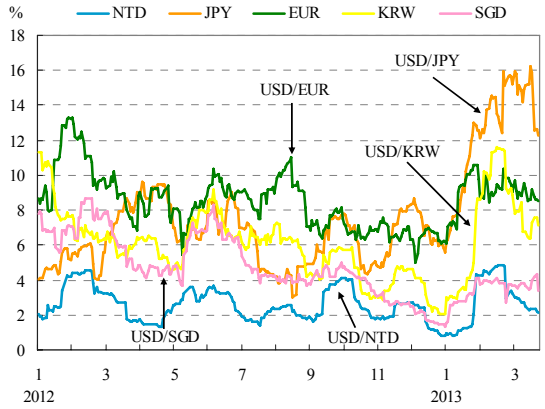
dollar (Chart 3.14).

Chart 3.14 Exchange rate volatility of various currencies against the US dollar



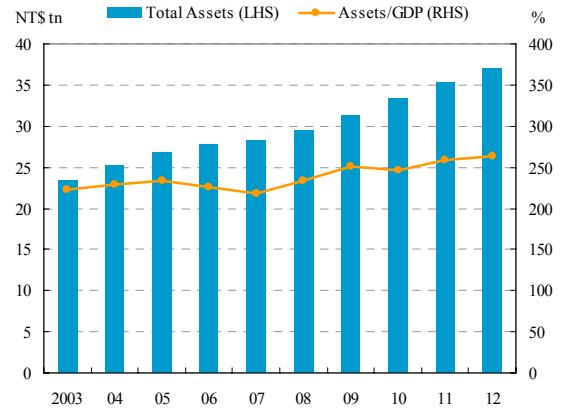
Note: Volatility refers to the annualized standard deviation of 20-day daily returns.
Source: CBC.

3.2 Financial institutions

3.2.1 Domestic banks

In 2012, the total assets of domestic banks accumulated at a slower pace due to the moderate growth rate in loans. Asset quality remained satisfactory and the credit concentration of corporate loans declined continuously; nevertheless, credit exposure in the real estate loans remained high. The estimated VaR for market risk exposures of domestic banks had limited influence on their capital adequacy. Moreover, liquidity risk was moderate as the banking system benefited from ample liquidity. The profitability of domestic banks reached a record high in 2012 with a sustained improvement in capital adequacy, strengthening the capability of domestic banks to bear risks.

Chart 3.15 Total assets of domestic banks



Note: Total assets are end-of-period figures.
Sources: DGBAS and CBC.

Total assets increased continually, while growth slowed

The total assets of domestic banks kept growing and reached NT$37.03 trillion at the end of 2012, equivalent to 263.69% of annual GDP (Chart 3.15). However, the annual growth rate of total assets decreased to 4.91% from 5.53% a year earlier, due to a slowing trend in loan growth.

Credit risk

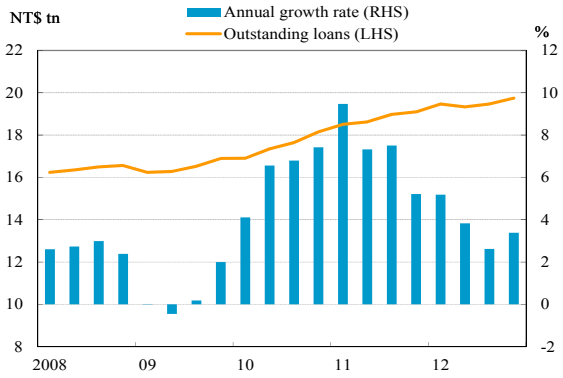
Customer loan growth slowed

Customer loans were the major source of credit risk for domestic banks. Outstanding loans of

the local business units of domestic banks[48] at the end of 2012 stood at NT$19.74 trillion (Chart 3.16) and accounted for 53.32% of total assets.

In the first three quarters of 2012, outstanding loans of the local business units of domestic banks accumulated at a slower pace in virtue of state-owned enterprises replacing bank borrowing with commercial paper issuance to meet their funding needs, as well as a notable decline in loans to government agencies. In 2012 Q4, following routine expenditures of government agencies at year-end and increasing funding demand for individual mortgage loans, the annual growth rate of loans resumed its upward trend and rose to 3.39% at the end of December (Chart 3.16). By category of borrowers, the annual growth rate of corporate loans was merely 3.18%, lower than 8.23% a year earlier, owing to sluggish domestic economic growth and falling funding demand. The annual growth rate of governmental loans and individual loans both ascended and registered 5.00% and 4.07%, respectively.

Chart 3.16 Outstanding loans and annual loan growth rate in domestic banks

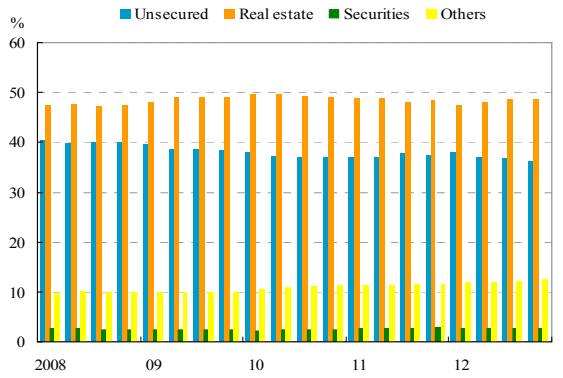


Note: Outstanding loans are end-of-period figures.
Source: CBC.

Concentration of credit exposure in real estate-related loans improved

Outstanding real estate-related loans[49] granted by the local business units of domestic banks amounted to NT$7.22 trillion, accounting for 36.58% of total loans as of the end of 2012. The ratio dropped by 0.38 percentage points over the previous year, reflecting an improved credit concentration of real estate-related loans. Meanwhile, real estate-secured credit granted by domestic banks stood at NT$11.55 trillion, or 48.72%

Chart 3.17 Credit by type of collateral in domestic banks



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

[48] The term "local business units of domestic banks" excludes Offshore Banking Units and overseas branches. The term "customer loans" herein refers to discounts, overdrafts, other loans and import bills purchased. It excludes export bills purchased, non-accrual loans and interbank loans.

[49] The term "real estate-related loans" herein refers to house-purchase loans, house-refurbishment loans and construction loans.

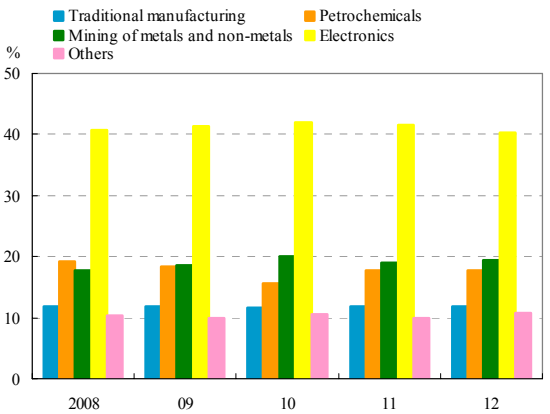
of total credit,[50] at the end of 2012. The ratio increased by 0.40 percentage points over the previous year (Chart 3.17). However, the growth of real estate-secured credit moderated and the annual growth rate declined to 4.95%. Among individual banks, nine had ratios of real estate-secured credit to total credit of over 60%. The number shrank from the peak of fifteen at the end of 2009, reflecting an improvement in the concentration of credit exposure in real estate-related loans.

Thanks to the effect of the CBC's and the FSC's measures to strengthen risk management regarding the real estate-related loans of banks, the concentration of credit exposure in real estate-related loans improved gradually throughout 2012. In addition, the establishment of a property transaction price registration system, which makes transaction prices open for public online inquiry, was expected to promote transaction information transparency and the future development of the real estate market. However, for those banks with credit exposures highly concentrated in real estate-related loans in some areas with ample housing supply, it would be advisable to monitor downward adjustment pressure on housing prices and develop strategies to cope with potentially heightening credit risks.

Credit concentration of corporate loans gradually declined

Outstanding corporate loans of the local business units of domestic banks stood at NT$8.85 trillion at the end of 2012, while loans to the manufacturing sector registered NT$3.94 trillion and accounted for the largest share of 44.50% of the total. Within the manufacturing category,[51] the largest proportion of loans was for the electronics industry, which stood at NT$1.59 trillion and accounted for 40.29% of the total loans to the whole manufacturing sector. The ratio continuously declined over the past two years (Chart 3.18), reflecting a descending credit concentration of corporate loans to the electronics industry.

Chart 3.18 Weight of loans to the manufacturing sector by domestic banks



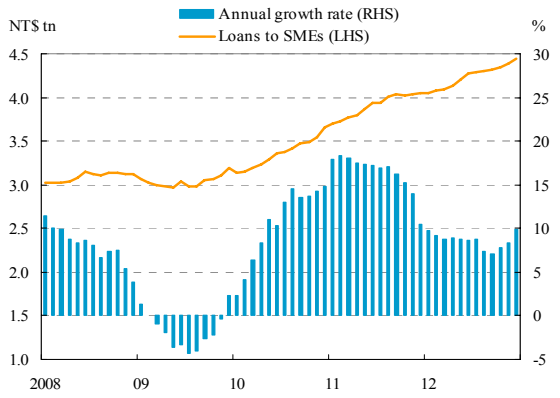
Notes: 1. End-of-period figures.
2. Weight of each sector = loans to each sector / loans to the whole manufacturing sector.
Source: CBC.

[50] The term "credit" herein includes loans, guarantee payments receivable and acceptances receivable.
[51] Loans to the manufacturing sector are divided into four categories by industry, including: (1) electronics industries, (2) mining of metals and non-metals industries, (3) petrochemicals industries and (4) traditional manufacturing industries. The remainder are classified as "others."

A few TFT-LCD and DRAM manufacturers have suffered great losses in recent years, and some have even applied for debt restructuring or bailouts. The vulnerability of these manufacturers could impact the loan quality of their creditors' banks. Thanks to the gradual recovery of global economic growth since 2012 Q4, the annual growth rate of total export volumes turned positive, which should bolster the prospects of the abovementioned industries. However, domestic banks need to pay close attention to these financial conditions and the business cycles of such borrowers to contain their credit risks.

