IV. Financial sectors

4.1 Financial markets

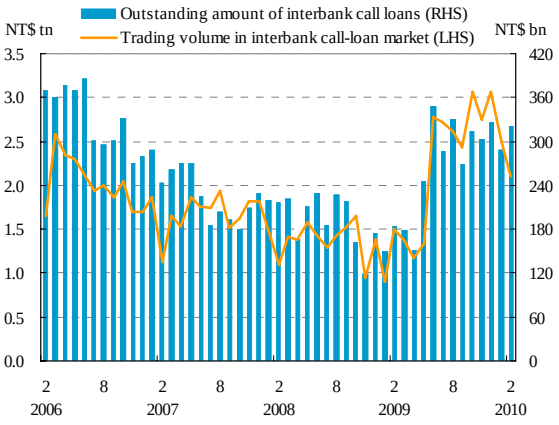
In 2009, the trading volume of interbank call loans increased materially; however, trading volumes contracted notably in the bond market and remained virtually unchanged in the bills market, while yield spreads between long-term and short-term rates swung between 90 and 117 basis points. As for the stock market, stock indices trended up from January 2009, with a marked increase in trading value and turnover. Nevertheless, the upward trend flattened out and stock indices fluctuated within a narrow range in January-February 2010. As for the foreign exchange market, the NT dollar exchange rate appreciated by 2.59% against the US dollar during 2009 and was relatively stable compared to the exchange rates of major currencies.

4.1.1 Money and bond markets

Trading volume picked up in interbank call loans but contracted notably in the bond market

The average monthly trading volume of interbank call loans in 2009 increased by 54.77% year on year. The average daily outstanding amount of interbank call loans in December 2009 also recorded an increase of 87.59% against same month of 2008, primarily because a large proportion of the funds remitted into Taiwan by foreign portfolio investors were channeled into interbank call loans from May 2009. In January-February 2010, the average trading volume and outstanding amount of interbank call loans remained at a high level, even though registering a slight decrease compared to

Chart 4.1 Interbank call-loan market



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

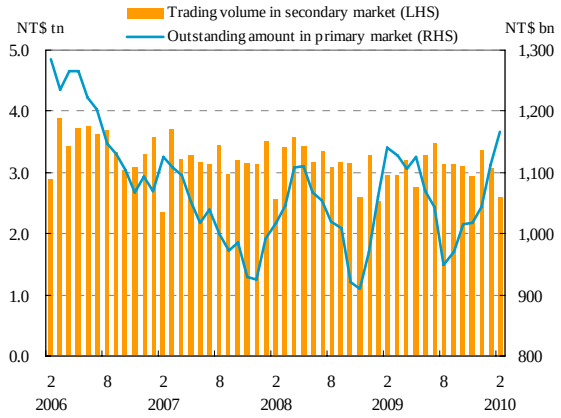
December 2009 (Chart 4.1).

In the primary bills market, the outstanding amount of bills issuance at the end of 2009 rose by 7.55% year on year, primarily because of an increase of NT$108.2 billion, or 101.3%, in the outstanding issuance of treasury bills. However, the outstanding amount of commercial paper issuance at the end of 2009 dropped by NT$39.8 billion, or 5.6%, compared to the end of 2008. The reasons behind this were that corporations decreased their needs of short-term financing and preferred obtaining loans from banks rather than issuing commercial paper due to the lower cost of bank loans.

As for the secondary bills market, its trading volume[40] was affected by a decrease in the issuance of commercial paper [41] and decreased by 3.86% year on year in 2009. In January-February 2010, driven by a rise in the outstanding issuance of commercial paper and treasury bills, the outstanding amount of bills issuance increased. Nevertheless, the trading volume of the secondary market remained at a low level (Chart 4.2).

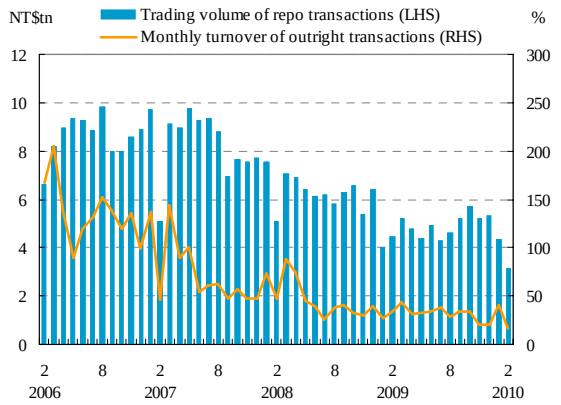
In the bond market, the trading volume for the year of 2009 decreased by 28.01% over 2008. Of the components, outright transactions and repo transactions decreased by 34.05% and 23.25%, respectively. Because of a diminishing investment willingness of bond dealers and less bonds being traded in the market as many financial institutions held large amounts of government bonds[42] and were reluctant to sell them into the market for the sake of effectively managing their idle funds, outright transactions dropped significantly and their monthly turnover ratio

Chart 4.2 Primary and secondary bills markets



Note: Excludes asset-backed commercial paper (ABCP).
Sources: CBC and FSC.

Chart 4.3 Bond transaction and turnover



Note: Monthly turnover = trading value in the month / average bonds issued outstanding.
Sources: CBC and FSC.

[40] Source: Banking Bureau, Financial Supervisory Commission, Executive Yuan, R.O.C.
[41] Although outstanding issuance of Treasury bills increased by 101.3%, the trading value of Treasury bills was less than 5% of the trading volume in the secondary market for bills. The effect of its change on the total trading volume is trivial.
[42] The average ratio of holdings of central government bonds by banks in 2009 was 44.14%, an increase of 3.61 percentage points compared to the previous year.

fell to a trough of 20.51% in November 2009, a seven-year low. The trading volume of repo transactions in 2009 also slid owing to banks' lack of willingness to trade bonds due to ample funds and lower bond holdings of bills finance companies and securities firms. In January-February 2010, both the repo trading volume and outright turnover ratio in the bond market remained at a low level (Chart 4.3).

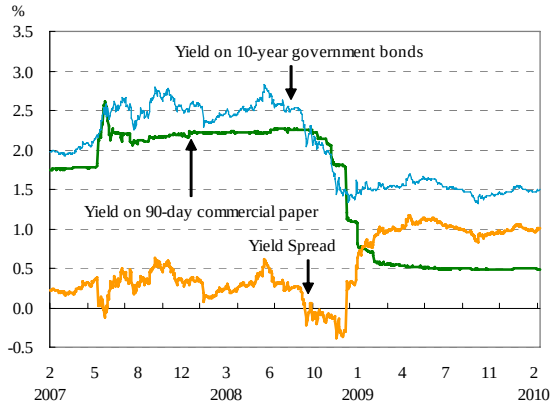
Yield spreads fluctuated between 90 and 117 basis points

In 2008 Q4, affected by the worsening financial crisis and slump in stock markets, investors sought a safe haven in bond markets, resulting in declining government bond yields. However, short-term rates remained at a high level during the same period. The outcome was the reversal of yield spreads between 10-year government bonds and 90-day commercial paper as the short-term rate became higher than long-term rate (Chart 4.4).

Entering into 2009, the CBC initiated interest rate cuts and expanded the scope of repo facility operations, resulting in a significant drop in short-term interest rates. However, bond yields continued fluctuating in a low range between 1.4% and 1.6%. As a result, yield spreads between short-term and long-term rates reversed to positive and stayed above 90 basis points, and hit a peak of 117 basis points in May 2009. In January-February 2010, due to the sluggish stock market, strong demand from insurance companies for long-term bonds and dealers' operations aimed at building up their bond positions, bond yields trended down and yield spreads between government bonds and commercial paper narrowed slightly (Chart 4.4).

Declining bond yields and a widening yield spread may generate capital gains for financial institutions holding long bond positions. However, if the trend of low interest rates is reversed, new bond holdings which financial institutions invested in during the period of low interest rates will face higher interest rate risk.

Chart 4.4 Yield spread



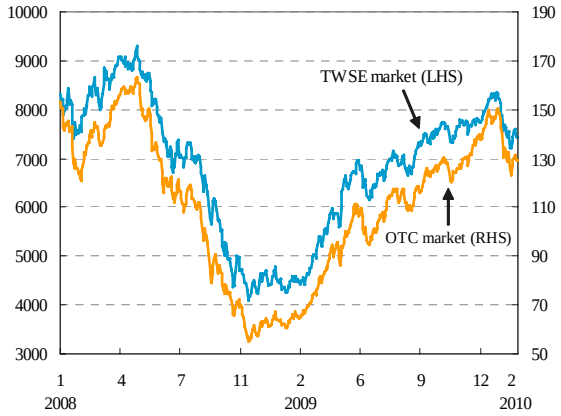
Note: Yield spread refers to yield on 10-year government bonds minus yield on 90-day commercial paper.
Source: Bloomberg.

4.1.2 Equity markets

Stock indices dropped after marked increases, while volatility rebounded slightly after sharp falls

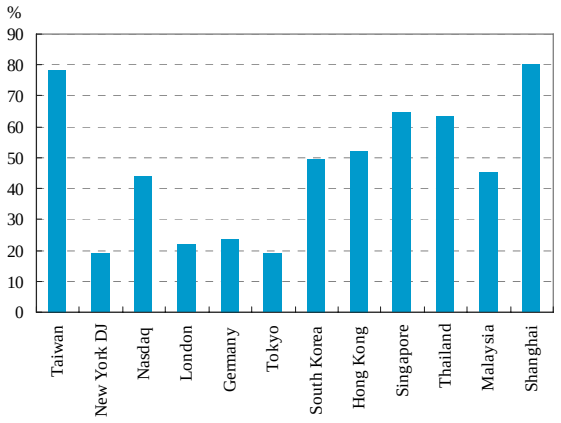
Amid the strengthening global financial and economic recoveries, the world's major stock markets began to trend up. Moreover, affected by the preliminary effects of easing restrictions on cross-strait securities investment and the signing of three Cross-strait Financial Supervisory Cooperation Memorandums of Understanding (MOUs), together with massive net buying from foreign investors, [43] the Taiwan Stock Exchange Weighted Index (TAIEX) of the Taiwan stock Exchange (TWSE) market climbed from its lowest point of 4,242 on 20 January 2009 to its highest point of 8,188 at the end of the same year, a rise of 93%. In January-February 2010, however, owing to the lower-than-expected economic growth in the US and the outbreak of the European sovereign debt crisis, the TAIEX index dropped to 7,436 at the end of February, a decrease of 9.18% compared to the high of last December. Meanwhile, Taiwan's GreTai Securities Market Index (GTSM Index) of the OTC market closely tracked the movements of the TAIEX, climbing to a peak of 150 at the end of 2009, an increase of 148.06%, after hitting a new low of 60 in January of the same year, and then falling to 129 at the end of February 2010, a decrease of 14% from the end of last December (Chart 4.5). Compared with major stock markets around the world, the Taiwan stock market increased by 78.34% in 2009, second only to the market in Shanghai (Chart 4.6).

Chart 4.5 Taiwan stock market indices



Sources: TWSE and GTSM.

Chart 4.6 Comparison of major stock market performances



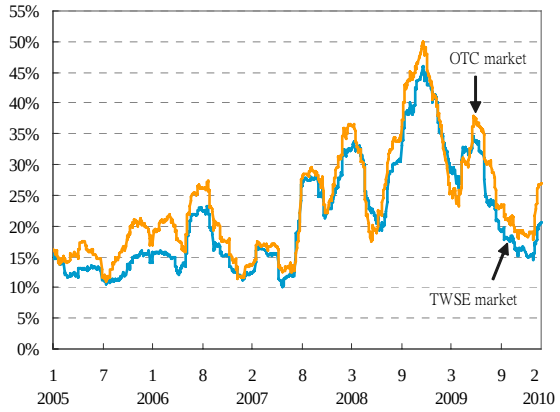
Notes: 1. Figures are for 2009.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

[43] In 2009, foreign investors (foreign institutional investors, overseas Chinese, and foreign individual investors) were net buyers of NT$480.1 billion worth of securities in Taiwan, while net accumulated inward remittances of foreign investors increased by US$26.2 billion.

Broken down by sectors, most indices were in bullish territory in 2009 and half of them outperformed the TAIEX. The indices for the electronic products distribution sector and other electronics-related sector performed the best due to an increase in purchase orders, increasing by 161.02% and 149.51%, respectively, whereas the indices for the cement sector as well as the petroleum and gas sector experienced limited growth, increasing by more modest figures of 27.23% and 26.03%, respectively. In January-February 2010, most indices entered bearish territory following falls on international stock markets, while the indices for the plastic products sector and glass and ceramic sector performed well, with increases of 4.41% and 5.29%, respectively, at the end of February 2010 compared to the end of 2009. These two sectors resisted the downward trend due to soaring oil prices and the China government-funded project to expand construction materials demand in the country's vast rural areas.

