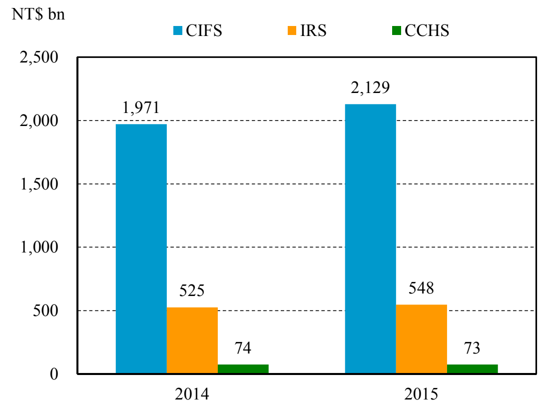
3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of three domestic systemically important payment systems in 2015

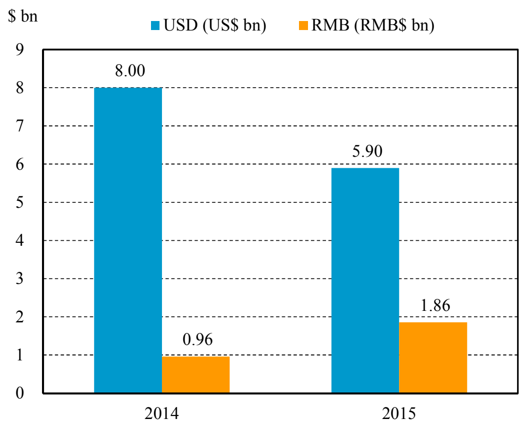
In 2015, the daily average amount of funds transferred via the three SIPSs,[79] which process domestic interbank payments, continued to expand, except for a slight decline of the CCHS. Among them, the CBC's CIFS[80] grew the fastest, mainly owing to the increase in settlements of interbank foreign exchange and securities transactions, and functioned as the most important system with the daily average amount of funds transferred reaching NT$2.13 trillion (Chart 3.57).

Chart 3.57 Daily average amount of funds transferred via the three SIPSs



Source: CBC.

Chart 3.58 Daily average amount of funds transferred via the foreign currency clearing platform



Source: CBC.

Functions of the foreign currency clearing platform have been broadly completed

Since the foreign currency clearing platform planned by the CBC and established by the FISC was launched on 1 March 2013, the trading volume of funds transferred via this platform has grown steadily, mainly in terms of US dollar and renminbi transactions, which recorded 1,850 thousand and 315 thousand, respectively. Meanwhile, the average daily transaction amounts of US dollars and renminbi in 2015 registered US$5.9 billion and RMB1.9 billion, respectively (Chart 3.58).

In 2015, the CBC continued to expand the functions of the foreign currency clearing platform

[79] See Note 7.
[80] The CIFS is a system which handles the final settlement of large-value payments in financial markets and interbank fund transfers.

by providing domestic and cross-border Japanese yen remittances services in January and May 2015, respectively. In addition, the platform connected with the Taiwan Depository & Clearing system to provide a delivery versus payment (DVP)[81] mechanism for foreign currency-denominated bond and bill transactions in July 2015, and included NCDs in bond and bill transactions at the end of August as well.

The foreign currency clearing platform has been broadly completed, currently providing US dollar, renminbi, Japanese yen and euro remittance services, as well as incorporating real-time gross settlement (RTGS),[82] payment versus payment (PVP)[83] and DVP mechanisms for settlement services. Furthermore, the platform links with Euroclear, Clearstream and the settlements systems in Mainland China, Japan, and the euro area. Therefore, it has become a close partner with the international settlement network, not only helping the domestic financial industry to expand their international business but also saving remittance time and fees[84] for financial consumers.

Recent developments of mobile payment platform in Taiwan

Thanks to growing popularity of mobile internet devices, mobile payments are gradually accepted by the public, driving the increase in the global mobile payment utilization rate year by year. In order to satisfy public needs and promote the sound development of domestic mobile payment, the FISC, the Taiwan Clearing House (TCH), and the financial industry jointly established a payment service provider trusted service manager (PSP TSM) platform, which received authentication from Visa and MasterCard and conforms to related international standards. At the end of 2015, 37 banks had joined this platform. Among them, 23 banks have officially launched mobile payment services.

Moreover, following the trend of cloud computing, the PSP TSM platform extended its function to include host card emulation (HCE)[85] and established the tokenization[86] authentication mechanism in 2015 to ensure transaction security. This new development has gotten support from 35 banks through their participation.

[81] DVP is a settlement mechanism which complies with international standards and aims to ensure that the delivery of securities occurs only if the corresponding transfer of funds occurs in order to efficiently prevent settlement risk.
[82] RTGS is a mechanism aiming to reduce settlement risk of large-value transactions settling on a real-time basis only when the banks involved hold sufficient account balances.
[83] PVP refers to a mechanism for payments between two different currencies and is used worldwide to control foreign currency settlement risk. Taking NTD/USD swaps as an example. PVP ensures that a final transfer of USD (or NTD) occurs only if a final transfer of NTD (or USD) takes place.
[84] According to the CBC's estimation, more than NT$1.6 billion of remittance fees have been saved since the platform was launched.
[85] See note 8.
[86] See note 9.

