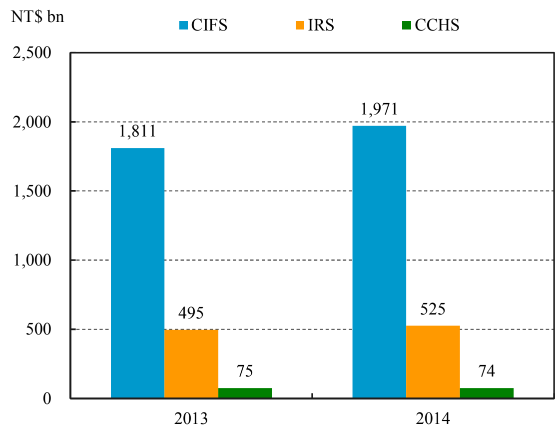
3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of systemically important payment systems in 2014

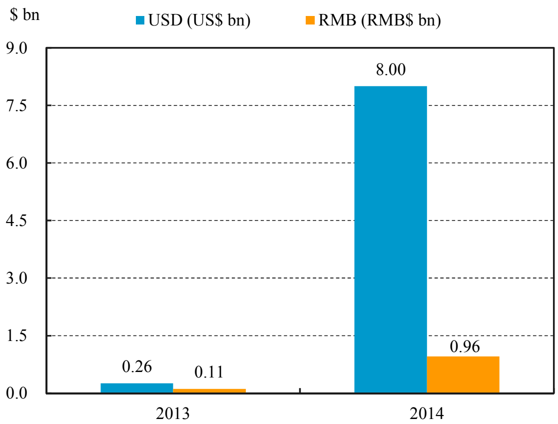
The daily average amount of funds transferred via the three SIPSs,[81] which process domestic interbank payments, increased steadily compared to the previous year except for a slight decrease in the transaction value in the CCHS in 2014 (Chart 3.54). Among them, the CBC's CIFS, which handles large payments and the final settlement of interbank fund transfers, regularly functioned as the most important system, with the daily average amount of funds transferred reaching NT$1.97 trillion.

Chart 3.54 Daily average amount of funds transferred via the three SIPSs



Source: CBC.

Chart 3.55 Daily average amount of funds transferred via the foreign currency clearing platform



Source: CBC.

In order to improve the efficiency of foreign currency clearing, the foreign currency clearing platform initiated by the CBC and established by the FISC was launched on 1 March 2013. The daily average amount of funds transferred via the platform rose substantially in 2014, with the average daily transaction values of US dollars and renminbi significantly increasing to US$8 billion and RMB0.96 billion, respectively (Chart 3.55).

Continuously expanding functions of the foreign currency clearing platform

To improve financial payment systems, the CBC will continuously expand the functions of the foreign currency clearing platform. The platform currently provides domestic and cross-border (including cross-strait) foreign currency remittances services, including the US

[81] See Note 11.

dollar, renminbi and Japanese yen, and is scheduled to launch domestic and cross-border euro remittances services in June 2015. From then on, the platform will provide PVP settlement for dual currency transaction, including the US dollar, renminbi, Japanese yen, euro and NT dollar. In addition, the platform is scheduled to set up a DVP mechanism for foreign currency-denominated bond and bill transactions in July 2015 (Table 3.3).

Table 3.3 The functions of the foreign currency clearing platform

Services provided by the platform		Effective date
1	Domestic US dollar remittances	1 March 2013
2	Inquiry service on banks' websites	15 April 2013
3	Domestic and cross-border (including cross-strait) renminbi remittances	30 September 2013
4	Cross-strait US dollar remittances	14 February 2014
5	PVP settlement for NTD/USD and RMB/USD transactions	17 February 2014
6	Liquidity-saving mechanism	30 July 2014
7	Domestic Japanese yen remittances	28 January 2015
8	Cross-border Japanese yen remittances	28 May 2015
9	Domestic and cross-border euro remittances	29 June 2015
10	DVP mechanism for foreign currency-denominated bonds and bills	28 July 2015

Note: Liquidity-saving mechanism refers to a mechanism of multilateral netting settlement which is based on a Real Time Gross Settlement (RTGS) mechanism, which can reduce liquidity demand for participating banks and enhance the efficiency of funds operation.
Source: CBC.