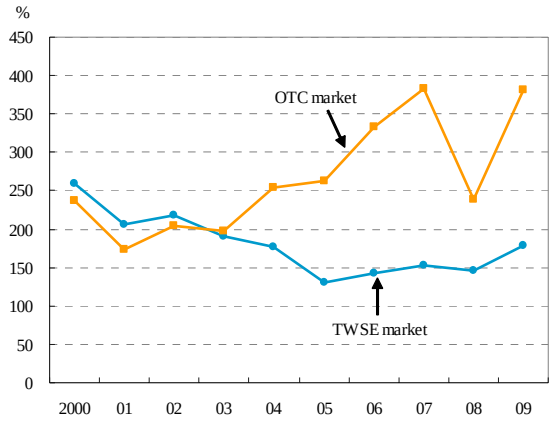
The volatility in the TWSE and OTC markets trended down and reached 14.86% and 18.24%, respectively, at the end of 2009, after hitting a new high in June 2009. This reflected the mitigation of risks in equity investments. However, as global stock markets got the jitters and slumped from the beginning of 2010, the volatility in the TWSE and OTC markets increased and stood at 20.50% and 26.95%, respectively, at the end of February 2010 (Chart 4.7), illustrating how risks in equity investments have increased somewhat.

Chart 4.7 Stock price volatility



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

Chart 4.8 Annual turnover ratio in Taiwan's stock markets



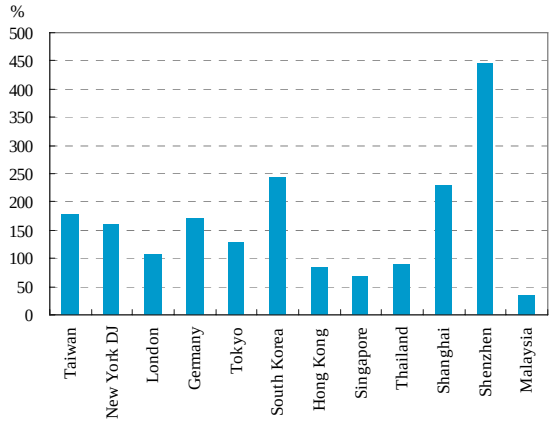
Sources: TWSE and GTSM.

Trading value and turnover ratio increased dramatically to hit 5-year high

The TWSE and OTC markets were active and saw significant increases in total trading values in 2009. The average monthly trading value on the TWSE market in 2009 was NT$2.47 trillion, an increase of 13.65% year on year, while its turnover ratio in terms of

trading value in the same year increased and stood at 178.28%, touching a 5-year high (Chart 4.8). However, affected by foreign investors' net selling and Chinese lunar new year holidays, the turnover ratio and monthly trading value in the TWSE market in February 2010 moved in a downward direction. Furthermore, the trading value in the OTC market saw a significant increase in 2009. The trading value in the OTC market was NT$436.6 billion in 2009 and increased markedly by 59.46% year on year, resulting in a significant rise in the turnover ratio to 380.61%, which was much higher than the 238.71% posted last year (Chart 4.8).

Chart 4.9 Comparison of turnover ratios in major stock markets



Notes: 1. Figures refer to accumulated turnover ratios in 2009.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

Compared to major stock markets around the world, the annual turnover ratio in the TWSE market in 2009 was lower than the neighboring stock markets in South Korea, Shanghai and Shenzhen, while approximately equal to those in New York's Dow Jones and Germany, but higher than those in London, Tokyo, Hong Kong, Singapore, Thailand and Malaysia (Chart 4.9).

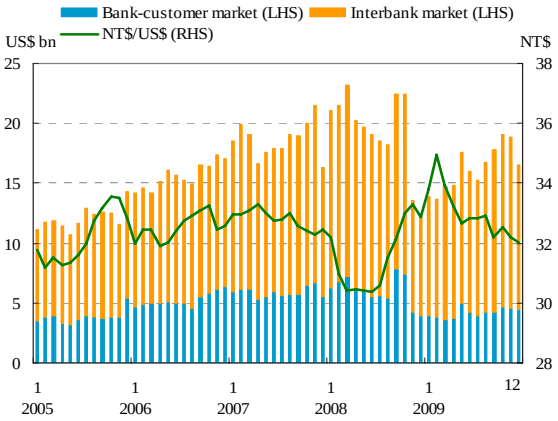
4.1.3 Foreign exchange market

The NT dollar exchange rate reversed to appreciation and trading volume increased slightly starting from 2009 Q2

Based on shrinking exports and increasing hedging needs for US dollars, the NT dollar exchange rate experienced depreciation in early 2009, once reaching 35 against the US dollar in early March. Afterwards, it turned to enter a period of appreciation mainly due to the weakening of the US dollar caused by capital inflows to emerging markets and high yield assets, as well as the inflow of residents' overseas funds caused by new policies of the government. The NT dollar exchange rate stood at 32.03 against the US dollar at the end of 2009, appreciating slightly by 2.59% compared to 32.86 at the end of 2008 (Chart 4.10). From early 2010, due to capital inflows by foreign investors, together with positive export growth, the NT dollar exchange rate kept appreciating, reaching a high of 31.755 against the US dollar in January. Later, owing to capital outflows by foreign investors and the increasing

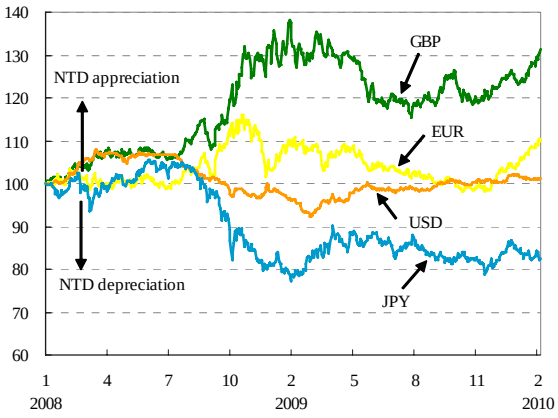
hedging needs for US dollars arising from the debt crisis of some countries in the euro area, it reversed to enter a period of depreciation and fell to 32.085 against the US dollar at the end of February. As for other key international currencies, the value of the yen went up as a result of the increasing hedging needs for international funds. However, Japan's decreasing trade surplus put more pressure for depreciation on the yen, causing the NT dollar to appreciate against the yen by 4.33% year on year at the end of 2009. Conversely, the NT dollar depreciated by 6.92% and 0.46% against the British pound and the euro, respectively, over the same period (Chart 4.11).

Chart 4.10 NT$/US$ exchange rate and foreign exchange market trading volume



Note: Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
Source: CBC.

Chart 4.11 Movements of NT dollar exchange rates against key international currencies

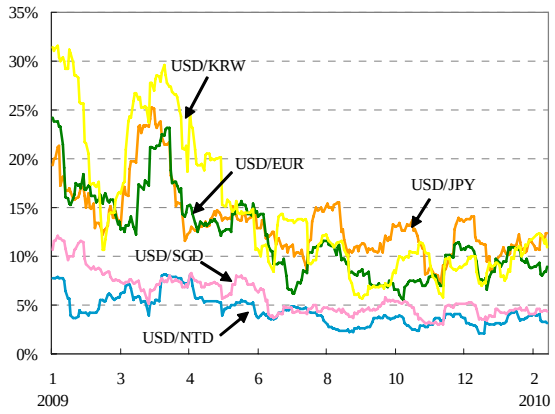


Note: 2 January 2008 = 100.
Source: CBC.

As a result of shrinking financial transactions caused by the global financial crisis and decreasing exports and imports caused by the global recession, the average foreign exchange daily trading volume fell to a new low of US$14.1 billion in 2009 Q1, after hitting a low point of US$16.1 billion in 2008 Q4, but saw a slight increase in 2009 Q2. Consequently, the average foreign exchange daily trading volume decreased by 16.24% year on year and registered US$16.2 billion in 2009 (Chart 4.10). A breakdown by counterparties shows that the average daily trading volume in the interbank market accounted for 74.12% of the total in 2009, while the bank-customer market made up a 25.88% share. As for types of transactions, spot trading accounted for 44.87% of the total, followed by foreign exchange swaps with 39.47%.

NT dollar exchange rate volatility remained relatively stable compared to other currencies

Chart 4.12 Exchange rate volatility of various currencies against US dollar



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

While the fluctuation of the NT dollar exchange rate increased slightly in the first half of 2009 before declining, the annual average volatility stood at 4.56% for the year as a whole. In January-February 2010, the volatility in the NT dollar exchange rate against the US dollar decreased further to 3.58%. The NT dollar exchange rate was relatively stable compared to the volatility in the exchange rates of major currencies such as the Japanese yen, euro, Korean won and Singapore dollar against the US dollar (Chart 4.12).

4.2 Financial institutions

This section analyses the relatively important financial institutions, including domestic banks, life insurance companies and bills finance companies.

4.2.1 Domestic banks

In the second half of 2009, the growth in loans extended by domestic banks returned to positive territory. Credit risk in corporate loans slightly decreased, but credit risk concentration was still high. Although the NPL ratio continuously decreased, special mention loans,[44] not reported as NPLs, rose and resulted in slight increases in both classified asset amounts and ratios, showing a slight decline in asset quality. The estimated Value at Risk (VaR) for market risk exposures decreased with limited influence on capital adequacy. Liquidity risk remained low as the banking system benefited from ample liquidity. The profitability of domestic banks rose substantially in 2009 compared to the previous year, and the average capital adequacy ratio continued to increase, strengthening the capability of domestic banks to bear risks.

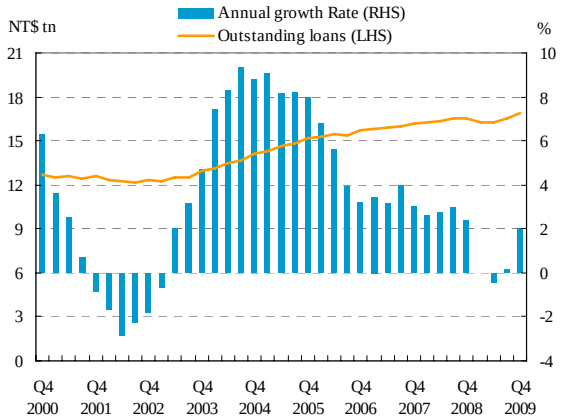
[44] Special mention loans refer to:
(1) Loans for which borrowers' financial situations and debt repayment capacities are experiencing difficulties, and, upon agreement, are approved to delay principal repayments while interest has to be repaid on time;
(2) Loans for which borrowers applied for debt restructuring and repaid principal and interest as agreed, according to related rules; and
(3) Loans for which principal and interest are overdue by one to three months, or not yet due but already some poor credit exists.

Credit risk

Customer loan growth turned positive

Customer loans[45] were the major type of credit exposure for domestic banks. The outstanding loans of the local business units of domestic banks at the end of 2009 stood at NT$16.9 trillion and accounted for 53.92% of total assets. The annual growth rate in loans slowed markedly in 2009 and even turned from positive to -0.45% in June. In 2009 Q3, due to the warming up of the economy and increasing customer funding demand, the annual growth rate turned from negative to positive and reached 2.00% at the end of 2009 (Chart 4.13). To analyze the borrowers specifically, the annual growth rate of individual loans was negative from January 2008; however, it turned positive from July 2009 and kept expanding by larger amounts, finally reaching 4.08% at the end of 2009. The annual growth rate of corporate loans turned negative from April 2009, following substantial contractions, while the decreases slowed and the annual growth rate registered -2.51% at the end of 2009.

Chart 4.13 Outstanding loans and annual loan growth rate in domestic banks



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

Chart 4.14 Credit by type of collateral in domestic banks

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

Credit exposure significantly concentrated in the real estate market

The concentration of credit exposure in the real estate loans trended upward from the beginning of 2009. Outstanding real estate-related loans[46] of domestic banks reached NT$7.11 trillion and accounted for 42.07% of total loans as of the end of 2009. In addition, real estate secured credit granted by

[45] The term "customer loans" herein refers to amounts lent by local business units of domestic banks to their customers. It excludes interbank lending.
[46] The term "real estate-related loans" includes loans for construction, house purchases, and house refurbishments.

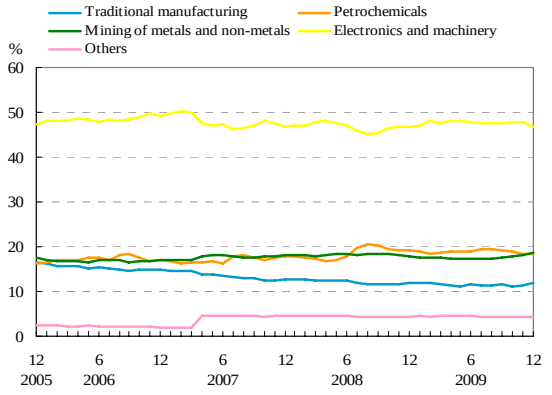
domestic banks amounted to NT$9.62 trillion, or 49.08% of total credit, at the end of 2009, which was 1.58 percentage points higher than the figure of the previous year (Chart 4.14). Among individual banks, fifteen had ratios of real-estate secured credit to total credit of over 60% as of the end of 2009, two banks more compared with the end of 2008.

The real estate market warmed up recently, while the NPL ratio of real estate-related loans remained relatively low. However, the debt servicing capability of residential mortgage borrowers may be undermined in the face of high unemployment rates and the potential rebound of interest rates. Moreover, with consideration of the upsurge of property prices in some specific areas (particularly Taipei City and Taipei County), the government adopted several measures such as stopping the auction sales of national land and urging banks to manage the risks associated with housing loans. Banks with credit exposures highly concentrated in real estate-related loans should review their credit policies to cope with the potentially increasing risks.

