III. Financial sector assessment

3.1 Financial markets

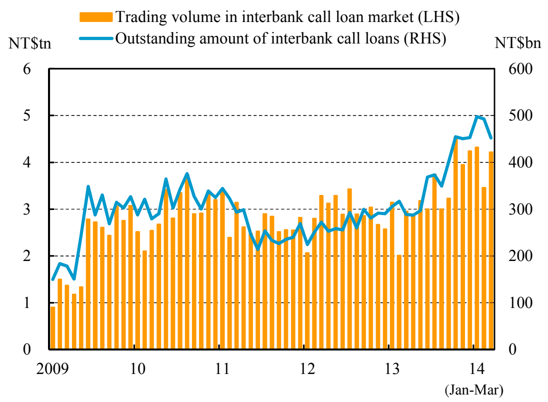
As for the money and bond markets, the trading volume in interbank call loans expanded in 2013. The outstanding amount of bill and bond issuance in the primary markets also rose significantly, although the trading volume in the secondary markets remained contracted. However, the yield spread between long-term and short-term market rates saw a rebound. With regard to the stock markets, stock indices trended up, while volatility regained stability after ascending and the annual turnover ratio continued to hit a new low. In the foreign exchange market, the NT dollar exchange rate against the US dollar turned to depreciation but remained relatively stable compared to the exchange rates of other major currencies, while trading volume continued to increase.

3.1.1 Money and bond markets

Trading volume of interbank call loans expanded remarkably

In 2013, the average daily outstanding amount of interbank call loans increased remarkably by 34.55% year on year. It was primarily because a continued funding surplus in the interbank call-loan market led to increasing interbank call loans provided by domestic banks, and a gradual increase in inward remittances by foreign portfolio investors after September onwards resulted in more funds being parked in the market by foreign banks that serve as custodian banks for foreign portfolio investors. Meanwhile, the trading volume of interbank call loans also expanded with an annual increase of 14.24% in the same period. In 2014 Q1, the trading volume and outstanding amount of interbank call loans mostly remained at a recent high level (Chart

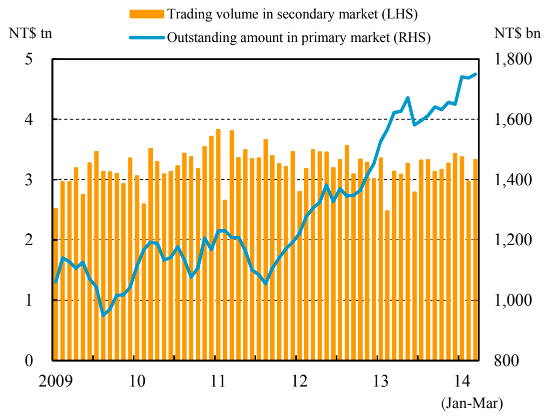
Chart 3.1 Interbank call loan market



Note: Outstanding amount is the monthly average of daily data.
Source: CBC.

3.1).

Chart 3.2 Primary and secondary bill markets



Sources: CBC and FSC.

Bill issuance in the primary market significantly rose, but trading volume in the secondary market remained contracted

The outstanding amount of bill issuance at the end of 2013 remarkably rose by 13.50% year on year in 2013, with commercial paper posting the highest increase of NT$175.6 billion or 17.15%. The main reason behind this was that interest rates of commercial paper issuance remained at low levels which attracted large private and state-owned enterprises to raise funds through commercial paper issuance. In March 2014, the outstanding amount of bill issuance remained at a high level (Chart 3.2).

Although bill issuance in the primary market rose, trading volume in the secondary market contracted by 3.65% year on year in 2013. The reason was primarily because bills finance companies replaced repurchase transactions with outright transactions to avoid interest rate risk, and most banks actively employed a buy and hold strategy toward investing in commercial paper.[46] In 2014 Q1, the trading volume of bills in the secondary bill market remained at a low level (Chart 3.2).

Bond issuance in the primary market expanded, but the turnover of outright transactions in the secondary market further shrank

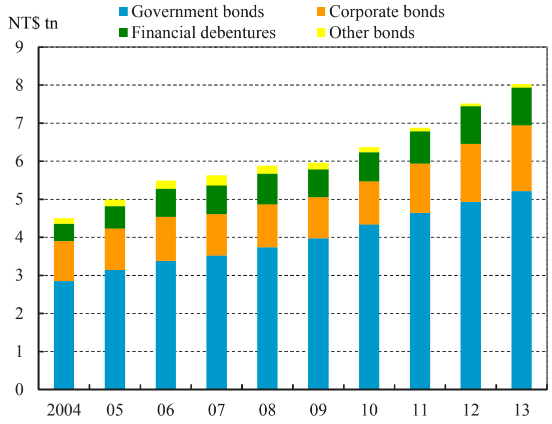
In 2013, the outstanding amount of bond issuance ascended by 6.85% year on year, with corporate bonds posting the highest growth of 13.67% due to additional issuance by some large high-tech corporations to meet their funding requirements for capacity expansion. Government bonds also registered a year-on-year increase of 5.58% in 2013, affected by treasury funds management and the implementation of the policy to a regular and moderate issuance of government bonds. Nevertheless, the outstanding amount of financial debentures kept at a similar level compared with the previous year, while that of beneficiary securities, foreign bonds and foreign currency-denominated international bonds remained low (Chart

[46] At the end of 2013, bank-held commercial paper accounted for 44.34% of total outstanding of issuance, rising by 2.59 percentage points over the previous year.

3.3). Although the transactions of RMB-denominated international bonds (Formosa Bonds), among others, were small, it is expected that their market scale will gradually amplify in the future on the back of active development of the offshore RMB market in Taiwan (Box 3).

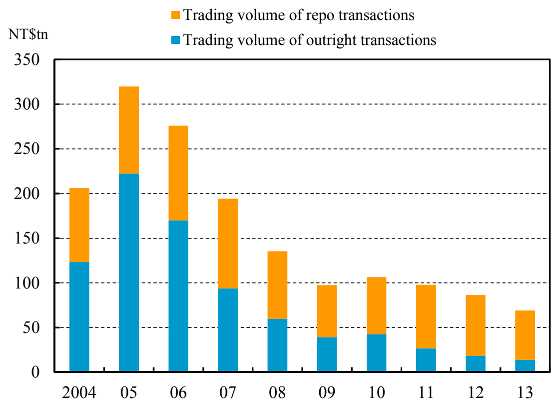
In 2013, the bond market was still sluggish, and trading volume declined by 20.02% year on year (Chart 3.4). Of the components, outright transactions dropped significantly by 25.71% owing to less bonds being traded in the market as banks actively employed a buy and hold strategy toward investing in government bonds.[47] This, together with a significant rise in bond yields from May 2013, resulted in a further shrinkage in the trading volume in the bond market and lowered the average monthly bond turnover in 2013. Especially due to bond traders' lack of willingness to trade by the end of the year, outright transactions dropped sharply and the monthly turnover ratio descended to a 10-year low of 4.52% in December 2013. In 2014 Q1, the monthly turnover ratio remained flat (Chart 3.5).

Chart 3.3 Outstanding amount of bond issuance in the primary market



Notes: 1. Other bonds include beneficiary securities, foreign bonds and foreign currency-denominated international bonds.
2. The ratio of other bonds to total outstanding volume was only 1.2% at the end of 2013.
Source: FSC.

Chart 3.4 Outright and repo transactions in the bond market



Source: CBC.

Short-term market rates stabilized, long-term market rates slightly dropped after trending up

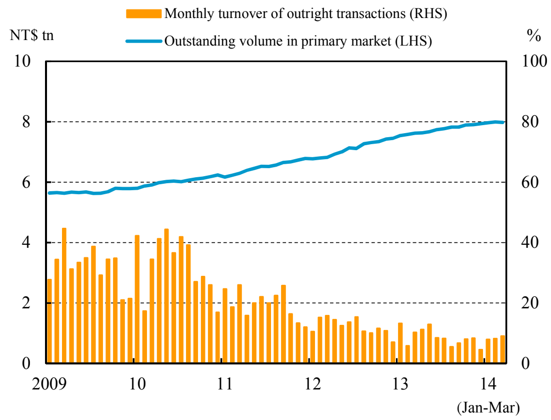
As for short-term market rates, in 2013, the CBC's decision to keep policy rates unchanged, coupled with market liquidity standing at an appropriate level, resulted in the yield on 90-day commercial paper remaining broadly stable at around 0.86% in the first three quarters. From October onwards, owing to the increase of inward remittances by foreign portfolio investors

47 Based on the CBC data, the average share of central government bonds held by banks accounted for 47.25% in 2013, increasing by 1.65 percentage points over the previous year.

and the lack of short-bills sources, short-term market rates slightly declined. In 2014 Q1, the short-term market rates remained relatively stable at a low range.

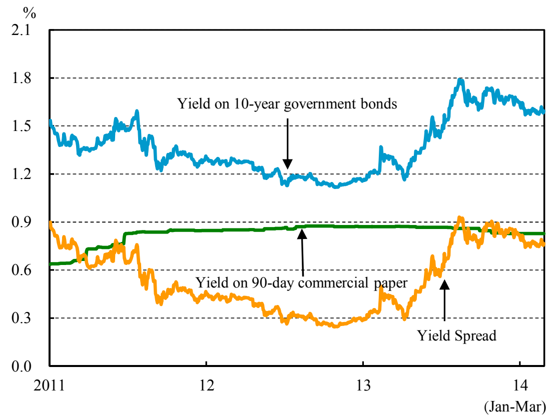
As for long-term market rates, spurred by brisk trading in the domestic stock markets and a marked hike in US government bond (US bonds) yields, the yield on 10-year government bonds (Taiwan bonds) followed an upward trend in 2013 Q1. However, the yield on Taiwan bonds reversed to trend downwards in response to a drop in US bond yields following the US and Japan both adopting further quantitative easing in April. It dipped to an annual low of 1.17% in early May, with the yield spread between short-term and long-term rates down to 29 basis points. From the middle of May onwards, owing to concerns about the Fed's tapering of asset purchases, the yield on Taiwan bonds reversed to trend up and reached an annual high of 1.79% in September. Afterwards, contrary to market expectations, the Fed decided to leave their monthly asset purchases unchanged. As a result, the yield on Taiwan bonds reversed to trend down, and the yield spread reached 85 basis points at the end of 2013, posting a relative high for the year. In early 2014, the yield on Taiwan bonds fluctuated following the movement of US bonds, and the yield spread slightly dropped to 77 basis points in March (Chart 3.6).

Chart 3.5 Primary bond market and turnover



Notes: 1. Primary bonds include government bonds, corporate bonds and financial debentures.
2. Monthly turnover = trading value in the month / average bonds issued outstanding.
Average bonds issued outstanding =(outstanding at the end of the month + outstanding at the end of last month)/2.
Source: FSC.

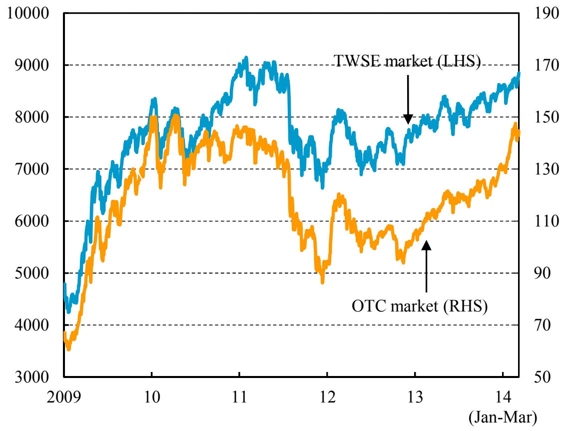
Chart 3.6 Yield spread



Note: Yield spread refers to yield on 10-year government bonds minus yield on 90-day commercial paper.
Source: Bloomberg.

3.1.2 Equity markets

Chart 3.7 Taiwan's stock market indices



Sources: TWSE and GTSM.

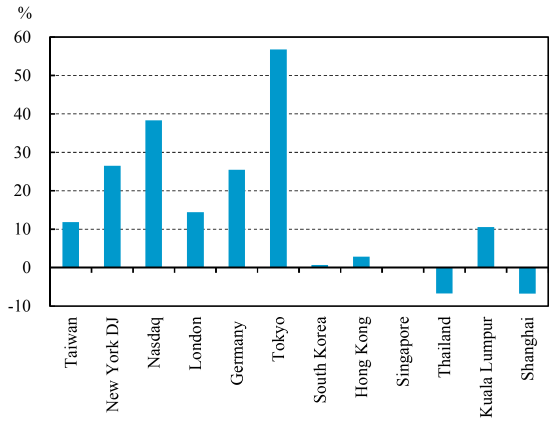
Stock indices trended up, while volatility initially amplified then dampened

Due to massive net buying by foreign portfolio investors in early 2013 spurred by the robust performance of global stock markets, smooth progress of cross-strait financial cooperation and the release of the revised capital gains tax on securities transactions, the TAIEX of the TWSE market kept tracking on an upward path and hit a new high of 8,399 on 22 May. However, subdued by market fear over the downsizing of the Fed's QE program, political turmoil in the Middle East and the repatriation of foreign capital from emerging markets, the TAIEX dipped to 7,814 on 22 August. From September onwards, the FSC announced several stock market support measures, including allowing securities dealers to purchase or sell securities at the limit-up or limit-down price, loosening restrictions on short selling at a price lower than the previous trading day's closing price, and allowing investors to execute day trades where the purchase precedes the sale, etc. Furthermore, the Fed decided to maintain the pace of its monthly bond purchases. All these propelled the TAIEX to soar up to an annual high of 8,623 on 30 December and register 8,612 at year-end 2013, an increase of 11.86% year on year. During 2014 Q1, the TAIEX continued on its upward path and reached 8,849 at end-March, increasing by 2.76% from the end of 2013 (Chart 3.7).

Taiwan's GreTai Securities Market (GTSM) Index of the OTC market trended up from 104 posted in early 2013 and closed at a year high of 130 at end-December, for an annual rise of 25.44%. The index climbed further and reached 145 at the end of March 2014, rising by 11.52% compared to the end of the previous year. The rise was higher than that of the TAIEX (Chart 3.7).

Comparing major stock markets around the world, most markets showed positive performances in 2013 except for the Thai Index and the Shanghai Composite Index, though the stock index of Tokyo outperformed others with a rise of 56.72%. The TAIEX climbed by 11.86% year on year, slightly higher than Kuala Lumpur's Composite Index (Chart 3.8).

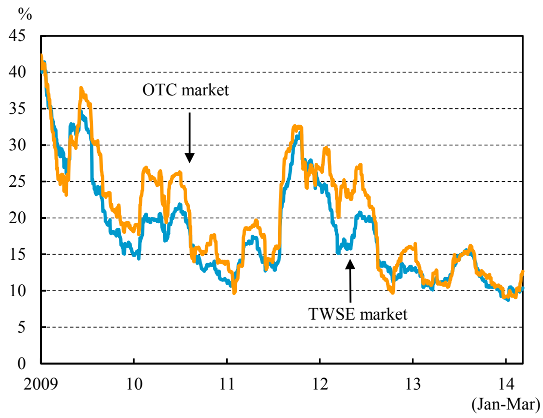
Chart 3.8 Comparison of major stock market performances



Notes: 1. Figures are for 2013.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

Broken down by sector, most sector indices in the TWSE market entered bullish territory in 2013, except the Shipping and Transportation, Oil, Gas and Electricity, Optoelectronic, Communications and Internet, and Electronic Products Distribution Industry indices, which were all negative performers. The indices for Automobiles and Electric Machinery performed the best, increasing by 48.25% and 42.93%, respectively.

Chart 3.9 Stock price volatility



Note: Volatility refers to the annualized standard deviation of 60-day daily index returns.
Sources:TWSE, GTSM, and CBC.

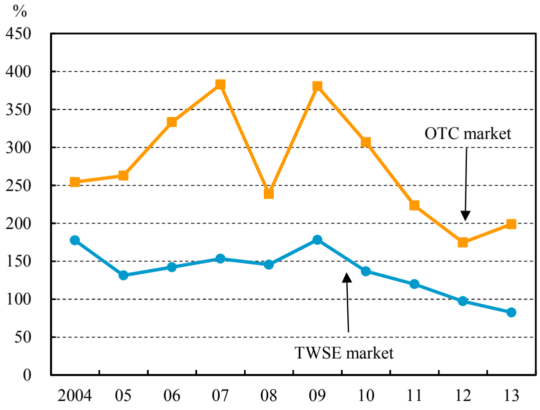
In 2013, the volatility in the TWSE and OTC markets declined after trending up, standing at 9.45% and 10.37%, respectively, at the end of December. At the beginning of 2014, the volatility in the TWSE and OTC markets reversed to increase gradually as the local stock indices rebounded, standing at 10.38% and 12.66%, respectively, at the end of March (Chart 3.9).

Annual turnover ratio kept hitting new lows in the TWSE market but rose slightly in the OTC market

The TWSE market experienced sluggish trading in 2013, with the average monthly trading value registering NT$1.58 trillion, a contraction of 6.41% year on year, while its turnover ratio in terms of trading value in the same year continuously declined to 82.64%, touching a 10-year low. However, the transaction volume in the OTC market showed a better performance. Its average monthly trading value was NT$336 billion in 2013, an increase of 36.55% year on year. Reflecting this, the annual turnover ratio of the OTC market rose to 198.87% from 174.80% a year earlier, but still remained at a low level (Chart 3.10).