In the first three quarters of 2012, the supply of credit to SMEs grew at a slower pace due to sluggish market conditions worldwide. With the increase in funding demand resulting from stable global economic recovery commencing in Q4, outstanding corporate loans to SMEs by domestic banks expanded to NT$4.45 trillion at the end of 2012, representing a rebounding annual growth rate of 9.89%[52] (Chart 3.19). Furthermore, in line with the government's policies geared towards improving economic growth and employment, the Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) has also implemented several projects to expand guarantees provision. This, together with the Program to Encourage Lending by Domestic Banks to Small and Medium Enterprises launched by the FSC, has encouraged financial institutions to provide more credit to SMEs. As a result, the outstanding amount of loan guarantees applied for by SMEs through the SMEG kept rising and increased 10.23% from year-end 2011 to reach NT$748.8 billion at the end of 2012, and accounted for 16.84% of total SME loans. The guarantee coverage percentage also increased to 79.29% from 78.96% a year earlier. These statistics point to the favorable conditions for SMEs to acquire necessary funds.

Chart 3.19 Loans to SMEs by domestic banks



Source: FSC.

[52] According to FSC data, outstanding corporate loans to SMEs by domestic banks at the end of 2012 rose by NT$380 billion year on year, which surpassed the 2012 targeted increase of NT$220 billion.

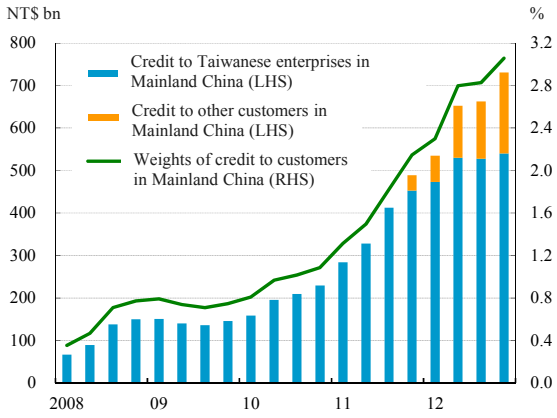
Credit to customers in Mainland China continuously increased but only accounted for a small share of total credit

Outstanding credit to customers in Mainland China by domestic banks increased continuously and reached NT$731.1 billion at the end of 2012, accounting for only a small share of 3.06% of total credit (Chart 3.20). The non-performing credit ratio of such credit at the end of 2012 was a mere 0.1%, reflecting satisfactory asset quality. Most of the credit to customers in Mainland China was extended to Taiwanese enterprises, which accounted for 73.93% of such credit. However, credit to other customers in Mainland China increased substantially as offshore banking units of domestic banks ramped up extending credit to such customers.

According to Article 12-1 of Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area, the aggregate amount of credit, investment, interbank loans and interbank deposits extended by domestic banks to any individuals, juristic persons, organizations or institutions in Mainland China or their branches in any country or area outside Mainland China should not exceed 100% of the bank's net worth as of the end of the preceding fiscal year. At the end of April 2013, the aggregate amount of such exposures of all domestic banks to their total net worth was 44%. No domestic bank exceeded the statutory limit.

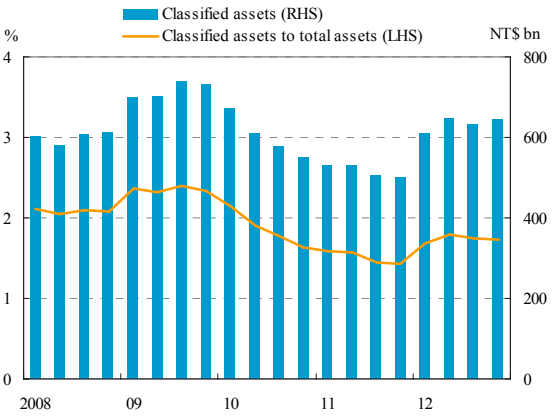
Along with the establishment of the cross strait currency clearing mechanism, financial interactions between the two sides of the Strait have become more extensive, contributing to rapid growth in credit to customers in Mainland China by domestic banks. However, in Mainland China, labor

Chart 3.20 Credit to customers in Mainland China by domestic banks



Note: Figures for "credit to other customers in Mainland China" started from December 2011.
Source: FSC.

Chart 3.21 Classified assets of domestic banks



Note: Excludes interbank loans.
Source: CBC.

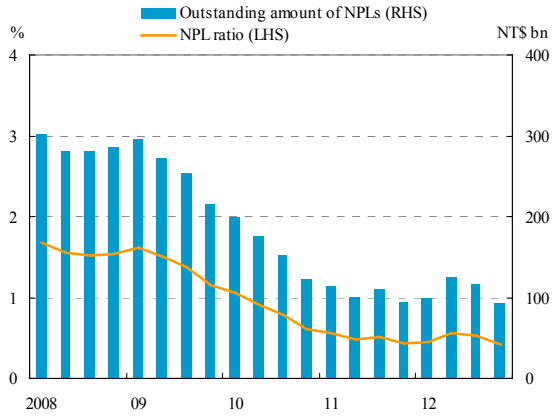
costs have increased steadily and profits of many industries have been hit by overcapacity, which might increase the risks of enterprises operating there and negatively impact the asset quality of their related creditor banks. Accordingly, domestic banks should cautiously monitor the credit risks of borrowers and counterparties in Mainland China.

NPL ratio registered a record low

Outstanding classified assets[53] and the average classified asset ratio of domestic banks stood at NT$643.2 billion and 1.74% at the end of 2012, increasing by 27.84% and 0.31 percentage points, respectively, over the previous year (Chart 3.21). The reason was primarily because loans to a few TFT-LCD and DRAM manufacturers were categorized as classified assets by banks. Expected losses of classified assets[54] stood at NT$83.5 billion at the end of 2012, increasing by NT$1.8 billion or 2.26% year on year. However, the ratio of expected losses to loan loss provisions stood at 27.85%, indicating sufficient provisions to cover expected losses.

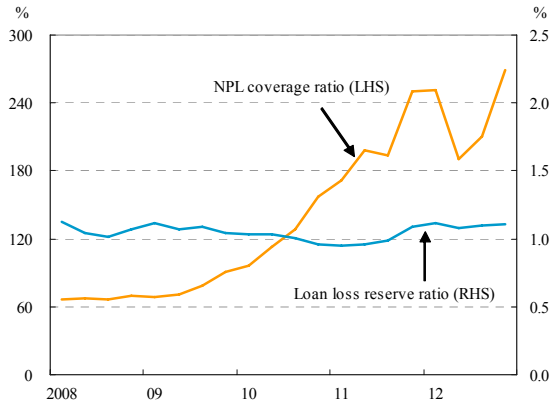
The outstanding NPLs of domestic banks stood at NT$92.9 billion at the end of 2012, contracting by 1.31% year on year. Meanwhile, the average NPL ratio fell to a record low of 0.41% (Chart 3.22). With the decrease in NPLs, the NPL coverage ratio at the end of 2012 rose to 269.07%. The loan loss reserve ratio increased to 1.11% as a result of an increase in loan loss provisions (Chart 3.23). Among 39 domestic banks, all had NPL ratios of less than 1%, except for

Chart 3.22 NPL ratio of domestic banks



Note: Excludes interbank loans.
Source: CBC.

Chart 3.23 NPL coverage ratio and loan loss reserve ratio of domestic banks



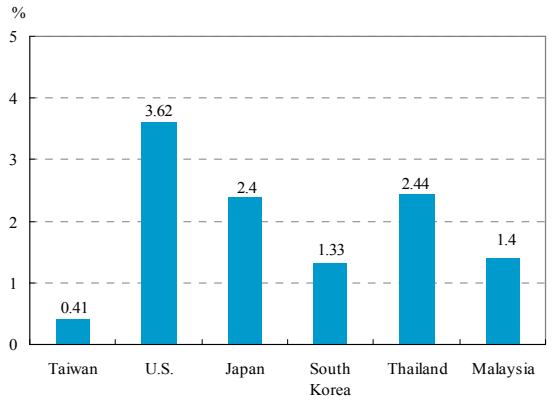
Notes: 1. NPL coverage ratio = loan loss provisions / non-performing loans.
2. Loan loss reserve ratio = loan loss provisions / total loans.
3. Excludes interbank loans.
Source: CBC.

[53] 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.

[54] Loss herein refers to the losses from loans, acceptances, guarantees, credit card revolving balances, and factoring without recourse.

two with ratios between 1% and 2% at the end of 2012. Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was much lower (Chart 3.24).

Chart 3.24 NPL ratios of banks in selected countries



Note: Figure for Japan is end-September 2012 data, while the others are end-December 2012.
Sources: CBC, FDIC, FSA, FSS, BOT and BNM.

Market risk

Estimated Value-at-Risk for market risk exposures decreased

The net position of debt securities accounted for the largest share of total market risk exposures of domestic banks, followed by the net position of equity securities and foreign exchange net position at the end of 2012. Using market data as of the end of February 2013, the estimated total VaR calculated by the CBC's market risk model[55] for foreign exchange, interest rate and equity exposures of domestic banks at the end of 2012 stood at NT$119.6 billion, decreasing by NT$9.1 billion or 7.07% compared to the figure a year earlier. Among market risks, equity VaR showed a significant fall of 52.74% owing to the marked decline of stock price volatility from the second half of 2012 onwards. Foreign exchange VaR increased, though the amount was not large. Interest rate VaR changed only slightly as a result of stable interest rates (Table 3.1).

The effects of market risk on capital adequacy ratios were limited

According to the estimated results mentioned above, the total VaR would cause a decrease of 0.51 percentage points in the average capital adequacy ratio of domestic banks and induce the current ratio of 12.54% to fall to 12.03%. It shows that the effects of market risk may be considered as limited.

[55] 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.