Credit risk of corporate loans slightly declined

Outstanding corporate loans of the local business units of domestic banks stood at NT$7.31 trillion at the end of 2009, decreasing by NT$0.19 trillion over the previous year, while loans to the manufacturing sector stood at NT$3.37 trillion and accounted for the largest share of 46.05% of the total, decreasing by 0.96 percentage points. This reflected the slight decline of industrial credit concentration. Within the manufacturing category,[47] the larger proportion of loans were for electronics, electric machinery and machinery-related industries, which stood at NT$1.57 trillion and accounted for 46.71% of the total[48] (Chart 4.15).

Chart 4.15 Weight of loans to the manufacturing sectors by domestic banks



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

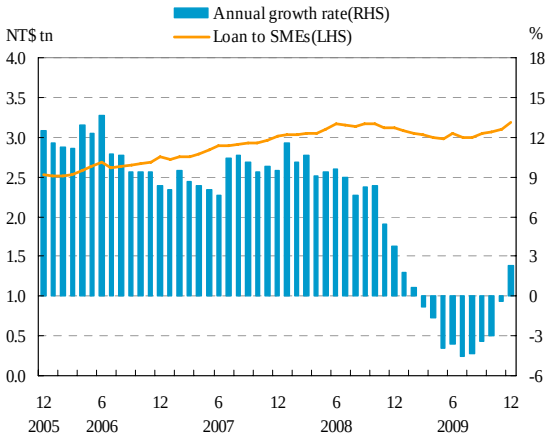
Source: CBC.

[47] Loans to the manufacturing sector are divided into four categories by industry, including (1) electronics, electric machinery and machinery-related industries, (2) mining of metals and non-metals related-industries, (3) petrochemicals related-industries and (4) traditional manufacturing industries. The remainders are classified as "others."

[48] The production value of electronics, electric machinery and machinery-related industries accounted for 42.46% of total manufacturing production value at the end of 2009, which is less than loans to electronics, electric machinery and machinery makers as a percentage of total loans to the manufacturing sector.

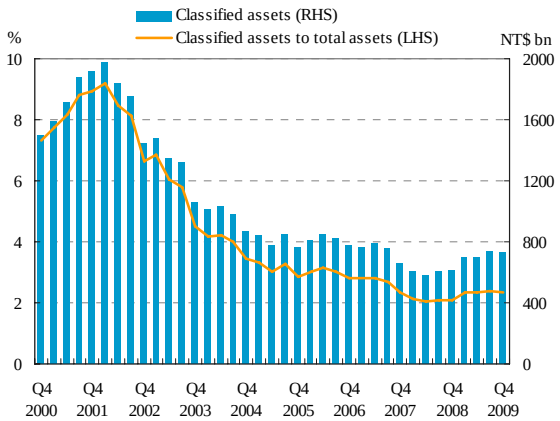
When the global financial crisis deepened in 2008 Q4, SMEs, which play an important role in Taiwan's economy, immediately faced difficulties to obtain funds from banks. Outstanding corporate loans to SMEs of domestic banks continuously decreased, and from March 2009, the year-on-year growth rate turned from positive to negative. After the government adopted a series of measures to assist SMEs to obtain necessary operating funds, the growth rate of loans to SMEs eventually returned to positive territory and the outstanding amount was NT$3.19 trillion at the end of 2009, which accounted for 43.66% of total corporate loans, with an annual growth rate of 2.34% (Chart 4.16 and Box 2). In addition, in line with the government's Economic Vitalization Package, the Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) also implemented several plans to loosen the qualification requirements for credit guarantees, allowing the outstanding loans guaranteed by the SMEG to rise from a low of NT$456.7 billion in March 2009 to NT$505.8 billion at the end of 2009. This represented a 5.71% year-on-year increase and accounted for 15.85% of total SME loans. During the same period, the guarantee amount and guarantee coverage percentage also grew to NT$372.8 billion and 73.72%, respectively.

Chart 4.16 Loans to SMEs by domestic banks



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

Chart 4.17 Classified assets of domestic banks



Notes: 1. End-of-period figures.
2. Excludes interbank loans.
Source: CBC.

Due to economic recovery at home and abroad, profitability rebounded, financial structures strengthened and short-term debt repayment capacities improved in the corporate sector. The credit risk of domestic banks related to corporate loans is expected to drop.

Asset quality declined slightly

In 2009, the outstanding classified assets[49] of

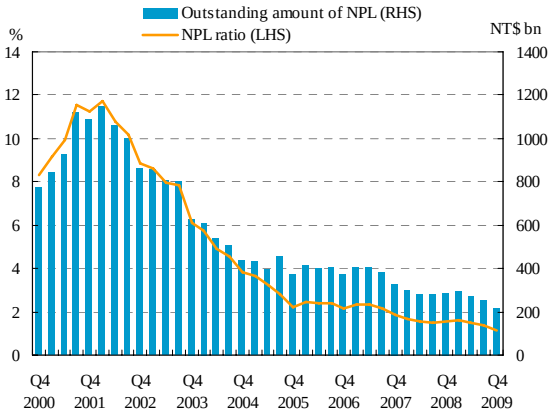
[49] The Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans break down all assets into five different categories, including: category one – normal credit assets; category two – credit assets requiring special mention; category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

domestic banks increased year on year by a significant 19.50% and stood at NT$731.7 billion at the end of December. At the same time, the average classified asset ratio was 2.34%, increasing by 0.26 percentage points over the previous year (Chart 4.17). The asset quality of domestic banks showed little sign of deterioaration. Nevertheless, most of the increase of classified assets belonged to the special mention category, which has a relatively low loan loss reserve ratio.[50] Moreover, there was a reduction in the "loss" category, which has a relatively high loan loss reserve ratio. As a result, the expected losses[51] at the end of 2009 declined by 8.43% year on year to NT$97.1 billion and the ratio of expected losses to loan loss provisions stood at 39.95%. The provisions set aside by domestic banks were still sufficient to cover expected losses.

As a result of write-offs and sales of NPLs amounting to NT$126 billion for the year as a whole, the outstanding NPLs of domestic banks stood at NT$215.8 billion at the end of 2009, contracting dramatically by 24.52% year on year. Meanwhile, the average NPL ratio remained at a low level of 1.15% (Chart 4.18). Among individual banks, all had NPL ratios of less than 5%, except for one[52] with a ratio as high as 15.50%, while thirty-two banks had ratios of less than 2% (Chart 4.19). Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was relatively low (Chart 4.20).

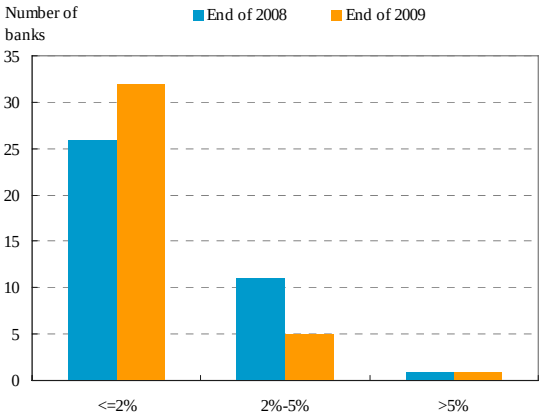
Together with the decrease in NPLs and the increase in loan loss provisions, the NPL coverage ratio at the end of 2009 rose dramatically to 90.35%, while the loan loss reserve ratio slightly reduced to 1.04% (Chart

Chart 4.18 Average NPL ratio of domestic banks



Notes: 1. End-of-period figures.
2. Excludes interbank loans.
Source: CBC.

Chart 4.19 Distribution of NPL ratios of domestic banks



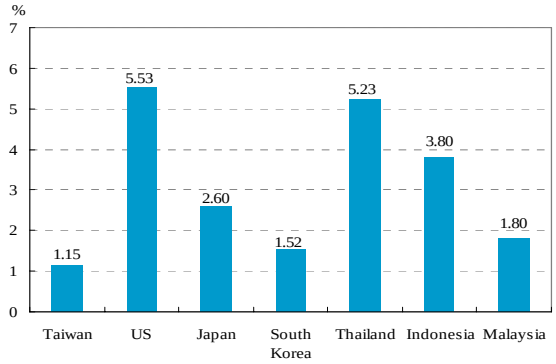
Note: Excludes interbank loans.
Source: CBC.

[50] The "loan loss reserve ratio" imposed on loans of category one to five are 0%, 2%, 10%, 50% and 100%, respectively.
[51] Loss herein refers to the losses from loans, acceptances, guarantees, credit card revolving balances, and factoring without recourse.
[52] This bank was taken into conservatorship by the Central Deposit Insurance Corporation (CDIC) in September 2008.

4.21).

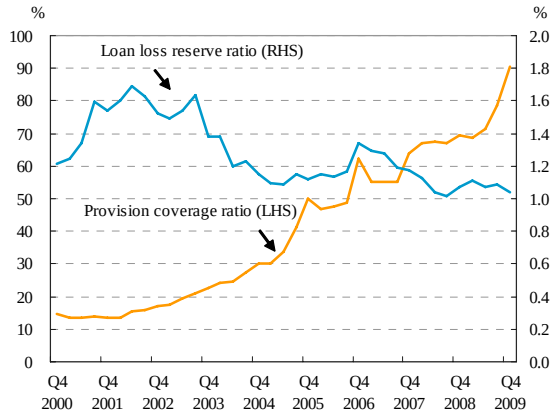
Although the outstanding NPLs and the NPL ratio both declined in 2009, special mention loans not reported as NPLs increased significantly with an outstanding amount of NT$412.9 billion at the end of 2009. If special mention loans are combined with NPLs, they amount to NT$628.7 billion and account for 3.36% of total loans, higher than the figure of 2.83% in the previous year, suggesting that the loan quality of domestic banks declined slightly.

Chart 4.20 NPL ratios of banks in selected countries



Note: Figure for Japan is end-September 2009 data. The others are end-December 2009.
Sources: CBC, FDIC, FSA, FSS, BOT, BI, and BNM.

Chart 4.21 NPL coverage ratio and loan loss reserve ratio of domestic banks



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

Market risk

Estimated Value-at-Risk dropped

Using market data as of the end of February 2010, the estimated total VaR[53] calculated by the CBC's market risk model for foreign exchange, interest rate and equity exposures of domestic banks at the end of 2009 stood at NT$96.9 billion. The figure contracted significantly by 34.92% year on year (Table 4.1), mainly resulting from the decrease in the volatility of all types of risk.

The effects of market risk on capital adequacy ratios were limited

According to the estimated results mentioned above, market risk would cause a decrease of 0.48 percentage points in the average capital adequacy ratio and induce the current ratio of

[53] The CBC modified the market risk model in September 2009. The new 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 new model constructs the sample distribution function of each asset return 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 1000 foreign exchange rate, interest rate, and equity price samples.

11.79%[54] to fall to 11.31%. Nevertheless, the effects may be considered as somewhat limited.

Table 4.1 Market risk in domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2008	End-Dec. 2009	Changes	
				Amount	%
Foreign exchange	Net position	43.6	47.6	4.0	9.17
	VaR	2.6	1.4	-1.2	-46.15
	VaR / net postiton	5.96	2.94		-3.02
Interest rate	Net position	3,191.6	3,755.5	563.9	17.67
	VaR	133.0	50.1	-82.9	-62.34
	VaR / net position	4.17	1.33		-2.84
Equity	Net position	451.9	502.9	51.0	11.29
	VaR	73.8	50.9	-22.9	-31.03
	VaR / net position	16.33	10.12		-6.21
Total VaR		148.9	96.9	-52.0	-34.92

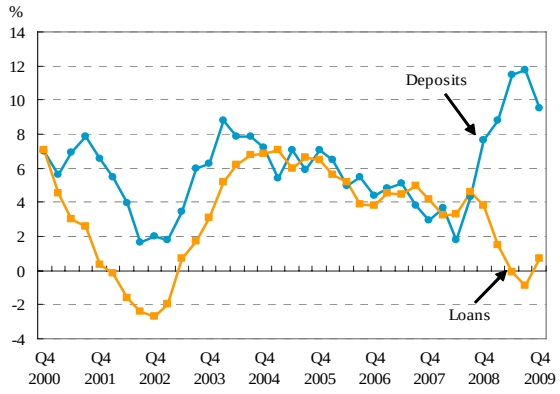
Note: The total VaR was estimated by a revised model in 2009, and the model takes the correlation among three risk categories into consideration; therefore, the sum of individual VaRs of the three types of risks is not equal to the total VaR.
Source: CBC.

Liquidity risk

Banking system liquidity remained ample

Owing to a large amount of overseas funds continuously flowing back to Taiwan, deposits in domestic banks increased materially in 2009, and the growth rate of deposits even reached 11.76% year on year in September, before slightly declining to 9.54% in December. As for loans, the annual growth rate dropped markedly and turned negative in the first three quarters of 2009 due to the weak demand for corporate finance and

Chart 4.22 Annual growth rate of deposits and loans of domestic banks



Source: CBC.

[54] The term “capital adequacy ratio” used herein is based on regulatory capital which has deducted unamortized deferred losses on the sale of NPLs.