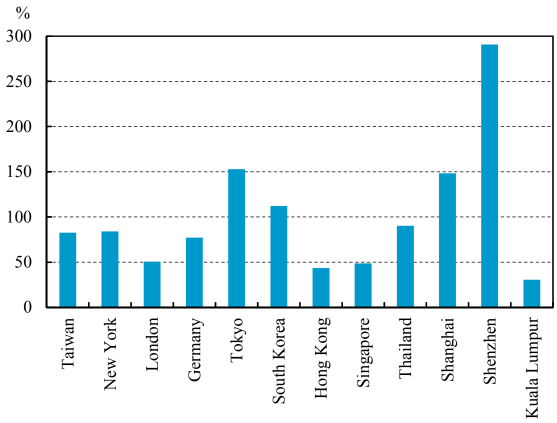
Comparing major stock markets around the world, the annual turnover ratios in Shenzhen, Tokyo and Shanghai ranked the highest in 2013, while the TWSE market ranked in the middle, approximately equal to the stock market in New York, but higher than those in London, Germany, Hong Kong, Singapore and Kuala Lumpur (Chart 3.11).

Chart 3.10 Annual turnover ratios in Taiwan's stock markets



Sources: TWSE and GTSM.

Chart 3.11 Comparison of turnover ratios in major stock markets



Notes: 1. Figures refer to accumulated turnover ratios in 2013.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

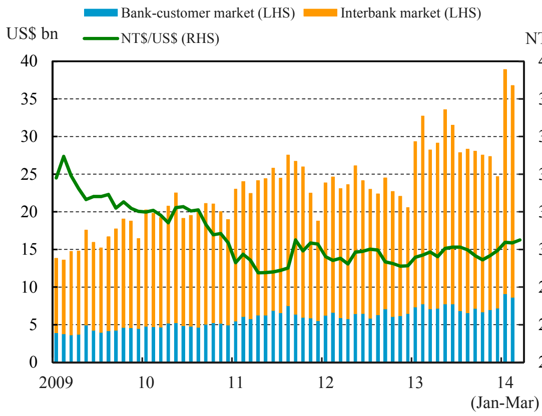
3.1.3 Foreign exchange market

The NT dollar exchange rate followed a depreciating trend and the trading volume increased

In the first half of 2013, the NT dollar exchange rate turned to depreciation, reaching 30.350 against the US dollar on 24 June, owing to an increase in purchases of US dollars by firms and capital outflows by foreign investors caused by the BOJ implementing additional quantitative monetary easing, the worsening European debt crisis, political confrontations on the Korean peninsula, and the possible shocks from an exit from quantitative easing announced by the US. Afterwards, it fluctuated within a narrow range (Chart 3.12).

The NT dollar exchange rate reversed to appreciate and reached 29.425 on 23 October in virtue of foreign capital inflows arising from the weakening of the US dollar caused by the fact that the Fed decided to keep the size of its bond purchases unchanged in September 2013. Afterwards, the market expected capital to flow back to the US, and in turn, the US dollar turned to strengthen again as the ECB cut its policy rate, and the Fed announced a gradual tapering of its monthly bond purchases from January 2014. As a result, the NT dollar exchange rate reversed to depreciate and stood at 29.950 against the US dollar at the end of December, with an annual depreciation of 2.72%. In early 2014, the US dollar stayed stronger, whereas the NT dollar exchange rate continued to depreciate and fell to 30.510 against the US dollar at the end of March (Chart 3.12).

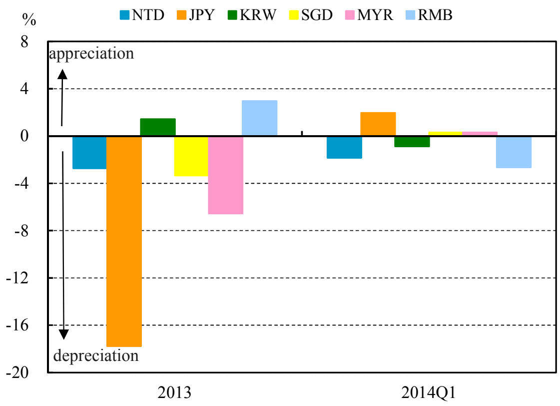
Chart 3.12 NTD/USD exchange rate and foreign exchange market trading volume



Notes: 1. Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
2. Latest data for trading volume is as of February 2014.
Source: CBC.

Compared to other major currencies in Asia, the depreciation of the NT dollar against the US dollar at 2.72% was lower than the Japanese yen's 17.77%, the Malaysian ringgit's 6.54% and the Singapore dollar's 3.33%, while only the renminbi and the Korean won appreciated, rising by 2.91% and 1.44%, respectively, in 2013. In 2014 Q1, the NT dollar continued to depreciate, falling by 1.84% from the end of 2013, less than the drop of the renminbi but more than that of Korean won, while the Japanese yen appreciated by 1.95% (Chart 3.13).

Chart 3.13 Appreciation and depreciation percentages of major Asian currencies against the US dollar

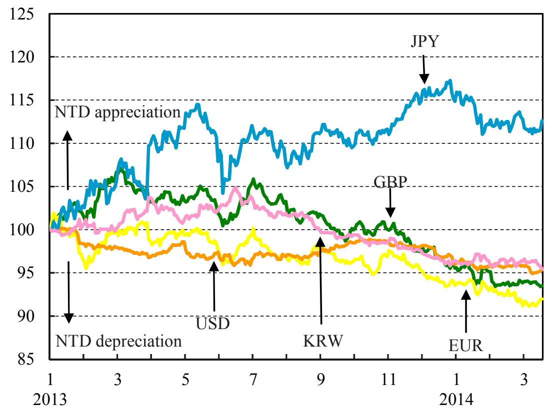


Source: CBC.

As for the NT dollar against other key international currencies, as a result of the significant depreciation of the yen, the NT dollar appreciated against the yen by 18.31% in 2013. Conversely, the NT dollar depreciated by 6.49%, 5.11% and 4.10% against the euro, the British pound and the Korean won, respectively, over the same period (Chart 3.14).

In 2013, owing to export growth and relatively large domestic and international capital movements, the transactions in the foreign exchange market became more active than a year earlier. The average daily trading volume of the foreign exchange market reached US$29 billion, increasing by 24.10% compared to US$23.4 billion a year earlier, primarily because of an increase in the trading volume of the interbank market (Chart 3.12). A breakdown by counterparty showed that the average daily trading volume in the interbank market accounted for 75.23% of the total in 2013, while the retail bank-customer market made up a 24.77% share. As for types of transactions, foreign exchange swaps accounted for 41.62% of the total, followed by spot trading with 37.47%. Taiwan's active development of the offshore RMB market is likely to be beneficial to expanding the foreign exchange market (Box 3).

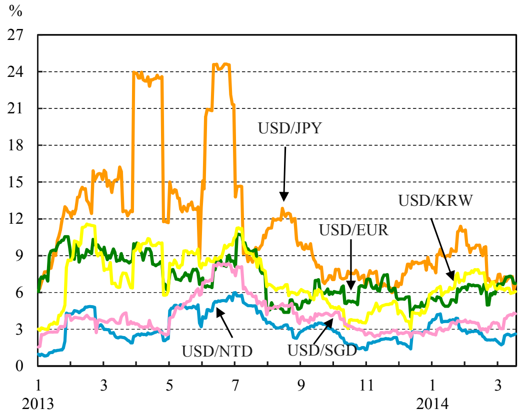
Chart 3.14 Movements of NT dollar exchange rate against key international currencies



Note: 2 January 2013 = 100.
Source: CBC.

NT dollar exchange rate volatility remained relatively stable

Chart 3.15 Exchange rate volatility of various currencies against the US dollar



Note: Volatility refers to the annualized standard deviation of 20-day daily returns.
Source: CBC.

The volatility in the NT dollar exchange rate against the US dollar fluctuated between 0.8% and 6% in 2013, and registered an annual average of 3.18%. In early 2014, with the effect of international capital outflows from emerging markets caused by declining bond purchases by the Fed, the volatility in the NT dollar exchange rate against the US dollar trended upwards, but fell below 3% from the middle of February. From 2013, the NT dollar exchange rate was relatively stable compared to the volatility in the exchange rates of major currencies such as the Japanese yen, euro, Korean won and Singapore dollar against the US dollar (Chart 3.15).

Box 3
Taiwan offshore RMB market– developments and future prospects

1. Background of the offshore RMB market

With the expansion of Mainland China's economy, its influence in Asia and even the world has grown day by day. Consequently, with consideration to its own benefit, the Chinese government started to actively promote policies that encourage the internationalization of the RMB in 2009, which garnered international attention. Among them, cross-border RMB trade settlement was one of the policies most actively promoted in the earlier stages. Following this were the introduction of the RMB foreign direct investment (RFDI) mechanism, allowing RMB qualified foreign institutional investors (RQFIIs) to invest in Mainland China's capital markets, and the signing of currency swap agreements with other central banks.

The share of RMB's usage in trade settlement grew to 18% of Mainland China's global trade volume in 2013, from 2.5% in 2010. With its close trade ties to Mainland China, how Taiwan will develop its offshore RMB market has drawn worldwide attention.

2. The development of the offshore RMB market in Taiwan

The development of Taiwan's offshore RMB market can be separated into two stages:

(1) First stage: from June 2008 to August 2012

There were two notable measures in this stage: (i) in response to flourishing tourism across the Strait, the CBC authorized financial institutions in Taiwan to exchange RMB banknotes in 2008; (ii) to facilitate cross-border trade settlements for Taiwanese companies operating in Mainland China, in July 2011, the CBC, along with the Financial Supervisory Commission, gave the green light to the OBUs and overseas branches of Taiwanese banks to conduct RMB business.

(2) Second stage: After the signing of the *Memorandum on Cross-Strait Currency Clearing Cooperation* on 31 August 2012

After the signing of the *Memorandum on Cross-Strait Currency Clearing Cooperation between Taiwan and Mainland China*, the main policies promoted include: (i) the Taipei Branch of the Bank of China was designated as the RMB clearing bank in Taiwan in December 2012; (ii) the CBC amended the *Regulations Governing Foreign Exchange Business of Banking Enterprises* in January 2013, allowing DBUs to conduct RMB business, and formally implemented the regulation on 6th February 2013. This opened a new chapter for the development of the RMB market in Taiwan.

3. Current market development

Financial institutions in Taiwan are allowed to offer a variety of RMB services and products, including deposits and loans, remittances, cross-border trade settlements, currency exchange, derivatives, insurance, and mutual funds. As of the end of March 2014, there were 66 DBUs and 57 OBUs that conducted RMB business, the overview of which is in Table B3-1.

Table B3-1: Overview of RMB business conducted in Taiwan

Unit: RMB bn

Type of Business	Amount
Outstanding of RMB deposits (2014/3)	268.4
RMB remittances volume (2013/2 - 2014/3)	739.6
Total amount of 15 issues of RMB-denominated bonds (2014/3)	12.1
RMB settlement through the Taipei Branch of the Bank of China (2013/2 - 2014/3)	2,495.7

Source: CBC.

4. Measures already in place and under preparation by the CBC

To develop Taiwan's offshore RMB market, the CBC has undertaken and will undertake the following measures:

4.1 Including RMB into the foreign currency clearing platform

RMB settlement has been integrated into the new foreign currency clearing platform mapped out by the CBC. Beginning 30 September 2013, the platform started to process RMB clearing and settlement of domestic and cross border remittances and funds transfers, including transactions with Mainland China, Hong Kong and other foreign markets. It helps to raise the processing efficiency of the flow of RMB funds.

4.2 Expanding RMB transaction volume and offering liquidity support

4.2.1 Encouraging participation by foreign banks

(1) Encouraging Taiwan's RMB clearing bank to actively introduce Taiwan's financial environment and the RMB clearing mechanism to other countries in order to attract foreign financial institutions to become participating banks.

(2) Encouraging Taiwan's leading banks to leverage the OBU tax concessions to attract

more foreign banks to open RMB interbank accounts in Taiwan, as well as encouraging overseas branches of Taiwanese banks to cooperate actively with local financial institutions abroad to grow their RMB business.

4.2.2 Encouraging cooperation between domestic and foreign currency brokerages to enlarge RMB liquidity and transaction volume

The CBC encourages cooperation between Taiwanese FX brokerage houses and their counterparts from other offshore RMB markets such as Hong Kong, Singapore, and London. This will not only expand the size of the global offshore RMB market, but also stimulate the growth of Taiwan's RMB transactions and bolster market liquidity.

4.2.3 Establishing RMB foreign exchange and interest rate fixing mechanisms to facilitate the offering of RMB financial products

The CBC is considering to establish fixing mechanisms for the CNT exchange rate and CNT Taibor (Taipei Interbank Offered Rate) as a benchmark for RMB financial products offered in Taiwan.

4.2.4 Closely cooperating with other offshore markets

The CBC will actively cooperate with other offshore RMB markets, such as Hong Kong, London, and Singapore. In the meantime, the CBC will exchange views and seek opportunities for collaboration with other countries interested in developing their own offshore RMB markets, such as France and Australia.

4.3 Actively negotiating with Mainland China to expand the channels for Taiwan's RMB funds to flow back to Mainland China

4.3.1 Allowing Taiwanese financial institutions to make loans to firms in Mainland China directly

In September 2013, the CBC issued a circular, allowing banks to grant RMB loans to Taiwanese corporate subsidiaries in Kunshan, China, based on lending contracts between the parent companies and their Kunshan subsidiaries. As a result, it not only expands the channels for Taiwan's RMB funds to flow back to Mainland China, but also can lower Taiwanese companies' funding costs. Moreover, in future talks with the Chinese authorities, the CBC will try to gain support to allow onshore RMB lending by Taiwanese banks directly to Taiwanese firms in Kunshan, and to those in Shanghai, Shenzhen, Xiamen, etc. in the longer term.

4.3.2 Investing in Mainland China's stock and bond markets through RQFII

If Taiwan's legislature passes the cross-strait service trade agreement, the RQFII scheme will also apply to Taiwanese financial institutions wishing to invest their offshore RMB funds in Mainland China's stock and bond markets. The CBC will also express its desire during cross-strait talks to obtain a larger quota for RQFII investment.

4.3.3 Encouraging both domestic and foreign companies to issue RMB bonds in Taiwan

The CBC also encourages both domestic and foreign businesses to issue RMB-denominated bonds in Taiwan, and hopes that in the future the issuers will be more diversified so as to retain RMB financial services in Taiwan and further increase RMB flows back to Mainland China.

5. Outlook and prospects

Taiwan's offshore RMB market has several advantages that would be beneficial to future development, including:

(1) Huge cross-strait trade and remittances bring banks tremendous RMB business opportunities to provide companies with better and more RMB-related services such as trade settlements, funds management, etc. It also helps build up a larger pool of RMB liquidity.

(2) The appointed RMB clearing bank here in Taiwan certainly helps to handle RMB clearing even more efficiently.

(3) Taiwan is also equipped with advanced financial infrastructure, for example the foreign currency clearing platform. It has streamlined clearing procedures and helps to expand RMB liquidity in Taiwan. Moreover, it can be linked with the China National Advanced Payment System (CNAPS) and the Bank of China's international information system through relayed connections. RMB remittance is thus more convenient time-wise and, in turn, facilitates RMB fund allocation in Mainland China and around the world.

(4) The tax concessions for Taiwan's OBUs have created a niche access to Taiwan's offshore RMB market.

(5) Taiwan has an established role as an offshore USD market, supported by a well-developed trading mechanism and regulatory environment, as well as years of experience. Such a strong foundation certainly helps consolidate Taiwan's position as an important offshore RMB market.

Taiwan's development of the offshore RMB market needs the joint efforts of all parties in the financial industry. The CBC will continue to monitor capital account liberalization after the launch of the Shanghai Free Trade Zone, as well as the process of RMB internationalization and the development of the China International Payment System (CIPS). In addition, the CBC hopes the two sides of the Strait will sign a currency swap agreement as soon as possible in order to build a safety net in Taiwan for RMB liquidity.

3.2 Financial institutions

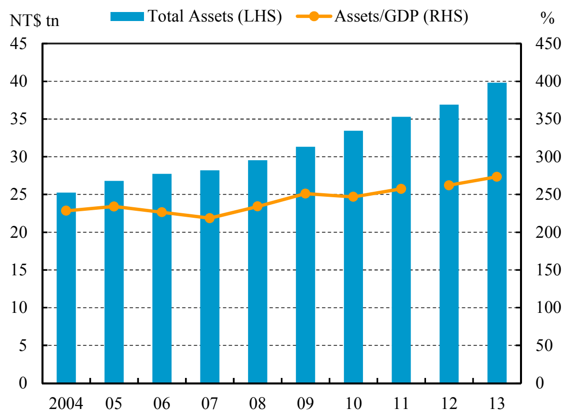
3.2.1 Domestic banks

In 2013, the total assets of domestic banks accumulated at a faster pace mainly because of the increase in loans. Asset quality improved and the credit concentration of corporate loans declined continuously; nevertheless, credit exposure to real estate remained high. The estimated Value at Risk (VaR) for all market risk exposures of domestic banks rose but had limited influence on their capital adequacy. Moreover, liquidity risk was moderate due to ample funds in the banking system. The profitability of domestic banks reached a record high in 2013, while the average ratio of capital adequacy was higher than the requested level of Basel III. This revealed that the capacity of domestic banks to bear losses was satisfactory.

