III. Financial sector assessment

3.1 Financial markets

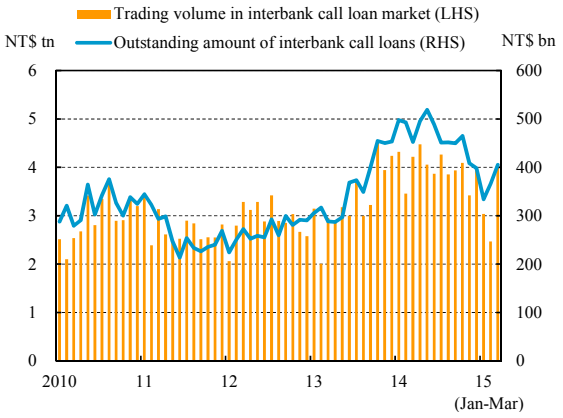
With respect to money and bond markets in 2014, the trading volume of interbank call loans initially expanded and then shrank. The trading volume of bills in the secondary market rose, although the outstanding amount in the primary market decreased slightly. In the bond market, the trading volume in the secondary market remained low, while the outstanding amount in the primary market continued to increase. Short-term market rates remained relatively stable at low levels, while long-term market rates fluctuated, closely following the movement of US government bond yields. With regard to the stock markets, stock indices trended up, while volatility fluctuated over the same period. In the foreign exchange market, the NT dollar exchange rate against the US dollar turned to depreciation after appreciating but remained relatively stable.

3.1.1 Money and bond markets

Trading volume of interbank call loans initially expanded but then decreased

In the first half of 2014, the average daily outstanding amount and the trading volume of interbank call loans increased remarkably by 42.15% and 58.13% year on year, respectively. The main reasons behind this were continued funding surpluses in the interbank call loan market, significant variations in fund levels across banks, and a lower base in the previous year. In the second half of the year, the outstanding amount and trading volume of interbank call loans decreased as a number of financial institutions adjusted their funding strategies for call loans (e.g., taking into

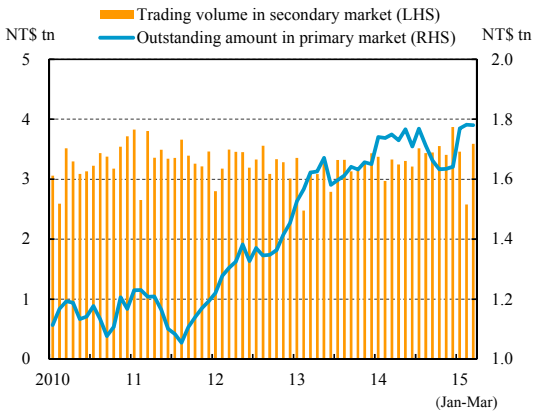
Chart 3.1 Interbank call loan market



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

account capital adequacy). Later, the figures continued to stay low in January and February 2015, but turned higher in March of the same year (Chart 3.1).

Chart 3.2 Primary and secondary bill markets



Sources: CBC and FSC.

Bill issuance in the primary market slightly fell, but trading volume in the secondary market increased

The outstanding amount of bill issuance at the end of 2014 fell by NT$9 billion or 0.54% year on year. Affected by treasury liquidity management, the outstanding amount of treasury bills decreased by NT$84.6 billion or 39.41%. Meanwhile, the outstanding amount of negotiable certificates of deposit (NCDs) also contracted by NT$32.1 billion or 13.83%. On the contrary, the outstanding amount of commercial paper increased by NT$107.6 billion or 8.98% compared to the previous year. The main reason behind this was that some state-owned enterprises (such as CPC Corporation) and large private enterprises raised funds through commercial paper issuance, encouraged by the fact that short-term market rates remained at low levels. In March 2015, the outstanding amount of bill issuance turned higher and reached a recent high record (Chart 3.2).

The trading volume in the secondary bill market rose by 7.72% year on year in 2014, as expanded issuance of commercial paper and ample market liquidity[52] met the increasing needs of financial institutions and private enterprises for bill investments. In 2015 Q1, the trading volume roughly remained at a high level, except for a decrease in February owing to seasonal factors (Chart 3.2).

Bond issuance in the primary market expanded, but the turnover of outright transactions in the secondary market remained at a lower level

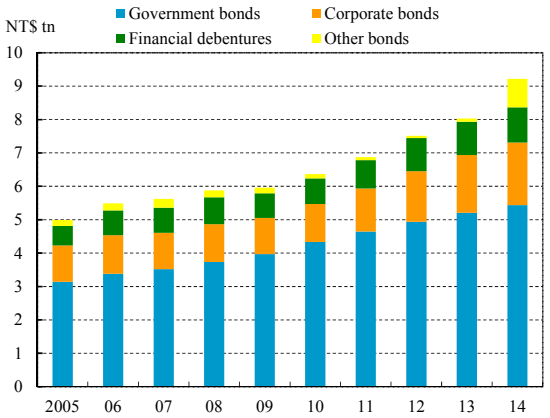
At the end of 2014, the outstanding amount of bond issuance ascended by 14.80% year on year, with foreign currency-denominated international bonds[53] accounting for the highest growth of 12.75 times. The reasons were mainly that the FSC significantly simplified steps

[52] The proportion of commercial paper to the total trading volume in the secondary bill market is over 80%. As a result, it has considerable influence on changes in the trading volume.

[53] Bonds denominated in foreign currencies offered and issued in Taiwan by domestic and overseas issuers are called "International Bonds." Bonds denominated in renminbi (RMB) are specifically called "Formosa Bonds."

for issuing international bonds. It also relaxed related regulations, exempting the international bonds invested by insurers from the cap on their overseas investment from June onwards. These measures, in turn, attracted many domestic and foreign enterprises and financial institutions to issue international bonds for the purpose of fund raising. As for corporate bonds, the Fed's exit from its asset purchases and the expectation of the Fed's interest rate rise in near future spurred enterprises' willingness to issue more corporate bonds. As a result, the outstanding amount of corporate bond in 2014 increased by 8.01% over the previous year. Meanwhile, the outstanding amount of financial debentures also increased by 5.94% over the previous year as banks sought to reinforce capital adequacy and boost merger momentum. The corresponding figure for government bonds revealed a growth rate of 4.43% over the same period, a slight increase owing to ongoing policy implementation for regular and moderate issuance of government bonds (Chart 3.3).

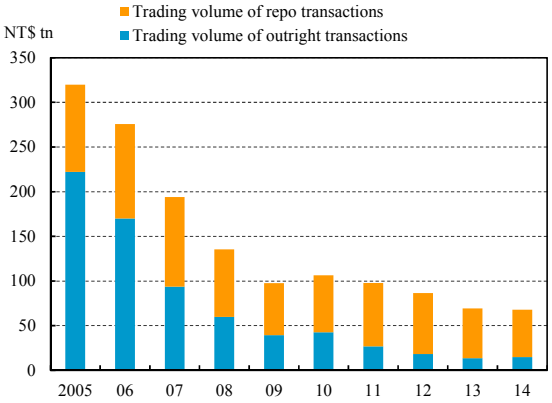
Chart 3.3 Outstanding amount of bond issuance in the primary market



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 9.3% at the end of 2014. Among them, international bonds accounted for 96.16% of the other bonds.

Source: FSC.

Chart 3.4 Outright and repo transactions in the bond market



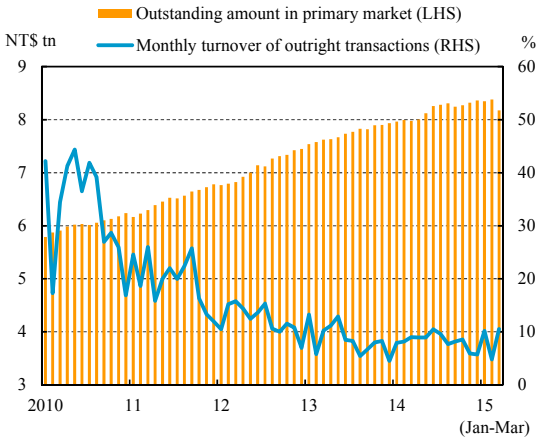
Source: CBC.

In 2014, the risk for short swing trading increased, affected by the tapering of the Fed's asset purchases alongside an increase in the expectation of interest rate hikes. This, together with excessive concentration of bonds held in the market, resulted in a slight contraction in outright transactions in the secondary market throughout the year (Chart 3.4). In 2015 Q1, the monthly turnover ratio roughly remained flat after descending to a lower level of 5.71% in December 2014 (Chart 3.5).

Short-term market rates stabilized, while long-term market rates mostly fluctuated along with those of US government bonds

As for short-term market rates, in 2014, the CBC's decision to keep policy rates unchanged, coupled with market liquidity standing at an appropriate level, helped the yield on 90-day commercial paper to remain broadly stable at around 0.83% in the first three quarters. However, in the fourth quarter, owing to seasonal factors, short-term market rates slightly rose. In 2015 Q1, the figure remained relatively stable within the lower range.

Chart 3.5 Outstanding amount and turnover in primary bond market

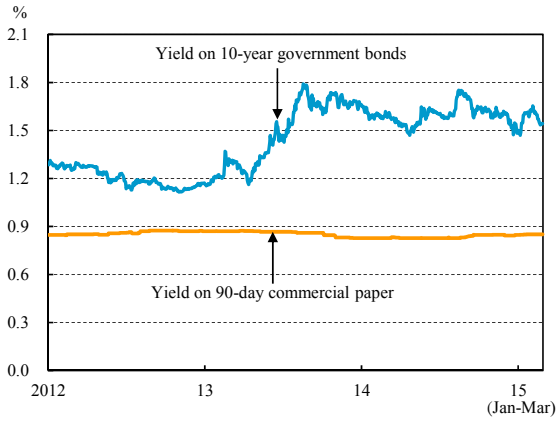


Notes: 1. Primary bonds include government bonds, corporate bonds and financial debentures.
2. Monthly turnover = trading value in the month/ average bonds issued outstanding.
Average bonds issued outstanding = (outstanding at the end of the month + outstanding at the end of last month)/2.

Source: FSC.

The trend of long-term market rates closely tracked the movement of US government bond yields. In 2014 Q1, international capital flowed into the US to hedge the risks of geopolitical tension in Ukraine. As a result, yield on Taiwan's 10-year government bonds dipped along with falling US government bond yields. Afterwards, the yield on Taiwan government bonds trended up and then fluctuated from June onwards owing to a marked recovery in the domestic economy. Furthermore, from the middle of September onwards, rising expectation of a Fed interest rate hike in near future drove up the yield on Taiwan government bonds. However, in 2014 Q4, a tumble in international oil prices alleviated inflationary pressures. This, coupled with bullish global bond markets in response to the successive implementation of monetary easing by several major economies, led to a drop in the yield on Taiwan government bonds. Subsequently, in 2015 Q1, the yield on Taiwan government bonds also went up and then dropped, tracking the movement of US government bond yields (Chart 3.6).

Chart 3.6 Yield spread



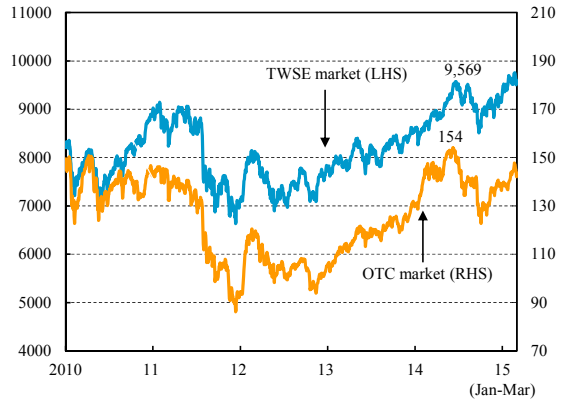
Source: Bloomberg.

3.1.2 Equity markets

Stock indices trended up gradually amid heavy volatility

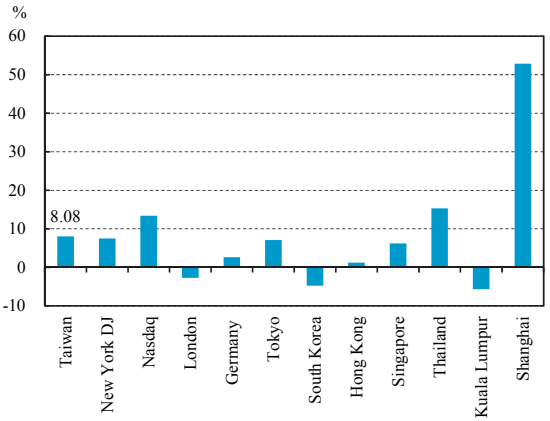
Both the TWSE and the OTC markets performed better in 2014 than in 2013. In the first half of 2014, spurred by global economic recovery, continuous revenue increases of the electronics industry, and the FSC's new measure to allow two-way day trading, juridical investors recorded net buying and led the TAIEX of the TWSE market on an upward path to hit a year high of 9,569 on 15 July. However, subdued by the Kaohsiung gas explosion incident and a series of food security scandals, the TAIEX dipped to 8,513 on 17 October. Afterwards, owing to the rise in US stock indices and net buying by foreign investors, the TAIEX rebounded and registered 9,307 at the end of 2014, an increase of 8.08% year on year. In early 2015, the FSC announced a program to boost securities markets, including easing the daily price up/down limit to 10%, and US stock indices kept hitting new highs during the same period. Against this backdrop, the TAIEX continued to trend up and reached 9,586 at end-March, increasing by 3.00% from the end of 2014 (Chart 3.7).

