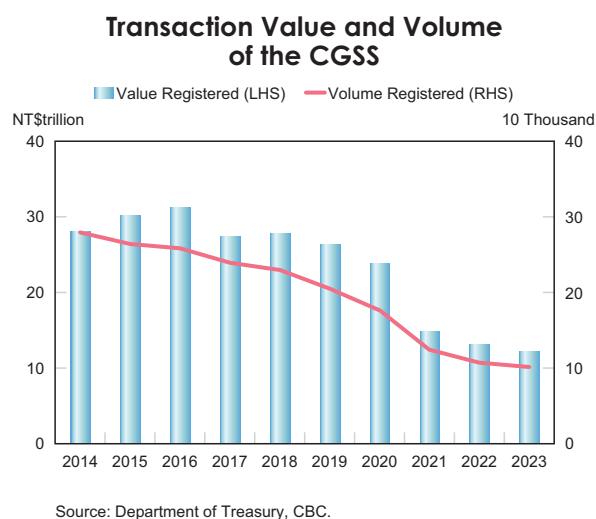


(2) Transactions via the CGSS

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 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 2023, there were 19 clearing banks with 1,679 branches that handled the registration of central government securities transfers. During the year, market expectations of the policy rate hike cycle nearing an end led central government bond yields to fluctuate within a narrow range, weighing on dealers' willingness for bond transactions. As a result, transaction value and volume of the CGSS in 2023 continued the downtrend, falling to NT\$12.1 trillion and 101 thousand 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 2023:

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

The Bank continued to monitor the operation of the large-value payment systems in 2023, and required 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 Payment Business

Clearing institutions and electronic payment institutions were required by the Bank to submit information about their operations and activities on a regular basis. The Bank also kept close watch on the development of innovations in the payment industry, and assisted in providing sound retail payment infrastructure.

(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 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 in the event of

malfunction or line interruption of a CGSS participant's mainframe system. In September 2023, 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. The conferences are convened separately by type of clearing institution. For instance, the May conference was held for securities clearing institutions such as the TDCC, the TPEX, and the TWSE, while the one in November was attended by payment clearing institutions including the FISC, the TCH, and the NCCC. During the conferences, the Bank urged the clearing institutions to reinforce the resilience of payment systems, strengthen business contingency planning, and adopt financial technology to enhance operational efficiency and risk management.

Continuing to Urge the FISC to Provide Sound Mobile Payment Infrastructure

To foster the development of mobile payment and electronic payment, the Bank instructed the FISC to reinforce mobile payment infrastructure and assist payment service providers in promoting new payment methods through the following actions:

- (1) To enhance information transmission and to facilitate transfer of funds between electronic payment institutions and between e-payment institutions and financial institutions, the Bank consigned the FISC to establish a "Common Inter-Institutional Electronic Payment Platform," inaugurated in October 2021. Later, the shopping e-payment service was introduced on the platform in October 2023. Therefore, the platform has now facilitated services in four areas including funds transfer, tax and bill e-payment, and shopping e-payment,⁸ and is expected to offer a cross-border QR Code payment service.
- (2) The Bank urged the FISC to develop a common QR code payment specification, named as TWQR and launched on the "Common Inter-Institutional Electronic Payment Platform." With TWQR, merchants and consumers could complete shopping payment by using one common QR code. This could help address the fragmentation of the domestic retail payment market.

Assisting in Cash Disbursements for the Government's "Tax Rebate Universal Cash for All" Project

The government rolled out the "Tax Rebate Universal Cash for All" project in 2023, sending out a one-off NT\$6,000 cash handout to every citizen from surplus tax revenue. In order to assist in cash

⁸ The 37 participating financial institutions have provided all four services, whereas electronic payment institutions provide the type(s) of services they see fit. At the end of 2023, there were 4 electronic payment institutions providing shopping e-payment service, while the remaining electronic payment institutions were in the preparation stage to launch the service.

disbursements for this project, the Bank instructed the FISC to offer multiple distribution channels through the interbank payment infrastructure, comprising the CIFS, the FISC's Financial Information System, and financial institutions. This enabled 23.55 million recipients to obtain their payments in easy and convenient ways, and the overall operation of the universal cash handout has run smoothly.

Proceeding with the CBDC Research Project

The Bank completed "wholesale CBDC technical feasibility study" in 2020 and the "retail CBDC technology experimentation" in 2022. The videos showcasing the results of the retail CBDC technology experimentation⁹ have been released on the Bank's official website.¹⁰

The Bank is currently conducting opinion surveys, enhancing platform technology, and deliberating regulations.

- (1) Conducting opinion surveys: To understand public demand for CBDC and their thoughts on relevant design, a professional research institution has been commissioned to conduct opinion surveys on various aspects of CBDC with participants including end-users, government agencies, industries, and academia. Subsequently, based on the survey results, extensive communication will be conducted through forums and in other forms.
- (2) Strengthening platform technology: Continuously adjusting and refining platform design to enhance processing capacity,¹¹ and conducting research on offline payments and cross-border payments.
- (3) Regulatory deliberation: Continuously gathering information on the regulatory trends of CBDC in major countries, deliberating on Taiwan's legal framework in a timely manner, and taking stock of relevant regulations that may need to be stipulated or revised to facilitate the issuance of CBDC.

⁹ The experimentation simulated various retail payment scenarios in a closed environment, which included funding and defunding, conducting transfers and purchases, and utilizing digital vouchers.

¹⁰ The videos are available at <https://www.cbc.gov.tw/en/cp-448-164955-c745e-2.html>.

¹¹ The transaction processing capacity of the CBDC prototype platform has increased to 20,000 transactions per second.