Table 3.1 Market risks in domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2011	End-Dec. 2012	Changes	
				Amount	%
Foreign exchange	Net position	60.3	71.0	10.7	17.74
	VaR	1.5	1.8	0.3	20.00
	VaR / net position (%)	2.49	2.54		0.05
Interest rate	Net position	5,848.5	6,314.6	466.1	7.97
	VaR	111.5	113.0	1.5	1.35
	VaR / net position (%)	1.91	1.79		-0.12
Equities	Net position	536.6	539.3	2.7	0.50
	VaR	65.8	31.1	-34.7	-52.74
	VaR / net position (%)	12.26	5.77		-6.49
Total VaR		128.7	119.6	-9.1	-7.07

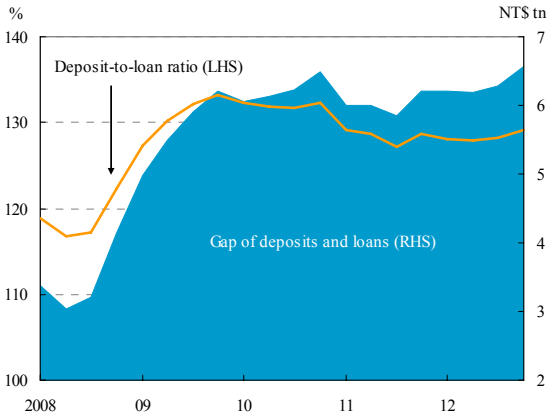
Note: The total VaR is not equal to the sum of the VaRs of the three types of risks since it has taken the correlation among the three risk categories into consideration.
Source: CBC.

Liquidity risk

Liquidity in the banking system remained ample

Given that the increase in deposits slightly exceeded that in loans in 2012, the average deposit-to-loan ratio of domestic banks rose to 129.06% at the end of December. The funding surplus (i.e., deposits exceeding loans) also expanded to NT$6.57 trillion, indicating that the overall liquidity in domestic banks remained abundant (Chart3.25).

Chart 3.25 Deposit-to-loan ratio of domestic banks

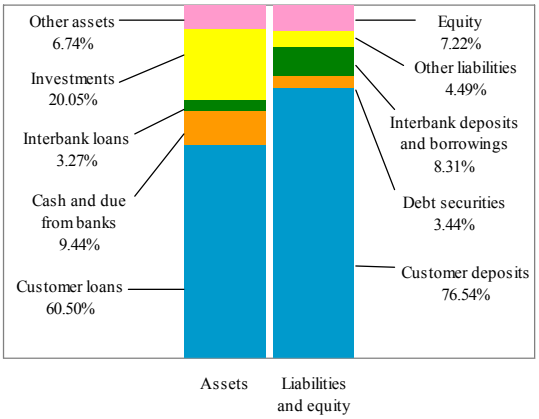


Note: Deposit-to-loan ratio = total deposits / total loans.
Source: CBC.

As for the sources of funds on the liability and equity side, relatively stable customer deposits accounted for the largest share of 76.54% of the total, slightly lower than 77.11% a year earlier, followed by interbank deposits and borrowings at 8.31%, while debt securities issues contributed a mere 3.44% at the end of 2012. Regarding the uses of funds on the asset side, customer loans accounted

for the biggest share of 60.50% with a year-on-year fall of 0.21 percentage points, and cash and due from banks slightly declined to a share of 9.44%, while securities investments slightly rose from 19.19% to 20.05% at the end of 2012 (Chart 3.26).

Chart 3.26 Asset/liability structure of domestic banks

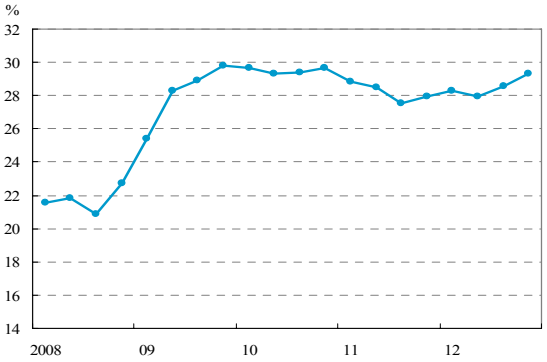


Notes: 1. Figures are as of end-December 2012.
2. Interbank deposits include deposits with the CBC.
Source: CBC.

Overall liquidity risk was moderate

The average NT dollar liquid reserve ratio of domestic banks was 29.33% in December 2012. It increased by 1.37 percentage points compared to the figure a year earlier and was well above the statutory minimum of 10% (Chart 3.27), while the ratio of each domestic bank was higher than 15%. In the same period, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the CBC, accounted for 89.97% of total liquid reserves,[56] while Tier 2 and Tier 3 reserves accounted for 9.93% and 0.10%, respectively. This revealed that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risk was moderate.

Chart 3.27 Liquid reserve ratio of domestic banks



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

Profitability

Profits rose to a historical high

The aggregate net income before tax of domestic banks reached a historical high of NT$240.7 billion in 2012, with a substantial increase of NT$39.9 billion or 19.89% year on year, mainly due to a rise in gains on financial instruments and net interest income. Among them, net income before tax of OBUs and overseas branches significanly grew by 74.47%

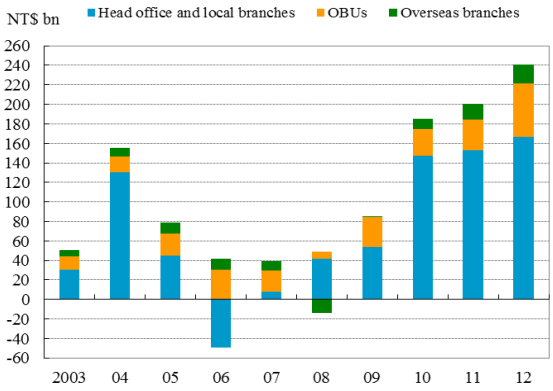
[56] Tier 1 liquid reserves include excess reserves, net due from banks in the call-loan market, re-deposits at designated banks with terms to maturity of no more than one year, certificates of deposit issued by the CBC, government bonds and treasury bills. Tier 2 liquid reserves include NT dollar-denominated bonds issued in Taiwan by international financial organizations, negotiable certificates of deposit, bank debentures, banker's acceptances, trade acceptances, commercial paper and corporate bonds. Tier 3 liquid reserves include beneficial securities issued in accordance with the asset securitization plan and other liquid assets as approved by the CBC.

and 21.83%, respectively, driven by increases in loan volumes and interest rate spreads. Both of them accounted for nearly one-third of the total net income and greatly contributed to the rise of the profitability of domestic banks (Chart 3.28). In particular, as the relevant authorities have gradually deregulated cross-strait financial activities and the RMB business since 2011, OBUs have enjoyed a remarkable expansion of activities and recorded historically high profits (Box 4).

The weighted average ROE and ROA for domestic banks as a whole rose to 10.33% and 0.67%, respectively, in 2012, from 9.27% and 0.58% in 2011, and reached a ten-year high (Chart 3.29). However, compared to selected Asia-Pacific neighboring countries, the profitability of domestic banks was relatively low (Chart 3.30).

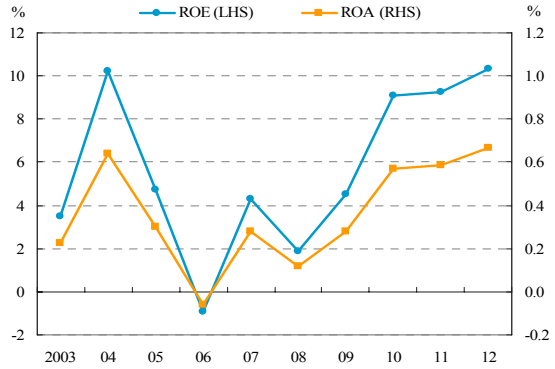
All 39 domestic banks posted profits in 2012. Among them, two banks reported profits of more than NT$20 billion, but some banks registered lower profits than the previous year due to reductions in net fee income or increases of provisions for loan losses. Moreover, eight banks achieved profitable ROEs of 15% or more, increasing from three banks in 2011, and the ROEs of 24 banks increased compared to those in 2011. In addition, the number of domestic banks whose ROAs reached the international standard of 1% increased to seven (Chart 3.31).

Chart 3.28 Net income before tax of domestic banks



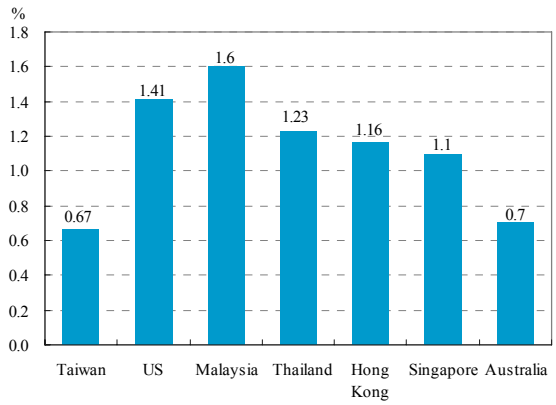
Source: CBC.

Chart 3.29 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.

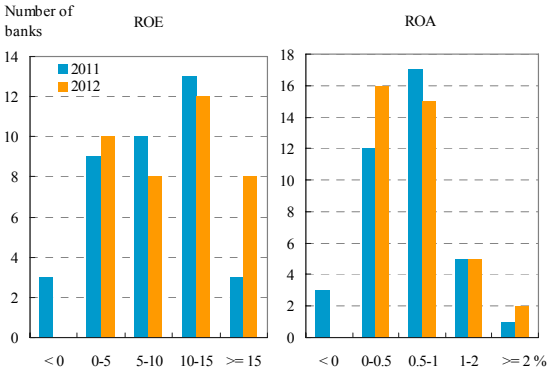
Chart 3.30 Comparison of ROAs of banks in selected countries



Note: Data for Singapore and Australia are for the first three quarters of 2012, while the others are for the whole of 2012.
Sources: CBC, FDIC, BNM, BOT, HKMA, MAS and APRA.