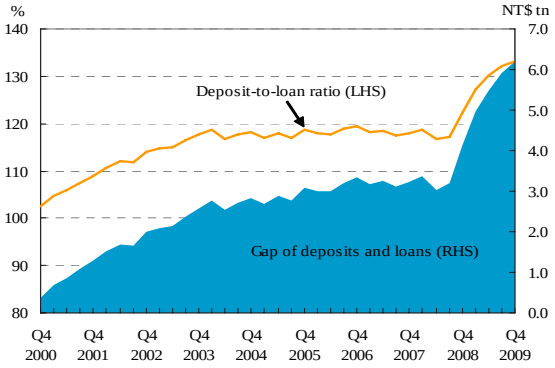
banks' more conservative credit policies. However, the growth of loans turned to positive 0.67% in 2009 Q4 as a result of the warming up of economic activity and increasing financing demand (Chart 4.22). Owing to the substantial increase in deposits and sluggish growth of loans, the average deposit-to-loan ratio of domestic banks climbed dramatically and reached 133.13% at the end of 2009. The funding surplus (i.e. deposits exceeding loans) registered NT$6.20 trillion, reflecting abundant liquidity in domestic banks (Chart 4.23).

As for the sources of funds, relatively stable customer deposits accounted for the largest share of 77% of the total, increasing slightly compared to the previous year, followed by interbank deposits and borrowings at 9%, while debt securities issues contributed a mere 3% at the end of 2009. Regarding the uses of funds, customer loans accounted for the biggest share of 59% with a year on year decline of 3 percentage points, while cash and due from banks increased from 12% at the end of the previous year to 15% of the total in 2009 (Chart 4.24).

Overall liquidity risk was moderate

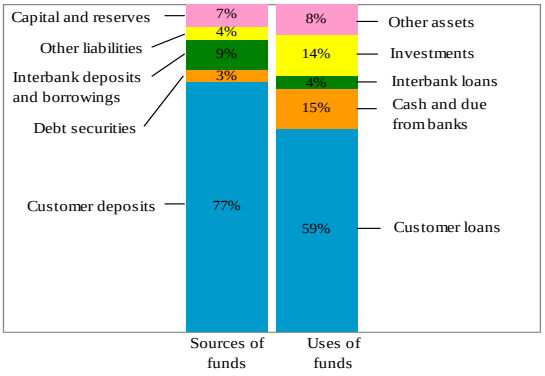
The average NT dollar liquid reserve ratio of domestic banks continuously went up to 29.78% in December 2009, well above the statutory minimum of 7% (Chart 4.25), and the ratio of each domestic bank was higher than 12%. In the same period, Tier 1 liquid reserves, mainly consisting of certificates of

Chart 4.23 Deposit-to-loan ratio in domestic banks



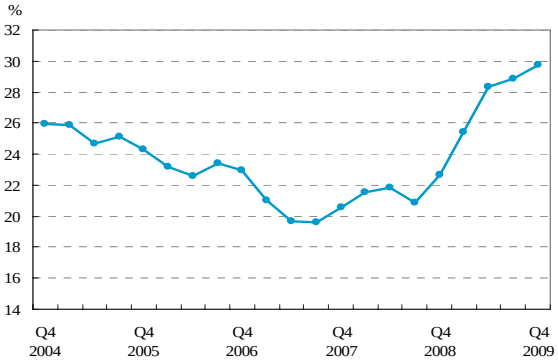
Notes: 1. Deposit-to-loan ratio = total deposits / total loans.
2. Gap of deposits and loans = total deposits - total loans.
Source: CBC.

Chart 4.24 Sources and uses of funds in domestic banks



Notes: 1. Figures are end-December 2009.
2. Interbank deposits include deposits at CBC.
Source: CBC.

Chart 4.25 Liquid reserve ratio of domestic banks



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

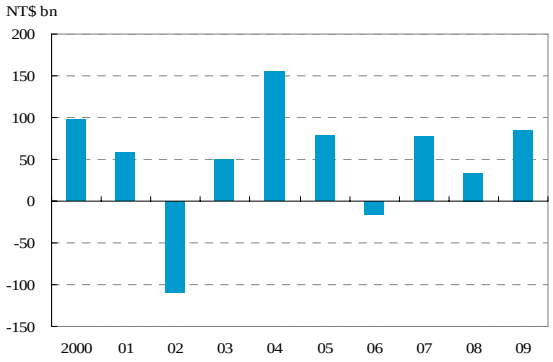
deposit issued by the CBC, accounted for 95.88% of total liquid reserves,[55] while Tier 2 and Tier 3 reserves accounted for 3.77% and 0.35%, respectively. This reveals that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risk was moderate.

Profitability

Profitability rebounded significantly in 2009

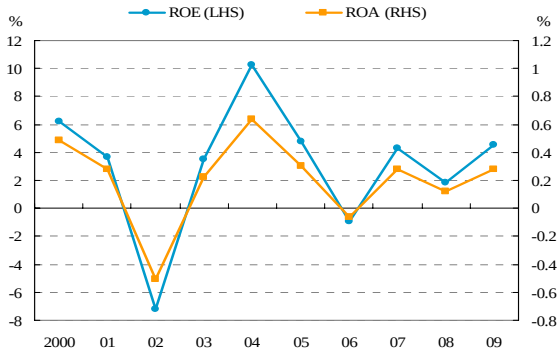
Owing to the high earnings of investment positions and the significant reduction in bad debt expenses, domestic banks reported a net income before tax of NT$85.1 billion in 2009, much higher than the figure of NT$34.4 billion in 2008 (Chart 4.26). The average return on equity (ROE) and return on assets (ROA) elevated to 4.52% and 0.28%, respectively (Chart 4.27). If the bank[56] which was taken into conservatorship by the Central Deposit Insurance Corporation (CDIC) is subtracted from the other domestic banks, the net income before tax and ROE will both increase slightly to NT$86.5 billion and 4.55%, respectively, with nearly no influence on the ROA. Compared to the US and Asia-Pacific neighboring countries, the profitability of domestic banks was relatively low, barely higher than that of the US, where the global financial turmoil originated from, and almost the same as that of South Korea (Chart 4.28).

Chart 4.26 Net income before tax in domestic banks



Source: CBC.

Chart 4.27 ROE & ROA of domestic banks



Note: ROE (return on equity) = net income before tax / average equity. ROA (return on assets) = net income before tax / average total assets.

Source: CBC.

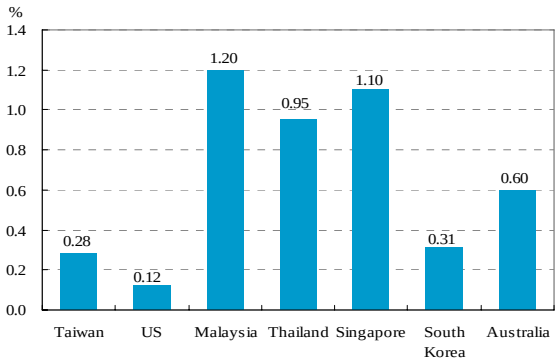
Among the total thirty-eight domestic banks, thirteen banks suffered declining profitability

[55] 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.

[56] Same as foot note 52, this bank's net loss was NT$1.35 billion in 2009.

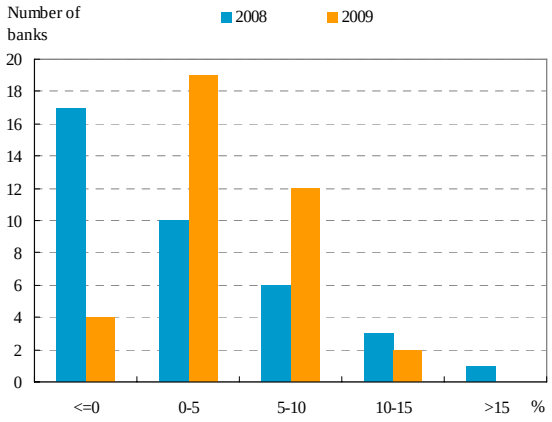
in 2009 compared to the previous year, mostly attributable to the contraction of net interest income, while several were also affected by the large amount of loss provisions set aside to resolve disputes over the sale of structured notes. Moreover, four of the thirty-eight banks posted negative ROEs, [57] decreasing markedly from seventeen in 2008. The number of banks achieving a profitable ROE of 10% or more was merely two (Chart 4.29).

Chart 4.28 Comparison of ROA of banks in selected countries



Note: Data for Singapore is for end-September 2009, and data for South Korea and Australia are for end-June 2009 , while the others are for end-December 2009.
Sources: CBC, FDIC, BNM, BOT, MAS, FSS and APRA.

Chart 4.29 Distribution of ROE of domestic banks



Source: CBC.

As for operating revenues and costs, total operating revenues of domestic banks stood at NT$454.4 billion in 2009, a slight decline of NT$0.4 billion, or 0.09% year on year. Of which, net interest income, accounting for 60% of the total revenues, declined substantially by NT$86 billion year on year as a result of narrowed interest rate spreads between deposits and loans. As global capital markets returned to normality and investors gradually regained confidence, non-interest income (primarily including net gains on financial instruments and net fee and commission income) showed a significant expansion and partly neutralized the adverse impact caused by the fall in net interest income. On the cost side, various provisions decreased sharply as a result of declining loan losses. Accompanied with effective control of business and administrative expenses, operating costs fell by NT$49.3 billion, or 11.74% year on year (Chart 4.30).

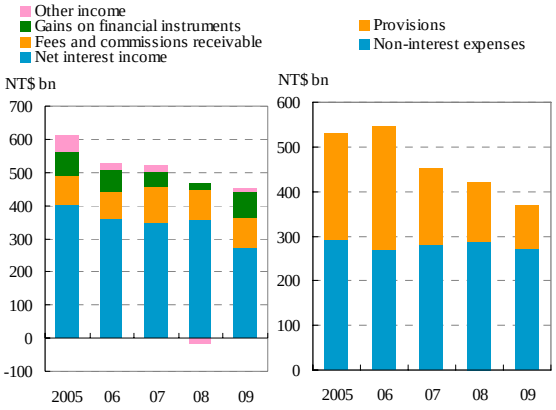
Factors that might undermine future profitability

Along with the recovery of both the global and domestic economies, the real sector's credit risk is expected to decline and benefit domestic banks' future profitability. However, there are several uncertainties worth paying attention to: (1) in the short run, narrowed interest rate

[57] Excluding one bank with negative net worth in 2008 and 2009.

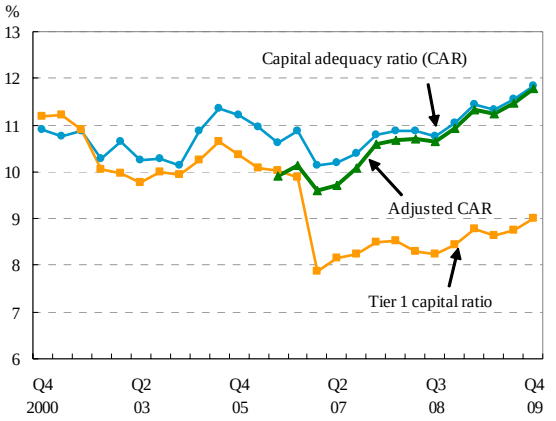
spreads between deposits and loans are unlikely to return to previous higher levels and, therefore, will limit the growth of net interest income; (2) the ascending sovereign risks in several countries facing huge public debt and fiscal deficits triggered turmoil in global financial markets. If the situation deteriorates further, domestic banks' foreign credit and investment positions might suffer losses; (3) the third revision of Taiwan's Statements of Financial Accounting Standards (SFAS) No.34 "Financial Instruments: Recognition and Measurement" will cover loans and accounts receivable and take effect from the beginning of 2011. Accordingly, domestic banks are required to set aside additional loan loss provisions, and this might impact their future profitability[58]; (4) More open cross-strait financial policies will bring domestic banks new business opportunities while also exposing them to more challenges of intense competition and mergers.

Chart 4.30 Composition of incomes and costs of domestic banks



Source: CBC.

Chart 4.31 Capital adequacy ratio of domestic banks



Notes: 1. End-of-period figures.
2. The data are on a semiannual basis prior to June 2006 and on a quarterly basis beginning June 2006.
3. Adjusted capital adequacy ratio = (eligible capital - unamortized deferred assets arising from losses recorded on the sale of non-performing assets) / risk -weighted assets.

Source: CBC.

Capital adequacy

Capital adequacy ratios continued rising

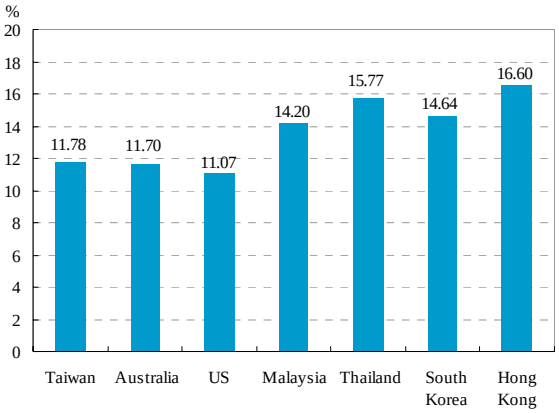
Benefiting from accumulated earnings and a booming stock market, the unrealized gains on available-for-sale financial assets of domestic banks increased and pushed stockholder's equity higher. As a result, the average capital adequacy ratio rose from 11.04% at the end of 2008 to 11.85% at the end of 2009. The Tier 1 capital ratio of domestic banks also increased from 8.43% to 9.01% (Chart 4.31). If unamortized deferred assets of NT$11.59 billion[59] arising from losses recorded on the sale of

[58] The loan loss reserve ratios currently used by domestic banks are set by the government (See footnotes 50 and 51). However, in the future, the loan loss evaluation will implement the "incurred loss model," under which banks have to evaluate the impairment of each asset. This might impact banks' profitability but help to improve the transparency of financial reports.