Chart 3.7 Taiwan's stock market indices



Sources: TWSE and TPEx.

Chart 3.8 Comparison of major stock market performances



Notes: 1. Figures are for 2014.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

Taiwan's Taipei Exchange Capitalization Weighted Stock Index, the OTC market index, closely tracked the movements of the TAIEX, hitting an annual high of 154 in early July after trending up from the beginning of 2014, and closed at 140 at end-December, with an annual rise of 8.34%. The index climbed further in 2015 Q1 and reached 144 at the end of March (Chart 3.7).

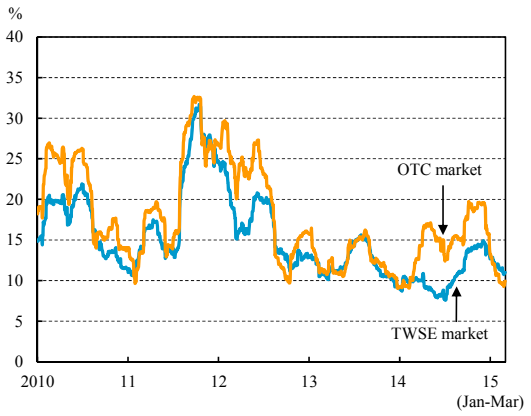
Comparing major stock markets around the world, most markets showed positive performances in 2014 except for the stock indices of London, South Korea and Kuala

Lumpur, and the Shanghai Composite Index outperformed others with an annual rise of 52.87%. The TAIEX climbed by 8.08% year on year (Chart 3.8).

Broken down by sector, the index for the electronics industry in the TWSE market performed relatively well, thanks to robust demand growth in semiconductor, panel, and cellphone related products. The semiconductor industry index performed the best, with an annual rise of 29.63%.

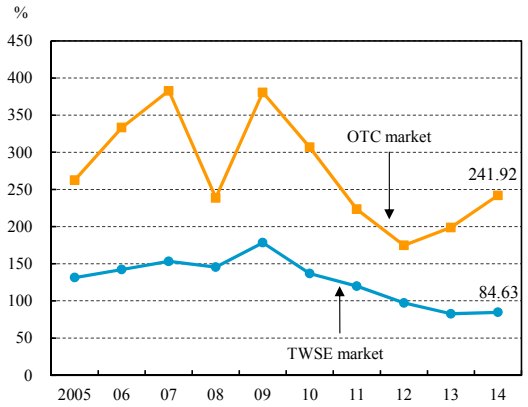
In 2014, volatility in the TWSE market amplified after an initial down trend, while that in the OTC market rose; volatility in those two markets stood at 14.51% and 18.94% respectively at the end of December. At the beginning of 2015, volatility in the TWSE and the OTC markets trended downward as the local stock indices rebounded and stabilized, standing at 10.99% and 9.91%, respectively, at the end of March (Chart 3.9).

Chart 3.9 Stock price volatility in Taiwan's markets



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

Chart 3.10 Annual turnover ratios in Taiwan's stock markets



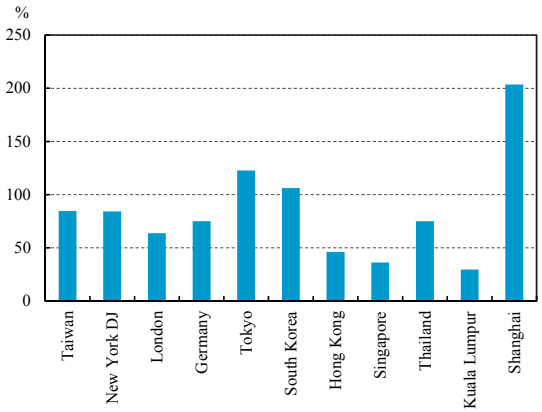
Sources: TWSE and TPEx.

Annual turnover ratio expanded slightly in the TWSE market while that in the OTC market rose for the second consecutive year

The TWSE market experienced an expansion in trading in 2014, with the average monthly trading value registering NT$1.82 trillion, a rise of 15.61% year on year, while its turnover ratio in terms of trading value rebounded to 84.63%. However, trading in the OTC market showed a better performance. Its average monthly trading value reached NT$530 billion in 2014, an increase of 57.68% year on year, and the annual turnover ratio continuously rose to 241.92% (Chart 3.10).

Comparing major stock markets around the world, the annual turnover ratios in Shanghai and Tokyo ranked among the highest in 2014, 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, Thailand and Kuala Lumpur (Chart 3.11).

Chart 3.11 Comparison of turnover ratios in major stock markets



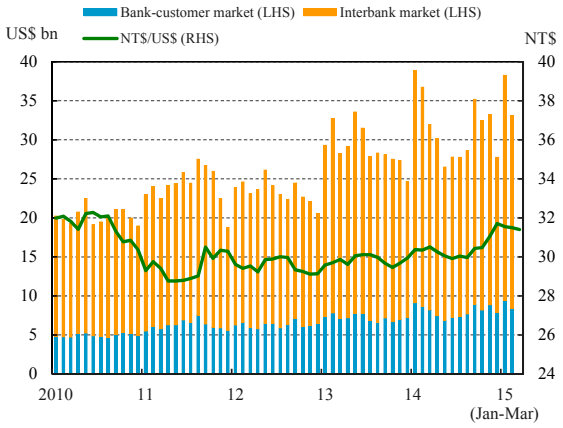
Notes: 1. Figures refer to accumulated turnover ratios in 2014.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

3.1.3 Foreign exchange market

The NT dollar exchange rate reversed from appreciation to depreciation and the trading volume increased

The NT dollar exchange rate appreciated against the US dollar since 2014 Q2, reaching a yearly high of 29.905 on 2 July, owing to an increase in net foreign capital inflows. Thereafter, the Fed ended its asset purchase program, known as QE, at the end of October and the ECB and the BOJ introduced further monetary easing, leading the US dollar to appreciate and the NT dollar exchange rate to hit a yearly low of 31.815 on 24 December. At the end of 2014, the NT dollar exchange rate reversed to appreciate marginally and stood at 31.718, with annual depreciation of 5.57%. In early 2015, the NT dollar exchange rate fluctuated within a narrow range and rose to 31.401 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



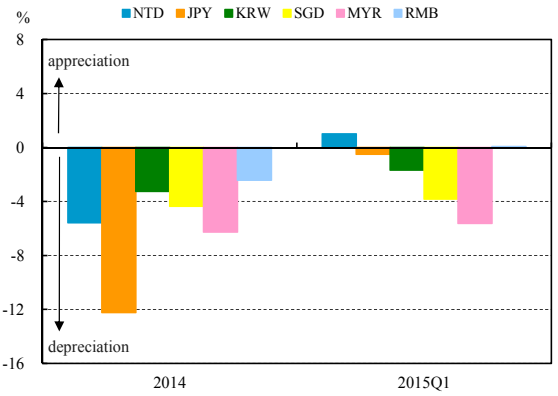
Notes: 1. Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
2. The latest data for trading volume is as of February 2015.
Source: CBC.

Compared to other major currencies in Asia, the depreciation of the NT dollar against the US dollar at 5.57% was higher than the Korean won's 3.26%, the Singapore dollar's 4.36% and renminbi's 2.42% in 2014. At the end of March 2015, the NT dollar appreciated slightly by 1.01% compared to the end of the previous year, while the Japanese yen, Korean won, Singapore dollar and Malaysian ringgit all displayed depreciating trends (Chart 3.13).

As for the NT dollar against other key international currencies, the Japanese yen continued to depreciate, so the NT dollar appreciated against the yen by 7.59% in 2014. Meanwhile, the NT dollar also appreciated by 7.10% and 0.29% against the euro and the British pound, respectively, but depreciated by 2.40% against the Korean won over the same period (Chart 3.14).

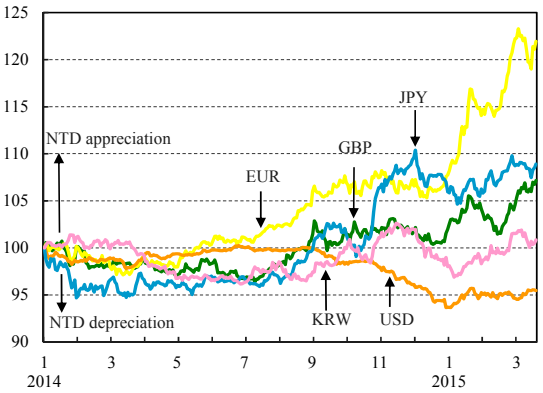
In 2014, owing to greater domestic and international capital movements, the transactions in the foreign exchange market became more active than a year earlier. The average daily trading volume of the foreign exchange market reached US$31.5 billion, increasing by 8.27% compared to US$29 billion a year 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 74.44% of the total in 2014, while the retail bank-customer market made up a 25.56% share. As for types of transactions, foreign exchange swaps accounted for the largest share of 42.78% of the total, followed by spot trading with 36.52%.

Chart 3.13 Exchange rate changes of major Asian currencies against the US dollar



Source: CBC.

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



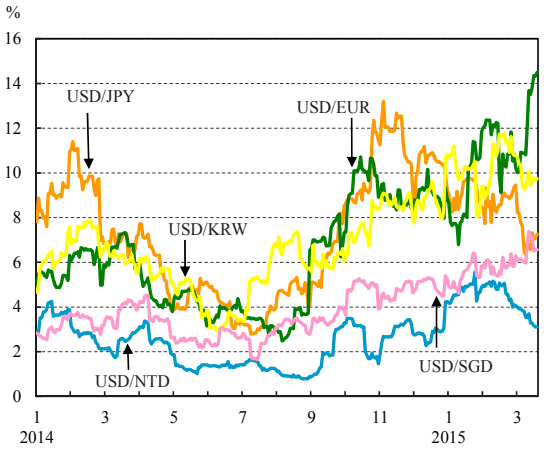
Note: 2 January 2014 = 100.
Source: CBC.

NT dollar exchange rate volatility remained relatively stable

Volatility in the NT dollar exchange rate against the US dollar fluctuated between 0.79% and 4.25% in 2014, and registered an annual average of 2.22%. In early 2015, central banks in Europe, Mainland China and South Korea set off a wave of monetary policy easing and interest-rate reduction. In addition, the SNB's announcement to abandon the Swiss franc's cap against the euro, coupled with the introduction of negative interest rates in several

countries,[54] induced international capital inflows into Asia, leading to greater fluctuations in financial markets. Volatility in the NT dollar exchange rate against the US dollar was thus affected and rose to around 5%, before gradually trending downwards. From 2014 onwards, the NT dollar exchange rate was relatively stable compared to 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).

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



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

[54] ECB cut rates into negative territory in June 2014, followed by SNB and Sweden's Riksbank in January and February 2015, respectively.

Box 4
Development and prospects of international bond market in Taiwan

International bonds are foreign currency-denominated bonds issued in Taiwan by domestic and foreign issuers and listed on the Taipei Exchange, while those denominated in RMB are called Formosa bonds. International bond issuance helps domestic issuers to finance with foreign currencies, enhances the international competitiveness of Taiwan's financial industry by allowing foreign issuers to participate in local bond markets, and provides more investment opportunities for ample local liquidity. This box introduces the development and prospects of Taiwan's international bond market, as well as its potential impacts on local bond markets.

1. The development of the international bond market

The development of the international bond market can be divided into the following three stages:

1.1 Initial stage (2006-October 2012)

(1) Allowing qualified domestic and foreign corporations[1] to issue international bonds denominated in foreign currencies, except for RMB, subject to credit rating requirements of issuers or issued bonds and approvals from the FSC and the CBC.

(2) In this stage, the aforementioned measures set the foundation of the international bond market.

1.2 Warming-up stage (November 2012-May 2014)

(1) Opening up Formosa bond issuance, setting up a cross-strait currency clearing mechanism, and permitting DBUs to conduct RMB business, and including RMB in the foreign currency clearing platform. All these measures opened a new era of Taiwan's offshore RMB market.

(2) Implementing multi-tier regulation on international bond investors, which significantly relaxed requirements for foreign currency bonds sold to qualified institutional investors, such as issuer qualifications, issuance procedures and registration documentation. For bonds sold to the general public, related regulations remain the same to protect financial consumers.

(3) Permitting certain Chinese corporations[2] to issue RMB-denominated corporate bonds in Taiwan that are only allowed to be sold to qualified institutional investors.

1.3 Flourishing stage (June 2014-present)

(1) Amending the *Insurance Law* on 4 June 2014 to exclude international bonds from overseas investment by insurance companies, which is subject to a ceiling of 45% of a company's fund.

(2) Expanding the scope of eligible professional investors to enlarge the investor base. In addition to qualified institutional investors such as banks, securities firms and insurance companies, any corporate entity or individual that meets the requirements regarding financial strength or professional expertise[3] can also qualify as a professional investor to invest in international bonds.

2. Current conditions of the international bond market

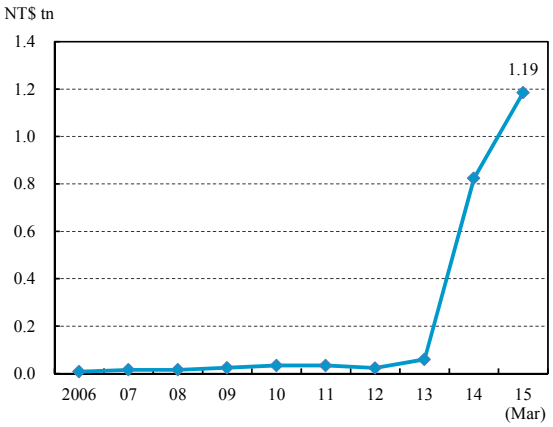
In recent years, the international bond market has become more active with tremendous growth in issuance and trading volume.