Total assets increased continually and the growth rate expanded

The total assets of domestic banks kept growing and reached NT$39.83 trillion at the end of 2013, equivalent to 273.54% of annual GDP (Chart 3.16). The annual growth rate of total assets also increased to 7.95% from 4.53% a year earlier, mainly driven by a dramatic increase in the loans granted by offshore banking units (OBUs) and overseas branches.

Chart 3.16 Total assets of domestic banks



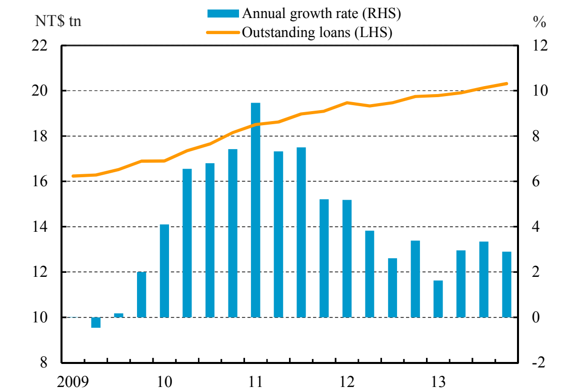
Note: Figures for total assets from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis
Sources: DGBAS and CBC.

Credit risk

Customer loan growth slowed

In 2013, customer loans were the major source of credit risk for domestic banks. Outstanding loans of the local business units

Chart 3.17 Outstanding loans and annual loan growth rate in domestic banks



Note: Outstanding loans are end-of-period figures.
Source: CBC.

of domestic banks[48] at the end of 2013 stood at NT$20.32 trillion, accounting for 51.01% of total assets, with the annual growth rate at the end of 2013 reducing to 2.90% from 3.39% a year earlier (Chart 3.17).

In 2013, outstanding loans of the local business units of domestic banks accumulated at a slower pace. The growth rate of loans to government agencies notably declined to -10.57% at the end of 2013 from 5.00% a year earlier, because an increase in the outstandings of government bond issuance and the government's collection of a total franchise fee of NT$118.65 billion for 4th generation broadband wireless (4G) licenses in Q4 caused a decrease in demand for bank borrowing. Meanwhile, the annual growth rate of corporate loans descended slightly to 2.51% from 3.18% a year earlier, and the annual growth rate of individual loans ascended from 4.07% to 5.93%, higher than a year earlier, due to stable growth in individual demand for buying houses.

Concentration of credit exposure in real estate loans descended slightly, but the ratio of real estate-secured credit ascended

Outstanding real estate loans[49] granted by the local business units of domestic banks amounted to NT$7.43 trillion, accounting for 36.57% of total loans as of the end of 2013.The ratio continuously declined over the past two years and dropped by 0.07 percentage points over the previous year. This reflected that under the CBC's and the FSC's measures to strengthen risk management regarding the real estate loans of banks, the concentration of credit exposure in real estate loans improved gradually throughout 2013. However, the ratio of real estate-secured credit granted by domestic banks was still high, reaching 49.20% of total credit[50] at the end of 2013 and increasing by 0.48 percentage points over the previous year (Chart 3.18). Meanwhile, outstanding real estate-secured credit, which stood at NT$12.32 trillion as of the end of

Chart 3.18 Credit by type of collateral in domestic banks

Note: End-of-period figures.
Source: CBC.

[48] The term "local business units of domestic banks" excludes offshore banking units and overseas branches. The term "customer loans" herein refers to discounts, overdrafts, other loans and import bills purchased. It excludes export bills purchased, non-accrual loans and interbank loans.
[49] The term "real estate loans" herein refers to house-purchase loans, house-refurbishment loans and construction loans.
[50] The term "credit" herein includes loans, guarantee payments receivable and acceptances receivable.

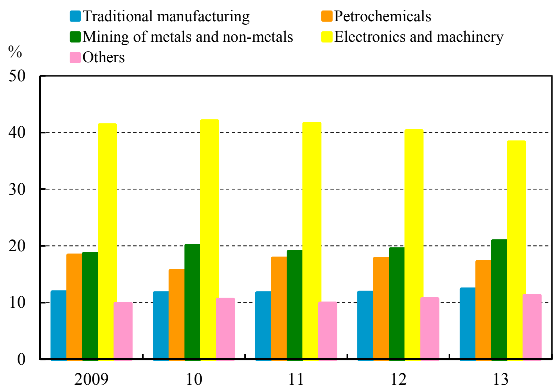
2013, also climbed byan annual growth rate of 6.71%, higher than 4.95% a year earlier.

Although the trading volume of the real estate market recovered steadily, and the housing price stood at a high level in the second half of 2013, potential house buyers gradually opted for a wait-and-see approach. Furthermore, with the Fed reducing the size of bond purchases, the interest rate on loans may rebound in the future and the burdens of home buyers will increase. In order to assess the vulnerability of domestic banks when such shocks are encountered, the FSC required domestic banks in April 2014 to undertake stress tests with respect to housing loans and construction credit, based on the scenarios of housing price declines and interest rate rises. Although the expected losses of banks were within a bearable sphere under the stress scenarios, banks should closely monitor the influence of downward adjustments on housing prices as well as rising interest rates, which both may pose credit risks to housing loans, and develop appropriate strategies to cope with such impacts.

Credit concentration of corporate loans gradually declined

Outstanding corporate loans of the local business units of domestic banks stood at NT$9.07 trillion at the end of 2013, while loans to the manufacturing sector registered NT$3.92 trillion and accounted for the largest share of 43.18% of the total.Within the manufacturing sector,[51] the largest proportion of loans was for the electronics industry, which stood at NT$1.50 trillion and accounted for 38.30% of the total loans to the whole manufacturing sector. The ratio was lower than 40.29% a year earlier and has continuously declined over the past three years (Chart 3.19).

Chart 3.19 Exposure to the manufacturing sector by domestic banks

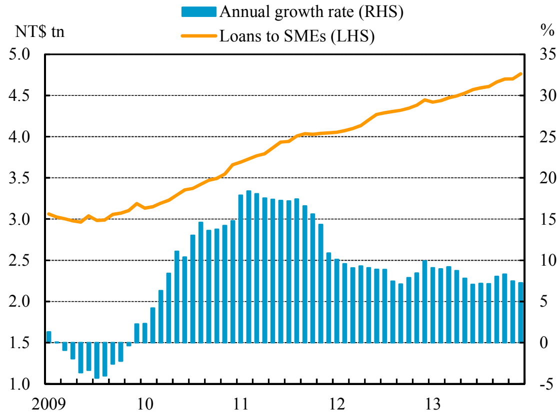


Notes: 1. End-of-period figures.
2. Exposure to each sector = loans to each sector / loans to the whole manufacturing sector.
Source: CBC.

[51] Loans to the manufacturing sector are divided into five categories by industry, including: (1) electronics, (2) mining of metals and non-metals, (3) petrochemicals and (4) traditional manufacturing, and (5) others.

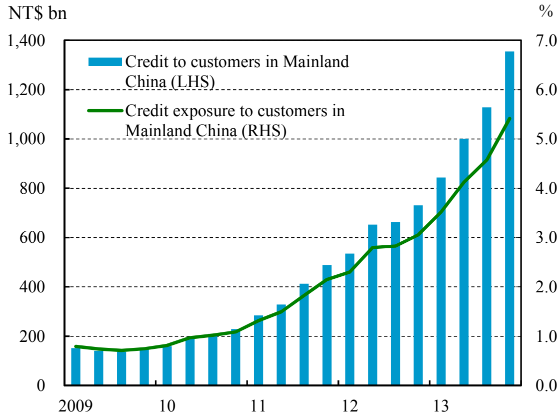
Outstanding corporate loans to SMEs by domestic banks steadily expanded to NT$4.78 trillion at the end of 2013, increasing by NT$322.6 billion or 7.23% over the previous year (Chart 3.20). The ratio of these loans to outstanding corporate loans also ascended gradually and reached a ten-year high of 52.72%, in line with the Program to Encourage Lending by Domestic Banks to Small and Medium Enterprises launched by the FSC. Following the pace of SME loan growth, the outstanding amount of loan guarantees applied for by SMEs through the Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) also kept rising and increased 11.14% from year-end 2012 to reach NT$832.2 billion at the end of 2013, and the guarantee coverage percentage also increased to 79.94%. These statistics all point to the favorable conditions for SMEs to acquire necessary funds.

Chart 3.20 Loans to SMEs by domestic banks



Sources: FSC and CBC.

Chart 3.21 Credit to customers in Mainland China by domestic banks



Source: FSC.

Credit to customers in Mainland China increased rapidly

As the offshore banking units of domestic banks continuously expanded credit to customers in Mainland China, outstanding credit to such customers dramatically increased by NT$624.1 billion or 85.36% year on year and reached NT$136 trillion at the end of 2013.

According to Article 12-1 of the *Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area*, the aggregate amount of credit, investment, interbank loans and interbank deposits extended by a domestic bank to customers in Mainland China should not exceed 100% of the bank's net worth at the end of the preceding fiscal year. As of the end of 2013, the aggregate amount of such exposures of all domestic banks as a percentage of their total net worth at the previous year-end was 58%, still within the statutory limit. No domestic bank exceeded the limit.

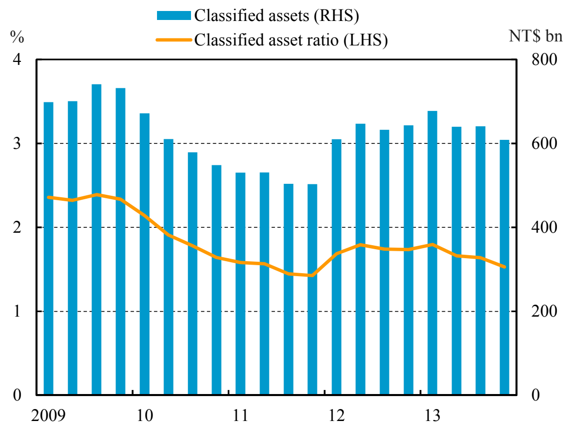
Outstanding credit to customers in Mainland China by domestic banks accounted for 5.41% of total credit at the end of 2013, higher than that of the previous year (Chart 3.21). However, the non-performing credit ratio of such credit was lower than 0.01%, representing satisfactory asset quality. In recent years, domestic banks have actively developed business in Mainland China. While such action offered them more business opportunities, it also gave rise to greater risk (Box 4), especially recently as Mainland China has faced a slowdown in economic growth and elevated financial risk. Accordingly, domestic banks should cautiously monitor economic and financial conditions in Mainland China as well as prudently control their exposures to customers in Mainland China.

Asset quality improved continuously

Outstanding classified assets [52] and the average classified asset ratio of domestic banks stood at NT$608.4 billion and 1.53% at the end of 2013, decreasing by 5.40% and 0.21 percentage points, respectively, over the previous year (Chart 3.22). Meanwhile, expected losses of classified assets [53] also decreased by NT$3.5 billion or 4.15% year on year to NT$80.3 billion,while the ratio of expected losses to loan loss provisions was only 24.60%, indicating sufficient provisions to cover expected losses.

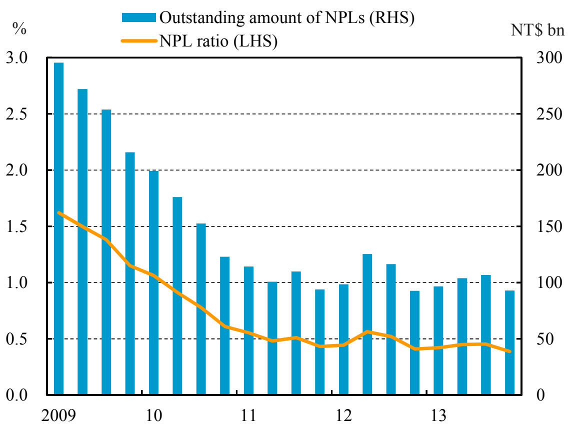
Although the outstanding NPLs of domestic banks slightly increased by 0.16% year on year and registered NT$93.0 billion at the end of 2013, the average NPL ratio fell to a record low of 0.39% owing to a greater increase in loan balances (Chart 3.23). With the increase in provisions, the NPL coverage ratio and the loan coverage ratioat the end of 2013 rose to

Chart 3.22 Classified assets of domestic banks



Note: Classified asset ratio = classified assets / total assets.
Source: CBC.

Chart 3.23 NPL ratio of domestic banks



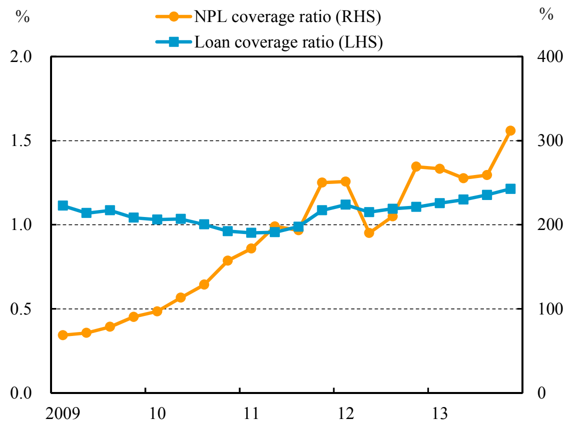
Note: Excludes interbank loans.
Source: CBC.

[52] The *Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans* break down all assets into five different categories, including: category one – normal credit assets; category two – credit assets requiring special mention; category three – substandard credit assets; category four – doubtful credit assets; and category five – loss assets. The term "classified assets" herein includes all assets classified as categories two to five.

[53] Loss herein refers to the losses from loans, acceptances, guarantees, credit cards, and factoring without recourse.

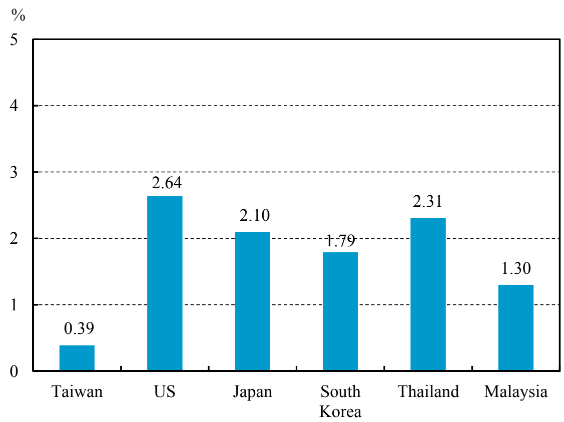
311.65% and 1.21%, respectively (Chart 3.24). Among 40 domestic banks, all had NPL ratios of less than 1%, except for two with ratios between 1% and 1.5% at the end of 2013. Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was much lower (Chart 3.25).

Chart 3.24 NPL coverage ratio and loan coverage ratio of domestic banks



Notes: 1. NPL coverage ratio = total provisions / non-performing loans.
2. Loan coverage ratio = total provisions / total loans.
3. Excludes interbank loans.
Source: CBC.

Chart 3.25 NPL ratios of banks in selected countries



Note: Figures for Japan and South Korea are end-September 2013 data, while the others are end-December 2013.
Sources: CBC, FDIC, FSA, FSS, BOTand BNM.

Market risk

Estimated Value-at-Risk for market risk exposures rose

The net position of debt securities accounted for the largest share of total market risk exposures of domestic banks, followed by the net positions of equity securities and of foreign exchange at the end of 2013. Using market data as of February 2014, the estimated total VaR calculated by the CBC's market risk model[54] for foreign exchange, interest rate and equity exposures of domestic banks at the end of 2013 stood at NT$249.8 billion, significantly ascending by NT$130.2 billion or 108.86% compared to the figure a year earlier. Among market risks, interest rate VaR showed a significant rise of 109.91% as the yield of Taiwan government bonds trended upward in response to a rise in US government bond yields owing to the anticipated scaling back in Fed asset purchases. Equity and foreign exchange VaRs diminished owing to a reduction in the volatility of the stock market and NTD/USD exchange rate, respectively (Table 3.1).

[54] The market risk model describes dependencies among foreign exchange, interest rate and equity positions' returns series, and provides a correlation structure between returns series. By means of a semi-parametric method, the modelconstructs the sample distribution function of each asset's returns series using a Gaussian kernel estimate for the interior and a generalized Pareto distribution (GPD) estimate for the upper and lower tails. The confidence level of the model is 99%, a holding period of ten trading days is used and exposure positions are assumed unchanged. The models are estimated using 1,000 foreign exchange rate, interest rate, and equity price samples (Data as of 21 February 2014).