Measures to shield financial market infrastructure from cyber attacks

In recent years, cyber attacks have increased gradually and become more complex. As a result, they are one of the main risks in financial transactions. As financial market infrastructures (FMIs) could not recover immediately once under attack, this might cause the public to lose confidence in FMIs and in turn undermine financial stability. Therefore, supervisory authorities have increasingly paid close attention to management issues regarding cyber attacks.

For effective responses to cyber attacks, the BIS published the *Guidance on Cyber Resilience for Financial Market Infrastructures*. It suggests that FMIs should adopt an integrated recovery program to resume critical operations within two hours, including: (1) using related technical tools to help rapidly identify the breadth of systemic damage; (2) implementing cyber governance to strengthen communication and emergency notification management; and (3) employing measures such as prevention, detection and recovery. It also suggests that FMIs should cooperate and share information with each other. Following the requirements of the BIS (2014), the CBC and related authorities have assessed the conformity of several important payment systems, including the CIFS, with the *Principles for Financial Market Infrastructures.* Especially concerning Principle 17, which suggests that operational risk should include integrated recovery assessment in response to cyber attacks, the CBC's assessment confirmed that the CIFS has complied with the principle. The main assessment conclusions revealed that the CIFS has considered operational reliability and adopted a high level of security design, established a business continuity plan, conducted scenario simulations regularly, evaluated the probability of cyber attacks, and adopted adequate defensive measures to ensure the emergency response and recovery ability of the CIFS.

3.3.2 Strengthening the supervisory regulations of complex high-risk derivatives

The renminbi has depreciated significantly since the first quarter of 2014, after appreciating continuously in the previous few years. This has induced numerous disputes between banks and investors over complex high-risk derivatives such as TRF and DKO products over significant losses suffered by customers.

Considering that some banks had failed to properly know their customers and product suitability, as well as not fully disclosing the risks, the FSC announced fines or bans on banks for engaging in such transactions and further implemented four rounds of supervisory reinforcements. Those measures included tightening the qualification of professional corporate investors, restricting contract terms, setting loss limits and minimum initial margin requirements for customers, establishing the management mechanism for credit limits, and enhancing disclosure of product risks. In addition, the FSC has required banks to conduct scenario analyses to evaluate potential losses and to establish mechanisms handling customer disputes (Table 3.3). These measures will promote customer protection, sound operation of banks, and healthy development of financial markets.

Table 3.3 FSC measures to strengthen the supervision of complex high-risk derivatives

Periods	Major measures
2014/4-2014/6	With growing TRF investment disputes after great depreciation of the renminbi, the FSC launched the following supervisory measures: 1. Taking enforcement actions on ten banks by ordering them to correct deficiencies immediately, levying penalties or banning them from engaging in TRF business. 2. Amending applicable regulations and ask banks to amend self-regulatory rules: • Defining complex high-risk derivatives and confine the scope of investors to those professional customers or customers who transact for hedging purposes. • Requiring banks to establish collateral mechanisms for potential losses of non-hedging transactions. • Requesting the JCIC to establish a query system for customers' derivatives trading limits and outstanding balances.
2015/2-2015/7	While banks turned to sell DKOs instead of TRFs and needed to reinforce their risk control, the FSC further amended applicable regulations and required banks to amend self-regulatory rules. The key amendments include the following: 1. Amending the definition of complex high-risk derivatives as products that have more than three settlement or price fixing periods and contain embedded put options. 2. Limiting the maximum losses for non-hedging complex high-risk derivatives to six or 9.6 times the notional amounts. 3. Requiring banks to disclose possible maximum losses to customers in transaction documents. 4. Asking banks to control the overall credit risks of customers.
2015/10-2016/1	Considering significant price volatility in exchange rate markets might induce higher credit risks of such products to banks, the FSC took further supervisory measures as follows: 1. Ordering nine banks to take corrective measures or to ban them from engaging in such transactions. 2. Amending applicable regulations to strengthen financial supervision on such products with the following major amendments: • Restricting banks from trading complex high-risk products with individuals and non-professional corporates for non-hedging purposes. • Tightening the qualification of professional corporates in terms of total assets from NT$50 million to NT$100 million, which also requires a written application to the bank for the qualification. • Limiting the tenor of complex high-risk exchange rate products to no longer than one year, the price fixing or settlement periods to less than twelve periods, and the maximum losses of individual transaction for non-hedging purposes to less than 3.6 times the notional amounts. • Requiring banks to establish minimum initial margin requirements for complex high-risk derivatives and foreign exchange derivatives containing embedded put options with the term exceeding one year. • Requesting that banks establish credit limits mechanisms such that the maximum

	transaction amount for complex high-risk derivatives should not exceed 2.5 times the verifiable financial resources of a customer. 3. Strengthening the supervision on those banks highly involved in complex high-risk transactions and requesting them to set the total limits for such products, which should be approved by the board of directors and be submitted to the FSC. 4. Requiring banks to reinforce the calculation requirements for credit valuation adjustment (CVA) for over-the-counter derivatives.
2016/3-2016/4	1. Asking banks to conduct scenario analyses to evaluate expected losses of customers, as well as delinquencies and estimated losses of banks, which should be reported to the board of directors and be submitted to the FSC. 2. Requesting the Financial Ombudsman Institution (FOI) to establish a mediation mechanism for complex high-risk derivatives disputes, which was inaugurated on 15 April 2016.