2.1 Primary market

Subject to the prevailing macroeconomic environment, related regulations and issuance procedures, the issuance of international bonds experienced six years of limited growth since 2006 (Chart B4.1). However, the market started to warm up in 2013 and showed an enormous expansion in 2014, with its issuance surpassing that of government bonds for the first time.

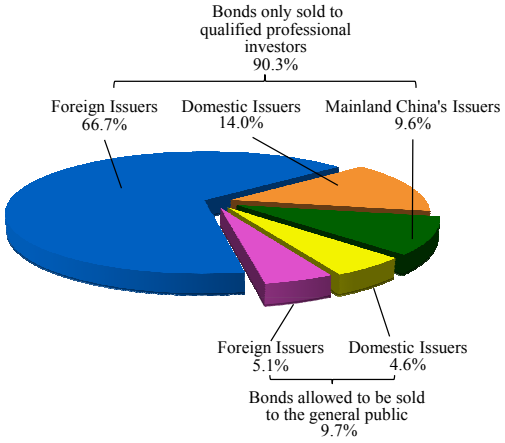
Further analysis of the market during the period from 2006 to March 2015 shows international bonds that were only sold to qualified professional investors accounted for 90.3% of total issuance, while those sold to the general public only accounted for 9.7% of the total

Chart B4.1 International bond issuance in Taiwan



Note: All currencies are converted into NTD.
Source: FSC.

Chart B4.2 Components of international bond market



Note: Figures are from 2006 to March 2015.
Source: CBC.

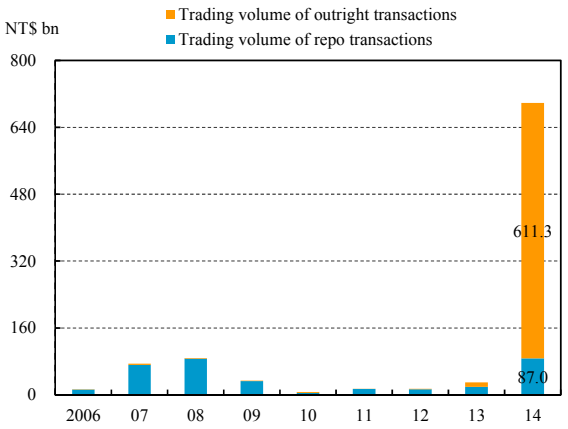
(Chart B4.2). As for the type of issuers, 71.8% of bonds were issued by foreign corporations, followed by 18.6% by domestic corporations, while bonds issued by Chinese banks only accounted for 9.6% because of their late entry to the market (Chart B4.2). Regarding type of investors, insurance companies were the largest investors in USD and RMB bonds, accounting for 93.1% and 44.8%, respectively, during the period from January 2014 to March 2015 (Table B4.1).

Table B4.1 International bond issuance by investor type

Currencies \ Investors		Insurance companies	Banks	Securities firms	Foreign enterprises	Others	Total
USD	US$ bn	27.7	0.3	0.2	0.8	0.8	29.8
	%	93.1	1.0	0.8	2.6	2.5	100.0
CNY	RMB bn	14.6	9.1	5.9	1.7	1.3	32.6
	%	44.8	27.8	18.0	5.3	4.1	100.0

Notes: 1. Figures are from January 2014 to March 2015.
2. Figures for USD denominated bonds exclude US$0.3 billion of convertible bonds.
Source: CBC.

Chart B4.3 Trading volume of international bond market



Note: All currencies are converted into NTD.
Source: FSC.

2.2 Secondary market

In recent years, the secondary market for international bonds shared the same trend with the primary market. Its trading volume reached NT$698.3 billion in 2014, significantly growing by 22.3 times compared to its value in 2013 (Chart B4.3).

3. The effects of international bond issuance on the local government bond market

The recent takeoff of international bond issuance indicates great progress in Taiwan's bond market. However, its massive issuance might have adverse impacts to some degree on the local government bond market.

3.1 The investments of insurance companies gradually shifted from government bonds to international bonds

Because USD-denominated long-term international bonds have higher yields than local government bonds with the same maturity, coupled with the exclusion of international bond investments from the regulatory foreign investment ceiling, insurance companies

increased their investments in international bonds and became the largest investors in the market (Table B4.1). Conversely, the ratios of government bond bidding and holding by insurance companies gradually diminished.

3.2 The bidding willingness of government bond dealers might be affected

The relatively high yields of international bonds could undermine the bidding willingness of government bond dealers. For example, the ratio of bidding to auction amount of 20-year long-term government bonds saw a decreasing trend from September 2014 onwards.

4. Future prospects and possible actions

(1) As foreign issuers remain interested in issuing Formosa bonds in Taiwan, it is expected that the international bond market still has room to grow, depending on the policy of total issuance limitation on Formosa bonds set by the financial authority.

(2) Considering the opaque financial statements of Chinese private corporations, the financial authority should take prudent measures on the issuing of Formosa bonds in Taiwan, as well as enhancing financial transparency of those corporations and conducting related risk controls.

(3) International bond issuance could provide more business opportunities for domestic financial industry. Nevertheless, its impacts on the local government bond market warrant close attention.

Notes: 1. Foreign issuers should meet certain qualifications, such as being listed corporations and branches or subsidiaries of foreign banks.
2. They include state policy banks, state-owned commercial banks and joint stock commercial banks, as well as their overseas branches and subsidiaries.
3. This refers to corporations and funds with assets over NT$50 million, or individuals with assets over NT$30 million and sufficient financial knowledge and trading experiences.

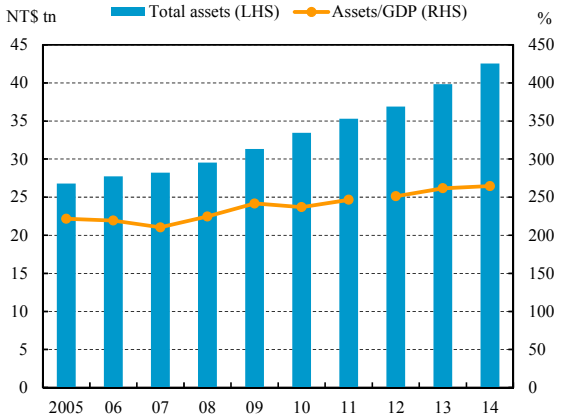
Sources: 1. Kao Chin-yi (2013), *The development opportunities and prospect of international bond market in Taiwan*, Securities and Futures Monthly, August.
2. Zhou Zi-Fu and Zeng Bao-Ci (2013), *The development and prospect of Formosa Bonds*, Securities and Futures Monthly, August.

3.2 Financial institutions

3.2.1 Domestic banks

In 2014, the total assets of domestic banks[55] accumulated continuously mainly because of increasing loans. Asset quality improved and the sector concentration of corporate loans declined continuously. The concentration of credit exposure in real estate loans remained broadly unchanged; nevertheless, the trading volume of real estate contracted and the price of real estate gradually decreased. Banks should take prudent actions to address potentially mounting credit risks. The estimated VaR of overall market risk exposures of domestic banks rose but had limited influence on their capital adequacy. Moreover, liquidity risk was moderate thanks to ample liquidity in the banking system. The profitability of domestic banks reached a record high in 2014, while the average capital adequacy ratio also rose. This revealed that the capacity of domestic banks to bear losses was satisfactory.

Chart 3.16 Total assets of domestic banks



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

Total assets increased continually

The total assets of domestic banks kept increasing and reached NT$42.56 trillion at the end of 2014, equivalent to 264.62% of annual GDP (Chart 3.16). The annual growth rate of total assets decreased slightly to 6.86% from 7.95% a year earlier.

Credit risk

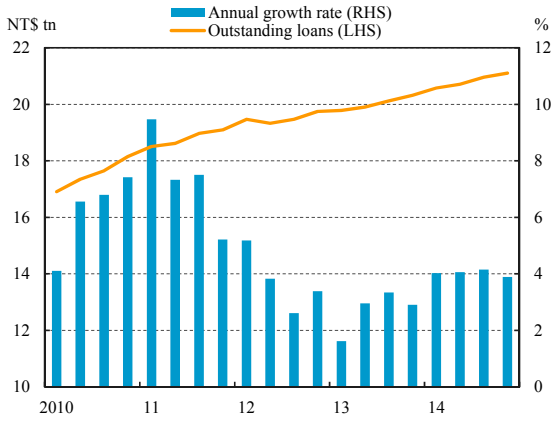
Customer loans saw stable growth

In 2014, customer loans were the major source of credit risk for domestic banks. Outstanding loans of their domestic banking units (DBUs)[56] stood at NT$21.11 trillion at the end of 2014, accounting for 49.59% of total assets, with the annual growth rate increasing to 3.89% from 2.90% a year earlier (Chart 3.17) .

[55] The 40 domestic banks referred to in this section include the Agricultural Bank of Taiwan.
[56] The term "domestic banking units" 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.

In terms of borrowers of loans extended by domestic banks' DBUs, at the end of 2014, the annual growth rate of corporate loans increased slightly to 3.1% from 2.51% a year earlier, and the annual growth rate of individual loans recorded 5.93%, which was about the same as the previous year. The annual growth rate of loans to government agencies was -2.64%, because an increase in government tax revenues and the outstandings of government bond issuance[57] caused a decrease in demand for bank borrowing.

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

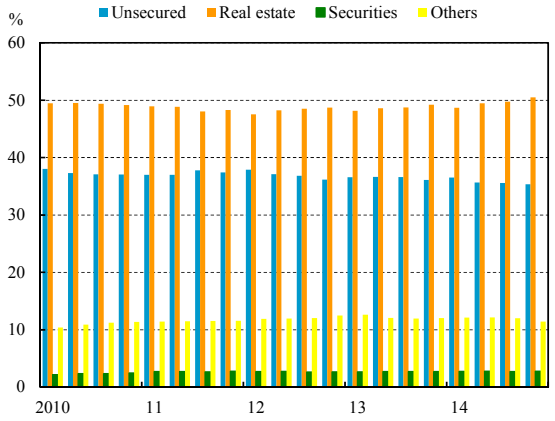


Source: CBC.

Concentration of credit exposure in real estate loans held steady, but the ratio of real estate-secured credit ascended

Outstanding real estate loans[58] granted by DBUs of domestic banks amounted to NT$7.73 trillion, accounting for 36.58% of total loans at the end of 2014. The ratio held steady, about the same as in the previous year. Because the government continuously implemented targeted prudential measures toward real estate loans and banks' loan policy turned more conservative in recent years, the concentration of credit exposure in real estate loans has gradually improved compared to the 38.66% figure recorded at the end of June 2010. However, the total real estate-secured credit granted by domestic banks reached NT$13.25 trillion, accounting for 50.48% of total credit,[59] an increase of 1.28 percentage points over the previous year (Chart 3.18).

Chart 3.18 Credit by type of collateral in domestic banks



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

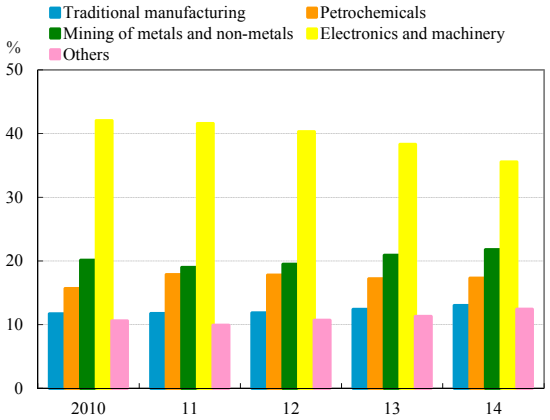
[57] Total net tax revenues and outstanding of government bonds in 2014 increased by NT$142.0 billion (7.74%) and NT$230.7 billion (4.43%), respectively, over the previous year.
[58] The term "real estate loans" herein refers to house-purchase loans, house-refurbishment loans and construction loans.
[59] The term "credit" herein includes loans, guarantee payments receivable and acceptances receivable.

With the trading volume of real estate contracting, as well as emerging signs of a slight decline in house prices, banks should cautiously adjust their loan policy and strengthen risk control mechanisms to address potentially mounting credit risks.

Credit concentration of corporate loans continually declined

Outstanding corporate loans of DBUs of domestic banks stood at NT$9.35 trillion at the end of 2014, while loans to the manufacturing sector registered NT$3.85 trillion and accounted for the largest share of 41.20% of the total. Within the manufacturing sector,[60] the largest proportion of loans was for the electronics industry, which stood at NT$1.37 trillion and accounted for 35.53% of the total loans to the whole manufacturing sector. However, in recent years, the ratio has gradually declined (Chart 3.19), and the credit contentration of corporate loans has decreased.