Assisting the development of electronic payment services

Thanks to electronic technology development, several domestic banks and non-financial institutions started to provide new payment services through networks or electronic payment platforms. In order to promote the sound operations and development of EPIs, the FSC promulgated the *Act Governing Electronic Payment Institutions* (also known as the third-party payment act) on 4 February 2015, focusing on EPIs' electronic payment services. The CBC also amended regulations governing the deposit of reserves as well as foreign exchange declaration and settlement of EPIs to facilitate their operations.

With the enactment of the *Act Governing Electronic Payment Institutions*, EPIs are allowed to: (1) make and collect payments as an agent; (2) accept deposits as stored value funds in multi-currencies; and (3) transfer small amounts of funds between e-payment accounts. Additionally, payment services for offline transactions via physical channels are also included (namely Online to Offline, O2O). EPIs offer diversified payment services, which strengthen the safety and convenience of transactions, bring momentum to the e-commerce market, and, in turn, stimulate economic development.

The deposits taken and the payments collected and made by EPIs as agents should be put into trust or under a full performance guarantee of a bank. The balance of stored value funds in NTD or foreign currencies deposited by each user shall not exceed an equivalent of NT$50,000. Moreover, the amount of funds transferred between e-payment accounts of users shall not exceed an equivalent of NT$50,000 for each transaction.

Strengthening oversight of mobile payment

Mobile payment is a new means of retail payment which combine multiple payment instruments with mobile devices. Thanks to high smartphone usage, financial inclusion and an increasing demand for mobile services, mobile payment has developed rapidly in recent years. Consumers are able to make proximity payments or remote payments by merely installing related payment instruments [82] onto their mobile devices via smartphone applications (APPs). Mobile payments have the advantages of convenience and diversified application, but security is always a concern as transaction data must be transmitted by access devices that are connected to mobile communication networks. Consequently, a trusted services management (TSM) platform plays a central role in ensuring the security and privacy of financial and personal information.

Currently, there are two recognized models for TSM. One is Payment Service Provider (PSP) TSM and the other is Mobile Network Operator (MNO) TSM. The former is in charge of the management of payment instruments and the safeguard of financial security, while the latter, built by the telecommunication or information industry firms, is responsible for the management of smartphone secure elements. To promote financial security and enhance efficiency of operation, it is common to develop an interface providing connection between PSP TSM and MNO TSM deployment models. This enables an integration of a variety of applications offered by their corresponding service providers, so as to quickly install the APPs onto users' smartphones.

Mobile payment has gradually accepted by the public in recent years. In response, a related report "Oversight Issues in Mobile Payments" published by the IMF in 2014 suggests that the national authorities should develop sound and effective oversight frameworks for new payment methods (e.g., mobile payments) by addressing issues such as a legal regime,

[82] The related instruments include credit card, cash card, banking account or stored value account.

financial integrity, fund safeguarding, operational resilience, and risk controls and access criteria in payment systems.

3.3.2 Implementation of liquidity coverage ratio in Taiwan

To reinforce banks' liquidity risk management, the Basel Committee on Banking Supervision (BCBS) published *Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring* in 2010, developing the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) as globally consistent liquidity indicators. With a view to strengthening the liquidity risk management of domestic banks and keeping in line with international standards, the FSC and the CBC jointly promulgated the *Standards Implementing the Liquidity Coverage Ratio of Banks,* which came into force on 1 January 2015. As for the NSFR, the FSC is currently drafting the regulation according to the latest publication of the BCBS. It is expected to be promulgated by the end of 2016 and become effective on 1 January 2018. The key points of Taiwan's LCR are as follows:

- The definition of LCR: LCR is calculated by dividing the stock of high quality liquidity assets (HQLA) by total net cash outflows over the next 30 calendar days. HQLA are the assets with high liquidity under stressed scenarios, such as cash, central bank reserves, government bonds and qualified securities, while net cash outflows refer to expected cash outflow netted of cash inflow within 30 calendar days under specific stressed scenarios.

$$\text{LCR} = \frac{\text{Stock of HQLA}}{\text{Total net cash outflows over the next 30 calendar days}} \times 100\%$$

- Statutory minimum standards: Same as international standards, the LCR of domestic banks should not be lower than 60% in 2015, while the minimum will increase by 10 percentage points each year during the transition period of 2016-2018 and be 100% from 2019. (Table 3.4)

Table 3.4 Minimum LCR standards

	1 January 2015	1 January 2016	1 January 2017	1 January 2018	1 January 2019
Commercial Banks	60%	70%	80%	90%	100%
Industrial Banks	60%				

Note: The business models of industrial banks are different from those of commercial banks, as they are not allowed to take retail deposits.
Source: CBC.