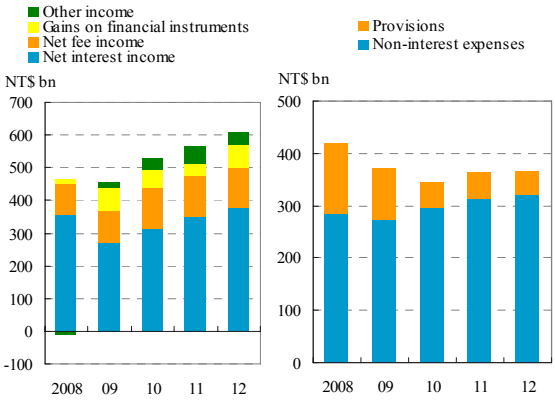
Total net operating income of domestic banks rose by NT$42.5 billion or 7.53% in 2012. Of which, net interest income continually grew, increasing by NT$24.7 billion or 6.98% compared to the previous year, and accounted for 62% of the total. Contributed to by a boost in fee incomes from the sale of insurance products, though combined with a decline of fee incomes from trust activities caused by global financial market turmoil, net fee income slightly increased by NT$1.7 billion or 1.42% year on year and accounted for 20% of the total. Additionally, net gains on financial instruments increased by NT$31.5 billion, driven by a substantial increase of valuation gains, and accounted for 12% of net operating income (Chart 3.32).

Chart 3.31 Distribution of ROEs and ROAs of domestic banks



Source: CBC.

Chart 3.32 Composition of incomes and costs of domestic banks



Source: CBC.

The operating costs of domestic banks increased slightly by NT$2.5 billion in 2012. This was primarily due to the growth of personnel costs which led to an increase in non-interest expenses[57] by NT$8.4 billion year on year and accounted for 87.76% of total operating costs. In addition, owing to decreases in charges for loan loss provisions and the recovery of previously impaired loans, loan provisions decreased by NT$5.8 billion to NT$44.8 billion in 2012, the lowest level during the past ten years, and accounted for 12.24% of total operating costs (Chart 3.32).

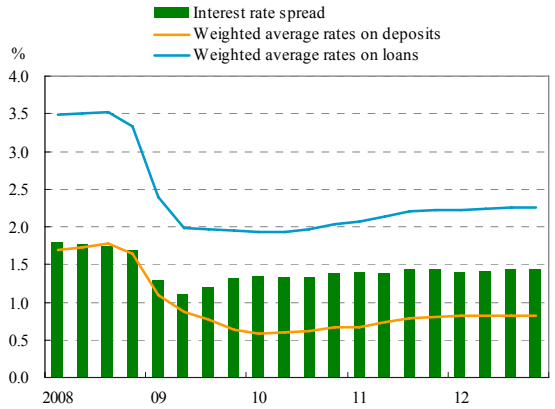
Factors that might affect future profitability

Despite a slight drop in the interest rate spread between deposits and loans during the first half of 2012, banks made efforts to adjust deposit structures and actively granted SME loans with higher loan margins. As a result, the interest rate spread rebounded to 1.43 percentage points in the second half of 2012 (Chart 3.33). This was helpful in boosting domestic banks' profitability. In view of ample liquidity and intense competition in the domestic banking

[57] Non-interest expenses include personnel costs and other operating and management expenses.

sector, the interest rate spread is unlikely to widen markedly in the short term. Banks are advised to enhance financial innovation and provide differential financial services, as well as strengthen their risk management, so as to lift their future profitability.

Chart 3.33 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.

Moreover, in order to help banks improve their ability to respond to a future economic downturn, the FSC announced the Measures to Enhance the Management of Credit Risk of Domestic Banks on 7 January 2013. They provided for a phased implementation of differential incentives and regulatory measures aiming at spurring domestic banks to raise their loan provisions for normal credit assets to 1% or higher as soon as possible. As of the end of March 2013, the average provisions for normal credit assets of the 39 domestic banks was 0.91%, and seventeen of them had ratios above 1%. However, some banks with ratios lower than 1% will need to increase provisions and this will in turn affect their future profits.

Capital adequacy

Capital adequacy ratios[58] ascended

Eligible capital of domestic banks has continuously expanded as a result of increases in common stock and accumulated earnings, and the expansion of eligible capital was larger than that of risk-weighted assets, leading the average capital adequacy ratio at the end of 2012 to rise from 12.06% in the previous year to 12.54%. The Tier 1 capital ratio also went up to 9.49% from 9.08% the previous year (Chart 3.34), showing continuous improvement in the capital adequacy level. Compared to the US and some neighboring Asia-Pacific countries, the average capital adequacy ratio of domestic banks was higher than that of Australia, but lower than those of the US and other Asian countries (Chart 3.35).

[58] In this section, the capital adequacy related ratios of domestic banks at the end of 2012 were audited and certified by certified public accountants.

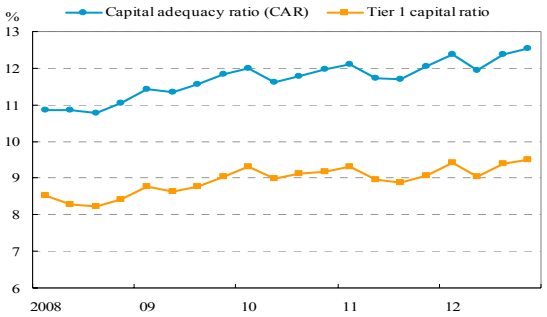
Further breaking down the components of regulatory capital, Tier 1 capital, which features the best risk-bearing capacity, accounted for 75.64% of eligible capital, while Tier 2 capital registered 24.36%, and Tier 3 capital was zero at the end of 2012. Compared to the end of the previous year, there was no significant difference in the capital structure of domestic banks (Chart 3.36).

All domestic banks held sufficient capital, albeit several of them faced pressure to raise their capital levels

The capital adequacy ratios of all domestic banks remained above the statutory minimum requirement of 8% at the end of 2012. In addition, there were 24 banks with ratios above 12% (Chart 3.37), seven more than that of the previous year. Among all 39 domestic banks, 22 of them showed year-on-year improvements in their capital adequacy ratios.

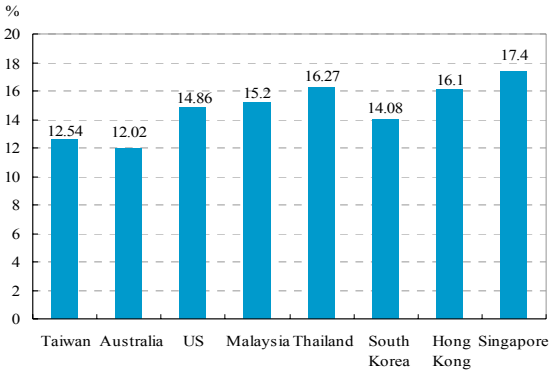
Since the Basel III standards will be phased in gradually beginning 2013, the FSC, referring to Basel III requirements, revised the Regulations Governing the Capital Adequacy and Capital Category of Banks and related calculation methods in November 2012. The Regulations set out the minimum capital requirements during the transition period for each year of 2013-2019. They also specified that the common equity, Tier 1 capital, and capital adequacy ratios should be no less than 7%, 8.5% and 10.5%, respectively,

Chart 3.34 Capital adequacy ratio of domestic banks



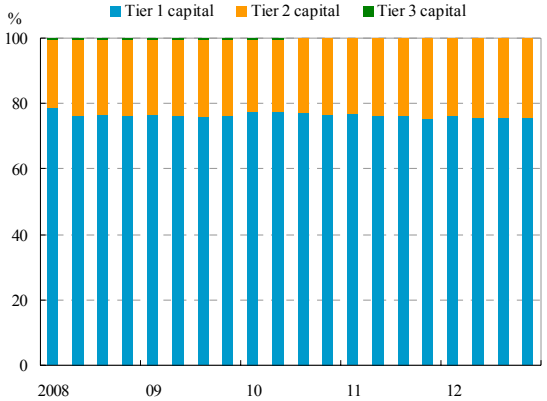
Notes: 1. End-of-period figures.
2. Capital adequacy ratio = eligible capital / risk-weighted assets.
3. Tier 1 capital ratio = tier 1 capital / risk-weighted assets.
Source: CBC.

Chart 3.35 Comparison of capital adequacy ratios in selected countries



Note: Figures of Australia, South Korea and Singapore are as of September 2012; the others are as of the end of 2012.
Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA and MAS.

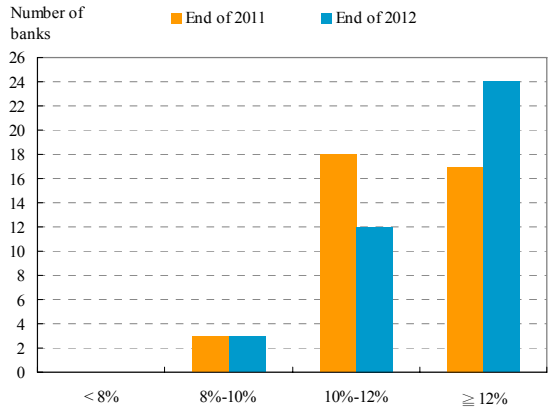
Chart 3.36 Domestics banks' eligible capital



Note: Tier 3 capital figure for the end of 2012 is 0%, and for the other periods figures are from 0% to 0.34%.
Source: CBC.

commencing 2019 (Box 5). Even though average Tier 1 capital ratios and capital adequacy ratios of domestic banks at the end of 2012 met the minimum requirements set for 2019, several banks with low capital buffers still faced pressure to raise capital levels. Besides Basel III requirements, banks aiming at expanding cross-strait financial activities should also actively reinforce capital levels in order to meet their business needs.[59]

Chart 3.37 Number of domestic banks classified by capital adequacy ratios



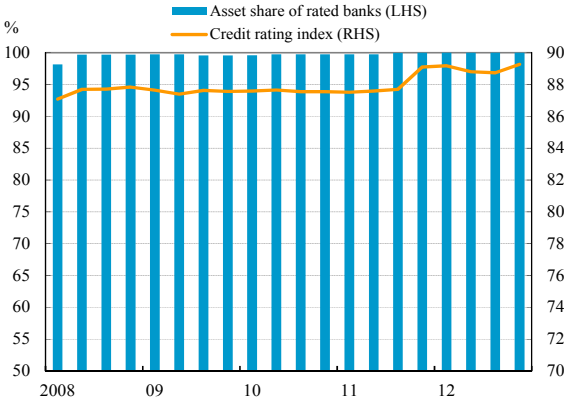
Source: CBC.