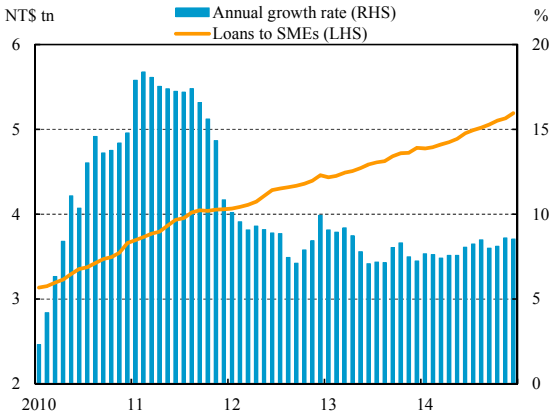
Chart 3.19 Exposure to the manufacturing sector by domestic banks



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

Source: CBC.

Chart 3.20 Loans to SMEs by domestic banks



Source: CBC.

Outstanding corporate loans to small and medium enterprises (SMEs) by domestic banks steadily expanded to NT$5.19 trillion at the end of 2014, increasing by NT$408.2 billion or 8.54% over the previous year (Chart 3.20). The ratio of these loans to outstanding corporate loans has also ascended each year and reached a ten-year high of 55.49% at the end of 2014, indicating good results as banks expanded SME lending in line with government policy while ensuring proper risk control. Along with 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 by 4.30% from year-end 2013 to reach NT$867.9 billion at the end of 2014, and the guarantee coverage ratio

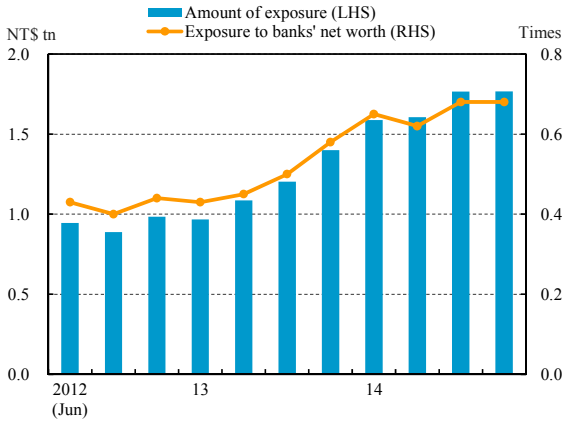
[60] Loans to the manufacturing sector are divided into five categories by industry, including: (1) electronics, (2) mining of metals and non-metals, (3) petrochemicals, (4) traditional manufacturing, and (5) others.

also increased to 78.75%. These statistics all point to the favorable conditions for SMEs to acquire necessary funds.

Exposure to Mainland China grew continually in the first three quarters, but turned to decline in the fourth quarter

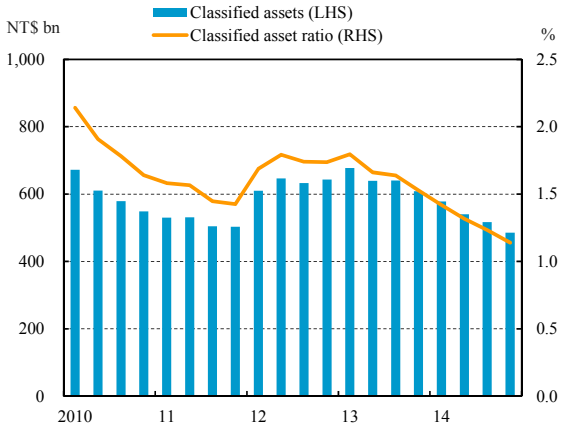
According to Article 12-1 of the *Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area*, the aggregate amount of credit, investment, and interbank loans/deposits (hereafter statutory exposure)[61] extended by a domestic bank to customers in Mainland China should not exceed 100% of the bank's net worth as of the end of the preceding fiscal year. In the first three quarters of 2014, the aggregate amount of such exposure of all domestic banks continuously increased, but reversed to a decline in the fourth quarter. At the end of 2014, the aggregate amount stood at NT$1.77 trillion, or 68% as a percentage of banks' net worth, higher than 58% a year earlier (Chart 3.21). However, it was still within the statutory limit and no domestic bank exceeded the limit.

Chart 3.21 Exposure to Mainland China by domestic banks



Note: FSC implemented calculation method of statutory exposure in Mainland area since April 2012.
Source: CBC.

Chart 3.22 Classified assets of domestic banks



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

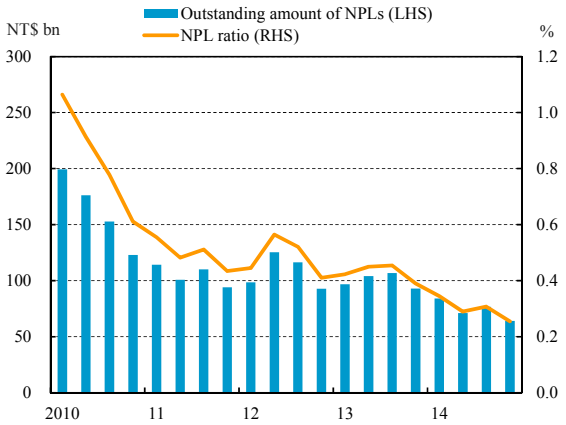
In addition to reinforcing target examination and risk control practices for credit exposure of domestic banks to customers in Mainland China, the FSC implemented the following measures in response to increasing credit risks in recent years:[62] (1) strengthening due

[61] Statutory exposure refers to aggregate exposure, but excludes: (1) short-term trade financing within one year; (2) credits and investments backed by guarantees or collateral which are fully secured outside Mainland China. Moreover, specific interbank loans/deposits with remaining maturity less than three months and the underlying counterparty rated at investment-grade are weighted with 20% of the aggregate amount of exposures.

[62] The balance of NPLs and NPL ratio of Mainland Chinese commercial banks kept growing. Furthermore, several Mainland Chinese enterprises defaulted in the second half of 2014.

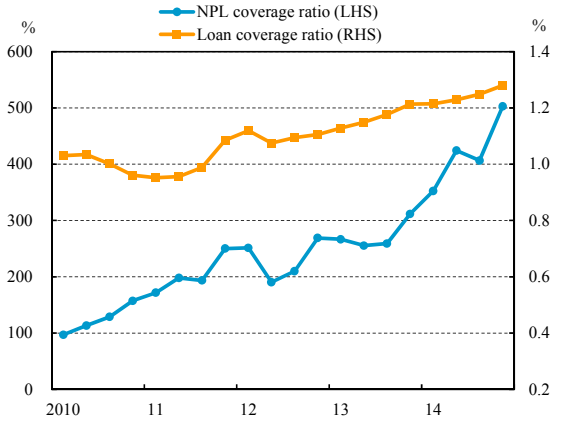
deligence audits on transaction authenticity of short-term trade financing by domestic banks, which is exempted from the statutory exposures; (2) bringing the full amount of interbank loans/deposits into the calculation of the statutory exposure limit in Mainland China, because such short-term interbank loans/deposits are shorter than three months but are expected to be extended after they are due, causing the loans/deposits period to exceed three months; and (3) requiring domestic banks to meet the requirement that minimum loan loss provisions and guaranteed reserves shall be at least 1.5% of the outstanding credit to customers in Mainland China by the end of 2015. Accordingly, domestic banks should cautiously monitor economic and financial conditions in Mainland China, as well as prudently controlling their exposures to customers in Mainland China.

Chart 3.23 NPL ratio of domestic banks



Note: Excludes interbank loans.
Source: CBC.

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.

Asset quality improved continuously

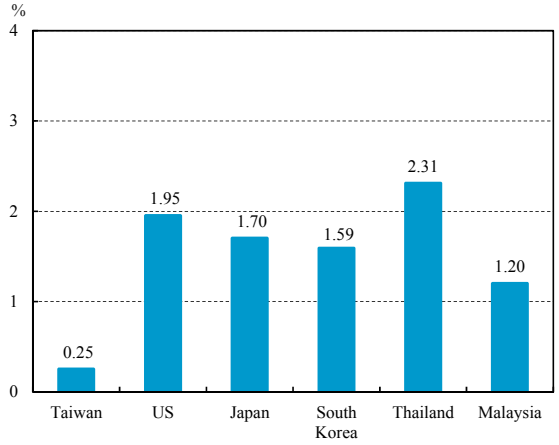
Outstanding classified assets [63] and the average classified asset ratio of domestic banks stood at NT$485.0 billion and 1.14% at the end of 2014, decreasing by 20.29% and 0.39 percentage points, respectively, over the previous year (Chart 3.22). Meanwhile, expected losses of classified assets[64] also contracted by NT$26.7 billion or 33.23% from a year earlier to NT$53.6 billion, while the ratio of expected losses to loan loss provisions was only 14.49%, indicating sufficient provisions to cover expected losses.

[63] 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.

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

The outstanding NPLs of domestic banks registered NT$64.0 billion at the end of 2014, decreasing by 31.15% year on year, owing to write-offs and retrieval of NPLs. The average NPL ratio fell to a record low of 0.25% (Chart 3.23). With the decrease in NPLs and the increase in provisions, the NPL coverage ratio and the loan coverage ratio rose to 502.87% and 1.28%, respectively, at the end of 2014 (Chart 3.24). Among the 40 domestic banks, all had NPL ratios of less than 1%, except for one with a ratio between 1% and 1.5%, at the end of 2014. Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was much lower (Chart 3.25).

Chart 3.25 NPL ratios of banks in selected countries



Note: Figures for Japan and South Korea are end-September 2014 data, while the others are end-December 2014 data.
Sources: CBC, FDIC, FSA, FSS, BOT and 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 at the end of 2014, followed by the net positions of equity securities and of foreign exchange. Using market data as of March 2015, the estimated total VaR calculated by the CBC's market risk model[65] for foreign exchange, interest rate and equity exposures of domestic banks stood at NT$291.8 billion at the end of 2014, ascending by NT$28.1 billion or 10.66% compared to the figure a year earlier. Among market risks, interest rate VaR increased by 7.59% as the yields on Taiwan's government bonds trended upward, following a rise in US government bond yields supported by better performance of the economy and improved employment as well as the Fed's QE exit. Equity and foreign exchange VaRs also increased owing to a rise in the volatility of the stock and foreign exchange markets caused by the divergence in the monetary policies of advanced countries (Table 3.1).

[65] 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 model constructs 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 27 March 2015).

Table 3.1 Market risks of domestic banks

Unit: NT$ bn

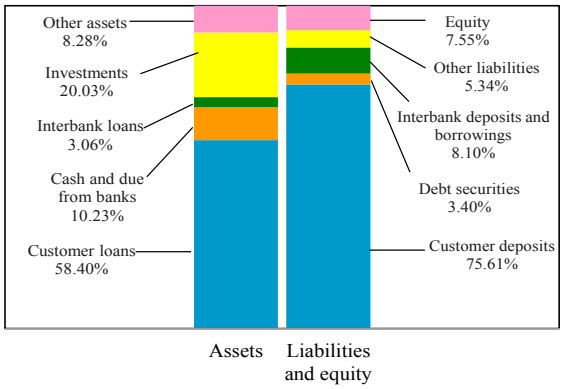
Types of risk	Items	End-Dec. 2013	End-Dec. 2014	Changes	
				Amount	PP ; %
Foreign exchange	Net position	79.9	78.4	-1.5	-1.88
	VaR	1.6	2.3	0.7	43.75
	VaR / net position (%)	2.00	2.93		0.93
Interest rate	Net position	6,723.7	7,033.2	309.5	4.60
	VaR	237.2	255.2	18.0	7.59
	VaR / net position (%)	3.53	3.63		0.10
Equities	Net position	597.4	709.2	111.8	18.71
	VaR	24.9	34.3	9.4	37.75
	VaR / net position (%)	4.17	4.84		0.67
Total VaR		263.7	291.8	28.1	10.66

Note: PP = percentage point.
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 1.21 percentage points in the average capital adequacy ratio of domestic banks and induce a drop in the ratio from the current 12.34% to 11.13%. Nevertheless, it would still be higher than the statutory minimum of 8%.

Chart 3.26 Asset/liability structure of domestic banks



Notes: 1. Figures are as of end-December 2014.
2. Equity includes loss provisions. Interbank deposits include deposits with the CBC.
Source: CBC.

Liquidity risk

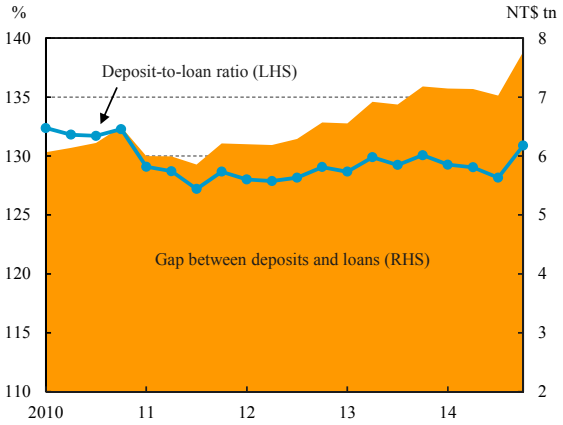
Liquidity in the banking system remained ample

The structure of assets and liabilities for domestic banks roughly remained unchanged in 2014. As for the sources of funds, relatively stable customer deposits still made up the largest share of 75.61% of the total, followed by interbank deposits and borrowings at 8.10%, while debt securities issues contributed a mere 3.40%. Regarding the uses of funds, customer loans

accounted for the biggest share of 58.40%, followed by securities investments at 20.03%, while cash and due from banks accounted for 10.23% (Chart 3.26).

