

V. Financial sector

5.1 Financial markets

In the domestic money and bond markets, the trading volumes of short-term bills and bonds declined materially, while interbank call loans contracted on a smaller scale in the second half of 2008. The yield spreads between short-term bills and government bonds turned from negative to positive and widened appreciably. As for the domestic stock market, stock indices trended up after sharp falls and volatility dropped after a substantial earlier increase, but trading value contracted noticeably. In the foreign exchange market, the NT dollar exchange rate reversed its appreciating trend and depreciated in the second half of 2008, but then appreciated again in March 2009. Moreover, it experienced a significant drop in trading volume in 2008 Q4. The volatility of the NT dollar exchange rate rose but remained relatively stable when compared to other currencies.

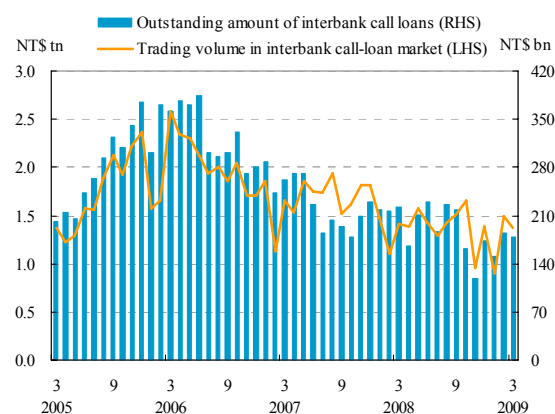
5.1.1 Money and bond markets

Trading volume contracted in both the money market and the bond market

In the second half of 2008, the average monthly trading volume of interbank call loans slightly declined by 1.89% compared to the figure in the first half of the year. Notably, the trading volume fell significantly in November 2008 but then rebounded to some degree in December. Similarly, the average daily outstanding amount of interbank call loans in December 2008 recorded a substantial decrease of 24.17% against the month of June 2008. In 2009 Q1, the average trading volume and outstanding amount of interbank call loans remained at a low level (Chart 5.1).

In the primary bill market, the outstanding amount of bills issuance shrank by 9.18% in the second half of 2008. Broken down by

Chart 5.1 Interbank call-loan market



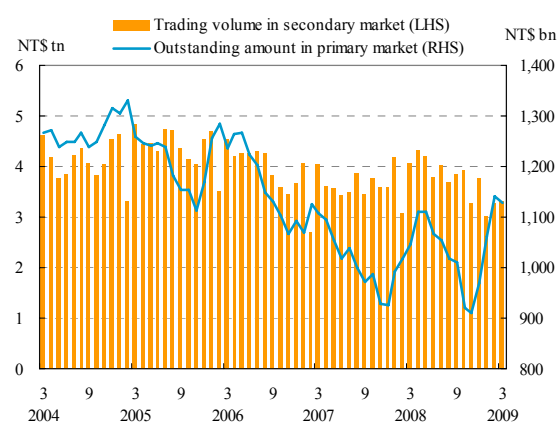
Note: Outstanding amount is the monthly average of daily data.
Source: CBC.

instruments: treasury bills decreased dramatically by 41.63% because of a drop off in issuances and some redemption of outstanding bills by the Ministry of Finance; certificates of deposit declined by 12.87% because of a reduction in issuances of certificates of deposit by banks owing to ample liquidity; and commercial paper dropped steeply in October 2008 due to the credit crunch induced by the global financial crisis, but gradually reversed its decline and grew by 0.78% at the end of 2008 over June of the same year. In early 2009, however, the outstanding amount of bills issuances increased, mainly driven by a sharp rise in the outstanding issuance of treasury bills³⁴ (Chart 5.2).

In the secondary bill market, the trading volume decreased by 4.75% in the second half of 2008, mainly due to the contraction of commercial paper transactions while bills finance companies reduced their underwriting of commercial paper and extended the period of outright and repo transactions for the sake of reducing liquidity risk. In 2009 Q1, the trading volume in the secondary market remained low³⁵ (Chart 5.2).