Table 3.1 Market risks of domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2012	End-Dec. 2013	Changes	
				Amount	%
Foreign exchange	Net position	71.0	79.9	8.9	12.54
	VaR	1.8	1.6	-0.2	-11.11
	VaR / net position (%)	2.54	2.00		-0.54
Interest rate	Net position	6,314.6	6,723.7	409.1	6.48
	VaR	113.0	237.2	124.2	109.91
	VaR / net position (%)	1.79	3.53		1.74
Equities	Net position	539.3	597.4	58.1	10.77
	VaR	31.1	24.9	-6.2	-19.94
	VaR / net position (%)	5.77	4.17		-1.60
Total VaR		119.6	249.8	130.2	108.86

Note: The total VaR is not equal to the sum of the VaRs of the three types of risks sinceit has taken the correlation among the three risk categories into consideration.
Source: CBC.

The effects of market risk on capital adequacy ratios reached about 1 percentage point

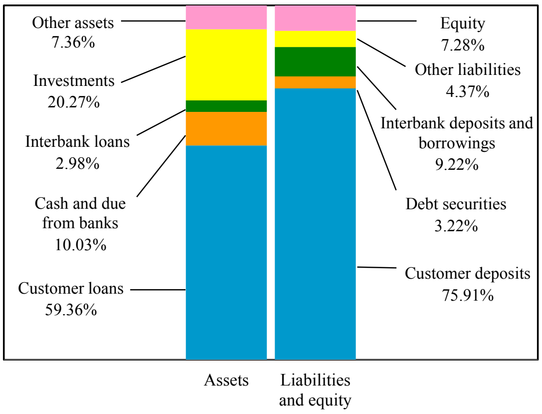
According to the estimated results mentioned above, the total VaR would cause a decrease of 1.05 percentage points in the average capital adequacy ratio of domestic banks and induce the ratio to drop from the current 11.83% to 10.78%. Nevertheless, it would still be higher than the statutory minimum of 8%.

Liquidity risk

Liquidity in the banking system remained ample

The structure of assets and liabilities for domestic banks roughly remained unchanged in 2013. As for the sources of funds, relatively stable customer deposits still accounted for the largest share of 75.91% of the total, followed by interbank deposits and borrowings at 9.22%, while debt securities

Chart 3.26 Asset/liability structure of domestic banks

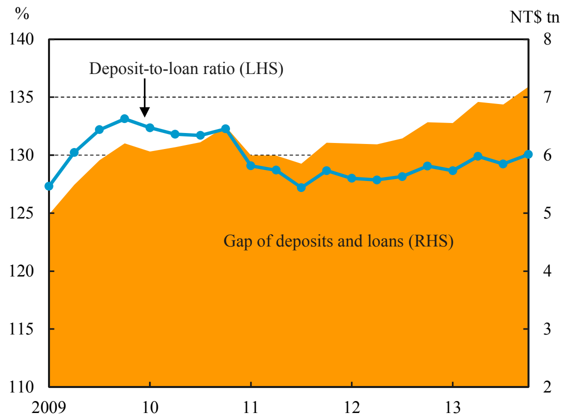


Notes: 1. Figures are as of end-December 2013.
2. Equity includes loss provisions. Interbank deposits include deposits with the CBC.
Source: CBC.

issues contributed a mere 3.22%. Regarding the uses of funds, customer loans accounted for the biggest share of 59.36%, followed by securities investments at 20.27%, while cash and due from banks accounted for 10.03% (Chart 3.26).

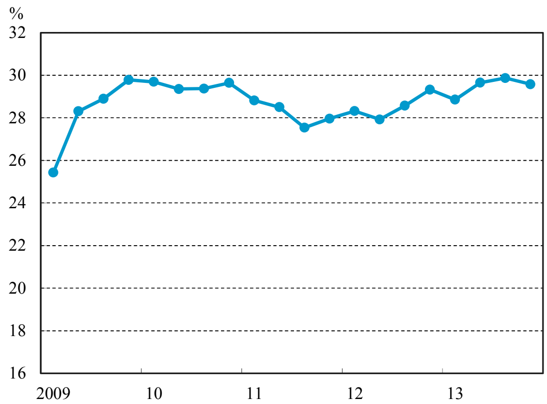
Given that the increase in deposits slightly exceeded that in loans in 2013, the average deposit-to-loan ratio of domestic banks rose to 130.06% at the end of December. The funding surplus (i.e., deposits exceeding loans) also expanded to NT$7.18 trillion, indicating that the overall liquidity in domestic banks remained abundant (Chart 3.27).

Chart 3.27 Deposit-to-loan ratio of domestic banks



Note: Deposit-to-loan ratio = total deposits / total loans.
Source: CBC.

Chart 3.28 Liquid reserve ratio of domestic banks



Note: Figures are the average daily data in the last month of each quarter.
Source: CBC.

Overall liquidity risk was moderate

The average NT dollar liquid reserve ratio of domestic banks was well above the statutory minimum of 10% in each month of 2013 and stood at 29.58% in December, an increase of 0.25 percentage points year on year (Chart 3.28), while the ratio of each domestic bank was higher than 15%. Looking at the components of liquid reserves in December 2013, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the CBC, accounted for 88.30% of total, while Tier 2 and other reserves accounted for a total of 11.70%. This revealed that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risk was moderate.

Profitability

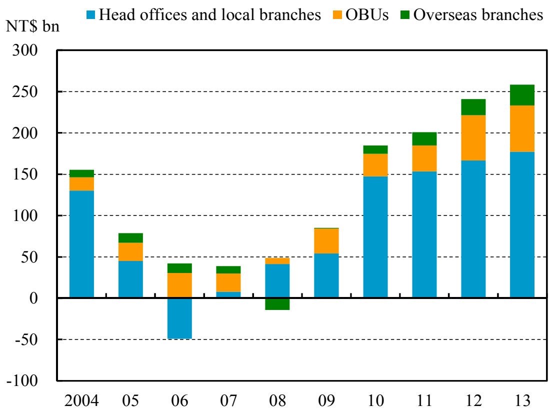
Profits recorded a historical high, of which more than 30% was contributed to by OBUs and overseas branches

The aggregate net income before tax of domestic banksreached NT$258.2 billion in 2013, increasing by NT$17.8 billion or 7.41% year on year (Chart 3.29). The amount recorded a historical high for the fourth consecutive year, mainly due to a rise in net fee income and gains on financial instruments. Since the opening up of the RMB business to OBUs and overseas branches, as well as the continual setting up of more branches in Mainland China and Southeast Asiaby domestic banks, OBUs and overseas branches have contributed to more than 30% of total profits in the recent two years, and the proportion has increased each year.

Although the profitability of domestic banks grew significantly, the average ROE decreased from 10.44% a year earlier to 10.24% due to a substantial increase of equity as a result of injections of capital and earnings, while the average ROA remained at 0.67% (Chart 3.30). Compared to selected Asia-Pacific neighboring economies, the ROAs of domestic banks still lagged behind other economies (Chart 3.31).

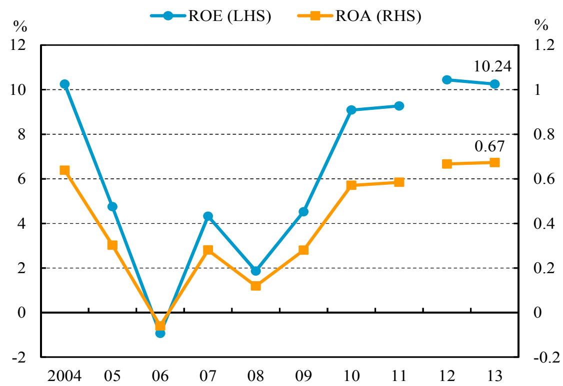
In 2013, four domestic banks achieved profitable ROEs of 15% or more, decreasing from eight banks in 2012, but fifteen banks reported better performance than the previous

Chart 3.29 Net income before tax of domestic banks



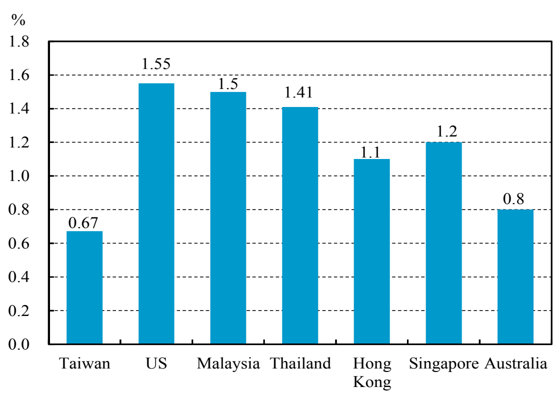
Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
2. Overseas branches include branches in Mainland China.
Source: CBC.

Chart 3.30 ROE & ROA of domestic banks



Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
2. ROE = net income before tax / average equity.
3. ROA = net income before tax / average total assets.
Source: CBC.

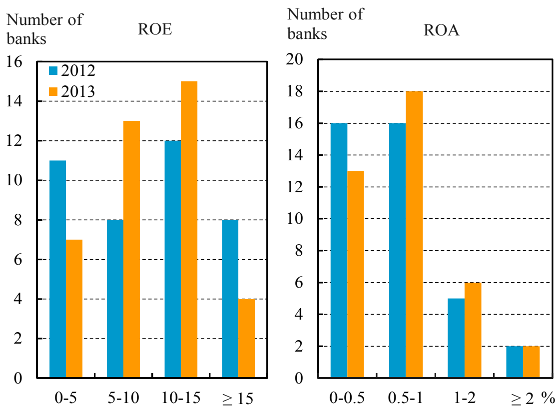
Chart 3.31 Comparison of ROAs of banks in selected economies



Note: Figures are as of 2013.
Sources: CBC, FDIC, BNM, BOT, HKMA,MAS andAPRA.

year. In addition, the number of domestic banks whose ROAs reached the international standard of 1% increased to eight (Chart 3.32), and the ROAs of 23 banks increased compared to those in 2012.

Chart 3.32 Distribution of ROEs and ROAs of domestic banks

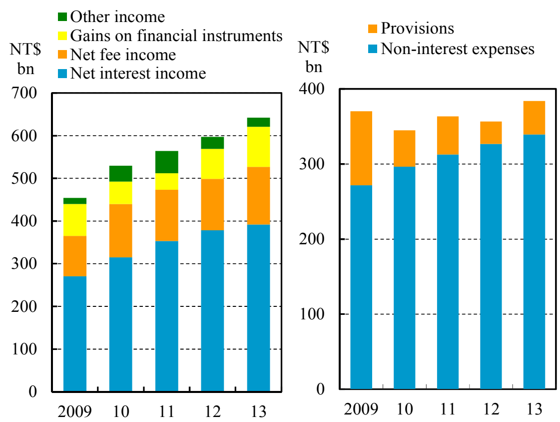


Note: Figures for 2012 and 2013 are on the TIFRSs basis.
Source: CBC.

Net operating income grew steadily

Total net operating income of domestic banks registered NT$642.3 billion in 2013, increasing by NT$45.2 billion or 7.57% year on year, mainly due to growth in non-interest income, such as net fee income and gains on financial instruments. Analyzed by income component, net interest income rose, albeit at a slower pace, by NT$13.2 billion or 3.49% and accounting for a slightly decreasing share of 61% of the total compared to the previous year, because of the growth in loans. Net fee income also increased by NT$15.2 billion or 12.63% year on year and accounted for an increasing share of 21% of the total, benefiting from the notable growth of the asset management business. Moreover, net gains on financial instruments markedly increased by NT$23.9 billion or 34.02%, driven by an increase in valuation or disposal gains resulting from a substantial growth of the financial instruments marketing business, and pushed up their share of total net operating income to 15% (Chart 3.33).

Chart 3.33 Composition of incomes and costs of domestic banks



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Source: CBC.

Operating costs increased remarkably due to a rise in loan loss provisions

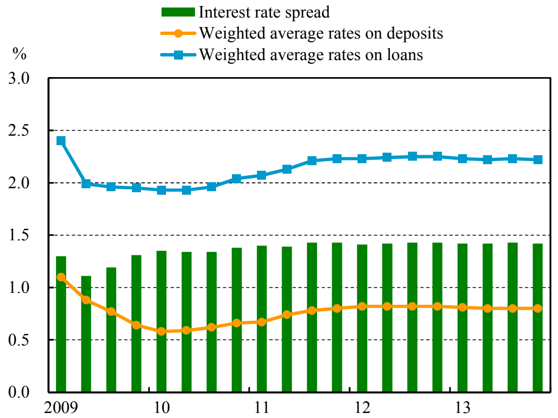
The operating costs of domestic banks registered NT$384.1 billion in 2013, rising by NT27.4 billion or 7.68% compared to the previous year. Non-interest expenses[55] increased by NT$12.5 billion or 3.82% and accounted for a decreasing share of 88% of total operating

[55] Non-interest expenses include employee benefits expenses, depreciation and amortization expenses, and other operating and management expenses.

costs. Meanwhile, provisions for bad debt expenses and guarantee reserves rose significantly by NT$14.9 billion or 49.66% year on year, with their share of total operating costs increasing to 12% (Chart 3.33).

In 2013, provisions for bad debt expenses and guarantee reserves of domestic banks reached NT$74.4 billion. To cope with an increase in non-performing loans and reach the statutory target of provisions for normal credit assets of 1% or higher,[56] domestic banks set aside more than NT$55 billion of provisions. However, its impact on profits was mitigated by the NT$29.5 billion gains on reversal of bad debt and impaired loans expenses.

Chart 3.34 Interest rate spread between deposits and loans



Notes: 1. Interest rate spread = weighted average interest rates on loans - weighted average interest rates ondeposits.
2. The weighted average interest rates on deposits and loans exclude preferred deposits of retired government employees and central government loans.

Source: CBC.

Factors that might affect future profitability

The interest rate spread between deposits and loans remained little changed at 1.42 percentage points during 2013 (Chart 3.34). However, the annual growth rate of deposits has outpaced that of loans for six consecutive quarters, and the RMB time deposits that banks took at high interest rates had limited opportunities for funds being used for investments or lending. Their impacts on the growth of net interest income are worth paying attention to.

As of the end of 2013,the average ratio of provisions for normal credit assets of domestic banks was 1.05%. However, some banks with ratios lower than 1% will need to increase provisions by a combined total of NT$10.3 billion. Although the increase in provisionsis viewed to have a limited impact on overall net income, it may adversely affect the 2014 profits of the banks requiring higher provisions. In addition, according to Article 11 of the *Value-added and Non-value-added Business Tax Act*, amended by the Legislative Yuan on 16 May 2014, the business tax rate on authorized business for banking and insurance industries shall resume its former rate of 5%, from 2%. Nevertheless, it is estimated to have a limited impact on overall profits.

[56] The FSC amended the *Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans* on 28 January 2014, raising the minimum ratio of provisions for normal credit assets from 0.5% to 1% of their outstanding balance. The amendment came into force from 1January 2014.

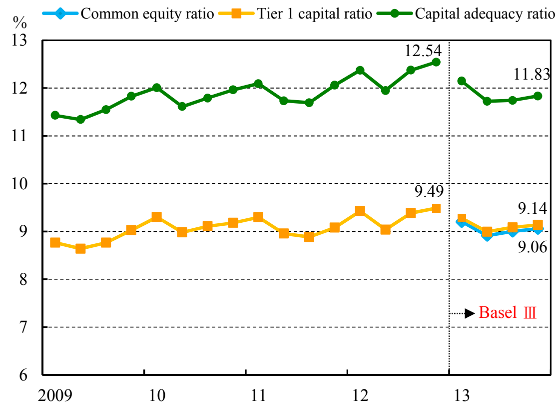
Capital adequacy

Average capital ratios met Basel Ⅲ standards

In the first half of 2013, average capital ratios of domestic banks turned to a descend as they adopted TIFRSs and Basel III[57] for the first time, standards that resulted in changes in regulatory capital components and risk-weighted assets calculations. However, in the second half of the year, as a result of capital injection and accumulated earnings as well as the issuance of Basel III-compliant long-term subordinated debt, the average common equity ratio, Tier 1 capital ratio and capital adequacy ratio reversed and rose to 9.06%, 9.14% and 11.83%, respectively. All of which met the statutory minimum standards set for 2019 (Chart 3.35). Compared to some neighboring Asia-Pacific economies, domestic banks in Taiwan had lower capital ratios and their relatively low profitability could constrain future increases of Tier 1 capital (Chart 3.36).

Further broken down by the component of regulatory capital, common equity Tier 1 capital, which features the best loss-bearing capacity, accounted for 76.54% of eligible

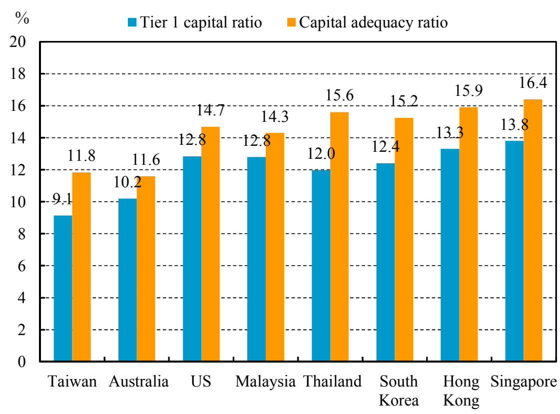
Chart 3.35 Capital ratio of domestic banks



Notes: 1. Figures from 2013 are on a Basel Ⅲ and TIFRSs basis, while prior years are on a Basel Ⅱ and ROC GAAP basis.
2. Common equity capital ratio = common equity Tier 1 capital / risk-weighted assets.
3. Tier 1capital ratio = Tier 1capital / risk-weighted assets.
4. Capital adequacy ratio = eligible capital / risk-weighted assets.