Given that the increase in deposits slightly exceeded that in loans in 2014, the average deposit-to-loan ratio of domestic banks rose to 130.89%. The funding surplus (i.e., deposits exceeding loans) also expanded to NT$7.77 trillion, indicating that the overall liquidity in domestic banks remained abundant (Chart 3.27).

Chart 3.27 Deposit-to-loan ratio of domestic banks

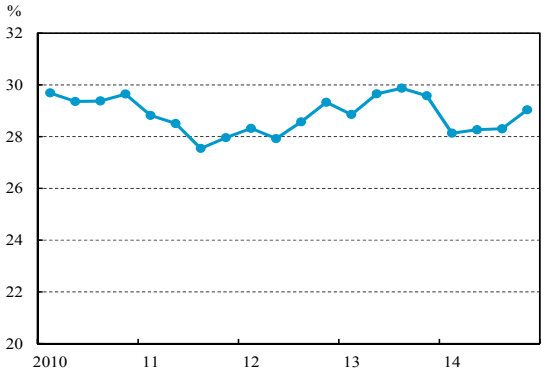


Note: Deposit-to-loan ratio = total deposits / total loans.
Source: CBC.

Overall liquidity risk was moderate

The average NT dollar liquid reserve ratio of domestic banks was well above the statutory minimum of 10% in every month of 2014 and stood at 29.04% in December, a slight decrease of 0.54 percentage points year on year (Chart 3.28), while the ratio of domestic banks was each higher than 15%. Looking at the components of liquid reserves in December 2014, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the CBC, accounted for 87.01% of the total, while Tier 2 and other reserves accounted for a total of 12.99%. This revealed that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risk was moderate.

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.

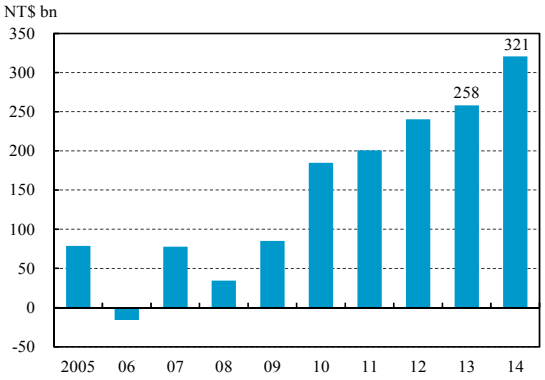
Profitability

Benefiting from the notable profit growth of OBUs and overseas branches, banks recorded historical high profits for 2014

The aggregate net income before tax of domestic banks reached a historical high of NT$320.7 billion in 2014, increasing by NT$62.5 billion or 24.19% year on year. The average ROE and ROA also rose to new highs of 11.62% and 0.77%, respectively, showing significant improvement in business performance (Charts 3.29 and 3.30). Compared to selected neighboring Asia-Pacific economies, the ROAs of domestic banks still lagged behind (Chart 3.31).

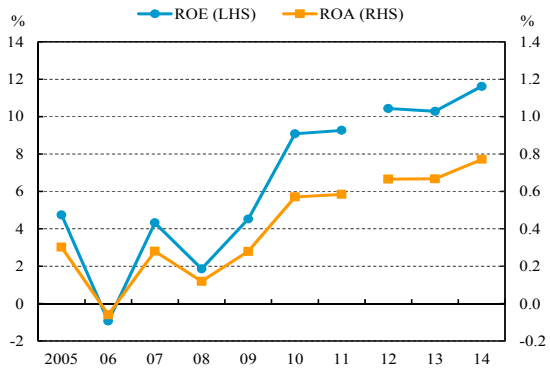
The main reason for the increase in profits, other than a substantial rise in net interest income and fee income, was recognition of a NT$14.8 billion gain from a bargain purchase[66] by CTBC Bank as a result of acquisition activity in June 2014. Excluding the influence of that one-time gain, annual profits still increased by NT$47.7 billion or 18.46% year on year. Among them, offshore banking units (OBUs) and overseas branches' net income before tax in 2014 grew by 52.74% and 36.10%, respectively, combining to contribute 37% of total profit, rising siginificantly from 31% a year earlier (Chart 3.32).

Chart 3.29 Net income before tax of domestic banks



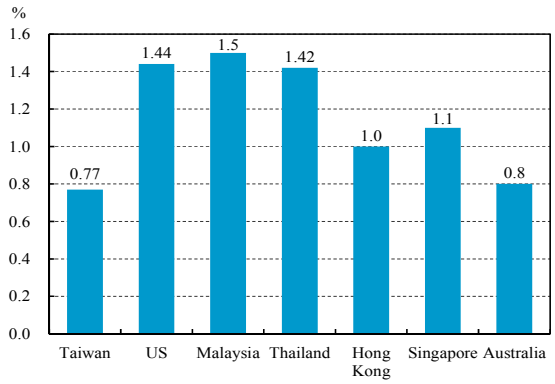
Note: Figures from 2012 forward are on the TIFRSs basis, while those of prior years are on the ROC GAAP basis (same in all charts in this section).
Source: CBC.

Chart 3.30 ROE & ROA of domestic banks



Notes: 1. ROE = net income before tax / average equity.
2. 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 2014.
Sources: CBC, FDIC, BNM, BOT, APRA and IMF.

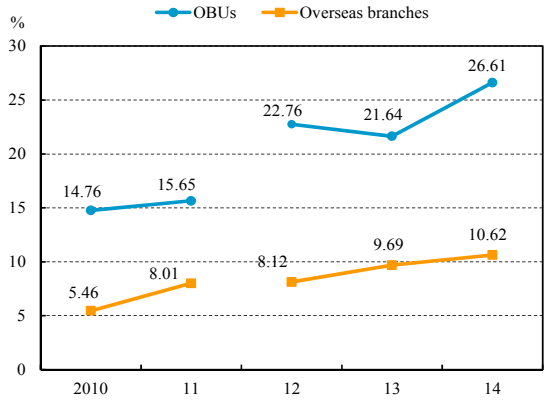
[66] In accordance with IFRS 3, an acquirer is required to measure the difference between the consideration transferred and the net identifiable assets at acquisition-date fair values of the acquiree in a business combination. If the difference is positive, that will be recognized as goodwill. If the difference is negative, the acquirer records a gain from a bargain purchase and that gain is treated as current period profit.

In 2014, seven domestic banks achieved profitable ROEs of 15% or more, increasing from four banks in 2013; the number of domestic banks whose ROAs reached the international standard of 1% increased to ten (Chart 3.33). In addition, the ROEs of 26 banks, and ROAs of 28 banks increased compared to the previous year.

Net operating income grew substantially

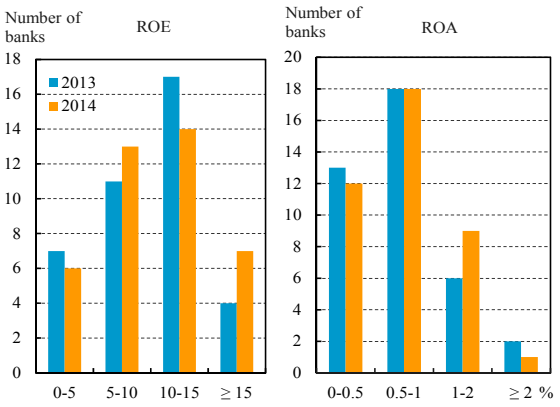
Total net operating income of domestic banks registered NT$730.8 billion in 2014, increasing by NT$88.5 billion or 13.78% year on year, mainly owing to marked growth in net interest income and fee income. Analyzed by income component, net interest income increased by NT$42 billion year on year; the annual growth rate also expanded from 3.49% a year earlier to 10.73% in 2014. Net fee income rose by NT$15.9 billion or 11.77%, supported by growth in the wealth management business. Moreover, net gains on financial instruments increased by NT$9.2 billion or 9.74%, driven by an increase in valuation gains (Chart 3.34).

Chart 3.32 Profit contributions of OBUs and overseas branches



Note: Overseas branches include branches in Mainland China.
Source: CBC.

Chart 3.33 Distribution of ROEs and ROAs of domestic banks



Source: CBC.

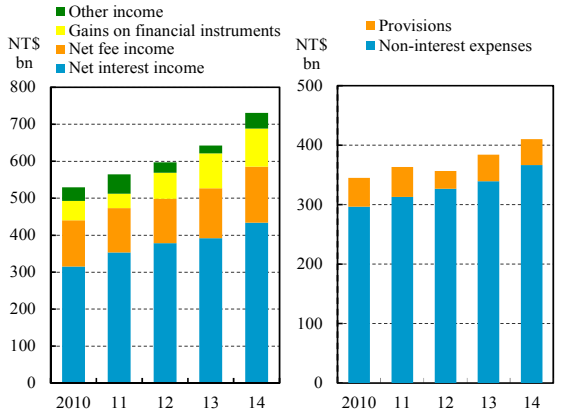
Operating costs increased by a relatively smaller margin

The operating costs of domestic banks registered NT$410.1 billion in 2014, rising by NT$26 billion or 6.78% compared to the previous year. Among them, non-interest expenses[67] increased by NT$27.3 billion or 8.06% and accounted for an increasing share of 89% of total operating costs, owing to the rise in employee benefits expenses and other operating and management expenses. Meanwhile, provisions for loan losses and guarantee reserves decreased by NT$1.3 billion or 2.94% year on year, mainly owing to a higher base of 2013

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

resulting from the requirement by the FSC in 2013 to raise the ratio of provisions from 0.5% to 1% of the balance of normal credit assets (excluding assets that represent claims against the central and local governments in Taiwan), leading to a marked increase in provisions (Chart 3.34).

Chart 3.34 Composition of incomes and costs of domestic banks

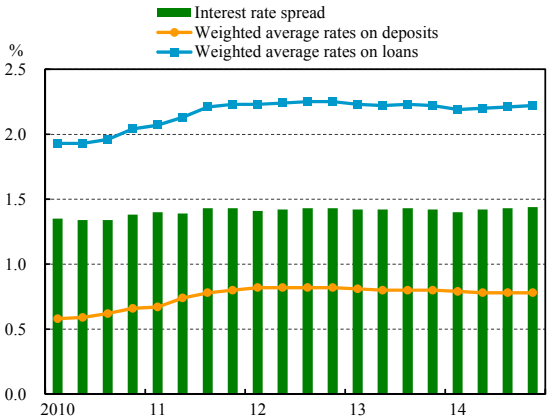


Source: CBC.

Factors that might affect future profitability

Driven by a rise in the interest rates of new loans for house purchases, the interest rate spread between deposits and loans gradually rebounded to 1.44 percentage points in 2014 Q4 (Chart 3.35). The rise in the spread was helpful in boosting domestic banks' profitability.

Chart 3.35 Interest rate spread between deposits and loans



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

Source: CBC.

In order to enhance the risk-bearing capacity of banks, in December 2014, the FSC required that domestic banks have to maintain a provision ratio of at least 1.5% against loans for home purchase, refurbishment, or construction by the end of 2016. Some large private banks had already achieved the 1.5% provision ratio at the end of 2014, and the other banks still have a two-year buffer period to increase provisions. Moreover, in April 2015, the FSC required that the ratio of loan loss provisions and guarantee reserves to the balance of normal credit assets extended to customers in Mainland China by domestic banks (including short-term trade financing) has to reach at least 1.5% by the end of 2015. Nevertheless, both of the requirements are estimated to have a limited impact on overall profits.

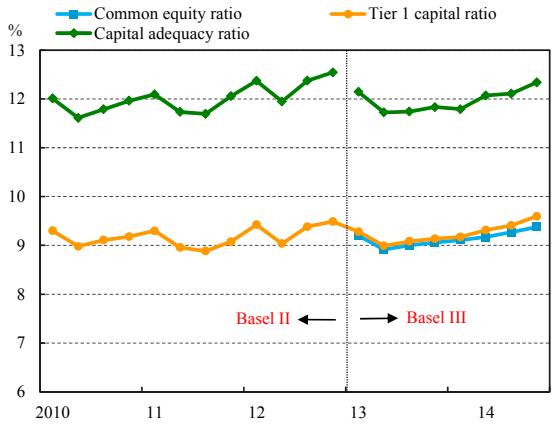
Capital adequacy

Capital ratios trend upward

In the first quarter of 2014, the average capital ratio of domestic banks declined slightly as risk-weighted assets accumulated at a faster pace. From Q2 onwards, as a result of capital injection and accumulated earnings as well as the issuance of Basel III-compliant subordinated debt, the average common equity ratio, Tier 1 capital ratio and capital adequacy ratio rose and stood at 9.38%, 9.60% and 12.34% at the end of 2014, respectively, from 9.06%, 9.14% and 11.83% a year earlier (Chart 3.36). However, compared to some neighboring Asia-Pacific economies, domestic banks in Taiwan had lower Tier 1 capital ratios (Chart 3.37).

Further breaking down the components of regulatory capital, common equity Tier 1 capital, which features the best loss-bearing capacity, accounted for 76.00% of eligible capital, while non-common equity Tier 1 capital and Tier 2 capital registered only 1.77% and 22.23%, respectively, at the end of 2014. It showed that the capital quality of domestic banks was satisfactory.