Credit ratings

Average credit rating level slightly improved

According to the rating results[60] released by credit rating agencies, the credit rating index[61] of Taiwan's domestic banks lifted slightly in 2012 (Chart 3.38), reflecting the improvement of the overall credit rating level. The main reason behind it was that one bank, which was set up in January 2012, received the highest rating of AAA(twn), and two banks were upgraded in the second half of 2012.

Chart 3.38 Credit rating indices of rated domestic banks



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

As for the overall risk assessments of Taiwan's banking system made by credit rating agencies, Standard & Poor's Banking Industry Country Risk Assessment (BICRA)[62]

[59] According to Article 12-1 of the Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institutions Between the Taiwan Area and the Mainland Area, for business activities of a Taiwanese bank in the mainland area, its aggregate amount of credit, investment and interbank loans and deposits may not exceed 100 % of the bank's net worth as of the end of the preceding fiscal year. In order to strengthen their ability to conduct business in Mainland China, banks should raise their capital levels and net worth.

[60] As of the end of 2012, the majority of Taiwan's domestic banks received long-term issuer ratings from Taiwan Ratings, followed by those with national long-term ratings from Fitch Ratings. Therefore, this section is based primarily on the Taiwan Ratings ratings (tw~), and secondarily on Fitch ratings (~(twn)).

[61] 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.

[62] 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.

maintained Taiwan's BICRA unchanged at Group 4. Compared to other Asian economies, the risk of Taiwan's banking industry was about the same as that of Malaysia, but much lower than those of Thailand, Mainland China, Indonesia and the Philippines. The overall risk evaluated by Fitch Ratings' Banking System Indicator/ Macro-Prudential Indicator (BSI/MPI)[63] remained at level bbb/1, equivalent to C/1 a year before, and was about the same as those of Japan, South Korea, Malaysia and Thailand (Table 3.2).

Table 3.2 Systemic risk indicators for the banking system

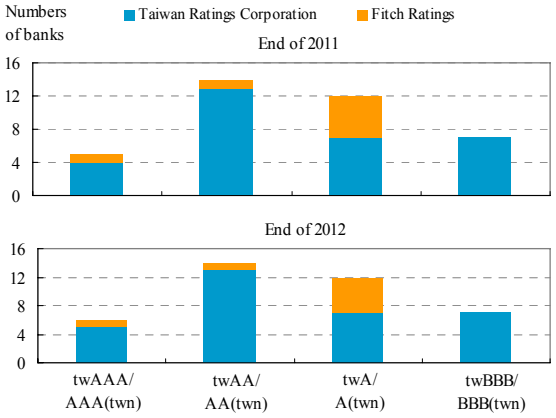
Banking System	Standard and Poor's		Fitch	
	BICRA		BSI/MPI	
	2012/2	2013/2	2012/2	2013/2
Hong Kong	2	2	B/3	a/3
Singapore	2	2	B/2	aa/2
Japan	2	2	C/1	bbb/1
South Korea	3	3	C/1	bbb/1
Taiwan	**4**	**4**	**C/1**	**bbb/1**
Malaysia	4	4	C/1	bbb/1
Thailand	5	5	C/1	bbb/1
Mainland China	5	5	D/3	bb/3
Indonesia	7	7	D/3	bb/3
Philippines	7	7	D/1	bb/1

Sources: Standard and Poor's and Fitch Ratings.

Rating outlooks for a majority of domestic banks remained stable or positive

All domestic banks were rated by credit rating agencies for 2012. Most of them maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2012, and none had credit ratings lower than twBBB/BBB(twn) (Chart 3.39). The results were similar to those received the previous year. Regarding rating outlooks or CreditWatch, 35 banks remained stable or positive, while 4 banks turned negative in 2012 due to deteriorating capital and earnings, a rating downgrade of the bank's parent company, or increasing capital pressure after M&A activity.

Chart 3.39 Number of domestic banks classified by credit ratings



Sources: Taiwan Ratings Corporation and Fitch Ratings.

[63] 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, based on the synthetic assessment results composed of individual ratings and systematic risks in the banking system, measures intrinsic banking system quality or strength on a scale from A (very high quality) to E (very low quality). In August 2012, Fitch Ratings introduced new BSI methodology, which rules out potential support from shareholders or governments and generates a standalone measure of banking system strength with an aim to highlight systemic weakness that may trigger the need for such support. The new BSI ranges from aa, a, bbb, bb, b, ccc, cc and c. There is no precise mapping between old and new BSI. However, as a rule of thumb, the old BSI A is roughly equivalent to the new BSI aa; the old BSI B to new BSI a; the old BSI C to new BSI bbb and the old BSI D to new BSI bb-/b. 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.

3.2.2 Life insurance companies

In 2012, the total assets of life insurance companies grew at an accelerated pace, reaching a historical high at the end of the year, and their profitability also improved and recorded a five-year high due to the improvement of operating performance. Nevertheless, the average RBC ratio of life insurance companies at the end of 2012 was lower than that of a year earlier, and the financial strength of a few companies needs to be bolstered as soon as possible. The credit ratings of the eleven rated life insurance companies generally remained stable in 2012.

Assets grew healthily, reaching a historically high level

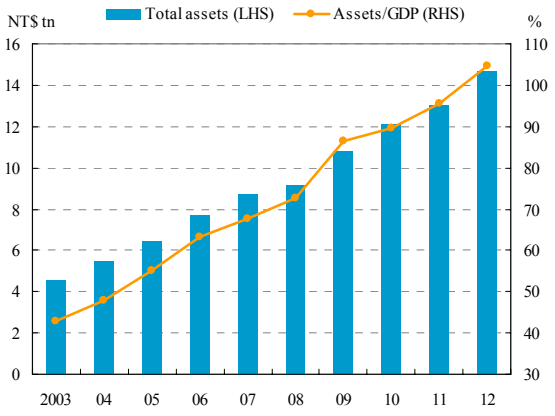
The total assets of life insurance companies continually grew and reached a historically high level of NT$14.71 trillion at the end of 2012, equivalent to 104.78% of annual GDP (Chart 3.40). Meanwhile, the annual growth rate of total assets significantly rose to 12.64% at the end of 2012, compared to 7.69% a year before.

At the end of 2012, twenty-four domestic life insurance companies[64] held a 98.42% market share by assets, five of which were foreign affiliates holding a 3.24% market share, while six foreign life insurance companies held the remaining 1.58% of total assets. The top three companies in terms of assets held a combined market share of 54.11%, with a slight increase of 0.84 percentage points year on year. The market structure of the life insurance industry roughly remained unchanged in 2012.

Domestic and foreign securities investments had higher growth rates

The funds of life insurance companies at the end of 2012 were chiefly invested in foreign and domestic securities which accounted for 35.62% and 34.21% of total assets, respectively. Loans only accounted for 8.46% of total assets, with cash and deposits accounting for 5.57% and real estate for 4.38%. As for the sources of funds, various policy reserves constituted 85.29%, with net worth making up only 4.02%, reflecting the

Chart 3.40 Total assets of life insurance companies



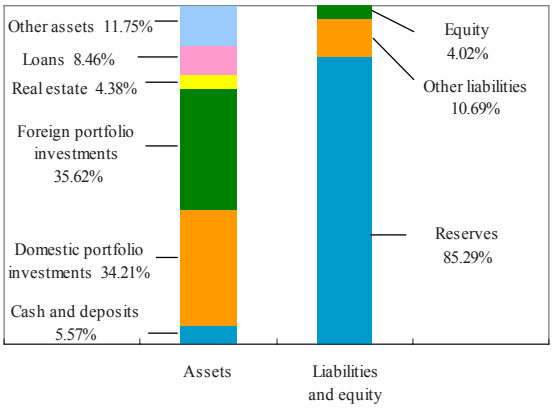
Sources: FSC and DGBAS.

[64] Foreign affiliates included.

high financial leverage of life insurance companies (Chart 3.41).

The usable funds of life insurance companies continued growing in 2012, mainly owing to the increase of domestic and foreign securities investments. Of them, benefiting from the relaxation of foreign investment regulations, foreign securities investments grew by a substantial 22.44%. Domestic securities investments also grew modestly by 7.08%.

Chart 3.41 Asset/liability structure of life insurance companies

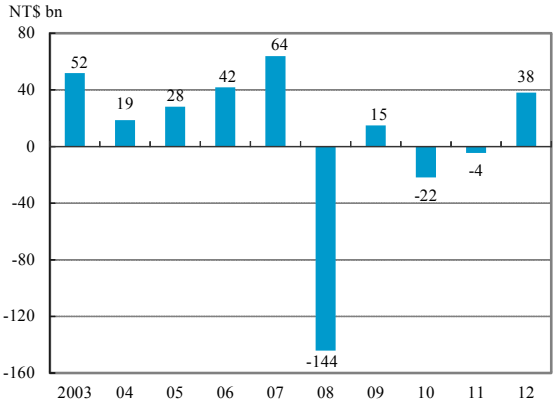


Note: Figures are end-December 2012 data.
Source: FSC.

Net profits rebounded to a five-year high

Life insurance companies reported a net income before tax of NT$38 billion, recording a five-year high (Chart 3.42), mainly due to a sharp increase in premium income induced by the expectation of rising premiums,[65] as well as cash dividends received from investment portfolios and valuation profits driven by ascending stock prices.

Chart 3.42 Net income before tax of life insurance companies



Source: FSC.

During the same period, average ROE and ROA were 7.43% and 0.27%, respectively, higher than those of the previous year (Chart 3.43). If Kuo Hua Life Insurance Company[66] was excluded, the net income before tax of life insurance companies as a whole would have risen to NT$41.1 billion, and average ROE and ROA would have stood at 7.01% and 0.30%, respectively.

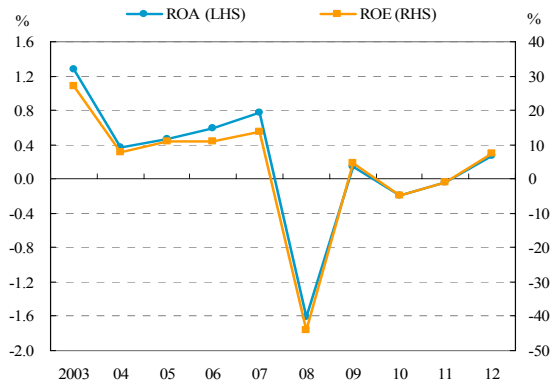
[65] The FSC announced 2 reductions in the interest rate on reserves for new insurance policies in 2012, which induced public expectations of rising premiums.