Sources: FSC and CBC.

3.3.3 Amendments to the Financial Institutions Merger Act

To simplify the merger procedures of financial institutions, provide tax preference, enhance the merger incentives for financial institutions, and expand the scale of financial institutions, the *Financial Institutions Merger Act* was amended on 9 December 2015. The key amendments include:

- Clearly stipulating that the *Act* applies to financial holding companies and that credit departments of farmers' and fishermen's associations are excluded.
- Adding the provision that cash and other properties can be used as payments for the merger of financial institutions.
- Adding the provision that a merger of financial institutions can be asserted as a defense against creditors, fund beneficiaries, right holders of insurance contracts, etc., if financial institutions establish a trust for the purpose of paying off debt or demonstrate that the exercise of rights by creditors will not be impeded.
- Based on the principle of tax fairness, revoking the provision that asset management companies are levied at the same business tax rates as banks when dealing with non-performing loans transferred from financial institutions.
- Adding new tax incentives for mergers of financial institutions after taking reference from the *Business Mergers and Acquisitions Act*. These incentives include the exemption from securities transaction taxes for transferred securities due to mergers, the exclusion of goods or labor services transferred from the scope of the imposition of business taxes, the extension of amortization years of goodwill generated due to mergers from within 5 years to within 15 years, and the expansion of the scope of deferred land value increment tax to

include the land owned by the extinguished institution.

These amendments are crucial for the development of Taiwan's financial industry as they can reinforce current regulations governing mergers of financial institutions and facilitate overseas market expansion of domestic financial institutions.

3.3.4 Foreign exchange regulation amendments

Relaxing foreign exchange regulations of banks

In order to promote development of the financial services industry in the context of financial globalization and liberalization, the CBC continued to relax foreign exchange regulations in 2015 as follows:

- In January and July 2015, the CBC revised the *Directions Governing Banking Enterprises for Operating Foreign Exchange Business*, which included: (1) allowing foreign exchange certificates of deposit to be pledged for foreign currency funds; (2) relaxing the qualification criteria for trustors of non-discretionary money trusts; (3) allowing trustors to collateralize their beneficiary rights for foreign currency loans; (4) removing restrictions on issuance of foreign currency negotiable certificates of deposit (NCDs).
- In May 2015, the CBC revised the *Regulations Governing Foreign Exchange Business of Banking Enterprises*, which included: (1) allowing the Agricultural Bank of Taiwan to apply for approval to be an authorized foreign exchange bank; (2) allowing authorized foreign exchange banks to issue foreign currency NCDs; (3) expanding the scope of foreign exchange derivatives; (4) simplifying procedures for authorized foreign exchange banks to apply for certain foreign exchange business.
- To move in line with the deregulation measure that allowed authorized foreign exchange banks to issue foreign currency NCDs, the CBC promulgated the *Directions for Issuance of Foreign Currency-Denominated Negotiable Certificates of Deposit by Banks* in July 2015. It increased flexibility in fund management for NCD holders by allowing foreign currency NCDs to be pledged for foreign currency funds or to be collateralized for foreign currency loans.

Relaxing foreign exchange regulations of insurance companies

In order to meet the funding needs of the insured and to enhance competitiveness of the insurance industry and to facilitate their foreign currency policy business, the CBC continued to relax measures governing foreign exchange business of insurance companies in 2015 as follows:

- In April 2015, the CBC removed the restriction on insurance companies that a foreign currency loan pledged against a foreign currency policy should not exceed 20% of the amount of the policy value reserve.
- In April 2015, the CBC revised the *Regulations Governing Foreign Exchange Business of Insurance Enterprises*, removing the restriction on insurance companies to extend foreign currency loans pledged against foreign currency policies.
- Effective from August 2015, insurance companies may participate in foreign currency syndicated lending.

Relaxing foreign exchange regulations of securities investment trust and consulting firms

In order to help domestic investment trust firms to grow their foreign mutual funds business, in August 2015, the CBC expanded the scope of foreign currency discretionary investment business conducted by securities investment trust enterprises and securities investment consulting enterprises, allowing these enterprises to invest in multi-currency funds that meet the following criteria: (1) the amount of domestic security investment is not over 30% of their net asset value; (2) currency classes include the NT dollar.