Source: CBC.

Chart 3.36 Comparison of capital ratios in selected economies



Note: Figures are as of the end of 2013.

Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA, and MAS.

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57 For implementation of Basel Ⅲ in Taiwan, see CBC (2013), *Financial Stability Report, May*. The minimum capital requirements in the transition period are as follows:

Items	2013	2014	2015	2016	2017	2018	2019 onwards
Common equity ratio（%）	3.5	4.0	4.5	5.125	5.75	6.375	7.0
Tier1 capital ratio（%）	4.5	5.5	6.0	6.625	7.25	7.875	8.5
Capital adequacy ratio（%）	8.0	8.0	8.0	8.625	9.25	9.875	10.5

capital, while non-common equity Tier 1 capital and Tier 2 capital registered only 0.67% and 22.79%, respectively, at the end of 2013. It showed that thecapital quality of domestic banks was adequate.

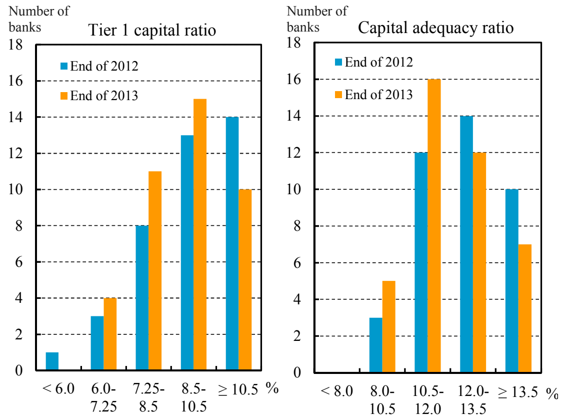
The capital levels of all domestic banks were higher than the2013 statutory minimum

At the end of 2013, the common equity ratios, Tier 1 capital ratios and capital adequacy ratios for all domestic banks remained above the statutory minimum requirementsfor 2013 (3.5%, 4.5% and 8.0%) and thosefor 2015 (4.5%, 6.0% and 8.0%). Compared to the previous year's capital ratios calculated in accordance with Basel Ⅱ, the number of banks with high capital ratios significantly decreased, indicating capital ratio drops for most banks (Chart 3.37).

Some banks faced pressure to raise their capital levels

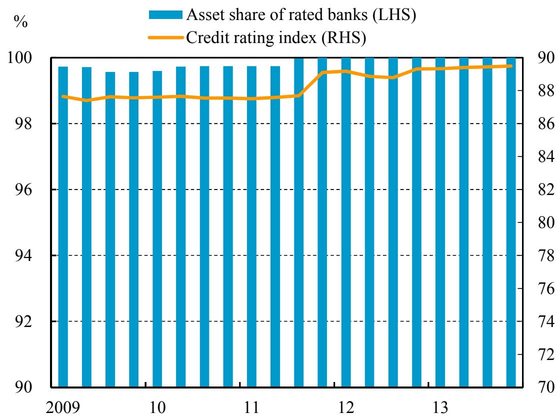
Even though the capital ratios of all banks met current minimum standards for 2013, some banks, particularly state-owned banks and small private banks,might not fulfill all minimum capital requirements set for the transition period. Such banks should actively reinforcetheir capital adequacy by seasoned equity offerings, accumulating earnings, reducing cash dividends and adjusting loan structures to raise their capital ratios gradually.

Chart 3.37 Number of domestic banks classified by capital ratios



Source: CBC.

Chart 3.38 Credit rating indices of rated domestic banks



Note: End-of-period figures.
Source: CBC.

Credit ratings

Average credit rating level remained stable

According to the rating results[58] released by credit rating agencies, the credit rating index[59] of domestic banks lifted slightly in 2013 (Chart 3.38), owing to one bank,which was set up during the year, receiving the highest rating of twAAA. It reflected an improvement of the overall credit rating level.

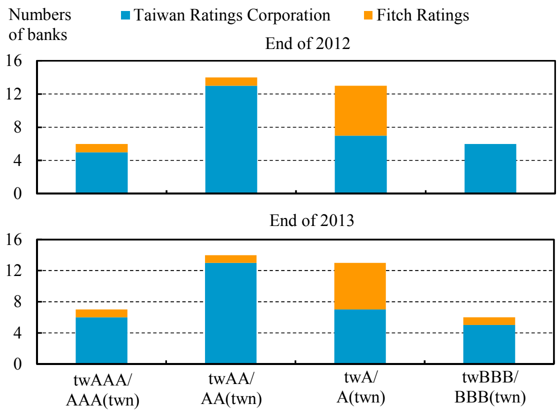
As for the overall risk assessments of Taiwan's banking system made by credit rating agencies, Standard & Poor's Banking Industry Country Risk Assessment (BICRA)[60] maintained Taiwan's BICRA unchanged at Group 4. Compared to other Asian economies, the risk of Taiwan's banking industry washigher than those of Hong Kong, Singapore, Japan, and South Korea, and about the same as that of Malaysia, but much lower than those of Mainland China, Thailand, Indonesia and the Philippines. The assessments of Taiwan's banking system evaluated by Fitch Ratings' Banking System Indicator/ Macro-Prudential Indicator (BSI/MPI) [61] also remained unchanged at

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard and Poor's		Fitch	
	BICRA		BSI/MPI	
	2013/2	2014/2	2013/2	2014/2
Hong Kong	2	2	a/3	a/3
Singapore	2	2	aa/2	aa/2
Japan	2	2	bbb/1	a/1
South Korea	3	3	bbb/1	bbb/1
Taiwan	**4**	**4**	**bbb/1**	**bbb/1**
Malaysia	4	4	bbb/1	bbb/1
Mainland China	5	5	bb/3	bb/3
Thailand	5	6	bbb/1	bbb/1
Indonesia	7	7	bb/3	bb/3
Philippines	7	7	bb/1	bb/1

Sources: Standard and Poor's and Fitch Ratings.

Chart 3.39 Number of domestic banks classified by credit ratings



Sources: Taiwan Ratings Corporation and Fitch Ratings.

58 As of the end of 2013, the majority of Taiwan's domestic banks received long-term issuer ratings from Taiwan Ratings, followed by those with national long-term ratings from Fitch Ratings. Therefore, this section is based primarily on the Taiwan Ratings ratings (tw~), and secondarily on Fitch ratings (~(twn)).

59 The credit rating index is an asset-weighted average rating score of rated domestic banks, measuring the overall creditworthiness of those banks on a scale from 1 (weakest) to 100 (strongest). The rating score for banks is determined according to their long-term issuer ratings from Taiwan Ratings or national long-term ratings from Fitch Ratings. The higher the index is, the better the bank's overall solvency.

60 The analytical dimensions of Standard & Poor's BICRA include economic risk and industry risk. The economic risk of a banking sector is determined by factors including economic resilience, economic imbalances, and credit risk in the economy, while industry risk is determined by institutional framework, competitive dynamics and system-wide funding. The overall assessments of those factors will lead to the classification of a country's banking system into BICRA groups, ranging from group 1 (lowest risk) to group 10 (highest risk), in order to indicate the relative country risk and banking sector credit quality.

61 Fitch Ratings has devised two complementary measures, the BSI and MPI, to assess banking system vulnerability. The two indicators are brought together in a Systemic Risk Matrix that emphasizes the complementary nature of both indicators. The BSI represents banking system strength on a scale from aa (very strong) to ccc/cc/c (very weak).On the other hand, the MPI indicates the vulnerability to stress on above-trend levels of private sector credit, a bubble in real asset prices, and/or major currency appreciation, measuring the vulnerability of the macro environment on a scale from 1 (low) to 3 (high) in terms of banking system vulnerability.

level bbb/1 (Table 3.2).

Rating outlooks remained stable

All domestic banks were rated by credit rating agencies for 2013. Most of them maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2013, and none had credit ratings lower than twBB/BB(twn) (Chart 3.39). The results were similar to those received the previous year. Regarding rating outlooks or CreditWatch, while six banks turned negative in 2013,[62] 34 banks remained stable or positive.

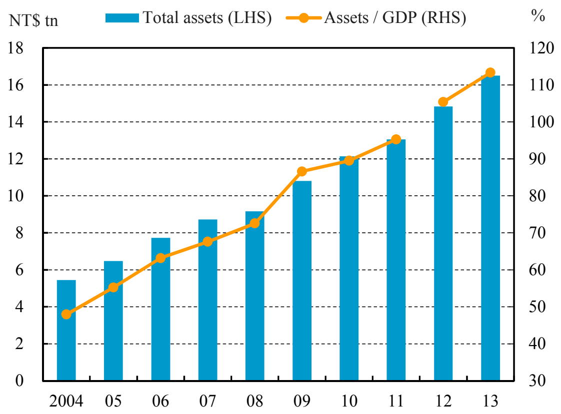
3.2.2 Life insurance companies

In 2013, the total assets of life insurance companies grew at a speedy pace, and their profitability recorded a six-year high, showing an improvement in operating performance. The average RBC ratio of life insurance companies at the end of 2013 was higher than that of a year earlier. However, the financial strength of a few companies needs to be bolstered as soon as possible.

Assets grew at a considerable pace

The total assets of life insurance companies grew continually and reached NT$16.50 trillion at the end of 2013, equivalent to 113.33% of annual GDP (Chart 3.40). However, the annual growth rate of total assets declined to a still considerable pace of 11.24% at the end of 2013, from 12.56% a year earlier.

Chart 3.40 Total assets of life insurance companies



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Sources: FSC and DGBAS.

At the end of 2013, 23 domestic life insurance companies[63] held a 98.40% market share by assets, five of which were foreign affiliates holding a 3.26% market share, while five foreign life insurance companies held the

[62] The reasons for six banks receiving negative rating outlooks or CreditWatch were excessive growth in loans affecting capital levels, decreasing capital levels affecting the ability to absorb losses, deteriorating capital and earnings, a rating downgrade of the bank's parent company, or increasing capital pressure after M&A activity.
[63] Foreign affiliates included.

remaining 1.60% of total assets. The top three companies in terms of assets held a combined market share of 53.97%, revealing a slight decrease of 0.28 percentage points year on year. The market structure of the life insurance industry roughly remained unchanged in 2013.

Foreign securities investments had the highest growth rate

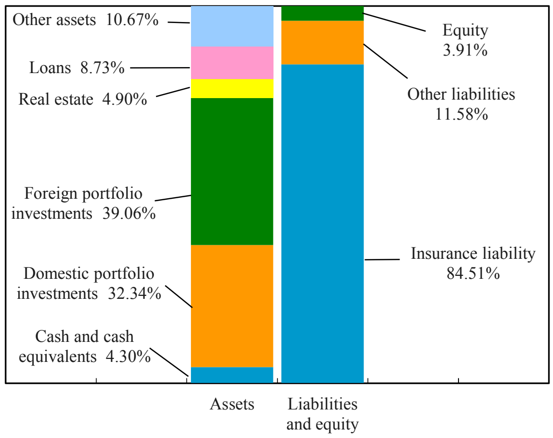
The funds of life insurance companies at the end of 2013 were chiefly invested in foreignand domestic securities which accounted for 39.06% and 32.34% of total assets, respectively. Loans only accounted for 8.73% of total assets, with real estate accounting for 4.90% and cash and cash equivalents for 4.30%. As for the sources of funds, insurance liability accounted for the largest share of 84.51%, while equity dipped to a share of 3.91% due to the huge contraction of unrealized gains on available-for-sale financial assets, reflecting the high financial leverage of life insurance companies (Chart 3.41).

In 2013, foreign securities investments by life insurance companies had the highest growth rate, increasing by 22.27% year on year. However, the growth rate of real estate investment dropped drastically to 6.60% from 15.57% a year earlier owing to the impact stemming from stricter regulations. Loans increased by 15.80% from the previous year's 4.05% as insurance companies tended to provide more real estate-secured loans.

Net income recorded a six-year high

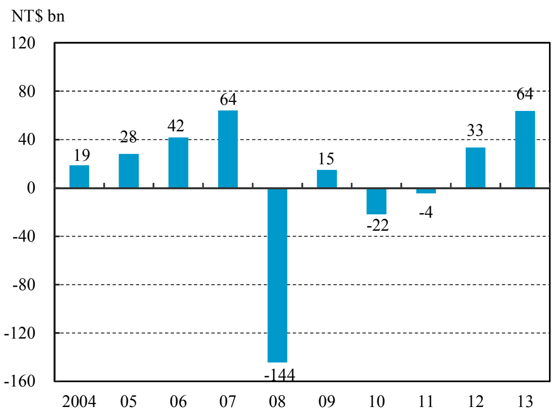
Life insurance companies reported a six-year high net income before tax of NT$64 billion in 2013, a year-on-year increase of NT$31 billion or 91.02% (Chart 3.42). This was mainly driven by huge profits on foreign exchange gains derived from investment portfolios, as well as an interest income

Chart 3.41 Asset/liability structure of life insurance companies



Note: Figures are end-December 2013 data.
Source: FSC.

Chart 3.42 Net income before tax of life insurance companies

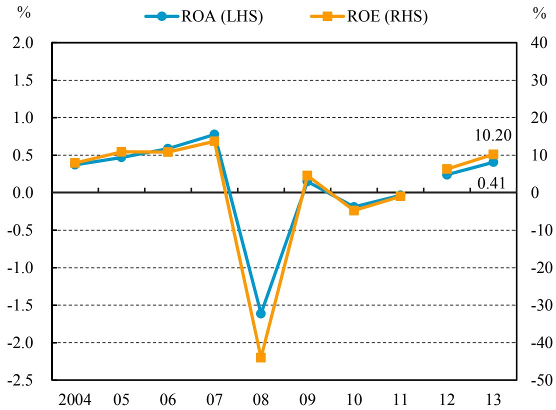


Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Source: FSC.

increase and a recovery of special reserves on unrealized property gains.

During the same period, average ROE and ROA were 10.20% and 0.41%, respectively, much higher than 6.31% and 0.24% in 2012 (Chart 3.43). Among all 28 insurance companies, six companies posted better profits and achieved ROEs of 10% or more, equivalent to the number of a year earlier. However, there were eleven companies who still suffered losses, two more than that of the previous year.

Chart 3.43 ROE & ROA of life insurance companies

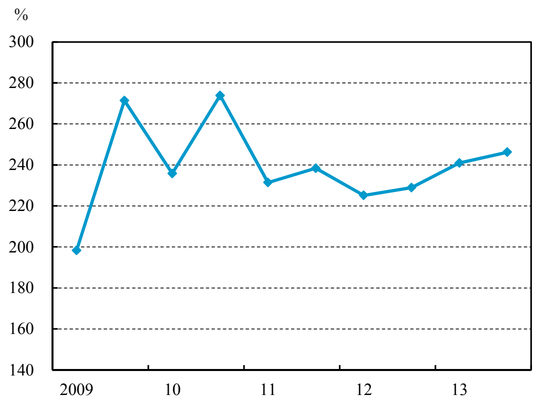


Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
2. ROE = net income before tax / average equity.
3. ROA = net income before tax / average assets.
Source: FSC.

Average RBC ratio was above the statutory minimum

Owing to greater domestic and foreign securities investments, as well as the FSC's measure to raise the coefficient for RBC, the total amount of RBC increased during 2013. Nevertheless, the industry turned healthy profits and more unrealized gains on investment property were allowed to be included in regulatory capital, along with ongoing capital-raising by several insurance companies, resulting in the increment of the regulatory capital exceeding that of RBC. Consequently, the average RBC ratio rose to 246.22% at year-end 2013 (Chart 3.44) from 228.95% at the end of the previous year (excluding Kuo Hua Life Insurance Company), above the statutory minimum of 200%.

Chart 3.44 RBC ratio of life insurance companies

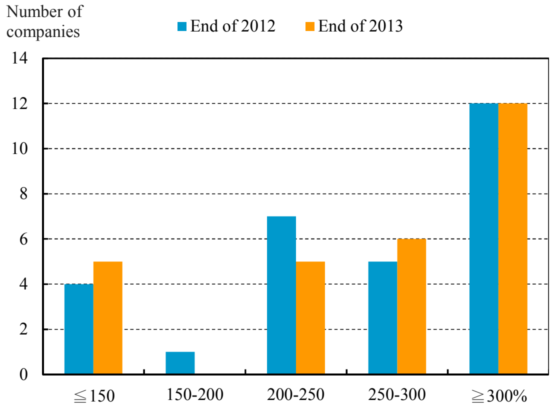


Notes: 1. RBC ratio = regulatory capital / risk-based capital.
2. Kuo Hua Life Insurance Company, which was taken into receivership by the Insurance Stabilization Fund in August 2009 and merged into TransGlobe Life Insurance Company in March 2013, is excluded from 2009 onwards.
Source: FSC.