[66] Kuo Hua Life Insurance Company, registering a net loss before tax of NT$3.2 billion in 2012, was taken into receivership by the Insurance Stabilization Fund and was sold by tender to TransGlobe Life Insurance Company.

Average RBC ratio dropped moderately but was still above the statutory minimum

Owing to the increase of unrealized profits from financial products, the regulatory capital of life insurance companies as a whole rose during 2012. However, the average RBC ratio[67] of life insurance companies, excluding Kuo Hua Life Insurance Company, declined to 229.32% at the end of 2012, from 238.38% a year before. The reason was primarily because the increase in RBC of life insurance companies, caused by greater domestic and foreign securities investments and stricter capital requirements for real estate investments,[68] was higher than that of their regulatory capital. Nevertheless, the average RBC ratio still remained above the statutory minimum of 200%. By individual companies, there were twelve companies with ratios over 300%, the same as at the end of 2011. However, five companies, whose combined assets accounted for 4.44% of the total, had ratios below 200% (Chart 3.44). The financial structure of those companies needs to be improved as soon as possible.

Chart 3.43 ROE & ROA of life insurance companies



Notes: 1. ROA = net income before tax / average assets.
2. ROE = net income before tax / average equity.
Source: FSC.

Chart 3.44 Number of life insurance companies classified by RBC ratios

Note: Kuo Hua Life Insurance Company, which was taken into receivership by the Insurance Stabilization Fund, is excluded.
Source: FSC.

Overall credit ratings kept stable, except for some with negative credit outlooks

None of the eleven life insurance companies rated by Taiwan Ratings or Fitch Ratings received credit rating adjustments in 2012, with all maintaining credit ratings above twA.[69]

[67] Risk-based capital ratio = regulatory capital / risk-based capital. According to Article 143-4 of the Insurance Act, the risk-based capital ratio of the insurance industry cannot be below 200%.
[68] According to the explanation of RBC ratio calculation for 2012 by the FSC on 22 November 2012, the risk weight of real estate was raised from 0.0744 to 0.0781. However, as for vacant land or real estate not in accordance with the criterion of instant application with yield, the mark-up on capital set aside was raised from 30% to 40%.
[69] Cathay Life Insurance Company, though not having its credit rating adjusted by Taiwan Ratings or Fitch Ratings, was downgraded by Moody's from Baa1 to Baa2.

The three biggest companies by assets were all rated twAA+, showing strong capability to fulfill all financial commitments.

The credit outlooks of most rated companies remained stable. Only four companies were put onto the list of negative outlook by Taiwan Ratings for the reason that the prevailing low interest rate environment might be unfavorable for improving their profitability, and growing risk positions and volatile capital markets might undermine their capital adequacy.

The challenges faced by life insurance companies

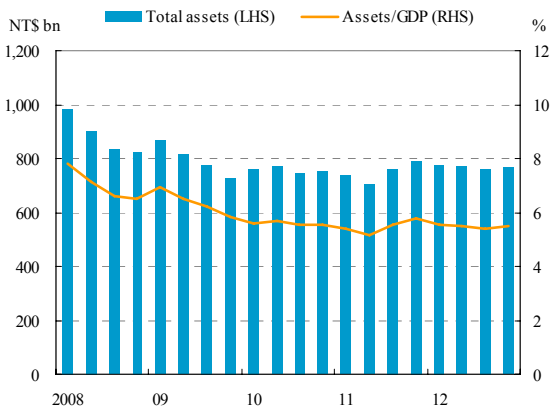
In general, the overall operations and financial health of life insurance companies improved in 2012. However, the problem of capital inadequacy faced by a few life insurance companies showed that, apart from capital injection and stricter supervision of those companies, replenishing the Insurance Stabilization Fund and establishing a resolution mechanism for the insurance industry will be important issues to be tackled in the future.

Moreover, globally interest rates have stayed at extremely low levels during recent years owing to easy monetary policies adopted by major countries. Once interest rates rebound, on one hand it will contribute to improving the situation of interest rate spread losses faced by life insurance companies, but on the other hand it might induce valuation losses for their huge bond investments and raise liquidity risk if policy holders herd to surrender their policies. Life insurance companies should prepare for and deal with those risks cautiously.

3.2.3 Bills finance companies

The total assets of bills finance companies lingered at a low level in 2012, while profitability remained stable. The quality of credit assets remained sound, yet the liquidity risk stayed high. Although the average capital adequacy ratio of bills finance companies as a whole declined somewhat, the ratio of each company still kept above the statutory minimum.

Chart 3.45 Total assets of bills finance companies



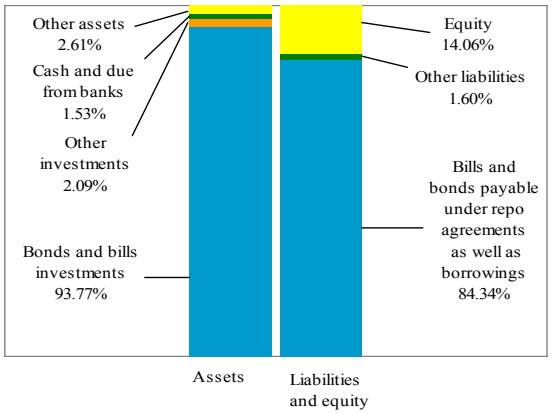
Note: Total assets are end-of-period figures.
Sources: CBC and DGBAS.

Total assets lingered at a low level

The total assets of bills finance companies declined gradually and lingered at a low level in 2012. The total assets of bills finance companies stood at NT$768.3 billion at the end of 2012, which was equivalent to 5.47% of annual GDP and decreased by 2.82% year on year (Chart 3.45). Of eight bills finance companies, the top three companies held a combined market share of 74.46% by assets, while each of the other firms had a market share below 7%.

Regarding the structure of assets and liabilities of bills finance companies, bonds and bills investments constituted 93.77% of total assets at the end of 2012, a decrease of 0.24 percentage points year on year. The sources of funds were mainly made up of short-term repo transactions and borrowings which accounted for 84.34% of total assets, while the net worth was only 14.06% of total assets (Chart 3.46).

Chart 3.46 Asset/liability structure of bills finance companies



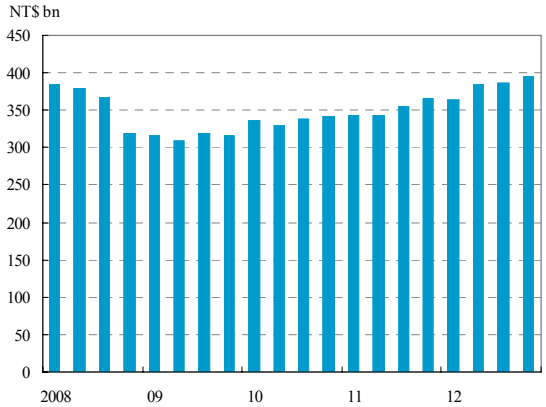
Note: Figures are end-December 2012 data.
Sources: CBC and FSC.

Credit risks

Outstanding balance of guarantees rebounded gradually

The commercial paper guarantees business is the major source of credit risks for bills finance companies. Following the increased issuance of commercial paper by private corporations for short term funding, the outstanding guarantees business undertaken by bills finance companies rebounded gradually, registering NT$395.7 billion at the end of 2012, with an increase of NT$29.4 billion or 8.04% year on year (Chart 3.47). The average multiple of guarantees outstanding to net worth of bills finance companies stood at 4.08 times at the end of 2012, higher than 3.90 times a year before, while each bills finance company conformed

Chart 3.47 Outstanding commercial paper guarantees of bills finance companies



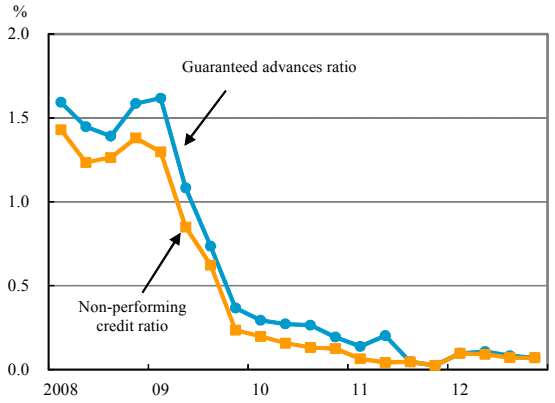
Note: End-of-period figures.
Source: CBC.

to the regulatory ceiling of five times.[70]

Credit quality remained sound

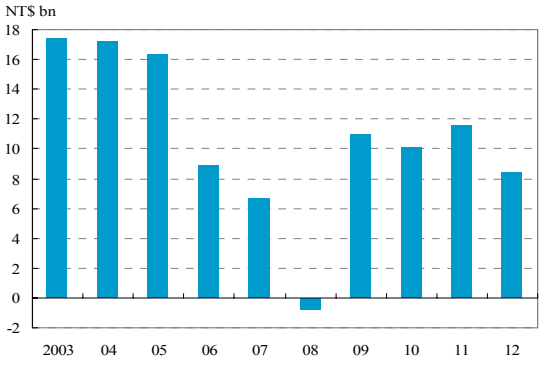
The average guaranteed advances ratio and the non-performing credit ratio of bills finance companies both stayed at the low level of 0.07% at the end of 2012, though rising slightly year on year, reflecting sound credit quality (Chart 3.48). At the same time, the ratios of credit loss reserves to non-performing credits as well as to guaranteed advances stood at the same value of 2,807.64%, indicating that the reserves set aside remained sufficient to cover potential credit losses.

Chart 3.48 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.

Chart 3.49 Net income before tax of bills finance companies



Source: CBC.