[59] Article 4 and 14 of the Regulations Governing the Capital Adequacy and Capital Category of Banks as amended on 30 June 2009 requires that unamortized losses recorded on the sale of non-performing assets should be deducted from Tier 1 capital. This requirement does not apply to sales made on or before 4 January 2007. The amount mentioned here occurred before the end of 2006.

classified assets were deducted from regulatory capital, the adjusted capital adequacy ratio came to 11.79%, up by 0.87 percentage points from the end of 2008. These figures reflect that the capital adequacy of domestic banks was continuously improving in 2009. Compared to the US and some Asia-Pacific neighboring countries, the average capital adequacy ratio of domestic banks is about the same as those of Australia and the US, but much lower than those of some Asian countries including South Korea (Chart 4.32).

Chart 4.32 Comparison of capital adequacy ratios in selected countries

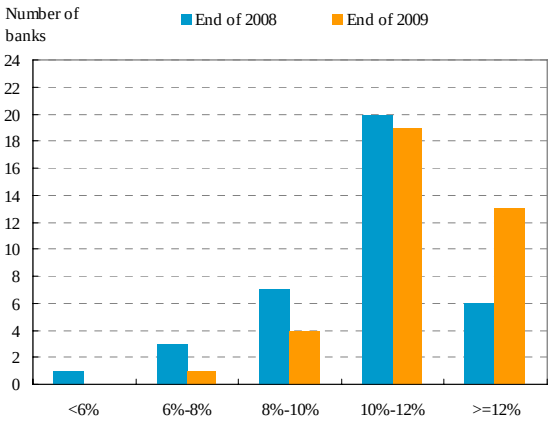


Notes: 1. Figures for Australia, South Korea and Hong Kong are end-September 2009 data, while the others are end-December 2009 data.
2. The figure for Taiwan is adjusted capital adequacy ratio.

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

Further breaking down the components of regulatory capital, Tier 1 capital, which features the best risk bearing capacity, accounted for 76.06% of eligible capital, while Tier 2 capital registered 23.71% and Tier 3 capital contributed a mere 0.23% at the end of 2009. The ratio of Tier 2 capital moderately increased in 2009, while those of Tier 1 and Tier 3 capital slightly decreased.

Chart 4.33 Number of domestic banks classified by adjusted capital adequacy ratios



Source: CBC.

Only one bank held insufficient capital

None of the domestic banks had capital adequacy ratios under the statutory minimum (8%) at the end of 2009. As for adjusted capital adequacy ratios, there was only one bank, with assets accounting for only 1.11% of the total, that had a ratio below the statutory minimum. However, this had limited impact on the banking system. In addition, there were thirteen banks with ratios above 12%, seven more compared with the end of 2008 (Chart 4.33).

Credit ratings

Average credit rating level slightly slid

Based on Standard & Poor's "Banking Industry Country Risk Assessment (BICRA)" [60] and Fitch Ratings' "Banking System Indicator / Macro-Prudential Indicator (BSI/MPI)", [61] Taiwan's banking system rating remained unchanged in Group 4 and at level C/1, respectively, in February 2010 (Table 4.2). Compared to other Asian economies, the risks in Taiwan's banking industry were higher than those in Hong Kong and Singapore, about the same as those in Japan, South Korea and Thailand, but much lower than those in China, Indonesia and the Philippines.

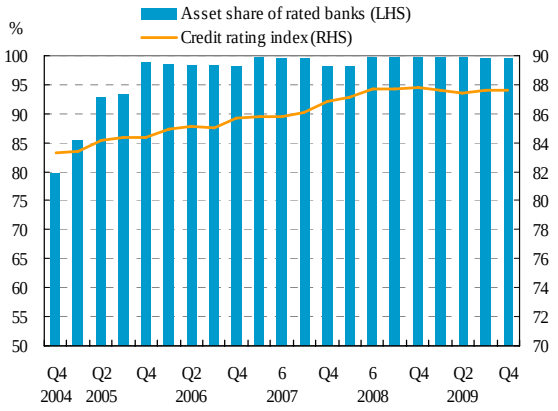
However, according to the rating results of individual banks released by credit rating agencies, there were eight banks downgraded in 2009, resulting in a slight slide in the credit rating index.[62] It reflected that the overall credit rating of domestic banks marginally declined (Chart 4.34).

Table 4.2 Systemic risk indicators for the banking system

Banking System	Standard and Poor's	Fitch
	BICRA	BSI/MPI
Hong Kong	2	B/1
Singapore	2	B/1
Japan	2	C/1
South Korea	4	C/3
Taiwan	**4**	**C/1**
Thailand	6	C/1
China	6	D/1
Indonesia	8	D/1
Philippines	8	D/1

Note: Figures are end-February 2010 data.
Sources: Standard and Poor's and Fitch Ratings.

Chart 4.34 Credit rating index of rated domestic banks



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

[60] The classification scheme used by the Banking Industry Country Risk Assessment (BICRA) is a synthetic assessment developed by Standard & Poor's Corporation that is based on the credit standing of financial institutions in the context of the structure and performance of the economy, legal and regulatory infrastructure supporting the financial system, and the competition and operation environment of the banking sector, while factoring out the potential for government support for banks. Assessment results reflect relative country risk and banking sector credit quality, and are indicated with a score of 1 (strongest) to 10 (weakest).

[61] Fitch Ratings has devised two complementary measures, the Banking System Indicator (BSI) and Macro-Prudential Indicator (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). 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.

[62] 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 Corporation or national long-term ratings from Fitch Ratings.

Uncertainties over future credit ratings are alleviating

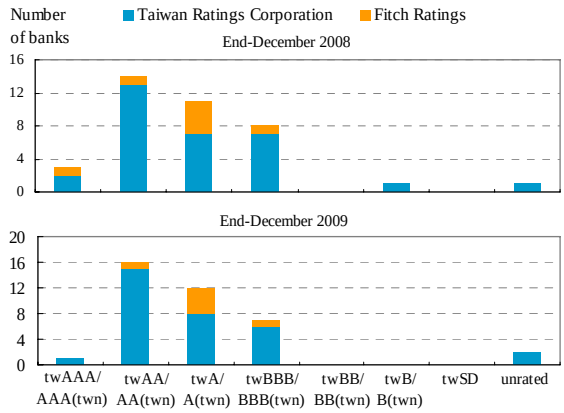
Most of the thirty-six rated banks maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2009, and none of them was rated below twBB/BB(twn), or speculative (Chart 4.35). In addition, ten banks received negative rating outlooks or CreditWatch at the end of 2009. However, the number declined to nine in February 2010, showing that uncertainties over future credit ratings were alleviating.

4.2.2 Life insurance companies

The total assets of life insurance companies increased and their performance improved in 2009. However, the potential losses driven by negative interest rate spreads and the high volatility of investment performance might continue to erode their future profits. The average risk-based capital (RBC) ratio at the end of June 2009 ascended slightly as a result of an increase in net worth but still remained below the statutory minimum of 200%. Nevertheless, it is expected to improve as the profits of life insurance companies grew significantly in the second half of 2009.

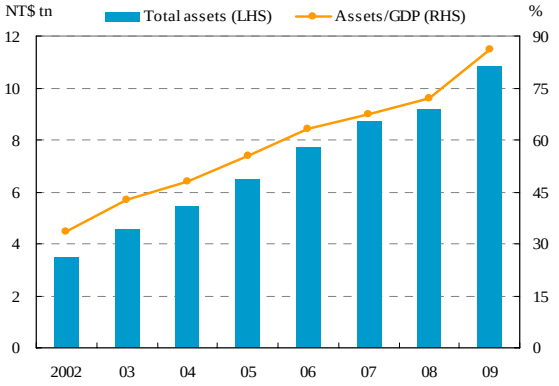
As for credit ratings, four companies were downgraded during 2009 and three companies were listed on negative rating outlooks or CreditWatch at the end of February 2010. Although life insurance companies generally performed better in 2009, they still face several challenges in the future.

Chart 4.35 Number of domestic banks classified by credit ratings



Sources: Taiwan Ratings Corporation and Fitch Ratings.

Chart 4.36 Total assets of life insurance companies



Note: Total assets are end-of-period figures.
Source: FSC.

Assets grew as fast as the years before the financial crisis

The total assets of life insurance companies increased by 18.03% year on year in 2009, as fast as the years before the financial crisis, and reached NT$10.81 trillion at the end of

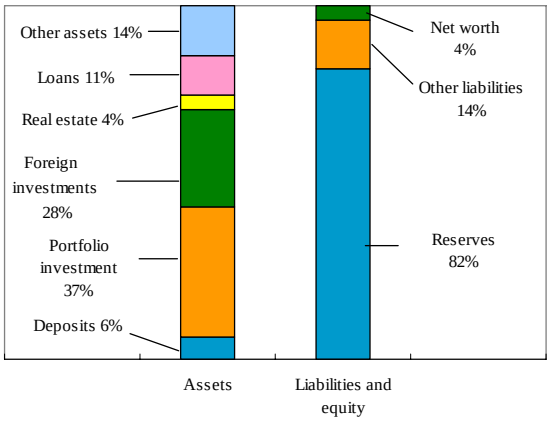
2009, equivalent to 86.28% of annual GDP (Chart 4.36). The asset increase was mainly supported by a surge of securities investments due to the recovery of global financial markets. In addition, insurance products held in segregated custody accounts, the major component of other assets, rose 37.00% year on year owing to the increase of investment-linked insurance policies as domestic investors gradually regained confidence resulting from the alleviation of the financial crisis and the settlement of customer disputes regarding structured products.

The structure of the life insurance industry changed little in 2009. As of the end of 2009, twenty-two domestic life insurance companies held a 98.69% market share by assets, while eight foreign life insurance companies[63] commanded a share of only 1.31%. In terms of assets, the top three companies held a combined market share of 54.17%, while in terms of premium income, the top three companies held a combined market share of 52.92%. As a few European life insurance companies sold their subsidiaries in Taiwan to domestic insurance companies, market concentration might elevate further.

Funds invested in securities grew significantly

The funds of life insurance companies at the end of 2009 were mainly invested in domestic and foreign securities, accounting for 65% of funds, while 11% of funds were in loans and 4% in real estate. As for the sources of funds, various policy reserves constituted 82%, while net worth accounted for 4% (Chart 4.37). Regarding the analysis of growth of usable funds of life insurance companies in 2009, domestic and foreign portfolio investment increased by 16.18% and 23.49%, respectively; deposits registered an increase of 33.18%, while real estate investments also increased by 17.09% due to their stable revenue and loosened restrictions on real estate investments of life insurance companies.

Chart 4.37 Asset/liability structure of life insurance companies



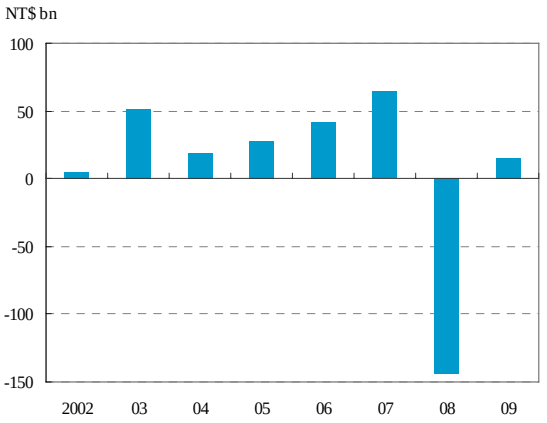
Note: Figures are end-December 2009 data.
Source: FSC.

[63] Including foreign affiliates.

Returning to profit in 2009

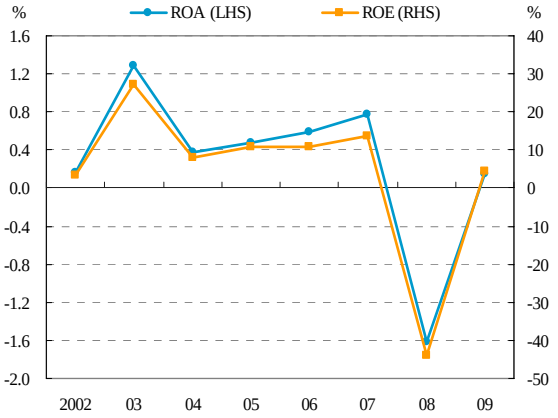
After experiencing enormous losses in 2008, life insurance companies as a whole registered a net profit before tax of NT$14.9 billion in 2009, mainly led by the profit in domestic and foreign portfolio investments, which benefited from the recovery of the global economy, more sanguine financial markets and rapidly rebounding stock markets (Chart 4.38). This was reflected in the marked improvement in the operating performance of life insurance companies. During the same period, average ROE and ROA also rose substantially and stood at 4.53% and 0.15%, respectively, much higher than -44.03% and -1.61% registered in 2008, but still lower than the levels in 2007 before the global financial crisis (Chart 4.39). One company which was taken into receivership by the Financial Supervisory Commission (FSC) [64] is excluded, other life insurance companies as a whole registered a net profit before tax of NT$20.0 billion and average ROE and ROA of 5.13% and 0.21%, respectively, in 2009 .

Chart 4.38 Net income before tax of life insurance companies



Source: FSC.