By individual company, there were twelve companies with RBC ratios over 300%. However, five companies had ratios below 200% (Chart 3.45), whose combined assets accounted for 2.42% of the total. Although the share is not particularly high, the financial structure of those companies needs to be improved as soon as possible.

Overall credit ratings improved slightly, with most obtaining positive or stable credit outlooks[64]

Chart 3.45 Number of life insurance companies classified by RBC ratios



Note: Figure for end-2012 is exclusive of Kuo Hua Life Insurance Company.
Source: FSC.

Overall, the credit rating level of eleven life insurance companies rated by Taiwan Ratings or Fitch Ratings improved slightly in 2013. The main reason behind this was that Standard & Poor's revised its rating criteria for insurance companies, resulting in the rating upgrade of China Life Insurance Company to twAA from twAA-, while others didn't receive credit rating adjustments. As of the end of 2013, all rated insurance companies maintained credit ratings above twA or its equivalent, while most companies except one received positive or stable credit outlooks. The three biggest insurance companies by assets were all rated twAA+, showing strong capability to fulfill all financial commitments.

The challenges faced by life insurance companies

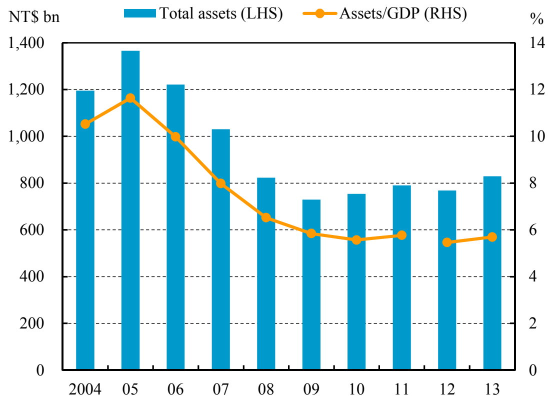
Although the overall profitability of life insurance companies improved in 2013, fast growth of total assets and limited increase in capital level propelled a soaring leverage ratio. Furthermore, the interest rate spread losses from maturity mismatches in the global climate of prolonged low interest rates remained unresolved. They both require insurance companies' close attention. Besides these, the problem of capital inadequacy faced by a few insurance companies showed that, apart from capital injection and stricter supervision of those companies, it is indeed an urgent matter to address the question of how to strengthen the resolution mechanism for the insurance industry, which could thus protect the rights of the assured and promote the sound development of the insurance industry (Box 5).

[64] As most life insurance companies were rated by Taiwan Ratings, the analysis in this section focused primarily on the opinions of Taiwan Ratings. Other rating agencies' opinions are also taken into consideration, though.

3.2.3 Bills finance companies

The total assets of bills finance companies increased slightly in 2013. Operating profitability remained stable and the quality of credit assets remained sound, yet the liquidity risk stayed high. The average capital adequacy ratio of bills finance companies as a whole was maintained at a similar level to the previous year, while the ratio of each company stayed well above the statutory minimum.

Chart 3.46 Total assets of bills finance companies

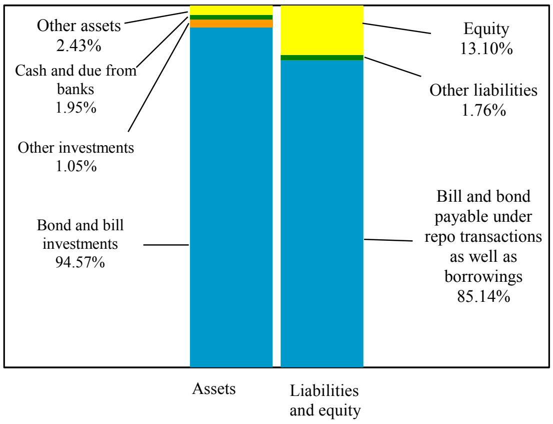


Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Sources: CBC and DGBAS.

Total assets increased slightly

The total assets of bills finance companies rebounded slightly in 2013, though still lingering at a level near their ten-year low. The total assets stood at NT$829.1 billion at the end of 2013, increasing by 7.90% year on year and equivalent to 5.69% of annual GDP (Chart 3.46).

Chart 3.47 Asset/liability structure of bills finance companies



Note: Figures are end-December 2013 data.
Sources: CBC and FSC.

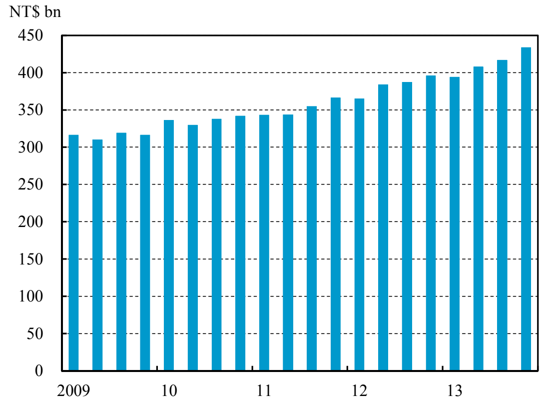
In terms of the assets and liabilities structure of bills finance companies at the end of 2013, bond and bill investments constituted 94.57% of total assets, a decrease of 0.8 percentage points year on year. On the liability side, it was mainly composed of short-term repo transactions and borrowings which accounted for 85.14% of total assets, while equity only accounted for 13.10% of total assets (Chart 3.47).

Credit risks

Outstanding balance of guarantees and real estate-secured credit increased gradually

Benefiting from the increased issuance of commercial paper by private corporations for short-term funding while the interest rate in the bill market remained low, the outstanding guarantees business undertaken by bills finance companies registered NT$433.7 billion at the end of 2013,an increase of NT$38 billion or 9.59% year on year (Chart 3.48). As a result, the average multiple of guarantees outstanding to equity of bills finance companies rose to 4.38 times at the end of 2013, compared to 4.08 times a year before. However, each bills finance company still conformed to the regulatory ceiling of five times.[65]

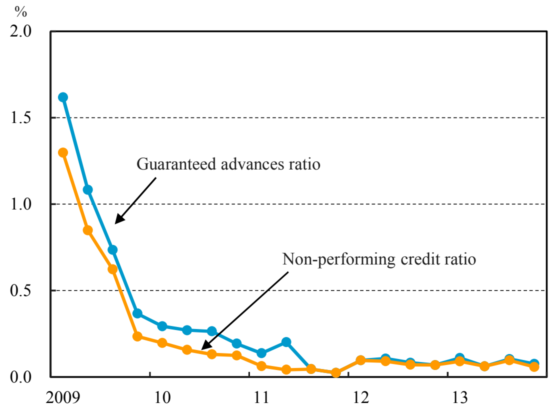
Chart 3.48 Outstanding commercial paper guarantees of bills finance companies



Note: End-of-period figures.
Source: CBC.

Guarantees granted to the real estate and construction industry and the credit secured by real estate accounted for 25.22% and 28.54%, respectively, of total credits of bills finance companies,with an upward trend. It is advisable for bills finance companies to closely monitor such credit risks while the domestic housing market might face downturn pressure in the future.

Chart 3.49 Guaranteed advances ratio of bills finance companies



Notes: 1. Guaranteed advances ratio = overdue guarantee advances / (overdue guarantee advances + guarantees).
2. Non-performing credit ratio = non-performing credit / (overdue guarantee advances + guarantees).
Source: CBC.

Credit quality remained sound

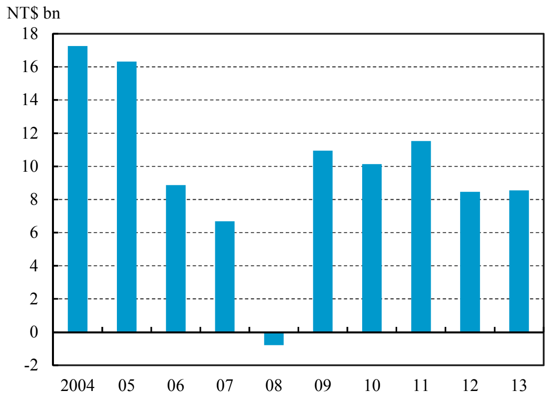
At the end of 2013, the average guaranteed advances ratio and the non-performing credit ratio of bills finance companies stayed at 0.08% and 0.06%, respectively, reflecting sound credit quality (Chart 3.49). At the same time, the ratios of credit loss reserves to non-performing credits as well as those to guaranteed advances registered 2,472.42% and 3,224.90%, respectively, indicating that the reserves set aside were significantly sufficient to cover potential credit losses.

[65] According to the *Directions for Outstanding Amount of Guarantees and Endorsements of Short-term Bills by Bills Houses*, the ratio of outstanding commercial paper guaranteed to net worth for a bills finance company should not exceed one, three, four and five times, respectively, depending on the level of its capital adequacy ratio of below 10%, above 10% but below 11%, above 11% but below 12%, or above 12%. As of the end of 2013, the capital adequacy ratio of each bills finance company was above 12%, so the ceiling of five times was set for them each accordingly.

Liquidity risk remained high

In 2013, bills finance companies still heavily relied on short-term interbank call loans and repo transactions as funding sources, while over 40% of funds went to long-term bond investments. The significant maturity mismatch between assets and liabilities showed bills finance companies still faced high liquidity risk. In order to lessen liquidity risk, the FSC set a ceiling ratio of major liabilities to equity for bills finance companies. The average multiple of major liabilities to equity at the end of 2013 rose to 7.13 times, compared to 6.68 times a year before, owing to the 8.93% increase of major liabilities in 2013. However, none of the bills finance companies exceeded the regulatory ceilings of tenor twelve times.[66]

Chart 3.50 Net income before tax of bills finance companies

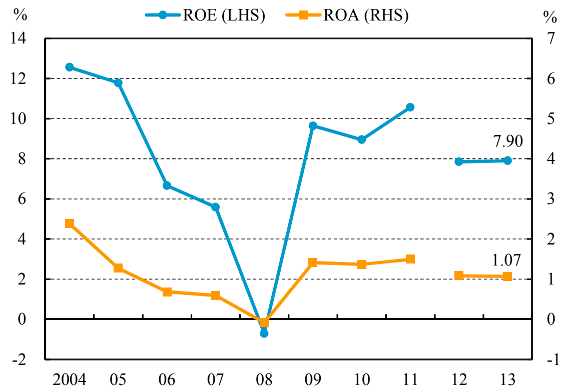


Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Source: CBC.

Operating profitability held steady

Bills finance companies posted a net income before tax of NT$8.55 billion in 2013 (Chart 3.50), with a year-on-year increase of 1.03%. Over the same period, average ROE and ROA registered at 7.9% and 1.07%, respectively, a slight change from 7.85% and 1.08% in 2012 (Chart 3.51). Looking forward, stable growth of the commercial paper guarantees business as well as the underwriting business could be conducive to future profitability of bills finance companies. However, the long-term interest rate might trend up owing to the gradual exit of quantitative easing in the US. This could result in a negative effect on their future

Chart 3.51 ROE & ROA of bills finance companies



Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
2. ROE = net income before tax / average equity.
3. ROA = net income before tax / average assets.
Source: CBC.

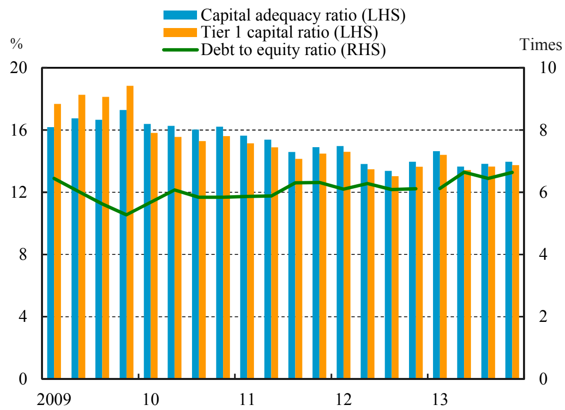
[66] In order to reduce the operating and liquidity risks of bills finance companies, the FSC amended the *Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses* on 9 April 2010, aimed at contracting the major liabilities of bills finance companies. The major liabilities of a bills finance company could not exceed six times, eight times or ten times its net worth depending on the level of its capital adequacy ratio of below 10%, above 10% but below 12%, or above 12%. If a bills finance company is a subsidiary of a financial holding company or its bank shareholder meets safe and sound criteria, the ceiling will be raised by an additional two times its net worth. As of the end of 2013, the capital adequacy ratio of each bills finance company was above 12%, so the ceilings were ten times or twelve times for each one.

performance.

Average capital adequacy ratio almost unchanged

The average capital adequacy ratio of bills finance companies registered 13.95% at the end of 2013, the same as the previous year. At the same time, the Tier 1 capital ratio slightly rose to 13.75%, from 13.64% a year before. The capital adequacy ratio for each bills finance company was above 13%, well above the statutory minimum of 8%. Nevertheless, the average multiple of debt to equity of bills finance companies climbed to 6.64 times, from 6.11 times a year earlier (Chart 3.52), reflecting a certain degree of increase in the financial leverage of bills finance companies.

Chart 3.52 Capital adequacy and leverage of bills finance companies



Note: Figures from 2013 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Source: CBC.

Box 4
Opportunities and risks for domestic banks to develop Mainland China market

In the early 1990s, financial supervisors began to gradually liberalize banking policy so that domestic banks could establish representative offices and expand their financial business in Mainland China. After the signing of the *Economic Cooperation Framework Agreement* (ECFA) by cross-strait authorities on 29 June 2010, which put financial service industries on the early harvest list, cross-strait financial interactions entered into a new stage of establishing branches or subsidiaries of financial institutions in the respective areas. Taiwan's banks also enjoyed favorable terms compared with banks from other countries, expediting the approval processes of setting up branches or subsidiaries and conducting RMB business. Given its huge market and rapid economic growth, Mainland China is a place full of business opportunities for domestic banks, but one that also comes with a certain level of risk.

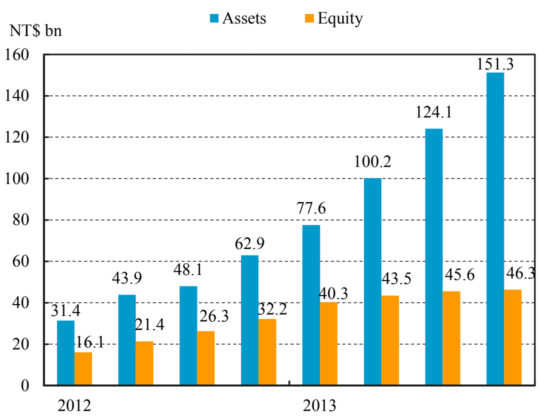
1. Current developments of Mainland Chinese branches of domestic banks

At the end of 2013, domestic banks had eleven branches with three sub-branches in Mainland China. Among them, six branches were allowed to engage in all RMB businesses. Moreover, several domestic banks were in the process of applying for greater presences in Mainland China.

1.1 Rapid growth in assets

Along with banks' increasing numbers of Mainland Chinese branches, their assets and equity increased dramatically. As of the end of 2013, total assets and equity of Mainland Chinese branches amounted to NT$151.3 billion and NT$46.3 billion with annual growth rates of 141% and 44%, respectively (Chart B4.1). However, the average NPL ratio of Mainland Chinese branches reported merely 0.08%, representing satisfactory asset quality.

Chart B4.1 Total assets and equity of Mainland Chinese branches of domestic banks

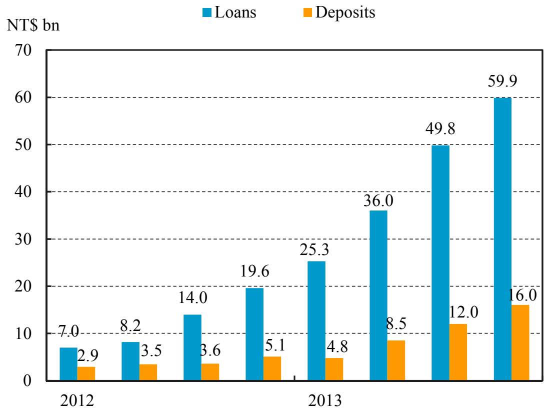


Note: Data includes branches and sub-branches.
Source: CBC.

1.2 Concentration of sources and uses of funds

The funds of Mainland Chinese branches mainly came from equity capital provided by their headquarters and due to affiliates, which accounted for 86.16% of total assets, while deposits accounted for only 10.58% of total assets at the end of 2013. As for the uses of funds, due from banks accounted for the largest share of 57.7% of the total, followed by customer loans at 39.19%.

Chart B4.2 Total deposits and loans of Mainland Chinese branches of domestic banks



Source: CBC.

In the most recent two years, Mainland Chinese branches actively engaged in the local syndicated loan market. It resulted in a dramatic increase in loans outstanding to NT$59.9 billion at the end of 2013, with an annual growth rate of 206%. At the same time, total deposits registered only NT$16 billion, much lower than total loans because of constraints of local deposit regulations; nevertheless, their annual growth rate reached 214% (Chart B4.2).

1.3 Net income rose substantially

In 2013, net income before tax of all Mainland Chinese branches reported NT$1.65 billion, dramatically increasing by 87.5% year on year. It was mainly contributed to by an increase ininterest income arising from due from banksand customer loans.