Liquidity risk improved, yet remained high

The funds of bills finance companies mainly came from interbank call loans and short-term repo transactions, and over 50% of funds went to long-term bond investments. The significant maturity mismatch between assets and liabilities showed that bills finance companies still faced high liquidity risk. However, major liabilities of bills finance companies contracted by 3.34% year on year, and, in turn, the average multiple of major liabilities to net worth declined to 6.68 times at the end of 2012, compared to 7.15 times a year before. None of the bills finance companies exceeded the regulatory ceilings of ten or twelve times[71]. This showed that the high

[70] According to Directions for Outstanding Amount of Guarantees and Endorsements of Short-term Bills by Bills Houses, the ceiling of the ratio of outstanding commercial paper guaranteed to net worth for a bills finance company could not exceed one, three, four and five times, respectively, depending on the level of its capital adequacy ratios of below 10%, above 10% but below 11%, above 11% but below 12%, or above 12%. As of the end of 2012, the capital adequacy ratio of each bills finance company was above 12%, so the ceiling of five times was set for each one.

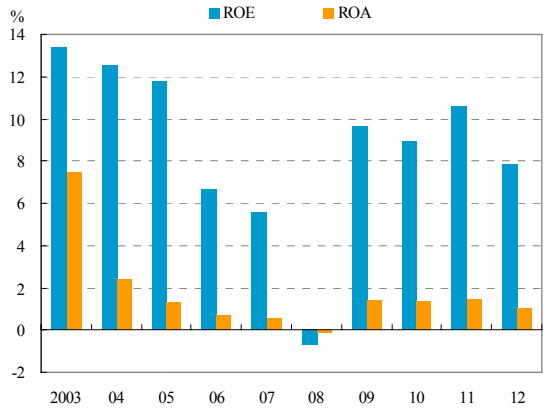
[71] In order to reduce the operating and liquidity risk of bills finance companies, the FSC amended Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses on 9 April 2010, contracting the major liabilities of bills finance companies. The major liabilities of a bills finance company could not exceed six times, eight times or ten times its net worth depending on the level of its capital adequacy ratio of below 10%, above 10% but below 12%, or above 12%. If a bills finance company is a subsidiary of a financial holding company or its bank shareholder meets safe and sound criteria, the ceiling will be raised by an additional two times its net worth. As of the end of 2012, the capital adequacy ratio of each bills finance company was above 12%, so the ceilings were ten times or twelve times for each bills finance company.

liquidity risk situation was gradually improving.

Operating profitability remained stable

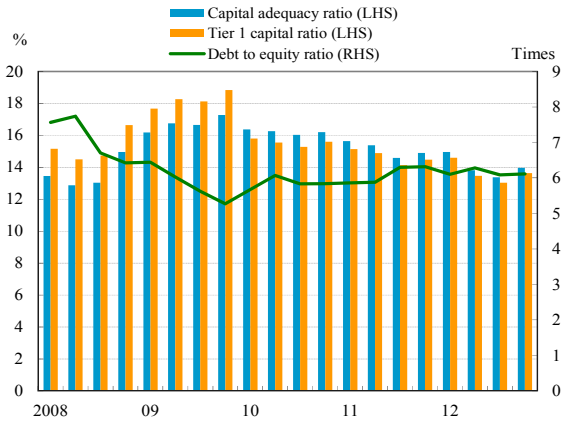
Bills finance companies posted a net income before tax of NT$8.44 billion in 2012, a year-on-year decrease of NT$3.09 billion or 26.82% (Chart 3.49). This was mainly driven by a decrease of NT$4.7 billion from capital gains on property transactions over the previous year. Nevertheless, if the above capital gains were excluded, the operating profitability of bills finance companies was almost the same as the previous year. Over the same period, average ROE and ROA declined to 7.81% and 1.08%, respectively, lower than 10.56% and 1.49% in 2011 (Chart 3.50). However, the increase of bills issuance as well as stable growth of the commercial paper guarantees business could be conducive to the future profitability of bills finance companies.

Chart 3.50 ROE & ROA of bills finance companies



Notes: 1. ROE = net income before tax / average equity.
2. ROA = net income before tax / average assets.
Source: CBC.

Chart 3.51 Capital adequacy and leverage of bills finance companies



Source: CBC.

Average capital adequacy ratio declined gradually

The average capital adequacy ratio registered 13.96% at the end of 2012, lower than 14.90% the previous year. The Tier 1 capital ratio also declined to 13.64% from 14.48% a year before. Both of the decreases were mainly due to the rise of risk-weighted assets. However, the capital adequacy ratio for each bills finance company still remained above 12%, well above the statutory minimum of 8%. Additionally, the average multiple of debt to equity of bills finance companies slightly declined to 6.11 times at the end of 2012, lower than 6.31 times the previous year (Chart 3.51), reflecting a decrease in financial leverage in bills finance companies.

Box 4
Domestic banks' offshore banking units: Retrospect and prospect

1. Progress in the development of offshore banking units in Taiwan

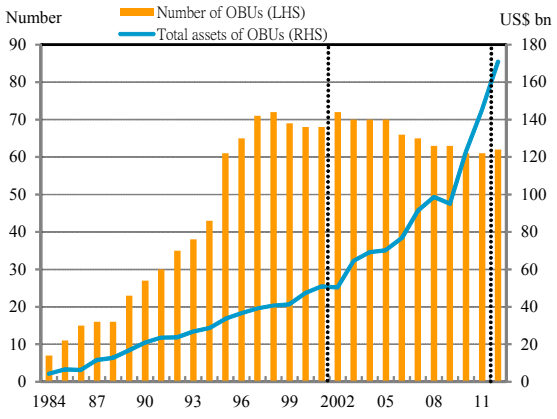
With a view to establishing a regional financial center, the government promulgated the Offshore Banking Act in December 1983, authorizing banks to set up offshore banking units (OBUs) within the territory of the Republic of China (Taiwan) and engage in offshore financial activities. OBUs were granted special treatment in terms of foreign exchange transactions, financial operations and taxes.

The first OBU commenced its operations in June 1984, with the total number increasing to its highest number of 72 in 1998 and slowly declining to 62 at the end of 2012 (including 37 run by domestic banks and 25 by foreign banks in Taiwan) in the wake of banks' mergers and acquisitions. Nevertheless, owing to the opening up of lines of business, the total assets of all OBUs recorded accelerated growth, amounting to US$170.9 billion (Chart B4.1), of which domestic banks' OBUs accounted for 81.1%, while foreign banks' OBUs accounted for 18.9%. Progress in the development of OBUs can be generally separated into three stages:

1.1 Opening up of offshore banking activities in December 1983

Since the government opened up offshore banking activities for OBUs to conduct business in December 1983, the Offshore Banking Act has been revised four times, successively expanding the scope of activities and revising the relevant taxation rules for OBUs. The major businesses conducted with natural persons, juridical persons, government agencies or financial institutions outside the territory include: accepting foreign currency deposits; extending credit in foreign currency; selling foreign currency financial debentures or other certificates of debt issued by their head offices; conducting import/export-related foreign exchange business; processing foreign currency remittances; engaging in foreign currency transactions, borrowing or lending of funds; and other foreign currency

Chart B4.1 Number and total assets of OBUs



Source: CBC.

businesses approved by the relevant authorities.

1.2 Opening up of cross-strait financial activities in June 2001

Aiming at developing OBUs into a funding center for Taiwanese firms operating overseas and in Mainland China, the government gradually liberalized the direct remittance business undertaken by OBUs to financial institutions in the mainland, expanded the counterparties and scope of cross-strait financial activities, and eased the credit limitations in seven steps from June 2001. The authorities took a further step to revise the Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution between the Taiwan Area and the Mainland Area in September 2011, allowing OBUs to do business with natural persons, juridical persons, groups, other agencies, and with the branches or subsidiaries that are set up by Mainland China-based financial institutions but located in jurisdictions or areas outside Mainland China. Meanwhile, the legal requirements regarding the scope of cross-strait financial activities were put back under the governance of the Offshore Banking Act.

1.3 Opening up of RMB business in July 2011

In order to further expand the breadth for the development of OBU business, the FSC and the CBC issued the Regulations Governing the Conduct of RMB Business for the OBUs and Overseas Branches of Taiwan's Domestic Banks in July 2011, authorizing OBUs to conduct RMB business. Subsequent to the signing of the Memorandum on Cross-Strait Currency Clearing Cooperation by the two respective central banks across the Taiwan Strait, the government repealed the above Regulations in September 2012. The administration of RMB business conducted by OBUs was also placed back under the Offshore Banking Act as its legal basis.

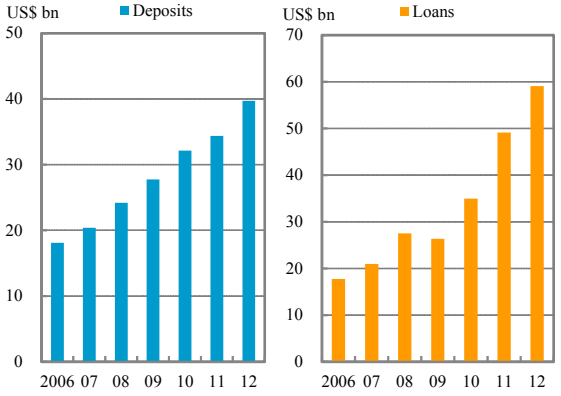
2. The current condition and performance of domestic banks' OBUs

Since the deregulation of cross-strait financial activities and RMB business, the asset scale of domestic banks' OBUs has been significantly augmented, with total assets amounting to US$138.6 billion at the end of 2012, growing by 21.3% year on year. As deposits, loans and cross-strait remittances grew remarkably, profits also rose noticeably. All of these positive factors greatly contributed to the operational performance of the domestic banks as a whole.

2.1 The balances of deposits and loans grew rapidly

In recent years, the balances of both deposits and loans have increased quite quickly. Among them, deposits amounted to US$39.7 billion at the end of 2012, with most of the annual growth rates standing at over 12% during recent years, while loans reached US$59.1 billion, growing much faster than deposits, with most of the annual growth rates lying between 20% and 40% (Chart B4.2).