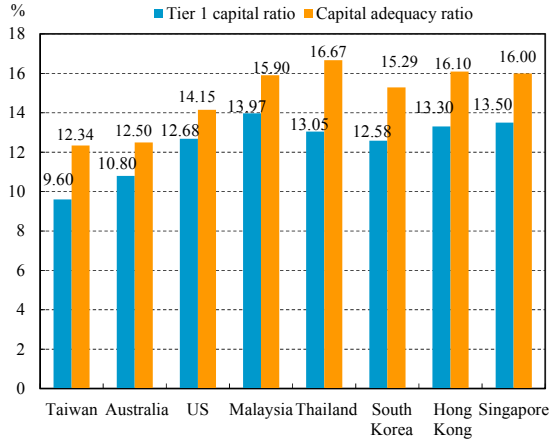
Chart 3.36 Capital ratio of domestic banks



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

Source: CBC.

Chart 3.37 Comparison of capital ratios in selected economies



Note: Figures for Hong Kong, South Korea and Singapore are as of end-September 2014; others are as of the end of 2014.

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

The capital levels of all domestic banks were higher than the 2014 statutory minimum

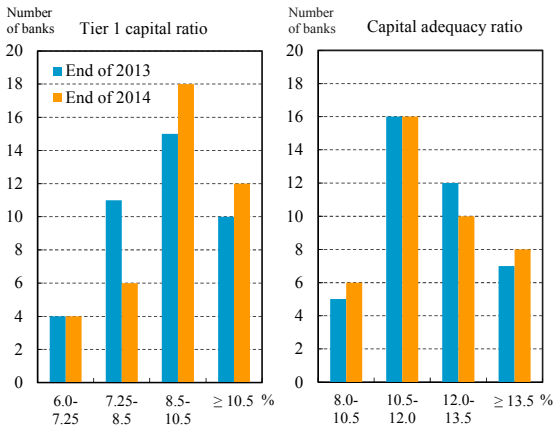
At the end of 2014, the common equity ratios, Tier 1 capital ratios and capital adequacy ratios for all domestic banks remained above the statutory minimum requirements for 2014 (4%, 5.5% and 8.0%) and those for 2015 (4.5%, 6.0% and 8.0%). Compared to the end of the previous year, the number of banks with Tier 1 capital ratios higher than 8.5% significantly

increased, indicating that most banks have been improving their capital quality and level in order to meet Basel III standards[68] or to increase their merger and acquisition momentum (Chart 3.38).

Some banks faced pressure to raise their capital levels

Even though the capital ratios of all banks at the end of 2014 met the minimum standards for 2015, some banks, particularly state-owned banks and small private banks, might not fulfill all minimum capital requirements effective from 2016 onwards and thus face pressure to raise their capital levels. Such banks should actively reinforce their capital adequacy via seasoned equity offerings, accumulating earnings, issuing subordinated debts, and adjusting asset structures to raise their capital ratios gradually.

Chart 3.38 Number of domestic banks classified by capital ratios



Source: CBC.

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard and Poor's		Fitch	
	BICRA		BSI/MPI	
	2014/2	2015/2	2014/2	2015/2
Hong Kong	2	2	a/3	a/3
Singapore	2	2	aa/2	aa/2
Japan	2	2	a/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
China	5	5	bb/3	bb/3
Thailand	6	6	bbb/1	bbb/1
Indonesia	7	7	bb/3	bb/2
Philippines	7	7	bb/1	bb/1

Sources: Standard and Poor's and Fitch Ratings.

Credit ratings

Average credit rating level remained stable

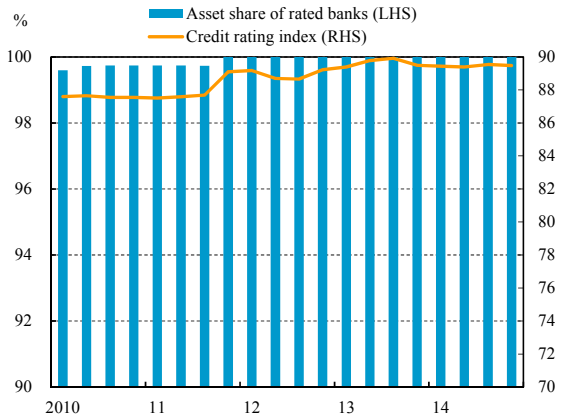
With respect to the overall risk assessments of Taiwan's banking system made by credit rating agencies, Standard & Poor's Banking Industry Country Risk Assessment

[68] 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

(BICRA) [69] maintained Taiwan's BICRA unchanged at Group 4. Compared to other Asian economies, the risk of Taiwan's banking industry was higher than those of Hong Kong, Singapore, Japan, and South Korea, about the same as that of Malaysia, but much lower than those of Mainland China, Thailand, Indonesia and the Philippines. The assessment of Taiwan's banking system evaluated by Fitch Ratings' Banking System Indicator/ Macro-Prudential Indicator (BSI/MPI) [70] also remained unchanged at level bbb/1 (Table 3.2).

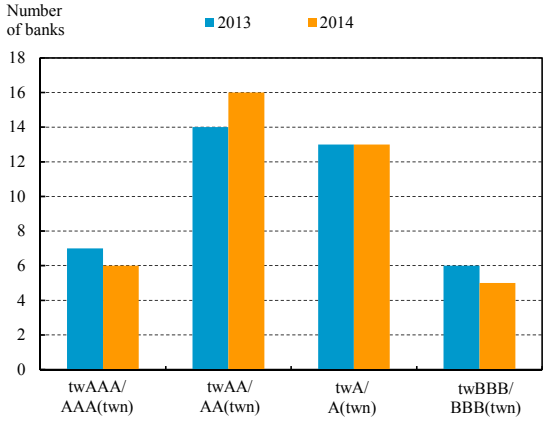
Chart 3.39 Credit rating indices of rated domestic banks



Note: End-of-period figures.
Sources: Taiwan Ratings Corporation, Fitch Ratings, and CBC.

As for the rating results[71] released by credit rating agencies, the credit rating index[72] of domestic banks descended slightly in 2014 (Chart 3.39), because one bank, whose parent company was downgraded by Standard & Poor's, received a rating downgrade from twAAA to twAA+.

Chart 3.40 Number of domestic banks classified by credit ratings



Note: End-of-period figures.
Sources: Taiwan Ratings Corporation and Fitch Ratings.

Rating outlooks remained stable

All domestic banks were rated by credit rating agencies for 2014. Most of them maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2014, and none had credit ratings lower than

[69] 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.

[70] 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.

[71] As of the end of 2014, 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' ratings (~twn).

[72] 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.

twBB/BB(twn) (Chart 3.40). The results were similar to those received the previous year. Regarding rating outlooks, while three banks turned negative in 2014,[73] the other 37 banks remained stable or positive.

3.2.2 Life insurance companies

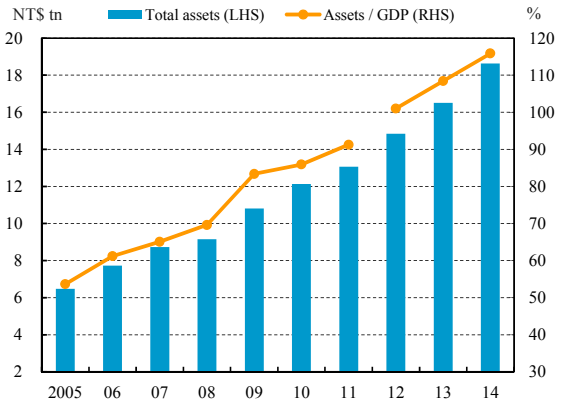
In 2014, the total assets of life insurance companies grew quickly, and their profitability registered a record high, showing an improvement in operating performance. At the end of 2014, the average RBC ratio of life insurance companies rose significantly. However, the financial strength of a few companies needs to be bolstered as soon as possible.

Assets grew rapidly

The total assets of life insurance companies grew continually and reached NT$18.64 trillion at the end of 2014, equivalent to 115.86% of annual GDP (Chart 3.41). The annual growth rate of total assets rose to 12.93% at the end of 2014, picking up rapidly from 11.24% a year earlier.

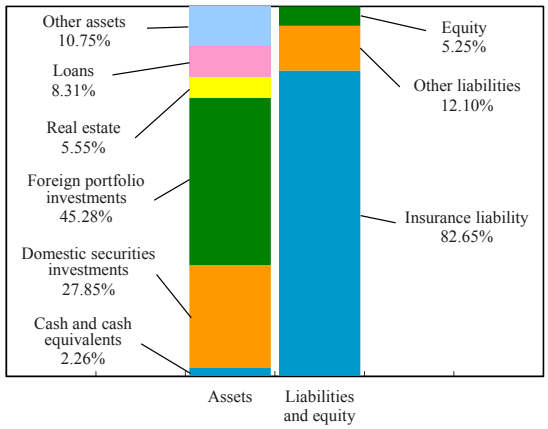
At the end of 2014, 23 domestic life insurance companies[74] held a 98.56% market share by assets, four of which were foreign affiliates holding a 2.71% market share, while four foreign life insurance companies held the remaining 1.44% of total assets. The top three companies in terms of assets held a combined market share of 55.34%, revealing a slight

Chart 3.41 Total assets of life insurance companies



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

Chart 3.42 Asset/liability structure of life insurance companies



Note: Figures are end-December 2014 data.
Source: FSC.

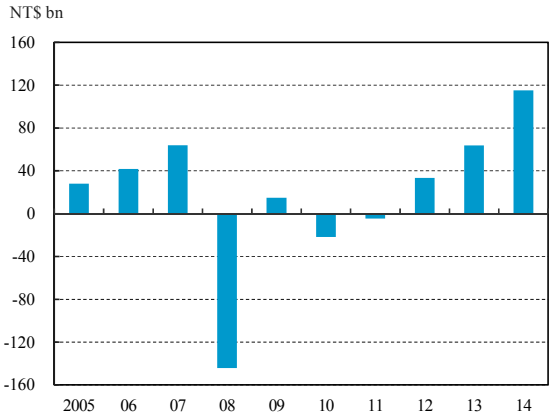
[73] The reasons for the three banks receiving negative rating outlooks were: (1) a negative rating outlook of one bank's parent company; (2) expansion of one bank's loan portfolio at a pace faster than the sector average putting pressure on its already below-par capitalization; and (3) fast growth of one bank's business and limited internal capital causing its loss-absorption ability to be worse than its peers.
[74] Foreign affiliates included.

increase of 1.37 percentage points year on year. The market structure of the life insurance industry roughly remained unchanged in 2014.

Foreign portfolio investments held the largest share

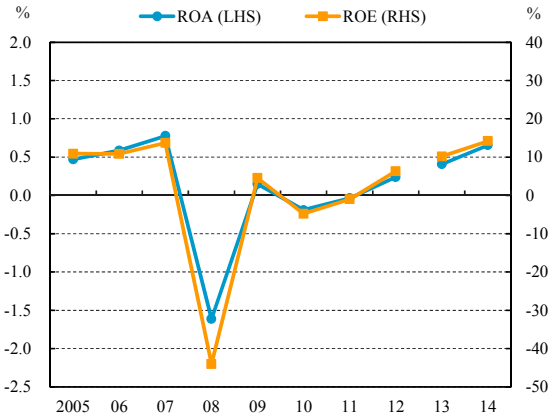
The funds of life insurance companies at the end of 2014 were chiefly invested in foreign portfolios and domestic securities. The share of foreign portfolio investments rose to 45.28%, benefiting from the amendment of the *Insurance Act* that excludes foreign currency-denominated international bonds from the amount subject to the overseas investment ceiling. The share of domestic securities investments dipped to 27.85%. As for the sources of funds, insurance liability accounted for the largest share of 82.65%, and equity rose to a share of 5.25% owing to the huge expansion of unrealized gains on available-for-sale financial assets as well as operating profits, reflecting an improved financial leverage of life insurance companies (Chart 3.42).

Chart 3.43 Net income before tax of life insurance companies



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

Chart 3.44 ROE & ROA of life insurance companies



Notes: 1. Figures from 2012 forward 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.

Net income registered a record high

Life insurance companies reported a record-high net income before tax of NT$115 billion in 2014, a year-on-year increase of NT$51 billion or 80.65% (Chart 3.43). This was mainly driven by huge foreign exchange gains derived from the depreciation of the NT dollar, as well as incremental expansion of interest income and realized gains on available-for-sale financial assets spurred by continuous growth and adjustments of bond and bill investments.

During the same period, average ROE and ROA were 14.20% and 0.66%, respectively, much higher than 10.20% and 0.41% in 2013 (Chart 3.44). Among all 27 insurance companies, nine

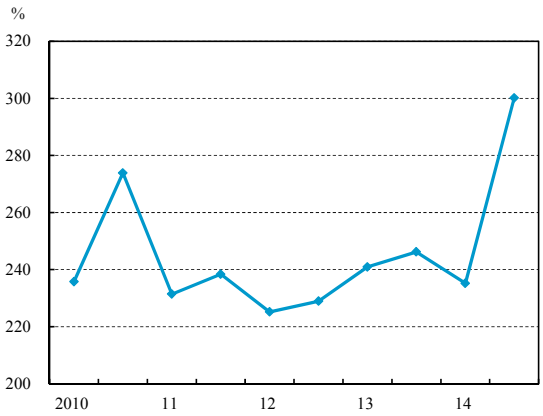
companies posted better profits and achieved ROEs of 10% or more, three more than that of the previous year. However, there were 11 companies who still suffered losses, three less than the number a year earlier.