2. Opportunities and risks in the Mainland China market

As business opportunities in the Mainland China market come with risks, domestic banks should take preventive actions in a prudent manner to mitigate such risks.

2.1 Opportunities

2.1.1 Expanding presence in Mainland China by setting up subsidiaries

Since setting up subsidiaries, rather than branches, would allow banks to enjoy a greater presence, business scope and customer pool, domestic banks were more inclined to set up subsidiaries or transferring their branches into subsidiaries to facilitate their business expansion.

2.1.2 Taking advantage of fast track program to expand business in the central and western regions of Mainland China

The government of Mainland China, under the policy of encouraging foreign banks to expand their presence in the central, western and northeastern regions, provided a fast track program for Taiwan's banks to set up branches in those regions. Domestic banks may take advantage of this to expand their business in Mainland China.

2.1.3 Better grasping the operations of Taiwanese enterprises and establishing a centralized financial service platform

Domestic banks could better grasp the cash flows and business activities of their customers, mainly Taiwanese enterprises and their subsidiaries in Mainland China, so as to mitigate credit risk and improve their customer relationships. Furthermore, domestic banks could establish their own centralized financial service platforms which linked financial services provided in Taiwan, Hong Kong and Mainland China together to meet the financial needs of Taiwanese enterprises operating in these regions.

2.1.4 Expanding SME financing in Mainland China

As Mainland China's government has been promoting SME financing in recent years, domestic banks could take this opportunity to expand SME financing in Mainland China based on their profound experiences. However, given the deficient financial transparency of Mainland China's SMEs, domestic banks should also take measures to mitigate potential risks.

2.2 Risks and limitations faced by domestic banks in the Mainland China market

2.2.1 Increasing credit risk

Credit risk in Mainland China might increase due to slowing economic growth, decreasing profits for enterprises, potential losses for the solar panel industry caused by oversupply, as well as a possible downturn in its real estate market.

2.2.2 Potentially rising interest rate risk

After the launching of a market-oriented reform of interest rates policy by the People's Bank of China, the interest rate floors for consumer loans were removed in July 2013. In the future, when the ceilings of deposit interest rates are also lifted, banks might face higher interest rate risk as interest rate spreads contract under severe competition.

2.2.3 Constrained business activities

The funding sources of Mainland Chinese branches were limited as they were only allowed to accept time deposits over RMB1 billion and borrow overseas on an approval basis, restraining their capability to extend RMB loans. In addition, local regulations stipulate that either interbank lending or borrowing of Mainland Chinese branches cannot exceed 200% of their RMB working capital, thus limiting the flexibility of their funding management.

3. The FSC's supervision of Mainland Chinese branches

The FSC has established a comprehensive mechanism including authorization previews, risk controls and follow-ups to enhance the supervision of Mainland Chinese branches of domestic banks.

3.1 Setting up risk limitations

According to the *Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area*, domestic banks shall comply with the following risk limitations:

- **Total investment limit:** the total of cumulative allocated working capital and equity investments for a bank's branches and subsidiaries in Mainland China cannot exceed 15% of the bank's net worth.

- **Total risk exposure limit:** the aggregate amount of credit, investment as well as interbank loans and deposits in Mainland China may not exceed 100% of the bank's net worth as of the end of the preceding fiscal year. At the end of 2013, the average ratio of risk exposure to net worth of domestic banks was 58%, still an acceptable level; however, some banks were close to the regulatory ceiling of their risk limits.

- **The limit of total credit extended by third-area branches and OBUs**: the total credit granted by third-area branches and OBUs to borrowers in Mainland China may not exceed 30% of their combined net total assets.

3.2 Closely monitoring Mainland Chinese operations of domestic banks

Besides the risk limitations, domestic banks are urged to strengthen their risk management. In addition, the FSC closely monitors the conditions and operations of Mainland Chinese bank branches via cross-strait supervisory cooperation and on-site examination based upon the Cross-strait Banking Supervisory Platform, which was established by the FSC and Mainland China's banking supervisors.

4. Conclusion

- In view of the significant gap with regard to financial market openness and structure between Taiwan and Mainland China, negotiations on the issues of cross-strait financial services should be undertaken on a gradual basis.
- Given that the risk exposures of some domestic banks to Mainland China are close to the regulatory ceilings, the competent authority will continue to implement the aforementioned risk control measures in a prudent manner and urge the banks to abide by the risk exposure limitations so as to avoid further risk concentration in Mainland China.
- When promoting business in Mainland China, domestic banks should ensure related regulation compliance, internal controls and internal audits, and put risk management as the first priority.

Reference: Wen-Chieh Wang (2014), *Cross-strait Banking Interaction and Development in the Post-ECFA Era- Review on Legal Framework*, Section 50 II, Taiwan Economic Financial Monthly Journal, Bank of Taiwan.

Box 5
Enhancing the resolution regime for problem insurers in Taiwan

Since the opening up of Taiwan's insurance market in the 1990s, several insurance companies have gone into insolvency due to inadequate management and have been liquidated or taken over by the supervisory authority. Among them, Kuo Hua Life Insurance Company had a negative net worth since 2000 and was not taken over by the Taiwan Insurance Guaranty Fund (TIGF) until August 2009. Eventually, it was sold to Trans Globe Life Insurance Company and exited from the market in March 2013, with the cost of NT$88.37 billion paid by the TIGF. This indicated that the current resolution regime for problem insurers needs to be improved. Given that a few life insurance companies still face problems of insufficient capital, it is urgent for the supervisory authority to establish a more comprehensive and efficient resolution regime so as to maintain the soundness of the insurance industry.

1. Current resolution regime for problem insurers in Taiwan

The current resolution regime for problem insurers is stipulated mainly by three pieces of regulations as shown below. These regulations authorize the competent authority to adopt different supervisory measures (including resolution and exit from the market) depending on the severity of the insurer's problems. Additionally, the TIGF plays an important role in the resolution regime, such as extending loans or advancing funds to problem insurers, assuming their insurance contracts, or taking them into receivership, resolution or liquidation.

1.1 Paragraph 4, Article 149 of the Insurance Act

The main regulations on resolution procedures for problem insurers is stipulated in Paragraph 4, Article 149 of the *Insurance Act*. It states that if an insurance company experiences significant deterioration of business or financial conditions and is unable to pay its debts or perform contractual obligations, or might damage the rights and interests of insured parties, the competent authority "may" place the company under conservatorship or receivership, order it to suspend business and undergo rehabilitation, or take other resolution measures depending on the severity of the circumstances.

1.2 Regulations Governing Capital Adequacy of Insurance Companies

The *Regulations* are formulated in accordance with the provisions of Paragraph 3, Article 143-4 of the *Insurance Act*. It stipulates that if the risk-based capital (RBC) ratio of an insurance company falls below 200%, the competent authority “may” adopt restrictive or resolution measures, such as (1) requiring it to increase capital or improve operation within the specified period; (2) restricting the scope of its business or trading; (3) dismissing its directors or supervisors; or (4) assigning personnel to supervise the company.

1.3 Guidelines for Dealing with Business Crises of Financial Institutions

According to the *Guideline*, when an insurance company encounters situations of abnormal policy surrenders, significant cash outflow or severe illiquidity and may go into insolvency, the FSC should set up a crisis management task force and coordinate with the CBC, the TIGF and other relevant authorities when necessary, in order to take responsive actions to deal with the crisis. If the company is assessed to be solvent, it could apply to other financial institutions and the TIGF for funding. If insolvent, the FSC will take resolution measures such as taking it into receivership, suspending its business or others.

1.4 Roles and functions of the TIGF

The TIGF was set up in accordance with Article 143-1 of the *Insurance Act*, for the purpose of protecting policyholders’ interests and maintaining financial stability. According to Article 143-3 of the *Insurance Act*, the TIGF has several functions, for example, extending loans, providing low-interest loans or subsidies, advancing funds on behalf of the insurer to settle claims, acting as receiver, rehabilitator or liquidator, assuming insurance policies of the insolvent insurer, etc.

The funds of the TIGF are pre-contributed by all insurers, with the contribution rates of 1‰ and 2‰ of gross premium income for life and non-life insurers, respectively. If the accumulated funds of the TIGF are insufficient to safeguard the interests of insured parties to the extent that it might seriously threaten financial stability, the TIGF may borrow from financial institutions after getting approval from the competent authority. At the end of 2013, the TIGF suffered a huge financial gap with an adjusted net worth of negative NT$45 billion and a borrowing balance from financial institutions of NT$48.4 billion, owing to the payout of NT$88.37 billion for resolving Kuo Hua Life Insurance Company.

2. Problems of the current resolution regime in Taiwan

2.1 Too much regulatory discretion might delay the resolution process

Authorized by the aforementioned regulations, the competent authority has the discretionary power to determine the time and measures for dealing with problem insurers. It is different from the prompt corrective actions (PCAs) stipulated in Article 44-2 of the *Banking Act* for the banking sector.[1] Although regulatory discretion grants the competent authority more flexibility in crisis management, they may result in delaying resolutions and exacerbating the crises.

2.2 Adopting a flat contribution rate for the TIGF and lacking limited coverage might give rise to moral risk

Currently, the TIGF adopts a flat contribution rate which disregards the risk level of individual insurers, lacking incentives to urge them to adequately manage risks. Moreover, contrary to the limited deposit insurance coverage system for the banking sector,[2] the coverage limit for insurance policies is not stated in the regulations but subject to the discretion of the competent authority, which could lead to higher moral risk of insurers and undermine the financial soundness of the TIGF.

2.3 The enormous financial gap of the TIGF might undermine its ability to resolve other problem insurers

The TIGF faced an enormous financial gap with an adjusted net worth of negative NT$45 billion after paying out for Kuo Hua Life. While there are still three insurance companies with negative net worth, the TIGF has little capacity for their resolution without obtaining more financial resources.

3. Recommendations for strengthening the resolution regime for problem insurers

To strengthen the resolution regime, while referring to *Key Attributes of Effective Resolution Regimes for Financial Institutions* released by the Financial Stability Board in October 2011 and considering the current status of Taiwan's insurance industry, several recommendations are provided as follows. Some of them have been included in the *Insurance Act* amendments in May 2014 and will be implemented immediately. Others may be difficult to carry out in the near future; however, they can be incorporated as part of long-term reforms.

3.1 Strengthening the supervisor's early intervention power over problem insurers

By referring to the PCAs in the *Banking Act*, PCAs for the insurance industry based on regulatory capital[3] should be established. Moreover, the early intervention power of the competent authority needs to be strengthened and regulatory discretion should be adequately constrained so as to diminish resolving costs.

3.2 Adopting a limited coverage scheme

By referring to the practices of the insurance industries in Singapore, South Korea and Malaysia, and of the banking industry in Taiwan, the coverage amount for insurance policies should be subject to a specific limit in order to eliminate moral hazard and lessen financial pressure on the TIGF.

3.3 Setting up a bridge insurer system

In view of the bridge bank scheme in the *Deposit Insurance Act*, a bridge insurer system to deal with problem insurers[4] should be taken into consideration. The bridge insurer can help problem insurers to temporarily continue the operations without paying out immediately, while maintaining the value of problem insurers and minimizing resolution costs.

3.4 Requiring insurers to prepare recovery and resolution plans

Requiring insurers to set up recovery and resolution plans in advance will help the supervisory authority to deal with crises in an orderly manner when they occur and, in turn, prevent them from causing financial instability and social disturbance. The plans should be regularly reviewed and be realistically exercised by insurers so as to strengthen their crisis management capabilities.

3.5 Accelerating the accumulation of the TIGF's funds and controlling insurance risk

3.5.1 Moderately increasing the contribution rate of the funds and implementing a risk-based contribution scheme

Currently, the TIGF's funds are contributed to at a flat rate with the annual accumulated amount equaling approximately several NT$ billion, significantly less than the amount paid out for the resolution of Kuo Hua Life Insurance Company, indicating notable insufficiency of the annual contribution to the funds. The competent authority should moderately increase the contribution rate and implement a risk-based contribution scheme[5] based on the risk level of individual insurers, similar to the system of deposit insurance.

3.5.2 Calculating the contribution of insurers based on their insurance liability reserves

Currently, the calculation of insurers' contributions is based on their gross premium income, which only considers the income scale of the insurer and has no relationship with the accumulated insurance liabilities of the insurer. Calculating insurers' contributions based on their insurance liability reserves will more adequately connect the contribution with the potential responsibilities and risk imposed on the TIGF when resolving problem insurers.[6]

3.5.3 Establishing a special contribution mechanism

Referring to the special insurance premium of the deposit insurance system, the TIGF could also establish a mechanism of charging insurers a special contribution in the case of insufficient funds to payout, so as to complement the funds as soon as possible.

3.5.4 Promoting a risk control system designed by the TIGF

In order to control the insurance risk, the TIGF should be empowered to establish an early warning system and conduct inspection, as well as issuing warnings to insurers or requiring them to take corrective actions within a specified period.[7]

Notes:
1. According to PCAs of Article 44-2 of the *Banking Act*, when the capital adequacy ratio of a bank is lower than the statutory minimum, the competent authority "shall" undertake different enforcement actions to intervene at an early stage, depending on severity of insufficient capital.
2. According Article 13 of the *Deposit Insurance Act*, the maximum deposit insurance coverage limit for each depositor of any insured institution is NT$3 million.
3. The FSC held three meetings to collect opinions from the industry and experts regarding the implementation of PCAs in the insurance industry. However, after prudent evaluation, the FSC decided to postpone its implementation and put it into the next schedule of revising the *Insurance Act*.
4. The bridge insurer system was introduced in the newly revised *Insurance Act*, which was passed by the Legislature on 20 May 2014.
5. The FSC amended regulations on 2 April 2014 to raise the contribution rate of life insurance companies from 1‰ to 2‰ of gross premium income, and implement a risk-based contribution scheme based on RBC and management performance of individual insurers. The new regulations will be effective from July 2014.
6. The FSC has received comments on the issue of using insurance liability reserves instead of gross premium income as the calculation basis of contributions by insurers to the TIGF's fund. After deliberation, the FSC decided to keep the current rule unchanged, with potential adjustment in the future depending on the progress of implementation.
7. According to the newly revised *Insurance Act*, the TIGF can require insurers to provide necessary electronic data files, conduct inspection and undertake enforcement action.

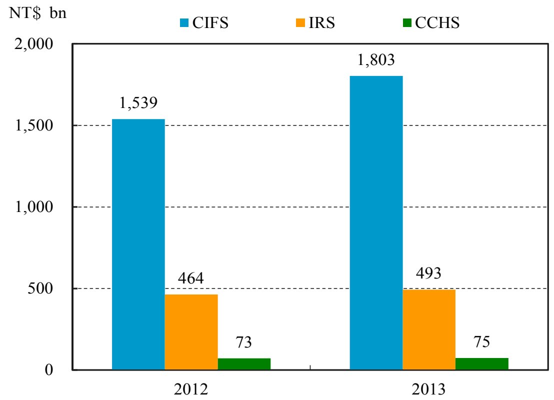
3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of systemically important payment systems in 2013

The three systemically important payment systems (SIPSs),[67] which process domestic interbank payments, operated soundly in 2013, with an increase of average daily transaction value compared to the previous year (Chart 3.53). Among them, the CBC's CIFS, which handles large payments and the final settlement of interbank fund transfers, continued to be the most important one, with average daily transaction value reaching NT$1.80 trillion and accounting for 76% of the total.

Chart 3.53 Average daily transaction value of the three SIPSs



Source: CBC.

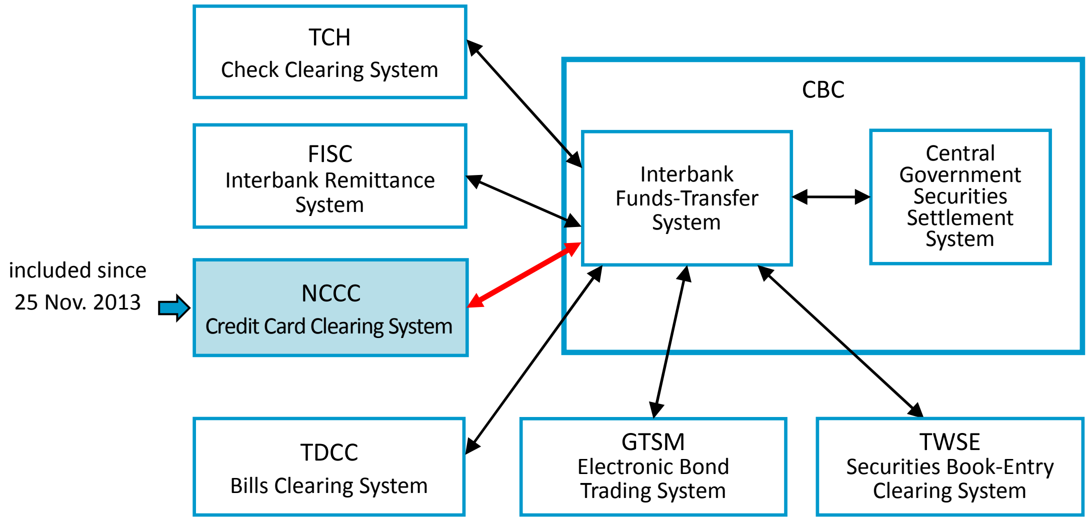
Incorporating credit card settlement into the CIFS

In the past, the NCCC opened clearing accounts in Mega Bank, Cathay United Bank and CTBC Bank, respectively, for credit card payments and settlements. It meant that the NCCC had to deposit funds in three banks and transfer funds between them through the Interbank Remittance System (IRS), resulting in inconvenient operations. Therefore, the CBC allowed the NCCC to open a clearing account in the CIFS to centrally process the payments of credit card acquirers and issuers to facilitate interbank settlements of credit card transactions.