- Reporting mechanism: Banks should calculate and report the LCR on a monthly basis, and inform the FSC and the CBC immediately when the ratio falls below the statutory minimum.

- Exempted from application: Taiwan's branches of foreign banks are exempted from the LCR requirement. Moreover, banks which are taken over, ordered to suspend operations or liquidated by financial authorities, and The Export-Import Bank of The ROC, which is not a commercial bank and does not take deposits, are also excluded.

At the end of March 2015, the average LCR of all domestic banks was 121%, while the average ratios of state-owned banks and private banks were 112% and 162%, respectively. All banks met the minimum requirement of 60% in 2015.

3.3.3 Insurance companies were permitted to conduct offshore insurance business

To expand the business scope of insurance companies and enhance the competitiveness of the domestic insurance industry, the *Offshore Banking Act* was amended and promulgated on 4 February 2015, to include insurance business in offshore finance. The related regulations and enforcement rules were issued in May. This amendment allows insurance companies to establish offshore insurance units (OIUs) to conduct offshore life and non-life insurance, reinsurance and other authorized business activities denominated in foreign currencies. It also provides tax exemption benefits for a period of ten years including the business income tax, the value-added tax, the stamp tax and the income tax withholding for OIUs. It will not only help the development of domestic insurance industries, create more financial jobs and in turn support economic growth, but also expand the insurance market towards internationalization, conducive to the establishment of Taiwan as an Asia-Pacific financial center.

The expected benefits of OIUs cover several aspects:

- Offering non-residents insurance products for wealth diversification and risk control, as well as providing one-stop shopping of financial services by consolidating the services and capacities of OBUs, offshore securities units (OSUs) and OIUs into a comprehensive platform.

- Taking advantage of the tax exemptions for OIUs to attract international reinsurance businesses, so as to bring in more professional knowhow and ideas of insurance product innovation, insurance underwriting and claims, and reinsurance operations.

- Promoting travel accident insurance for foreign travelers in Taiwan.

3.3.4 Local accounting principles to be fully in line with IFRSs from 2015 onwards for public companies

The FSC has announced a two-phase timetable, starting 2013, for Taiwan's entities to adopt the IFRSs. The second-phase adopters, including unlisted public companies, credit cooperatives and credit card companies, have already been in compliance with the IFRSs since the beginning of 2015. As a result, the full convergence of local accounting principles and international standards will enhance business internationalization and improve transparency of financial reports of local companies.

Moreover, in January 2014, the FSC announced the Roadmap to Full Adoption of the Updated IFRSs to facilitate cross-country comparison of financial statements and narrow the differences between international standards and the current accounting treatments in Taiwan. According to the roadmap, from 2015 onwards, entities that adopted the 2010 version of the IFRSs should switch to the 2013 version (except for IFRS 9 *Financial Instruments*). The updated accounting principles which had significant impacts on corporations included IFRS 10 *Consolidated Financial Statements*, IFRS 11 *Joint Arrangements*, IFRS 12 *Disclosure of Interests in Other Entities*, and IFRS 13 *Fair Value Measurement*.

Furthermore, in July 2014, the International Accounting Standards Board (IASB) issued the final version of IFRS 9 *Financial Instruments* which will become effective on 1 January 2018. The new standard introduces an expected loss model instead of an incurred loss model for the recognition of expected credit losses, revises the classification and measurement of financial assets, and relaxes the application scope and criteria of hedge accounting. Among those, the expected loss model is believed to have the most significant impact on the financial industry. While the FSC is considering the timetable of the IFRS 9 adoption, financial institutions should take proper reactions as early as possible to mitigate possible impacts.