Chart 4.39 ROE & ROA of life insurance companies



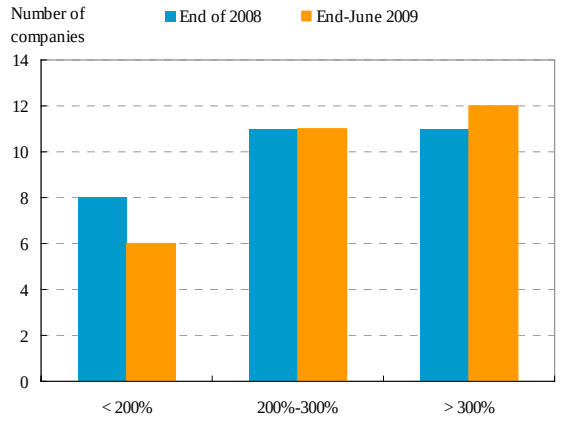
Notes: 1.ROA = net income before tax / average assets.
2.ROE = net income before tax / average equity.
Source: FSC.

As a consequence of the rebound in domestic and foreign financial markets, the average return on investment of life insurance companies rose to 3.55% in 2009, compared to 1.87% in 2008. However, the impact of negative interest rate spreads on profits is still a concern before global interest rates begin to turn up. Furthermore, the high volatility of global financial markets also put pressure on the performance of life insurance companies. In order to provide more stable and long term investment instruments, the FSC relaxed certain regulations related to real estate and securities investments to enhance the flexibility and

[64] The FSC took Kuo Hua Life Insurance Co. into receivership on 4 August 2009 and entrusted the Insurance Stabilization Fund as the conservator of the company under the authorization of the Insurance Act. Kuo Hua Life Insurance Co. registered an net loss before tax of NT$5.05 billion in 2009.

efficiency of funds usage under consideration of their safety, liquidity and profitability.

Chart 4.40 Number of life insurance companies classified by RBC ratios



Source: FSC.

Average RBC ratio rebounded slightly

As a result of the recovery of profit and net worth, the average RBC ratio for life insurance companies increased slightly from 190.37% at the end of 2008 to 198.27% at the end of June 2009, but was still below the statutory minimum of 200%.[65] Since profit in the second half of 2009 improved significantly, the average RBC ratio was expected to increase further. At the end of June 2009, there were twelve companies with ratios of over 300%. However, there still were six companies with ratios below 200% (Chart 4.40), the combined assets of which accounted for 8.57% of the total[66]. Their financial structures needed to be improved. Considering the current economic and financial situation, the FSC announced the amendment of RBC regulations[67] on 5 February 2010, and the amendment was put into practice immediately with the intention of enhancing the stability of capital adequacy and the solvency of life insurance companies.

Credit ratings for the top three companies remained above twA+ or A+ (twn)

Of the ten domestic life insurance companies rated by credit rating agencies, four companies were downgraded in 2009. This somewhat reflects the weak capital level for those companies and concerns about the potential impact of mergers & acquisitions on their financial health. There still were three companies listed on negative rating outlooks or CreditWatch at the end of February 2010. Nevertheless, the top three companies in terms of assets and premium market share were rated above twA+ or A+(twn),[68] respectively, signifying their strong ability to meet all financial commitments.

[65] Excluding the life insurance companies with negative equity, the average RBC ratio for other companies was 269.39%.
[66] Excluding Kuo Hua Life Insurance Co., the ratio became 6.08%.
[67] The main amendments were: (1) the issuance of bonds with a capital nature or preferred stock of a liability type shall be included in eligible capital; (2) the funds invested in bonds with a capital nature or preferred stock of a liability type shall be deducted from eligible capital; (3) the special reserve for major events can be included in eligible capital; and (4) 80% of unrealized gains and 100% of unrealized losses arising from investments on stocks, exchange-traded funds (ETFs) and mutual funds can be included in eligible capital.
[68] Ratings prefixed with "tw" are from the Taiwan Ratings Corporation, while ratings suffixed with "(twn)" are from Fitch Ratings.

The challenges faced by life insurance companies

Declining global interest rates and greater volatility in the financial investment environment decreased the investment return and, in turn, amplified the impact of negative interest rate spreads on Taiwan's life insurance industry. The root of the negative interest rate spreads problem was the duration mismatch of assets and liabilities of life insurance companies as they have long-term and fixed-rate liabilities and hold short-term and floating-rate assets. Life insurance companies should take responsive deliberate measures to improve their asset allocations and enhance their interest rate risk and foreign exchange rate risk management in order to maintain safety and soundness in the current environment with a cyclical economy and volatile financial markets (Box 3).

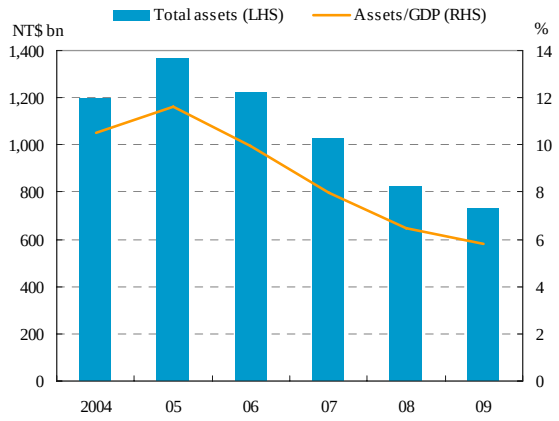
4.2.3 Bills finance companies

The total assets of bills finance companies continued to contract in 2009. Their profitability increased significantly, mainly due to the interest rate cuts by the CBC, and both asset quality and capital adequacy were enhanced. Although bills finance companies still faced the situation of maturity mismatch between assets and liabilities, their liquidity risk was expected to decline as the amended regulations of limiting the financial leverage of bills finance companies was put into practice. Moreover, as the guarantee business of bills finance companies has contracted over the years, they face the need to search for new business niches for the sake of long-term performance.

Total assets continued to contract

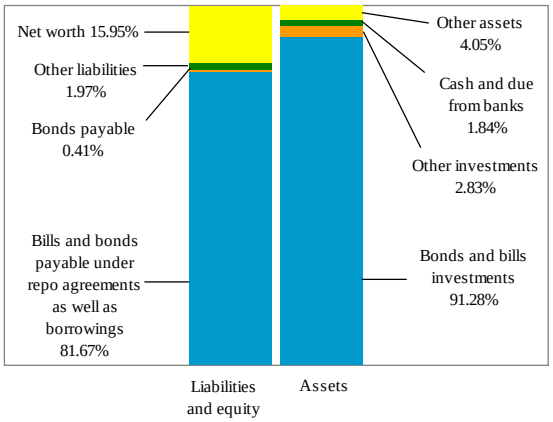
Driven by the reduction of bonds and bills investments in order to alleviate the risk of interest rate reversals, the total assets of bills finance companies continued to decline and

Chart 4.41 Total assets of bills finance companies



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

Chart 4.42 Asset/liability structure of bills finance companies



Note: Figures are end-December 2009 data.
Source: CBC.

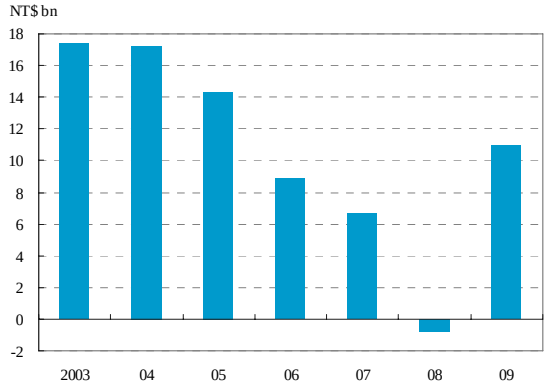
stood at NT$729.1 billion, or 5.82% of annual GDP, as of the end of 2009, a decrease of 11.53% year on year (Chart 4.41). The three largest bills finance companies commanded a market share by assets of 71.01% in total, while each of the other firms had a market share below 7%.

As for asset/liability structure at the end of 2009, bonds and bills investments on the asset side accounted for 91.28% of total assets, an increase of 1.37 percentage points compared to the end of the previous year, while bills and bonds payable under repo agreements as well as borrowings on the liability side accounted for 81.67%, a decrease of 2.46 percentage points (Chart 4.42).

Profitability saw a great improvement

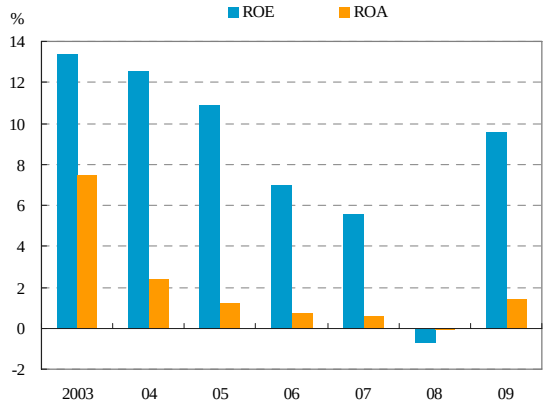
Bills finance companies posted a net income before tax of NT$11 billion in 2009, a big increase compared to a loss of NT$0.8 billion in 2008 (Chart 4.43). At the same time, ROE and ROA rose dramatically to 9.60% and 1.41%, respectively (Chart 4.44). The increase in profitability was mainly underpinned by a significant reduction of interest expenses, as the interest rates of repos and overnight borrowing, the two main funding sources, fell due to CBC's rate cuts. Once interest rates reverse and trend up, however, higher funding costs and valuation losses in bonds and bills investments might erode the future profits of bills finance companies.

Chart 4.43 Net income before tax of bills finance companies



Source: CBC.

Chart 4.44 ROE & ROA of bills finance companies



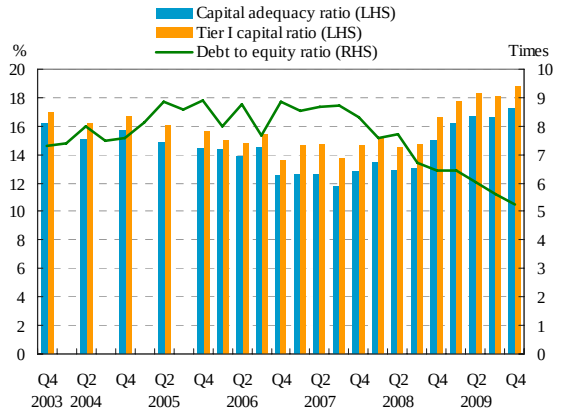
Notes: 1. ROE = net income before tax / average equity.
2. ROA = net income before tax / average assets.
Source: CBC.

The average capital adequacy ratio increased and financial leverage continued to improve

Because of the obvious contraction of risky assets, the average capital adequacy ratio of bills finance companies rose and registered

17.28% as of the end of 2009, while all companies had ratios above 13%. The average Tier 1 capital ratio also rose and stood at 18.84%. Furthermore, owing to a contraction in debt and an increase in equity, the average debt to equity ratio of bills finance companies continued to slide to 5.27 as of the end of 2009 (Chart 4.45), reflecting an improvement in financial leverage.

Chart 4.45 Capital adequacy ratio and leverage of bills finance companies

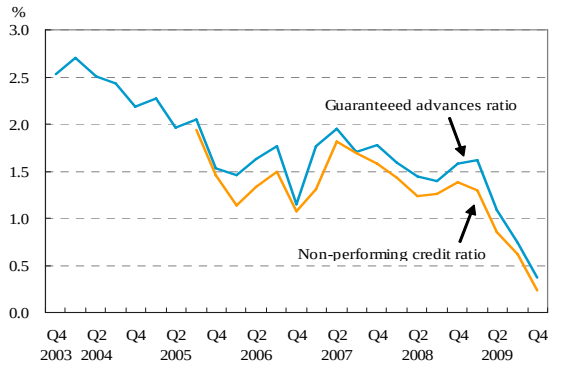


Source: CBC.

Credit quality remained satisfactory

The guaranteed advances ratio and non-performing credit ratio [69] for the guarantee business dropped significantly to 0.37% and 0.23%, respectively, at the end of 2009 (Chart 4.46), mainly driven by a large amount of write-offs during the year. The credit quality of bills finance companies remained satisfactory.

Chart 4.46 Guaranteed advances ratio of bills finance companies



Notes: 1. Guaranteed advances ratio = overdue guarantee advances / (overdue guarantee advances + guarantees). Non-performing credit ratio = non-performing credit / (overdue guarantee advances + guarantees).
2. The data of non-performing credit ratios are compiled from September 2005 onwards.

Source: CBC.

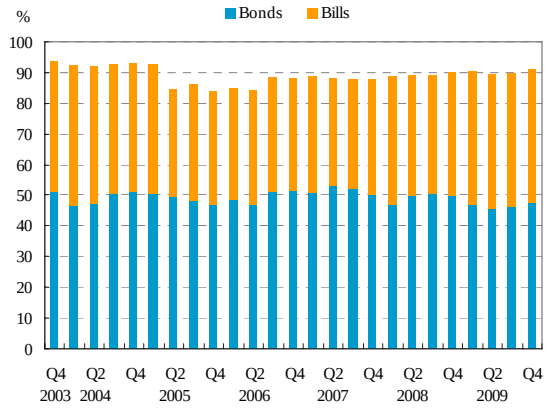
Maturity mismatch between assets and liabilities remained, but liquidity risk is expected to mitigate

Affected by the global financial crisis, liquidity risk of bills finance companies ascended in 2008 Q4. Nevertheless, the risk alleviated in 2009 due to better performance of companies and ample liquidity in the financial market. However, the maturity mismatch between assets and liabilities of bills finance companies still persisted. At the end of 2009, bonds and bills investments constituted 91.28% of total assets, in which bonds investments accounted for 47.50% (Chart 4.47), while repos and short-term borrowings made up 81.67% of total assets. These figures showed that the liquidity risk of bills finance companies was somewhat high. In order to reduce their liquidity risk, the FSC promulgated the amendments to the Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo

[69] Non-performing credit for guaranteed advances refers to those guarantee advances that are more than three months overdue.