Chart B4.2 Deposit & loan balances of domestic banks' OBUs

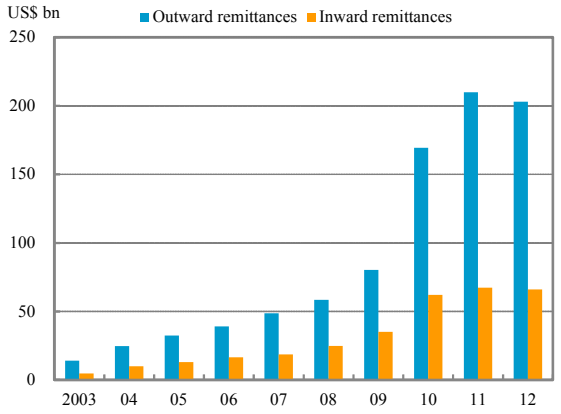


Source: CBC.

2.2 Cross-strait remittance business expanded noticeably

After the relaxation of OBUs' cross-strait financial activities in 2001, the cross-strait remittance business conducted by domestic banks' OBUs increased gradually. With cross-strait communication becoming more frequent from 2010, the remittance business processed by domestic banks' OBUs grew vastly, with inward remittances and outward remittances registering a total of US$203 billion and US$66 billion, respectively, in 2012 (Chart B4.3).

Chart B4.3 Cross-strait remittance undertaken by domestic banks' OBUs



Source: CBC.

2.3 RMB deposit balances continued hitting fresh record highs

As of the end of April 2013, there were 38 domestic banks' OBUs that launched RMB business. RMB deposit balances totaled US$29.4 billion, growing by 1.39 times compared to the end of the same month in 2012 (Chart B4.4).

2.4 Profits ascended to a new record

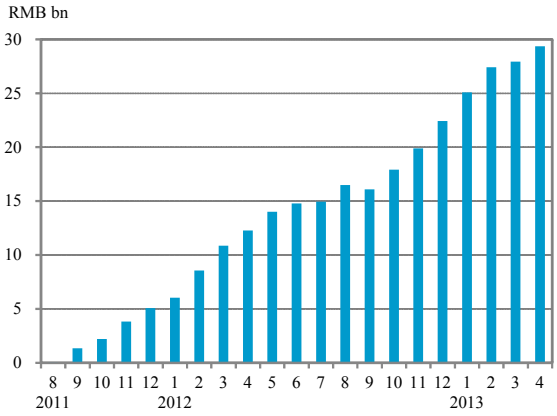
Benefitting from the fast-growing RMB business, the net income before tax earned by domestic banks' OBUs reached US$1.9 billion (NT$55.4 billion) in 2012, a record high. Furthermore, the return on assets (ROA) rose to 1.48% (Chart B4.5).

3. The future development of offshore banking activities

To expand participation in offshore banking activities, the FSC and the CBC jointly proposed a draft on revisions to some articles of the Offshore Banking Act that would authorize securities firms to set up offshore securities units (OSUs) within the territory, allowing them to engage in lines of business that pertain to the securities firms' professional practices, including brokerage, proprietary dealing, and underwriting activities of foreign currency securities. The revised draft has been submitted to the Executive Yuan and forwarded to the Legislative Yuan for deliberation. The Legislative Yuan embarked on the review in March 2013.

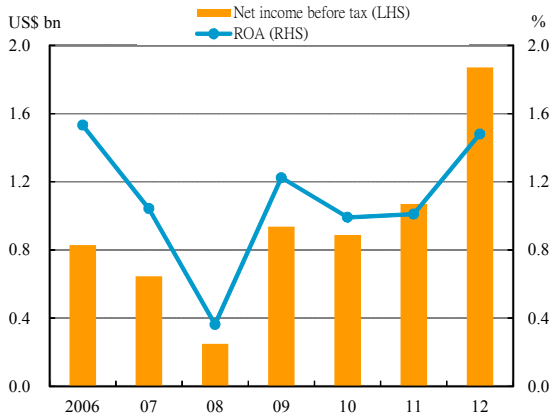
Going forward, when securities firms conduct offshore securities business, banks can help deal with the flow of funds to meet the firms' demands for foreign currency funding. For banking institutions and securities firms, both can complement each other in their business functions. This not only broadens the scope and scale of offshore banking activities but also helps Taiwan develop into a regional financial center and concurrently achieves the goal of fostering a Taiwan-centric wealth management platform.

Chart B4.4 RMB deposits with domestic banks' OBUs



Note: The OBUs were authorized to launch RMB deposit business beginning July 2011.
Source: CBC.

Chart B4.5 Profitability of domestic banks' OBUs



Source: CBC.

Box 5
Implementation of Basel III in domestic banks in Taiwan

In order to tackle deficiencies in financial supervision exposed during the global financial crisis of 2008-09, the Basel Committee on Banking Supervision (BCBS) has progressively published several documents relating to international capital and liquidity standards for banks since 2010. These standards, collectively known as Basel III, urged national authorities to strengthen microprudential supervision, including increases in the levels and quality of capital, the expansion of the coverage of risk-weighted assets, and the introduction of a leverage ratio and two liquidity ratios. Furthermore, aiming at systemic risks that could be caused by procyclicality and interconnectedness of banking activities, Basel III introduced macroprudential measures, comprising a new capital conservation buffer, a countercyclical capital buffer and an additional capital surcharge for systemically important banks. In Taiwan, the standards will be phased in beginning 2013, with full implementation as of 1 January 2019.

With a view to raising the risk-bearing capacity and international competitiveness of domestic banks, and in compliance with global regulatory reforms, the Financial Supervisory Commission (FSC), referring to Basel III, revised the Regulations Governing the Capital Adequacy and Capital Category of Banks in November 2012, effective from January 2013. Summarized below are the contents of Basel III-related regulations in Taiwan and the work to be further promoted in the future.

1. Contents of the capital adequacy regulations in Taiwan

The new capital adequacy regulations are Basel III compliant in principle but fine-tuned according to the operational characteristics of banks in Taiwan. Key points are as follows:

1.1 Raising capital quality

The FSC, referring to the Basel III capital standards, introduced the definition of common equity Tier 1 capital, amended the requirements of non-common equity Tier 1 capital and Tier 2 capital (including bail-in provisions),[1] and removed the category of Tier 3 capital from the regulations. Additionally, those capital instruments that were issued before 12 September 2010 and not qualified as non-common equity Tier 1 capital and Tier 2 capital will be required to be phased out beginning January 2013 by setting a cap of 90% of the nominal amount of these instruments in 2013 and reducing the cap by 10 percentage points in each subsequent year.

1.2 Lifting capital levels

The regulations introduce a capital conservation buffer and incorporate it into minimum regulatory capital standards. Furthermore, the regulations set out the minimum capital requirements during the transition period for each year of 2013-2019 and specify that the common equity, Tier 1 capital and capital adequacy ratios should be no less than 7%, 8.5% and 10.5%, respectively, commencing 2019 (Table B5.1).

1.3 Introducing a leverage ratio

The minimum leverage ratio is set at 3% during the period of parallel run testing between 2013 and 2018. The ratio requirement will be formally implemented on 1 January 2018.

1.4 Introducing a countercyclical capital buffer

In order to avoid the occurrence of systemic risks, the FSC will consult with the CBC and other relevant agencies, when necessary, to impose on banks an additional provision of countercyclical capital buffers of up to 2.5%.

Table B5.1 Minimum capital requirements and transition period

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

Source: CBC.

2. Future work to be further promoted

Based on the timeline set out by the BCBS, Taiwan will phase in Basel III capital requirements beginning 2013. Nevertheless, with the major contents of implementation focused on microprudential dimensions, capital requirements related to macroprudential dimensions will also need to be strengthened, and liquidity ratio regulations should, therefore, be deliberated and laid down.

2.1 Considering the operational mechanisms of a countercyclical capital buffer

Article 5 of the Regulations Governing the Capital Adequacy and Capital Category of Banks provides the legal basis for implementing countercyclical capital buffers. However, the relevant guidelines and operational mechanisms of a capital buffer have not

been stipulated. In view of the fact that a countercyclical capital buffer is within the scope of macroprudential supervision and highly pertinent to the CBC's credit policy, the CBC will promote relevant study and cooperate with the FSC in the stipulation of provisioning criteria and regulations that are applicable to the domestic banking system.

2.2 Imposing additional supervisory requirements on systemically important domestic banks to reduce potential risks

In November 2011, the BCBS issued a final version of the document - Global Systemically Important Banks (G-SIBs): Assessment Methodology and the Additional Loss Absorbency Requirement. Subsequently, the Financial Stability Board (FSB) published a list of G-SIBs[2] and suggested that national authorities should identify their domestic systemically important banks (D-SIBs) and adopt appropriate policy measures to mitigate their negative externalities.[3]

Domestic banks in Taiwan were not included in the list of G-SIBs. Nevertheless, the authority will adopt additional supervisory measures for local banks that possibly could induce systemic risks, so as to improve their loss absorbency ability and reduce potential impacts.

2.3 Deliberating on the liquidity ratio regulations

The BCBS introduced two liquidity ratios: the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). Both ratios are currently being observed and under adjustment and expected to be implemented from 2015 and 2018, respectively.[4] In line with the timeline for the implementation of liquidity ratios set out by the BCBS, the FSC and the CBC, weighing the Basel III standards and the domestic practices of banks' liquidity management, have actively embarked on deliberations related to the liquidity regulations applicable to domestic banks.

Notes: 1. The bail-in provision means that the priority order for the distribution of the earnings and assets of the holder of non-common equity Tier 1 and Tier 2 capital instruments is the same as that of a common stock holder when the relevant authority assigns officials to take conservatorship over the issuing bank, orders such a bank to suspend and wind up business, or liquidates the bank.

2. The FSB published an initial list of 29 banking groups identified as G-SIBs in November 2011. It updated the list in November 2012, indicating the number of G-SIBs was reduced to 28. See FSB (2012), *Update of group of global systemically important banks*, November 1.

3. BCBS (2012), *A Framework for dealing with domestic systemically important banks,* October.

4. The BCBS introduced standards on LCR and NSFR in December 2010. Subsequently, taking into account their latent impacts on financial markets, credit supply and economic growth, it revised the calculation of LCR in January 2013. The revised standards will adopt a phase-in

arrangement that introduces the LCR as planned on 1 January 2015, but with the minimum requirement set at 60%. This will then rise by 10 percentage points per annum to reach 100% on 1 January 2019.