3.3.5 The benchmark change of NTD financial contracts

The most quoted benchmark for short-run interest rates in Taiwan was Thomson Reuters 6165 before the end of 2014

Thomson Reuters 6165/51328,[83] the Taipei Interbank Offered Rate (TAIBOR) and the Taiwan Bills Index Rate (TAIBIR) were the three benchmarks for NTD short-term interest

[83] 6165/51328 were the interest rate benchmarks compiled and published by Thomson Reuters for the secondary and primary NTD bill markets.

rates with active quotes. Among them, transactions quoted 6165 as the benchmark rate posted the highest trading volume, exceeding NT$4 trillion each year before the end of 2014.

Financial institutions stopped providing quotes to 6165/51328 consecutively out of the consideration of quote risks

Following the London Interbank Offered Rate (LIBOR) rigging scandal in November 2013, Thomson Reuters required the quoting financial institutions to sign agreements with the addition of an article that any damages or lawsuit losses incurred by the quotes would be fully borne by the quoting financial institutions. Considering the risks of offering the quotes, financial institutions stopped providing quotes to 6165/51328, resulting in insufficient representation of the benchmarks and a need to change quoted benchmarks for related financial contracts.

Financial authorities assisted in the change of interest rate benchmarks

Before benchmark change, most quotes of NTD financial derivatives were referred to 6165, while the quotes referred to TAIBOR and TAIBIR were not active enough to become market benchmarks. To achieve a smoother process of benchmark change quoted in unexpired financial contracts and provide more options for market quotes, the FSC and the CBC, under the assistance of the Bankers Association and the Taiwan Depository & Clearing Corporation, took several measures in October 2014, such as asking financial institutions to provide NTD interest rate derivative quotes referred to TAIBOR or TAIBIR and requiring them to periodically report the timetables and the implementation of benchmark change to the FSC and the CBC.

Interest rate benchmark change went smoothly

By the end of 2014, 99.49% of financial contracts that reference 6165/51328 had been converted into using TAIBOR or TAIBIR. Among those, more than 90% chose to use TAIBOR because the difference between quote values of 6165 and TAIBOR were very small, giving the benefit of reducing disputes between both parties in financial contracts. Most financial contracts not yet converted were syndicated loans. They were expected to complete the conversion after adding further articles into original contracts when interest rates reset before June 2015.

3.3.6 Gradual improvements in compensation schemes of financial institutions

Compensation policies determined in terms of short-term performance but not taking into consideration long-term risks may endanger financial institutions and result in excessive risk taking, and was thought to be one of the major causes of the latest global financial crisis in 2007. To improve incentives derived from compensation schemes, the Financial Stability Board (FSB) and major countries such as the US and UK have respectively proposed compensation scheme reforms. These proposals require that a portion of the variable compensation of senior executives should be deferred to be paid in the future or be clawed back in the event of poor performance, and the compensation for salespersons should align with potential risks to avoid encouraging excessive risk taking.

In Taiwan, there were also several financial shocks mainly deriving from improper incentives relating to the compensation policies of financial institutions. Therefore, after consulting the above global financial reforms, the FSC has taken the following measures since 2009 to reinforce the compensation schemes of domestic financial institutions:

- Assigning the Bankers Association, in October 2009, to amend the *Corporate Governance Best-Practice Principles for Banks*, requiring that compensation payments of directors of the board, managers and salespersons should be based on future risk-adjusted performance, and significant proportions of the associated compensation should be deferred.

- Amending the *Securities and Exchange Act* in November 2010 to require all listed companies, including listed financial holding companies and banks, to set up compensation committees responsible for establishing and periodically reviewing compensation policies for directors and supervisors of the board and managers of the companies.

- Supervising the Trust Association, in March 2011, to draft and issue the *Principles of Setting up and Assessment of Remuneration System in the Trust Industry*, requiring that the compensation of their salespersons should not completely come from variable payments, and should be deferred to be paid for a period of time and avoid directly linking to their performance.

- Amending the *Directions of Risk Management for Banks Conducting Financial Derivative Business* in April 2014, requiring that the remuneration and performance assessment of sales staff should not totally depend on the achievement of sale targets and should consider other non-financial indicators.

The aforementioned regulation and direction amendments for compensation practices throughout the financial service industry would help to improve incentive compensation schemes, so as to promote the sound operation of financial institutions and enhance customer protection in financial services.