Average RBC ratio recorded an eight-year high

Although greater investment portfolios bolstered the amount of RBC, the FSC's measure to lower the coefficient for foreign portfolio investments, as well as introducing the new risk capital calculation formula regarding foreign exchange risk as an independent risk factor, limited RBC growth. Furthermore, the industry earned healthy profits and the FSC loosened the regulation to allow more unrealized gains on investment property to be included in regulatory capital, resulting in the significant increase of regulatory capital. Consequently, the average RBC ratio rose to 300.12% at the end of 2014 (excluding Singfor and Global Life Insurance Companies, which were under receivership), from 246.22% a year before, posting an eight-year high (Chart 3.45).

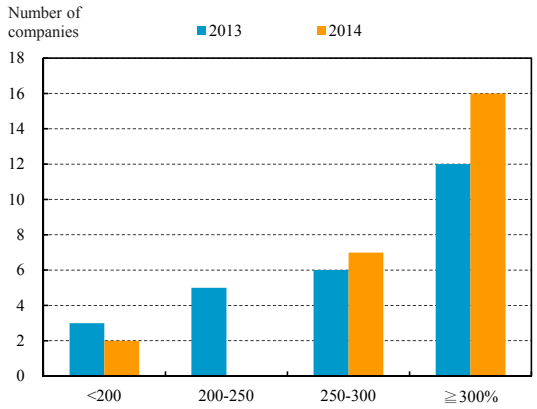
By individual company, there were 16 companies with RBC ratios over 300%, four more than the figure of the previous year. Moreover, the number of companies below 200% decreased to two (Figure for end-2014 is exclusive of the two life insurance companies under receivership, Chart 3.46), whose combined assets accounted for 0.61% of the total. Although the share is low, the financial structure of those companies needs to be improved as soon as possible.

Chart 3.45 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 Taiwan Insurance Guaranty Fund in August 2009 and merged into TransGlobe Life Insurance Company in March 2013, is excluded from figures from 2010 onwards. Figure for end-2014 is exclusive of Singfor and Global Life Insurance companies.
Source: FSC.

Chart 3.46 Number of life insurance companies classified by RBC ratios



Notes: 1. End-of-period figures.
2. Figure for 2014 is exclusive of Singfor and Global Life Insurance Companies.
Source: FSC.

Because of poor management, RBC ratios below the statutory minimum, and consecutive quarters of negative net worth, Singfor and Global Life Insurance companies were taken into receivership by the Taiwan Insurance Guaranty Fund on 13 August 2014 and sold by tender to Cathay Life Insurance Co. on 23 March 2015. This is deemed beneficial to safeguarding the interests of insured parties and sustaining financial stability.

Overall credit ratings kept stable, with most obtaining stable credit outlooks[75]

None of the 11 life insurance companies rated by Taiwan Ratings or Fitch Ratings received credit rating adjustments in 2014. As of the end of December, all rated insurance companies maintained credit ratings above twA or its equivalent, while the three biggest insurance companies by assets were all rated twAA+, showing strong capability to fulfill all financial commitments. As for the credit outlook, all received stable credit outlooks, except for CTBC Life Insurance Co., which received a negative credit outlook because financial support from its affiliated company CTBC Bank might suffer owing to a weakening financial structure.[76]

Life insurance companies should undertake prudential risk management of securities investments

The usable funds of life insurance companies continued accumulating in recent years and therefore propelled great expansion of securities investments. Of them, foreign portfolio investments had the largest growth rate because of insufficient supply of other domestic long-term investment instruments and the relaxation of related regulations. While the efficiency of fund usage could be improved through greater foreign portfolio investments, it is inevitable to incur higher foreign exchange risk. In addition, some bond and bill investments are classified as fair value through profit or loss financial assets or available-for-sale financial assets, the fair value and investment returns of which are susceptible to interest rate fluctuations. It is likely that discrepancies in GDP growth rates will continue to cause monetary policy divergence around the globe. In particular, the Fed signaled that it might raise the federal funds rate in the forthcoming future, putting upward pressure on both yield curves for US and Taiwan government bonds. In response to rising interest rate risk, insurance companies with huge securities investments should undertake prudential risk management hereafter.

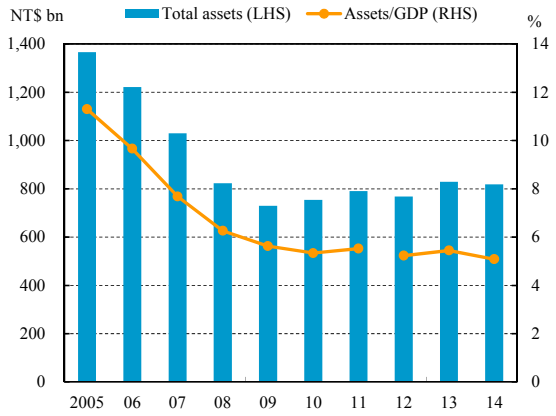
[75] As most life insurance companies were rated by Taiwan Ratings, the analysis in this section focuses primarily on the opinions of Taiwan Ratings. Other rating agencies' opinions are also taken into consideration, though.

[76] Cathay Life Insurance Co. was placed on Watch Negative by Taiwan Ratings on 25 March 2015. The main reason behind this was that the company's heightened foreign exchange risk together with the proposed acquisitions of Singfor and Global Life Insurance Companies with negative net worth will likely weaken its earnings and capital.

3.2.3 Bills finance companies

The total assets of bills finance companies decreased slightly in 2014. However, profitability increased in the same year and the quality of credit assets remained sound, yet the liquidity risk and long-term interest rate risk stayed high. The average capital adequacy ratio of bills finance companies increased slightly, while the ratio of each company stayed well above the statutory minimum.

Chart 3.47 Total assets of bills finance companies

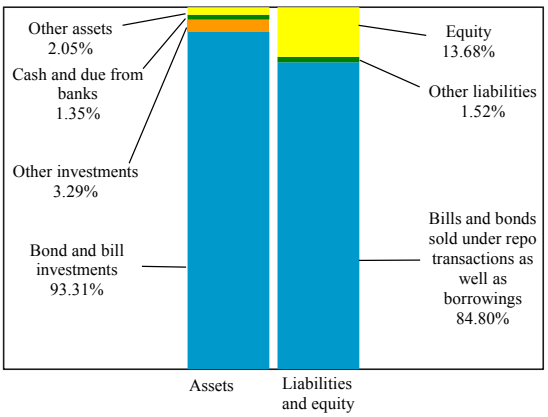


Note: Figures from 2012 onwards are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Sources: CBC and DGBAS.

Total assets decreased slightly

The total assets of bills finance companies stood at NT$818.1 billion, a figure equivalent to 5.09% of annual GDP, at the end of 2014, decreasing by 1.32% year on year owing to the decline in short-term bill positions (Chart 3.47).

Chart 3.48 Asset/liability structure of bills finance companies



Note: Figures are end-December 2014 data.
Sources: CBC and FSC.

In terms of the asset and liability structure at the end of 2014, bond and bill investments constituted 93.31% of total assets, a decrease of 1.26 percentage points year on year. On the liability side, bills and bonds sold under repo transactions as well as borrowings accounted for 84.80% of total assets, while equity only accounted for 13.68% of total assets (Chart 3.48).

Credit risks

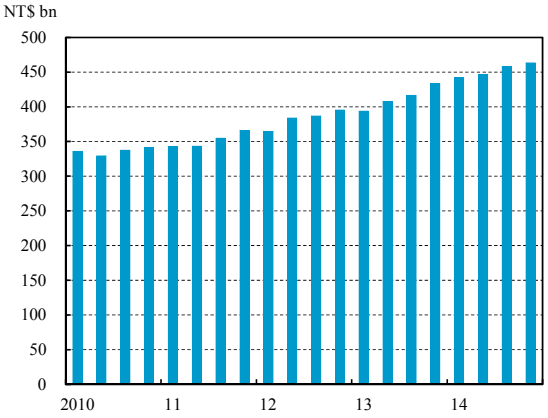
Outstanding balance of guarantees and the ratio of real estate-secured credit increased gradually

The outstanding guarantees business undertaken by bills finance companies registered NT$463.7 billion at the end of 2014, an increase of NT$30 billion or 6.92% year on year

(Chart 3.49). The rise was mainly because of the increased issuance of commercial paper by private corporations for short-term funding amid the domestic economic recovery and low interest rates in the bill market, as well as a higher guarantees ceiling raised from 5 times equity to 5.5 times for companies with regulatory capital ratios of 13% or higher after the FSC amended related regulations in July 2014. As a result, the average multiple of outstanding guarantees to equity of bills finance companies rose to 4.58 times at the end of 2014, compared to 4.38 times a year before. However, each bills finance company still conformed to the regulatory ceiling.[77]

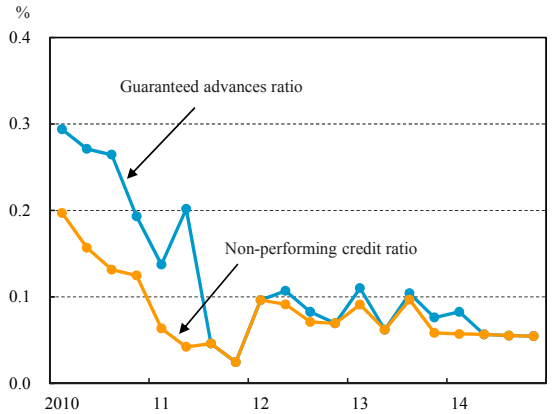
Guarantees granted to the real estate and construction industries and the credits secured by real estate accounted for 26.03% and 30.37%, respectively, of total credits of bills finance companies, showing an upward trend. It is advisable for bills finance companies to closely monitor such credit risks against a backdrop of contracting transaction volume and moderating prices in the housing market.

Chart 3.49 Outstanding commercial paper guarantees of bills finance companies



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

Chart 3.50 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

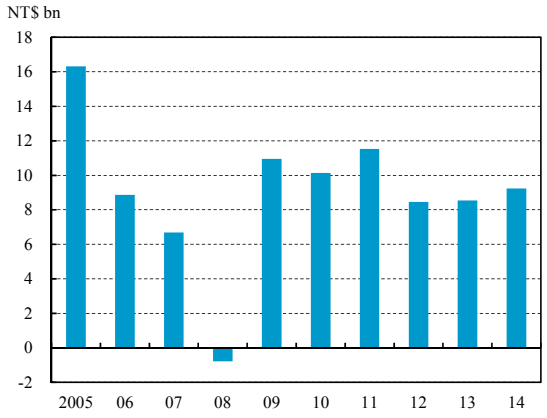
At the end of 2014, the average guaranteed advances ratio and the non-performing credit ratio of bills finance companies both stayed at 0.05%, reflecting sound credit quality (Chart 3.50). At the same time, both the ratios of credit loss reserves to total guaranteed advances and to non-performing credits were 3,091.70%, indicating that the reserves set aside were significantly sufficient to cover potential credit losses.

[77] The FSC amended the *Ceiling on the Total Amounts of the Short-term Bills Guarantee and Endorsement Conducted by Bills Finance Companies* on 18 July 2014, stipulating that the ratio of outstanding commercial paper guaranteed to equity for a bills finance company should not exceed 1, 3, 4, 5 or 5.5 times, respectively, depending on the level of its capital adequacy ratio of below 10%, above 10% but below 11%, above 11% but below 12%, above 12% but below 13%, or above 13%.

Liquidity risk remained high

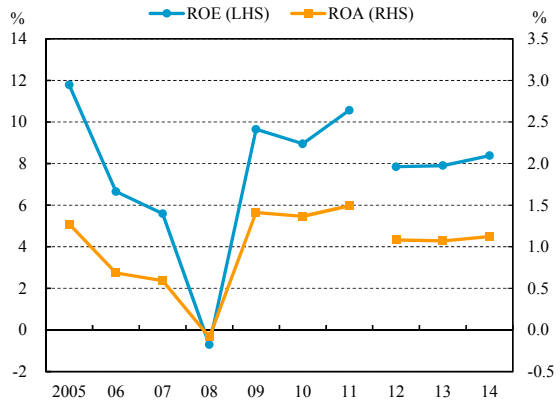
In 2014, bills finance companies still heavily relied on short-term interbank call loans and repo transactions as funding sources, while over 40% of funds went to long-term bond investments. The significant maturity mismatch between assets and liabilities showed bills finance companies still faced high liquidity risk. Moreover, the average multiple of major liabilities to equity at the end of 2014 dropped to 6.85 times, compared to 7.13 times a year before, owing to the 1.71% decrease of major liabilities in 2014. The multiples of each bills finance company were below the regulatory ceilings of ten or twelve times.[78]

Chart 3.51 Net income before tax of bills finance companies



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

Chart 3.52 ROE & ROA of bills finance companies



Notes: 1. Figures from 2012 forward 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.

Profitability rose slightly

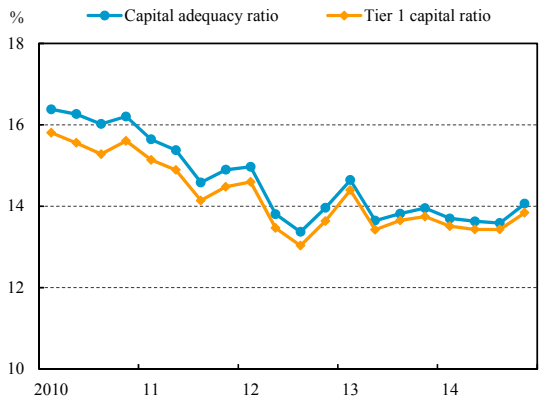
Bills finance companies posted a net income before tax of NT$9.24 billion in 2014 (Chart 3.51), with an increase of NT$0.69 billion or 8.12% year on year. Over the same period, average ROE and ROA registered 8.38% and 1.12%, respectively, both higher than the ratios of 7.90% and 1.07% posted in 2013 (Chart 3.52). The rise in income was mainly contributed to by increased commission revenues as the companies actively undertook the commercial paper guarantees and underwriting businesses and by expanded income from high-yield non-government bond investments.[79] However, when the Fed raises interest rates, resulting in an upward trend in

[78] According to the *Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses*, which aim to reduce the operating and liquidity risks of bills finance companies, the major liabilities of a bills finance company could not exceed six times, eight times or ten times its equity 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 additional two times its equity. As of the end of 2014, the capital adequacy ratio of each bills finance company was above 12%, so the ceilings were capped at ten times or twelve times for each one.