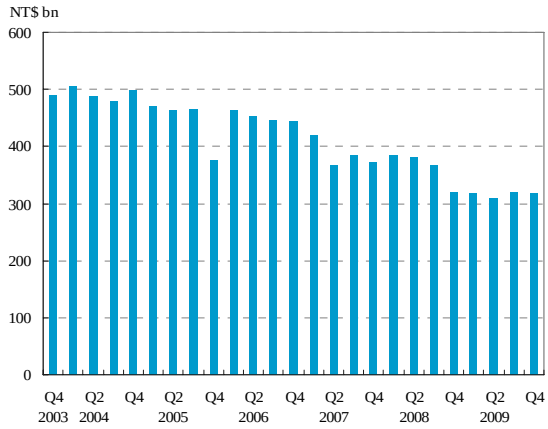
Transactions Conducted by Bills Houses on 9 April 2010. The amended directive states that the major liabilities of a bills finance company may not exceed ten times, eight times or six times its net worth depending on the level of its capital adequacy ratio, compared to fourteen times for all companies in the pre-amended directive. 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. With the implementation of this directive, it is expected that the liquidity risk of bills finance companies will be reduced.

Chart 4.47 Bond & bill positions as percentage of assets at bills finance companies



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

Chart 4.48 Outstanding commercial paper guarantees



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

With the guarantee business shrinking, bills finance companies should search for new business niches

The outstanding balance of commercial paper guaranteed by bills finance companies continued to decline in 2009 and registered NT$316.3 billion as of the end of the year (Chart 4.48). The main reason was that bills finance companies tended to be more conservative in granting credit lines and enterprises preferred borrowing from banks rather than issuing commercial paper due to ample funding in the banking system. In order to reduce the credit risk of bills finance companies as well as encourage them to act as brokers and traders but not creditors, the FSC promulgated the amendments to the Directions for Outstanding Amount of Guarantees and Endorsements of Short-term Bills by Bills Houses on 24 February 2010. Compared to eight times, the ceiling of the ratio of outstanding commercial paper guaranteed to net worth for all bills finance companies before the amendment, the amended directive requires that the above ratios shall not exceed five, four, three and one times, respectively, if their capital adequacy ratios are above 12%, 11%-12%, 10%-11% or below 10%, respectively. This new direction will not impact the guarantee

business of bills finance companies immediately as all bills finance companies had capital adequacy ratios above 12% and had ratios of outstanding commercial paper guarantees to net worth below five times. However, bills finance companies should search for new business niches for the sake of long-term performance.

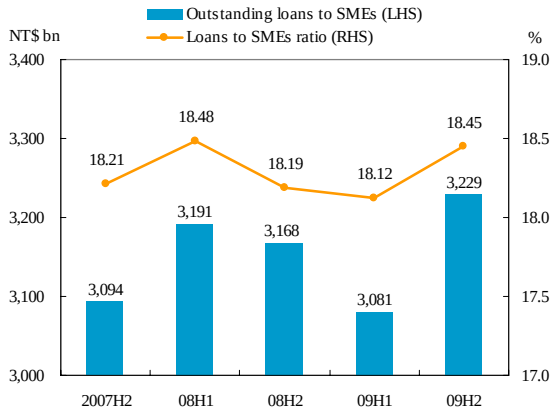
Box 2
Loans to small and medium enterprises

Small and medium enterprises (SMEs) play an important role in Taiwan's economic development and have far-reaching impacts on economic growth and social stability. The total number of SMEs registered 1.235 million, accounting for 97.70% of the total number of corporations at the end of 2008. In terms of number of workers, 7.966 million workers worked for SMEs, which was equivalent to 76.58% of national employment that year. The total sales revenues for SMEs amounted to NT$10.46 trillion, or 29.69% of the corporate sector as a whole[1]. Their main source of funding is loans from banks[2]. Nevertheless, compared to large corporations, SMEs encounter more difficulties in obtaining loans from banks because of a lack of transparency, relatively unsound financial structures and insufficient collateral. In view of the pro-cyclical nature of banks' lending behavior[3] and that currently the economy has not yet fully recovered, the relevant government authorities would actively adopt measures so as to increase banks' incentives for extending loans to SMEs.

1. Loans to SMEs

The outstanding amount of total loans to SMEs granted by banks amounted to NT$3,229.4 billion as of the end of 2009, increasing by NT$61.6 billion, or 1.94%, year on year, representing an increase of NT$ 38.3 billion, or 1.2%, when compared with that of June 2008 before the onset of the global financial crisis. Loans to SMEs accounted for 18.54% of total loans as of the end of 2009, up by 0.26 percentage points from that of the previous year-end, but slightly down by 0.03 percentage points from that of the end of June 2008[4]. In general, loans to SMEs have returned to the level they were at before the financial crisis struck (Chart B2.1).

Chart B2.1 Outstanding and ratio of Loans to SMEs in Banks



Notes: 1.The term "banks" here refers to domestic banks and local branches of foreign banks.
2. End-of-period figures.
Source: FSC.

Most loans to SMEs were granted by state banks, in line with government policies. Loans to SMEs granted by the 8 widely-defined state banks[5] reported NT$2,261.4 billion, with a market share of

70.03%, which was relatively concentrated; loans extended to SMEs by the local branches of foreign banks was merely NT$37.5 billion or 1.16% of the market.

2. Measures Adopted by the Government to Assist SMEs

Considering the current economic environment's impacts on corporate finances, the CBC continued to adopt easy monetary policies to lower banks' costs of funding and inject ample liquidity into the market so as to increase the lending capacity of the banking sector. Other relevant government agencies also took the following responses to assist SMEs in obtaining operation funds:

2.1 The Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) adopted several measures to increase banks' incentives to extend loans to SMEs

In view of full compliance with the government's policy, the SMEG launched a new Special Guarantee Program to Promote Employment and Funding. Under the Program, credit lines were increased and restrictions on credit guarantees that enterprises can utilize to apply for loans were relaxed, guarantee fee rates were lowered, and both guarantee coverage percentages and the standard payment rate after claims for loans under the Package Credit Guarantees were increased. Through the credit guarantees of this program, credit risks faced by banks were largely reduced, and as a consequence, banks' incentives to extend loans to SMEs were increased significantly. In 2009, the SMEG helped SMEs obtain financing of NT$613.1 billion (of which NT$462.0 billion was guaranteed by the SMEG), an increase of NT$94.2 billion from NT$518.9 billion (where SMEG guarantees amounted to NT$327.3 billion) extended in 2008.

2.2 The government and contracted financial institutions donated more to expand the capacity of the SMEG

In 2009, donations from the government and contracted financial institutions increased to NT$6 billion and NT$2 billion, respectively. As a result, the net worth of the SMEG registered NT$27.7 billion as of the end of 2009, representing a ceiling of credit guarantees of NT$554.0 billion. When compared with outstanding credit guarantees of NT$393.9 billion granted by the SMEG[6] in the same year, there was still ample capacity for guarantees available.

2.3 The FSC required domestic banks to extend more loans to SMEs

Domestic banks' loans to SMEs have increased gradually since the Domestic Banks Loans to SMEs Enhancement Project was initiated by the Financial Supervisory

Commission (FSC) in July 2005. As of the end of 2009, loans to SMEs granted by domestic banks stood at NT$3.19 trillion, increasing by NT$73.1 billion from the previous year. The ratio of their loans to SMEs to their overall corporate loans reached 43.66%, an increase of 2.07 percentage points from the previous year. To help SMEs obtain operation funds, the FSC continued to promote the Project, and loans to SMEs granted by domestic banks were expected to increase by NT$100 billion by the end of 2010.

Notes: 1. SMEs Outlook 2009, issued by Small and Medium Enterprise Administration, Ministry of Economic Affairs (MOEA).
2. Sources from the Department of Statistics, MOEA.
3. Loans granted by banks increase during economic expansions while they decrease markedly during contractions, which may worsen the volatility and instability of the macro-economy.
4. Figures are taken from the Banking Bureau, Financial Supervisory Commission.
5. These banks here refer to the Bank of Taiwan, Land Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, Chang Hwa Commercial Bank, Taiwan Business Bank and Mega International Commercial Bank.
6. Including NT$21 billion of government project finance.

Box 3
Current issues facing Taiwan's life insurance companies and possible solutions

1. Current issues facing life insurance companies

1.1 Duration mismatch and negative interest rate spread

The fundamental issue facing life insurance companies in Taiwan is that long-term liabilities' share in total liabilities is persistently higher than long-term assets' share in total assets, owing to a lack of long-term investment instruments in the domestic market. This leads to a duration mismatch that may cause a higher risk of losses when market prices exhibit larger fluctuations. On the other hand, the assumed interest rates of life insurance policies issued in earlier periods are still higher than the current rates of investment return due to a worldwide downward trend of interest rates, resulting in the existence of a negative interest rate spread.

1.2 Average risk-based capital ratio needs to be improved

The return on investment of life insurance companies significantly declined in 2008 due to the deepening global financial crisis. In addition, operating losses during the same year further caused a decrease in their net worth. As a result, the average RBC ratio for life insurance companies dropped to 190.37% at the end of 2008, even though the Financial Supervisory Commission temporarily relaxed the regulation of risk-based capital (RBC) for the insurance industry. In the first half of 2009, unrealized gains and losses from domestic and foreign securities investments turned positive, but the average RBC ratio merely increased to 198.27% at the end of June 2009, still below the statutory minimum requirement of 200%. Among all insurance companies, there were six with RBC ratios below 200% where further improvement was needed.[1]

2. Possible solutions

The following measures may contribute to improving the performance of life insurance companies and lowering the potential unfavorable effects:

(1) If the government issues more long-term government bonds, it will help to provide sufficient long-term investment instruments for life insurance companies and, in turn, ease the mismatch problem of the asset-liability term structure;

(2) Life insurance companies are encouraged to focus on selling traditional life insurance

policies, but not investment-linked insurance policies, during low interest rate environments. Losses from negative interest rate spreads may be reduced accordingly;

(3) Insurance policies with high assumed interest rates should be closely monitored by supervisory agencies and be put under the risk control mechanism of insurance companies so as to reduce the risk arising from over competition in the life insurance industry; and

(4) Life insurance companies with RBC ratios lower than the statutory minimum standards should raise more capital within a certain time period. Furthermore, a 2% sales tax levied on life insurance companies may be considered by the government to be appropriated to the Insurance Stabilization Fund so as to expand the scale of the Fund and, in turn, contribute to adopting appropriate supervisory measures for problematic life insurance companies or implementing a market exit mechanism.

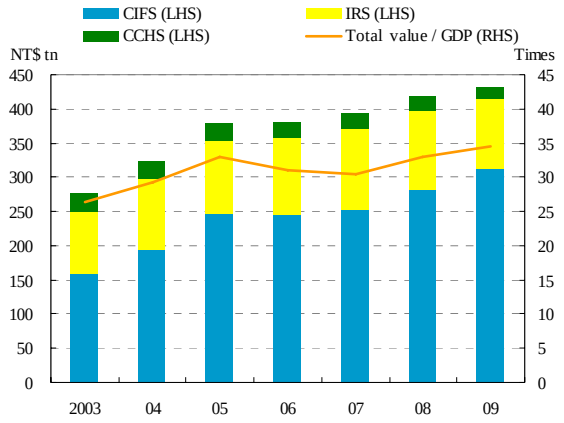
Note: As the profitability of life insurance companies improved markedly in the second half of 2009, the average RBC ratio is expected to increase at the end of 2009.

4.3 Financial infrastructure

4.3.1 Payment and settlement systems

Overview of major payment and settlement systems

Chart 4.49 Transaction value of the three major payment systems



Source: CBC.

The three major payment systems processing domestic interbank payments are the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) and the Check Clearing House System (CCHS), with the CBC, the Financial Information Service Co., Ltd. (FISC) and the Check Clearing House as operators, respectively. In 2009, the total transaction value of the three major systems increased by NT$15 trillion from the previous year to NT$433 trillion, which was equivalent to 34.6 times annual GDP (Chart 4.49).

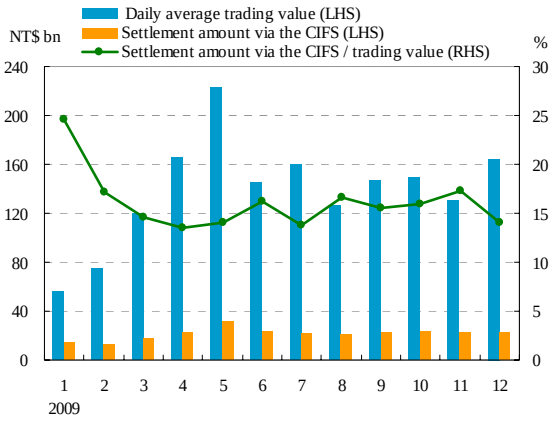
Of the three major payment systems, the CIFS was the most important one and accounted for 72% of the total transaction value. The CIFS also handled the final settlement of interbank funds transfers relating to the settlement of bonds, bills and stocks transactions. In 2009, the transaction value of the CIFS reached NT$312 trillion, an increase of NT$31 trillion from a year earlier (Chart 4.49).