The NCCC started to settle credit card transactions through the CIFS on 25 November 2013 and its operation has worked smoothly since then. Participant banks of the NCCC can transfer the funds of credit card payments through reserve accounts in the CIFS, which not only enhances the efficiency of credit card settlements but also contributes to the banks' fund management operations. In addition, incorporating credit card settlements into the CIFS has further strengthened the security and efficiency of domestic retail payment systems (Chart 3-54).

[67] The three SIPSs include the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) and the Check Clearing House System (CCHS).

Chart 3.54 Framework of payment and settlement systems in Taiwan



Note: TCH = Taiwan Clearing House; TDCC = Taiwan Depository and Clearing Corporation; GTSM = GreTai Securities Market; TWSE = Taiwan Stock Exchange Corporation.
Source: CBC.

Establishing the foreign currency clearing platform

The foreign currency clearing platform planned by the CBC and established by the FISC was launched on 1 March 2013, with the aim to reinforce domestic financial infrastructure. The platform was scheduled to expand its function in four phases. Initially, the platform only processed domestic US dollar remittances. After that, domestic and cross-border RMB remittances were included in the platform on 30 September 2013, followed by cross-strait USD remittances and the PVP mechanism for NTD/USD transactions introduced on 14 February and 17 February 2014, respectively. The establishment and development of the foreign currency clearing platform is detailed in Box 6.

In the future, the CBC will continuously expand the functions of the platform, including the incorporation of Japanese yen and euro payments, and the setup of a delivery-versus-payment (DVP) mechanism for foreign currency-denominated bonds to reduce their settlement risk. The platform not only centralizes the process of foreign currency payments with the benefits of effectively simplifying banks' operations and achieving economies of scale, but also adopts SWIFT standards and processes both domestic and cross-border foreign currency payments, with the benefit of facilitating the development of the domestic financial services industry.

Strengthening the management mechanism of the certificates of bonds for RP transactions

For the purpose of promoting the efficiency of government bonds settlement, the CBC proposed to adopt a book-entry central government bond scheme and set up the Central Government Securities Settlement System (CGSS) in September 1997. Subsequently, the CBC linked the CGSS and the CIFS on a DVP mechanism in April 2008, so as to improve settlement security and reduce settlement risk.

The settlement of central government bond repurchase (RP) transactions between investors and securities firms requires the transfer of bonds through book-entry accounts or delivery of RP certificates issued by the clearing bank. Originally, for the latter, the clearing bank issued two copies of RP certificates and debited the disposable account of the securities firm. The original of RP certificate was delivered to the investor by the securities firm, while the duplicate was held by the securities firm. When the RP transaction came due, the securities firm could apply to the clearing bank with the duplicate for crediting its disposable account and cancelling the certificate, and the original certificate would become invalid automatically, no matter whether the firm made the payments or not. This increased the settlement risk for investors when securities firms defaulted and failed to make the payments to investors.

To reduce the settlement risk, the CBC and the FSC set up a working group in September 2010 to jointly deliberate the proposal of strengthening the management mechanism of certificates for bond RP transactions, and subsequently improved the CGSS as well as amended related regulations which became effective in January 2012. Accordingly, securities firms should submit both the duplicate certificate and proof of fund payment to the clearing bank for certificate cancellation when the RP transaction is due. Otherwise, the investor may apply to the clearing bank with the original certificate for bond transfers. This significantly reduces settlement risk and protects investors' interests. Furthermore, the CBC has conducted on-site audits on the settlement operations of RP certificates at clearing banks since 2012 to ensure their compliance with the new regulations. In 2013, the amount of book-entry CGSS transfers reached NT$28.7 trillion. Among them, transfers by way of issuance and cancellation of RP certificates accounted for a share of 46.61% of the total, all of which complied with the regulations.

3.3.2 Securities firms permitted to conduct FX business

Internationalization and liberalization of the foreign exchange (FX) business has further evolved toward a mature stage over recent years. The FX-related activities conducted by securities firms already have a certain scale as well. In view of these positive developments, the CBC decided to duly grant securities firms authorization to conduct specified FX business so as to spur continued growth of their activities. Moreover, to subject the conduct of securities firms' FX business to clearer requirements and effective supervision, the CBC consolidated relevant rules into a single regulation and thereby promulgated the *Regulations Governing Foreign Exchange Business of Securities Enterprises* on 26 December 2013.

Highlights of the opening-up of FX business

- The FX transactions not involving NT dollars undertaken by securities firms with customers should be based on the actual needs in connection with their securities business.
- Foreign currency financial products and credit derivatives.
- Structured products linked with foreign currency-denominated international bonds.

Overview of Securities firms' FX business approved by the CBC

As of the end of 2013, FX dealings approved for securities firms to conduct mainly included accepting orders to trade foreign securities, underwriting of international bonds, and interest rate-related products denominated in foreign currencies.

3.3.3 Policies in response to Basel III Liquidity Standards

The BCBS published *Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring* in December 2010. It developed two minimum standards in liquidity risk management (i.e., the LCR and the Net Stable Funding Ratio (NSFR)), especially focusing on internationally active banks. These two standards are expected to be put into effect in 2015 and 2018, respectively.

In January 2013, the BCBS further published *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools*, which made amendments to the calculation of the LCR and its implementation schedule. Major changes include loosening the definition of high-quality liquid assets, adjusting the assumptions made in various scenarios for stress tests, and introducing a phased timetable for its implementation (Table 3.3). As for the NSFR, due to its later implementation date, the BCBS has already published a consultative document in January 2014 to invite comments from the public.

Table 3.3 Phase-in timetable of LCR implementation

	2015	2016	2017	2018	2019
Minimum LCR	60%	70%	80%	90%	100%

Source: BCBS.

The contents of the LCR and the NSFR

The LCR and the NSFR were developed to meet two separate but complementary objectives for liquidity risk management. The aim of the LCR is to promote short-term resilience of a bank under adverse liquidity shocks. It requires banks to maintain a sound funding structure during normal times and have enough high-quality liquid assets to survive a significant stress scenario lasting for 30 days. As for the purpose of the NSFR, it requires banks to fund their activities with more stable sources so as to enhance their long-term resilience in the face of a crisis (Table 3.4).

Table 3.4 Definitions and implications of the LCR and the NSFR

	LCR	NSFR
Objectives	Requiring banks to retain adequate high-quality liquid assets (HQLA) to cope with liquidity needs for a 30-day time horizon under a liquidity stress scenario.	Requiring banks to raise funds from stable sources (over 1 year) on the basis of continuous operation to enhance long-term resilience.
Definition	$\frac{\text{Stock of HQLA}}{\text{Total net cash outflow over the next 30 calendar days}} \geq 100\%$	$\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$
Implications	To measure short-term resilience of a bank under liquidity stress; the higher the LCR, the higher the resilience.	To measure the funding source stability of a bank; the higher the NSFR, the higher the stability of funding sources.

Source: BCBS.

Implementation of the LCR and the NSFR in Taiwan

To strengthen financial institutions' liquidity risk management, the FSC, the CBC, and the Bankers Association jointly established a sub-group on liquidity risk under the Basel III working group in 2012. It aimed to formulate Taiwan's LCR and NSFR regulations, based on the BCBS's liquidity risk framework and domestic banks' practices.

Referring to the methodology of the LCR standard revised by the BCBS in 2013, the working group completed the first draft of the LCR's calculation tables and explanations in December 2013. The Bankers Association then held a seminar to explain LCR calculation in March

2014. The FSC also required all banks to conduct quantitative impact studies for LCR regulations. In addition, to be consistent with international standards and with the benefit of facilitating international comparisons, Taiwan's LCR implementation schedule is set to follow the recommended timeframe set by the BCBS. As for the implementation of the NSFR, it is still under discussion before the BCBS publishes the final document.

3.3.4 Taiwan scheduled to switch to 2013 TIFRSs in 2015

Converging with global trends of financial supervision, the FSC has announced a two-phase timetable[68] for entities in Taiwan to adopt the IFRSs from 2013 onwards and endorsed the 2010 TIFRSs as the adopted version. However, because the International Accounting Standards Board (IASB) continuously amended or issued new accounting standards, the 2010 TIFRSs were significantly different from the latest IASB accounting standards. Moreover, adopting the new version of IFRSs not only could enhance the quality and transparency of financial reports, but also could facilitate cross-country comparison of financial statements. Therefore, on 29 January 2014, the FSC announced the Roadmap to Full Adoption of the Upgraded IFRSs with the aim to continuously converge local accounting principles with international standards via a two-phase process.

- Phase 1: From 2015 onwards, entities that adopt the 2010 TIFRSs, credit card companies and unlisted public companies should adopt the 2013 TIFRSs.

- Phase 2: From 2017 onwards, each subsequently issued IFRS will be adopted after being endorsed by the FSC.

The 2013 TIFRSs contain 41 standards and 24 interpretations. Compared to the 2010 TIFRSs, 24 standards and interpretations were either issued, amended or abolished in the 2013 TIFRSs. Among them, changes in pension recognition, consolidation accounting and disclosure requirements, which are elaborated below, are expected to have greater impacts on local entities. However, due to differences in business strategies and industry features, the impacts of changes in the version of TIFRSs on individual entities may be different.

- Abolish amortization of actuarial gains and losses and past service cost for pension recognition. Both should be recognized immediately in the period they occur. The actuarial gains and losses should be recognized in other comprehensive income, while the

[68] First-phase adopters, including the companies listed on the stock exchange, OTC market or emerging stock markets and financial institutions supervised by the FSC (except for credit cooperatives, credit card companies, insurance brokers and insurance agents), were required to prepare TIFRSs-based financial statements from 2013. As for second-phase adopters, including unlisted public companies, credit cooperatives and credit card companies, they should apply TIFRSs from 2015.

past service cost should be recognized in profit and loss.

- Revise definitions of control and the type of joint arrangements and prohibit using proportionate consolidation for joint ventures. Moreover, if an investment in a joint venture becomes an investment in an associate, the entity should continue to apply the equity method to the remaining interests instead of remeasuring the investment at its fair value.

- Require extensive disclosure of information. For example, entities should (1) provide more comprehensive information on interests in subsidiaries, joint arrangements, associates and unconsolidated structured entities; (2) begin to disclose information on the offsetting of financial assets and liabilities, and transfers of financial assets.

The 2013 TIFRSs is significantly different from current accounting treatments in Taiwan. Its impacts will not only be on accounting, but also on entities' information systems, funding management and investor relations. Therefore, entities shall be well-advised to study thoroughly the 2013 TIFRSs, evaluate potential impacts and develop responsive measures in order to mitigate the impacts.

Box 6
Setup and development of foreign currency clearing platform

In the past, the domestic USD payments by banks were wired to their correspondent banks in the US for clearing. Because the time zone difference between Taiwan and the US is about 12 hours, it could cause delays in transaction payments on some occasions, with potential risks of settlement default. On top of that, customers had to bear additional costs incurred from the process of remittance transfer by intermediary banks both in extra time and higher charges. For the purpose of improving the process for domestic USD remittance, the CBC embarked on launching a domestic USD dollar settlement system in September 2008 and thereby selected Mega International Commercial Bank (Mega Bank) as the settlement bank. Accordingly, Mega Bank established a domestic USD settlement system which officially began operations in December 2010.

On 31 August 2012, the CBC and the People's Bank of China jointly signed the *Memorandum on Cross-Strait Currency Clearing Cooperation*. The Executive Yuan subsequently approved the Program to Develop Financial Services with Cross-Strait Characteristics on 6 September 2012, including a modern cross-strait money remittance platform that would be jointly planned by the CBC and the FSC. As a result of the policy initiatives, the need for RMB settlement domestically in addition to the USD arose. Thus, the CBC further programmed a multi-currencies clearing platform which expanded the existing framework and function of domestic USD settlement and adopted the globally-accepted SWIFT message format, network and international settlement mechanism, with a view to gearing towards international practices.

In order to smooth the proceedings of setting up the new platform, the CBC together with the Financial Information Service Co. (FISC) and Mega Bank organized a task force in October 2012. After the CBC reported the proposal to the Premier on 12 December 2012, the new platform was approved to be established and operated by the FISC. The Executive Yuan also resolved to shift the equity of the FISC, which was entirely held by the Ministry of Finance, to the CBC on 1 January 2014, so as to facilitate supervision of the FISC's liquidity provided by the CBC.

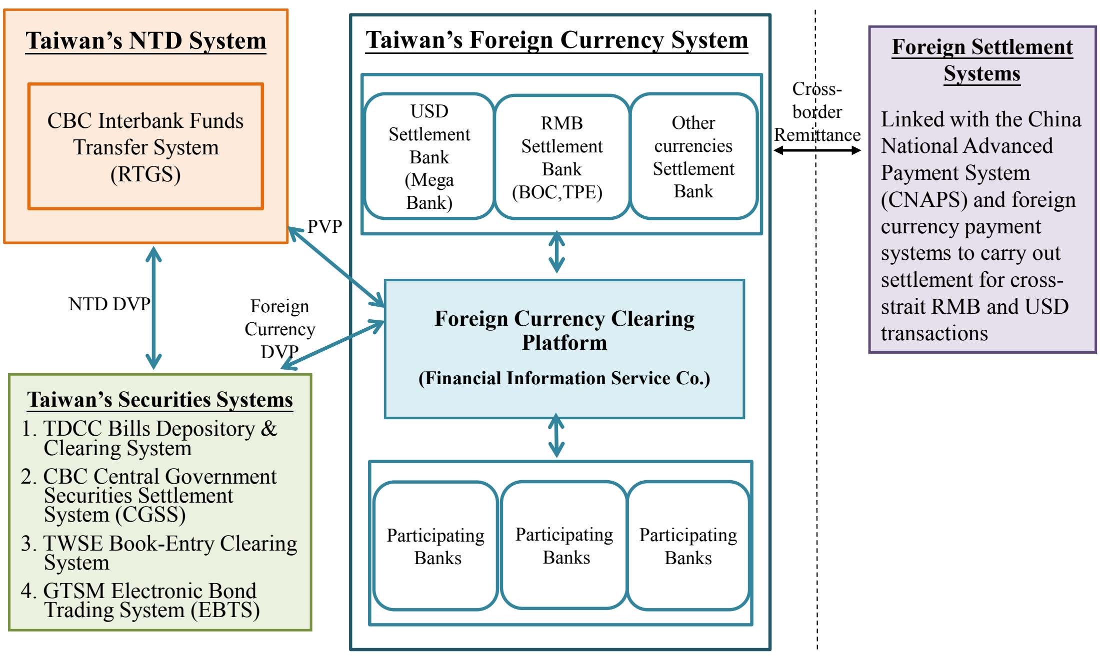
The foreign currency clearing platform was scheduled to expand its function in four phases (Table B6.1). When the relevant functions are set in position, the platform's framework will become further integrated (Chart B6.1). This will significantly upgrade the function of the financial payment system as a whole and thereby give an advantage for building a much more competitive financial environment in Taiwan.

Table B6.1 Phased timetable for the foreign currency clearing platform

Phases	Function	Effective date
Phase 1	1. Adoption of SWIFT message format and network. 2. Origination of domestic USD remittances.	1 March 2013
Phase 2	Inception of domestic and cross-border RMB remittances.	30 September 2013
Phase 3	1. Launch of cross-strait USD remittances; linking with the CBC's CIFS; augmentation of the mechanism of payment-versus-payment (PVP) settlement for NTD/USD transactions. 2. Addition of the mechanism for reduction of USD liquidity needs to lower the costs of USD settlement.	1. 14 February 2014 17 February 2014 2. Expected to be completed in July 2014
Phase 4	1. Addition of clearing and settlement services for other foreign currencies (such as euro and yen) transactions. 2. Provision of delivery-versus-payment (DVP) settlement mechanism for foreign currency-denominated bonds.	1. Expected to be finished in December 2014 2. Under construction

Source: CBC.

Chart B6.1 Framework of foreign currency clearing platform



Source: CBC.

The setup of the foreign currency clearing platform offers several advantages as follows:

(1) Centralized processing of various currency transactions by a single platform allows

efficacious use of resources to achieve economies of scale.

(2) Domestic USD and RMB remittances can be exempted from fees charged by intermediary banks, with the full amount arriving in the beneficiary's account the same working day. Banks' relevant operational costs and risks can also be reduced.

(3) Centralized settlement of transactions between different currencies through the PVP mechanism can not only avoid delay in settlement by correspondent agents abroad due to time zone differences, but eliminate default risk as well.

(4) Centralized processing of foreign currency transactions is able to prevent settlement banks from acquiring customer information from participating banks and thereby help maintain fair competition in the market.