[79] Non-government bond investments, which comprise corporate bonds and bank debentures, rose to 59.84% of total assets at the end of 2014, compared to 56.30% a year before.

long-term interest rates, those bond positions may suffer evaluation losses that not only have the potential to erode equity but also could impact future profitability of bills finance companies. While facing higher interest rate risks, companies have taken response measures step by step to reduce possible adverse impacts (Box 5).

Chart 3.53 Capital adequacy ratios of bills finance companies



Source: CBC.

Average capital adequacy ratio rebounded

The average capital adequacy ratio of bills finance companies registered 14.06% at the end of 2014, slightly higher than 13.95% of the previous year, while the Tier 1 capital ratio rebounded to 13.84% from 13.75% a year before, owing to the sharp contraction in non-guarantee commercial paper holdings with higher risk weights and the decrease in long-term equity investments.[80] Furthermore, the capital adequacy ratio for each bills finance company was higher than 13%, well above the statutory minimum of 8% (Chart 3.53).

[80] Long-term equity investments must be totally excluded from regulatory capital.

Box 5
The interest rate risk faced by bills finance companies and their response measures

The investments of bills finance companies in bills and bonds are mainly funded by repurchase (RP) transactions, call loans and other short-term borrowings. This operational model whereby short-term borrowing is used to finance long-term assets, with over 40% of assets allocated to bond investments, has caused a maturity mismatch between assets and liabilities and increased liquidity risk. In addition, bills finance companies may also face higher interest rate risks with long-term interest rates likely to go up in the future. This box explores the interest rate risk faced by bills finance companies in bond investments and their response measures.

1. The bond investment strategies of bills finance companies

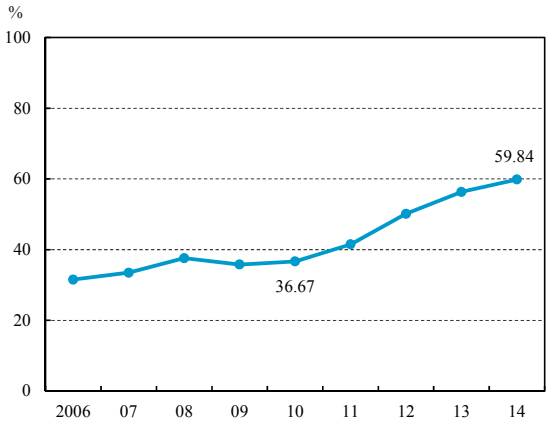
The bond investment strategies of bills finance companies can be mainly divided into "yielding" operations[1] and short-swing outright transactions, in which yielding operations account for a bulk of the total.

1.1 Yielding operations

1.1.1 The proportion of investment in non-government bonds trended up

The types of bonds held by bills finance companies comprise government bonds, corporate bonds and bank debentures. About 95% of the bond portfolios are booked as available-for-sale (AFS) financial assets for accounting purposes. To improve investment returns, there has been a gradual increase in the asset allocation to higher-yield corporate bonds, bank debentures and other non-government bonds since 2011 (Chart B5.1).

Chart B5.1 The proportion of non-government bonds to total bond holdings



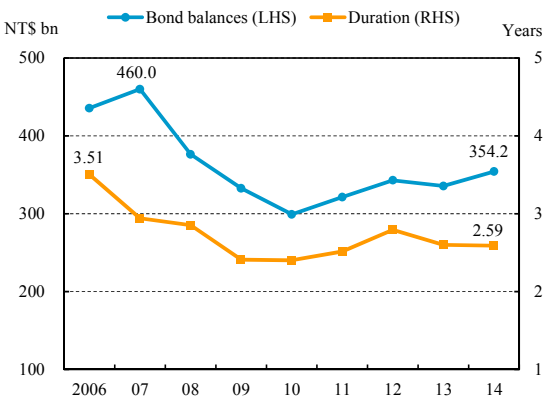
Source: FSC.

1.1.2 Bond balances and their duration stayed relatively low

In practice, the impact of rising interest rates on bond portfolios depends on the bond

balances and the length of duration. At the end of 2014, the bond balances held by bills finance companies and their average duration mostly remained relatively low and thus less susceptible to a rise in interest rates (Chart B5.2).

Chart B5.2 Balances and average duration of bonds by bills finance companies



Note: Duration is estimated based on the investment portfolios of three major bills finance companies in Taiwan.
Source: CBC.

1.1.3 Yielding spreads gradually declined

AFS portfolios are mainly traded by way of RP so as to earn an interest spread through short-term financing for long-term assets. In recent years, despite little change in the trend of RP interest rates, yielding spreads gradually narrowed and hence caused overall bond yields to slip. One of the main reasons is that higher-yield bonds purchased in earlier periods matured or were sold prior to maturity with a view to realizing a profit. Another important reason is that new bond portfolios were subsequently built up during the recent period of relatively low interest rates. For example, the yielding spread in 2014 was about 0.93 percentage points, markedly lower than 1.72 percentage points in 2010.

1.2 Short-swing outright transactions

1.2.1 The trading positions for short-swing transactions remained low

The proportion of short-swing trading positions, which were measured at fair value through profit or loss in the balance sheet for the purpose of short-swing outright transactions to earn a price differential, was mostly lower than 5%. Therefore, such trading positions accounted for only a small fraction of total positions.

1.2.2 The willingness for short-swing trading decreased

In recent years, influenced by the US exit from its quantitative easing (QE) policies and the prospect that the Fed might raise interest rates, yields rebounded from the bottom. In addition, bonds tended to be held by a limited handful of financial institutions, resulting in less bonds being traded in the market. Consequently, the overall volume of outright bond transactions shrank and market quotations were often on and off. These factors

have increased the risk of short-swing transactions and, in turn, most bills finance companies have decreased their short-swing outright transactions to reduce risks.

2. The interest rate risk assessing mechanism of bills finance companies

Bills finance companies generally make use of interest rate sensitivity analysis and stress tests to assess interest rate risk. The pertinent information shall be submitted to the board of directors and senior management as a reference to set operational strategies and risk appetite.

2.1 Interest rate sensitivity analysis

The DV01 (dollar value of a basis point) method is the most commonly used by bills finance companies for bond interest rate sensitivity analysis. It measures the absolute value of the change in prices of overall bond positions for a one basis point change in yield.

2.2 Stress test of interest rate risk

Although bills finance companies have not yet faced legal requirements to conduct stress tests, most of them implemented stress tests of interest rate risk spontaneously in view of strengthening interest rate risk management, and simulated possible impacts on their profits and losses and capital adequacy ratios under various stress scenarios. However, the stress scenarios set by some bills finance companies were not severe enough[2] and might not properly reflect the impacts of extreme events.

3. Response measures to a possible rise in bond yields

Bills finance companies commonly envisaged that short-term interest rates were expected to remain stable and would not rise sharply, but mid- and long-term interest rates may go up in the future. Accordingly, they have taken the following response measures to mitigate the interest rate risks to bond portfolios:

3.1 Response measures to AFS positions

3.1.1 Control of bond positions and duration, plus adoption of the strategy to step up bond positions in due course

Currently, the average duration of bond holdings by bills finance companies is mostly less than three years, but it will gradually decrease as bonds mature over time. Bond positions will also decrease each year accordingly. Because of their consideration of yielding operations, bills finance companies still have unmet demand to build up their

bond positions. Consequently, they will control bond positions and duration while adopting a strategy of rebuilding bond positions step by step for risk mitigation.

3.1.2 Increase in asset allocation to non-government bonds

The yields of corporate bonds and bank debentures are higher than those of government bonds. In view of liquidity, profitability and asset quality, bills finance companies may increase investments in higher-rated corporate bonds and bank debentures.

3.1.3 Diversifying sources of funds and reducing yielding costs

Bills finance companies will actively expand their RP customer bases to include legal persons and natural persons, so as to diversify the channels of funding sources, increase funding flexibility and push down yielding costs.

3.2 Response measures in terms of trading positions

Bill finance companies will focus on trading of benchmark bonds with the highest liquidity and strictly implement the trading principles of "stop loss" and "lock in gains."

4. Conclusion

(1) Bills finance companies run bills and bond businesses over an extensive period of time. Their operational performance is highly sensitive to interest rate movements. In the situation that long-term interest rates may trend upward, they are poised to strengthen interest rate risk management. In the future, unless short- and long-term interest rates rise sharply and simultaneously, it is expected that they can respond well to address the impacts of interest rate risk.

(2) Although some bills finance companies conducted stress tests of interest rate risk spontaneously, the stress scenarios they set were not severe enough and could not reflect the shock of extreme events. The competent authority can clearly lay down the requirements for stress tests implemented by bills finance companies, so as to urge them to strengthen risk management.

(3) As bills finance companies increase their investments in non-government bonds, they should take prudent measures to deal with the relatively high credit risk posed by non-government bonds.

Notes: 1. "Yielding" refers to the trading strategy by use of long-term bond holdings to borrow short-term funds through a repurchase (RP) transaction with a dealer. The transaction allows the bond

holder to receive higher long-term yield rate and pay lower short-term RP interest rate. The gain from the interest spreads is called "yielding spread."

2. For example, under the stress scenario that bond yields rise by 25 basis points.

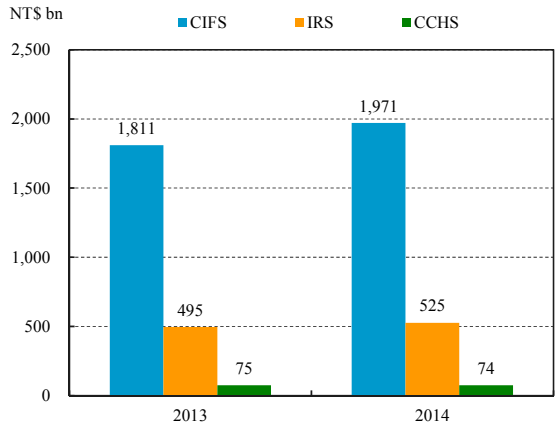
3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of systemically important payment systems in 2014

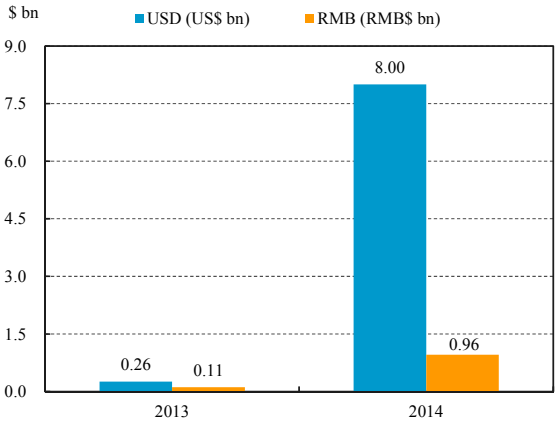
The daily average amount of funds transferred via the three SIPSs,[81] which process domestic interbank payments, increased steadily compared to the previous year except for a slight decrease in the transaction value in the CCHS in 2014 (Chart 3.54). Among them, the CBC's CIFS, which handles large payments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

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



Source: CBC.

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



Source: CBC.

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

Continuously expanding functions of the foreign currency clearing platform

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

[81] See Note 11.

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

Table 3.3 The functions of the foreign currency clearing platform

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

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

Assisting the development of electronic payment services

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

With the enactment of the *Act Governing Electronic Payment Institutions*, EPIs are allowed to: (1) make and collect payments as an agent; (2) accept deposits as stored value funds in multi-currencies; and (3) transfer small amounts of funds between e-payment accounts. Additionally, payment services for offline transactions via physical channels are also included

(namely Online to Offline, O2O). EPIs offer diversified payment services, which strengthen the safety and convenience of transactions, bring momentum to the e-commerce market, and, in turn, stimulate economic development.

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

Strengthening oversight of mobile payment

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

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

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

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

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

3.3.2 Implementation of liquidity coverage ratio in Taiwan

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

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

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

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

Table 3.4 Minimum LCR standards

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

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

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

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

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

3.3.3 Insurance companies were permitted to conduct offshore insurance business

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

The expected benefits of OIUs cover several aspects:

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

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

- Promoting travel accident insurance for foreign travelers in Taiwan.

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

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

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

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

3.3.5 The benchmark change of NTD financial contracts

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

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

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

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

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

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

Financial authorities assisted in the change of interest rate benchmarks

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

Interest rate benchmark change went smoothly

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

3.3.6 Gradual improvements in compensation schemes of financial institutions

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

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

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

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

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

- Amending the *Directions of Risk Management for Banks Conducting Financial Derivative Business* in April 2014, requiring that the remuneration and performance

assessment of sales staff should not totally depend on the achievement of sale targets and should consider other non-financial indicators.

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