Three major payment systems accomplished self-assessment

To ensure the soundness and efficiency of the CIFS, which played a pivotal role in domestic interbank payment systems, the CBC completed its self-assessment in 2007 based on the *Core Principles for Systemically Important Payment Systems* issued by the Bank for International Settlements (BIS). The assessment results showed that most requirements were satisfied. Moreover, the CBC encouraged the other two major payment system operators, the FISC and the Check Clearing House, to conduct self-assessment so as to ensure the compliance of their operations with the core principles. In 2009, the CBC finished the review of their self-assessment reports and required them to take corrective actions to address the deficiencies not conforming to the core principles.

The securities market launched a new clearing and settlement mechanism

Chart 4.50 The clearing amount of stock market transactions via CIFS



Sources: TWSE and GTSM.

In order to strengthen their competitiveness, many capital markets around the world have attempted to enhance financial innovation as well as undertake clearing and settlement system reforms. To cope with the trend, the TWSE and the GreTai Securities Market (GTSM) jointly appointed the Taiwan Depository & Clearing Corporation to provide consolidated securities depository services for securities transactions in 1995. At that time, however, each market had its own funds clearing agreement and thus market participants had to deal with different funds clearing institutions. In order to streamline the operations, the TWSE and the GTSM consolidated their funds clearing operations for stock transactions in 2003 and assigned them to the TWSE as the single central operator for the clearing of funds.

As for the funds settlement of stock transactions, the TWSE originally assigned it to one domestic commercial bank. Nevertheless, in view of the benefits of being safe, efficient and competitively neutral, funds settlement was made through the CIFS from 2007 and adopted the T+2 DVP (delivery-versus-payment) settlement mechanism in 2009 to meet the requirements of international recommendations (Box 4).

The total daily average trading value of securities listed on the TWSE and the GTSM was NT$164.7 billion in December 2009, including NT$130.6 billion from the TWSE and NT$34.1 billion from the GTSM. The daily average settlement amount of security transactions via CIFS was NT$23.1 billion, accounting for 14% of the total trading value (Chart 4.50), significantly reducing the amount of funds needed for settlement.

4.3.2 Extension of the interim blanket guarantee for deposits to the end of 2010

The financial system in Taiwan was temporarily in turmoil in 2008 Q4 in the wake of the deepening international financial crisis. To enhance depositors' confidence and stabilize the financial system, the government announced the measure of a blanket guarantee for deposits

in October 2008, accompanied by a package of relevant measures aiming to strengthen financial supervision and regulation. These measures effectively stabilized the market and diminished banks' liquidity risks.

This measure of a blanket guarantee for deposits was initially put into effect until the end of 2009. However, the government announced its extension to the end of 2010 on 8 October 2009, considering the persistence of global economic and financial instability and extensions of the blanket deposit guarantee schemes adopted by neighboring countries, such as Singapore and Hong Kong. The scope of the coverage and special premium surcharges imposed on interbank call loans remains the same. The FSC also takes necessary actions to enhance financial supervision and requires financial institutions to strengthen their liability management, as well as implements Prompt Corrective Actions to impaired banks.

4.3.3 Establishing cross-strait financial supervisory cooperation mechanism and opening cross-strait financial interactions

In line with the government's policy of opening-up cross-strait interactions, the FSC and the relevant Chinese supervisory and regulatory agencies jointly signed three Cross-strait Financial Supervisory Cooperation Memorandums of Understanding (MOUs) in November 2009. Moreover, there were three revised regulations governing the permission of cross-strait financial activities in banking, insurance, and securities and futures which were subsequently promulgated by the FSC in March 2010. It was a response to manage deeper financial interactions between the financial markets on the two sides of the Taiwan Strait and, at the same time, to maintain Taiwan's economic soundness and financial stability.

As Taiwan's financial institutions apply sound risk management and possess a leading edge in the fields of financial innovation, coupled with the advantage of sharing the same language and culture with China, they could find niches for expanding business and creating revenues in the China market after the opening of cross-strait financial activities and investments. Nevertheless, those institutions should be vigilant regarding the potential risks that might emerge from accessing China's market and adopt appropriate business and risk management strategies to prevent the potentially unsafe and unsound operations that may exist in China from compromising the soundness of Taiwan's financial system.

Signing MOU with China

According to Principle 25 of the *Core Principles for Effective Banking Supervision* published

by the Basel Committee on Banking Supervision (BCBS), cross-border consolidated supervision requires the cooperation and information exchange between home supervisors and other supervisors involved, primarily host banking supervisors. To help cross-strait cooperation, the FSC signed three MOUs, involving banking, insurance, and securities and futures services, with the China Banking Regulatory Commission, the China Insurance Regulatory Commission and the China Securities Regulatory Commission, respectively, on 16 November 2009. The content of these MOUs covered supervisory cooperation including information exchanges, confidentiality, financial examinations, and cross-strait contacts. The terms were effective as of 16 January 2010. The signing of these MOUs not only improves the cooperation of cross-strait supervision and bolsters the pursuit of international supervision standards, but also helps Taiwan's supervisory authorities to get the full picture of the operations of Taiwan's financial institutions in China in order to maintain financial stability.

Amendments of the regulations governing cross-strait financial activities

To respond to the need for managing financial activities between the cross-strait financial markets, the FSC amended three regulations governing approvals of banking institutions, insurance companies, and securities and futures firms to engage in business and investment activities between Taiwan and China on 16 March 2010. Under the principle of consolidated supervision and effective management, these regulations will guide an orderly entrance of Taiwan's financial institutions into China's market and gradually allow China's financial institutions to access Taiwan's market.

The key amendments to the regulations governing banking services primarily include augmenting regulations governing the establishment of offices, branches or subsidiaries and equity investments by Taiwan's financial institutions, easing restrictions on offshore banking units of Taiwan's financial institutions extending credit to Taiwanese enterprises in China, and expanding the scope of cross-strait credit card and debit card business transactions processed by domestic financial institutions in Taiwan. In the case of the regulations governing insurance companies, the most notable revisions are allowing Taiwan's insurance auxiliary companies[70] to establish branches or subsidiaries in China and to have equity investments in China's insurance auxiliary companies, and allowing China's insurance companies to establish offices in Taiwan and have equity investments in Taiwan's insurance companies. The major changes to the regulations governing securities and futures firms involve allowing securities and futures firms from China to establish offices and to have equities investments in Taiwan.

[70] The insurance auxiliary industry includes insurance agents, insurance brokers and insurance surveyors.

The three amended regulations were made effective on 16 March 2010. However, the relevant regulations relating to equities investments by China's banks in Taiwan's banks and financial holding companies will not enter into force until a later date to be determined on the basis of the development of the Economic Cooperation Framework Agreement.

4.3.4 The gradual conformability of Taiwan's SFAS to IFRS

The convergence[71] of Taiwan's Statement of the Financial Accounting Standards (SFAS) toward International Financial Reporting Standards (IFRS) started from 1999. It aimed not only to enhance the comparativeness of the financial reports of international corporations, but also to help Taiwan's corporations to raise funds at lower costs from international capital markets. Accordingly, the Accounting Research and Development Foundation in Taiwan, with reference to the IFRS, made numerous amendments to Taiwan's SFAS. Among those amended SFAS, the third amendment to Taiwan's SFAS 34 (*Financial Instruments: Recognition and Measurement*) and SFAS 40 *(Insurance Contracts*), having close ties with the financial sector, will be adopted from 1 January 2011. Their impact on the domestic financial industry is worth drawing attention to.

Furthermore, given the global trend towards full adoption of the IFRS, the FSC announced in May 2009 its plan for the full adoption of the IFRS in Taiwan, starting from 2013. The plan was to adopt the IFRS in two phases.[72.] As the implementation of the IFRS will affect financial institutions and other enterprises, both of them need to engage in early preparation, evaluate the potential impacts and plan for appropriate responses.

The third amendment to Taiwan's SFAS 34

Taiwan's SFAS 34 mainly refers to International Accounting Standards No.39 (IAS 39), namely *Financial Instruments: Recognition and Measurement*. According to IAS 39, financial assets including loans and receivables are subject to impairment assessment. However, in order to alleviate the impacts on enterprises, especially banks, originated loans and receivables were temporarily excluded from the scope of Taiwan's SFAS 34 when it was issued in 2003. Nevertheless, the third amendment to Taiwan's SFAS 34 will be effective from January 2011 and require enterprises, including banks, to assess originated loans and

[71] To realize the goal of developing a single set of accounting standards, the International Financial Reporting Standards (IFRS), countries can either "converge" with or "adopt" the IFRS. Countries deciding to converge with the IFRS will publish local statements of financial accounting standards referring to the IFRS. Others, which adopt the IFRS, will be required to translate and adopt the IFRS.

[72] In phase I, listed companies and financial institutions supervised by the FSC, except for credit cooperatives, credit card companies, and insurance intermediaries, will be required to adopt the IFRS starting from 2013. Early adoption starting from 2012 is optional. In phase II, unlisted public companies, credit cooperatives, and credit card companies will be required to adopt the IFRS starting from 2015, with optional early adoption starting from 2013.

receivables if there is any objective evidence of impairment and determine whether any impairment losses should be recognized. If their present value of estimated cash flows discounted at the original effective interest rate is lower than their carrying amount, banks are required to recognize the impairment losses. The current regulation of loan loss provisions in Taiwan requires banks to break down credit assets into five categories and set aside different percentages of provisions,[73] which is quite different from the accounting treatment in Taiwan's SFAS 34. Therefore, it is expected to have significant impacts on the banking sector. A prompt response by individual banks to this matter is warranted.

Taiwan's SFAS 40 - Insurance Contracts

Taiwan's SFAS 40, referring to phase I of the IFRS 4,[74] requires insurance companies to implement liabilities adequacy tests by assessing whether their insurance liabilities are adequate to cover their estimated future cash flows arising from insurance contracts. If it is inadequate, the entire deficiency should be recognized in profit or loss. However, Taiwan's SFAS 40 does not specify the discount rate for the test. That is, currently, the best estimated discount rate can still be used. In addition, Taiwan's SFAS 40 requires insurance companies to assess the impairment of reinsurance assets and to disclose the information that helps users understand the amount of insurers' financial statements that arise from insurance contracts. Insurance companies should adjust their policies and information systems as soon as possible to cope with the adoption of SFAS 40.

[73] See Note 49 and 50.

[74] IFRS 4 was adopted in two phases. In phase I, the standard required insurance companies to classify insurance contracts and implement liability adequacy tests. In phase II, insurance contracts should be tested based on their fair value. The European Union started to implement IFRS phase I in January 2005. Standards of phrase II are still being set out.

Box 4
Taiwan Stock Exchange introduced T+2 DVP Settlement System

With the aim of coming further into line with international standards and enhancing the efficiency of Taiwan's securities market, the Taiwan Stock Exchange (TWSE) launched a series of reforms in the securities market. Among the reforms, the TWSE implemented a new settlement system called "T+2 DVP (Delivery-Versus-Payment, DVP)," which became effective from 2 February 2009. The implementation of the T+2 DVP Settlement System can shorten the settlement time gap between securities and funds and, in turn, reduce settlement risk.

1. Deficiencies in the original settlement system

The fund/securities settlement operation of the Taiwan Stock Exchange is divided into two tiers: (1) settlements between investors and securities companies, and (2) settlements between securities companies and the TWSE. Under the original settlement system, there was a one-day gap for investors between the delivery of securities/funds and the receipt of funds/securities. This time gap between delivery and receipt was not only unfair to investors, but also could become a source of settlement risk.

2. Comparisons of the original system and the new system

Item	Original System	New System
Tier I : Investors and securities companies	Investors should deliver securities or funds to securities companies before 12 p.m. of T+1. Securities companies should deliver securities or funds to investors after 10 a.m. of T+2.	Investors should deliver securities or funds to securities companies before 10 a.m. of T+2. Securities companies should deliver securities or funds to investors after 11 a.m. of T+2.
Tier II : Securities companies and the TWSE	Sell-side securities companies should deliver securities to TWSE before 6 p.m. of T+1. Buy-side securities companies should deliver funds to TWSE before 10 a.m. of T+2. TWSE should deliver securities to buy-side securities companies and deliver funds to sell-side securities companies after 10 a.m. of T+2.	Sell-side securities companies should deliver securities to TWSE before 10 a.m. of T+2. Buy-side securities companies should deliver funds to TWSE before 11 a.m. of T+2. TWSE should deliver securities to buy-side securities companies and deliver funds to sell-side securities companies after 11 a.m. of T+2.

Note: "T" represents the day on which investors buy/sell securities from/to securities companies.

3. Benefits of the new system

The new T+2 DVP system requires the delivery and receipt of either securities or funds to occur on the same day (i.e. day T+2). It not only enhances the usability of securities and funds, but also brings the TWSE's settlement system further into line with international standards and expedites the internationalization of Taiwan's securities market.