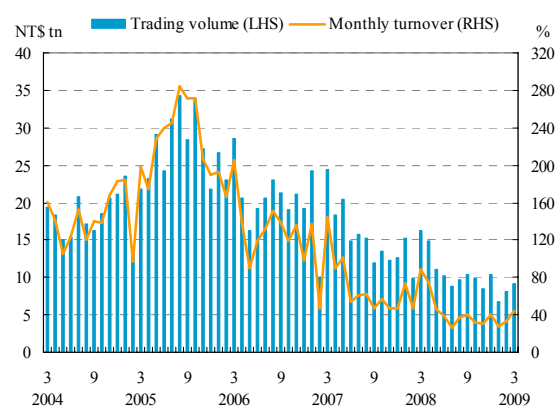
In the bond market, the trading volume for the second half of 2008 decreased by 25.70% over the first half of 2008. Notably, outright transactions dropped significantly while repo transactions saw a moderate decline. The monthly turnover ratio of outright transactions in July 2008 fell to a trough of 25.75%, a five-year low, affected by the cooling of trading activities due to diminishing investment willingness of dealers. Although it rebounded slightly in August and September as investors redirected funds from the lackluster equities

Chart 5.2 Primary and secondary bill markets



Note: Excludes asset-backed commercial paper (ABCP).
Source: CBC.

Chart 5.3 Bond market size and turnover



Notes: 1. Monthly turnover ratio = trading value in the month / average bonds issued outstanding.
2. Average bonds issued outstanding = (bonds issued outstanding at the end of this month + bonds issued outstanding at the end of the previous month) / 2

Sources: CBC and FSC.

³⁴ Outstanding issuance of treasury bills herein refers to issues minus redemptions.

³⁵ 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.

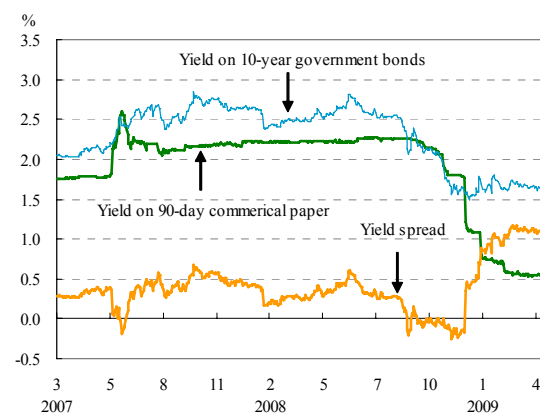
markets into the bond market, it still remained in a lull in 2008 Q4 due to less bonds being traded in the market as many financial institutions held large amounts of government bonds and were reluctant to sell them into the market for the sake of effectively managing their idle funds. In 2009 Q1, the turnover ratio of outright transactions and the trading volume of repo transactions in the bond market remained at a low level (Chart 5.3).

Yield spreads turned from negative to positive and expanded appreciably

In 2008 Q3, affected by the worsening financial crisis and slump in stock markets, investors sought a safe haven in bond markets. As a result, government bond yields trended down and short-term commercial paper rates fluctuated within a narrow range, causing the interest rate spread to shrink gradually and turn negative from mid-September to reach a low of negative 25 basis points in November 2008 (Chart 5.4).

From late September 2008, the CBC initiated interest rate cuts and expanded the scope of Repo facility operations, resulting in a significant drop in short-term interest rates. Bond yields also dipped, but to a lesser extent, as funds flowed into the bond market in response to unfavorable financial conditions. As a result, yield spreads between government bonds and commercial paper turned from negative to positive and expanded noticeably, hitting a peak of 129 basis points in April 2009 (Chart 5.4). 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 long-term interest rates will face higher interest rate risk.

Chart 5.4 Yield spread



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

Source: Bloomberg.

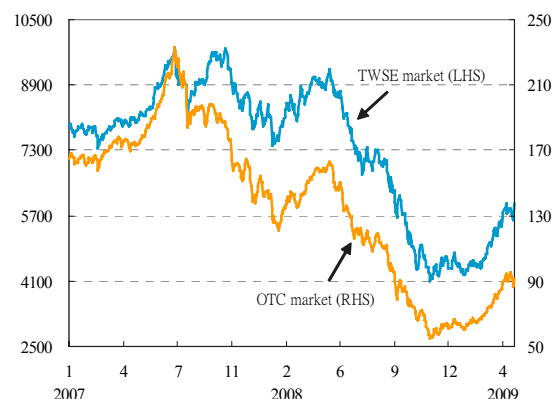
5.1.2 Equity markets

Stock indices trended up after sharp falls, while volatility dropped after marked increases

Amid the global financial turmoil and economic downturn, the world's major stock markets repeatedly registered new lows. Affected by the slump in global stock markets and the economic downturn in Taiwan, together with a massive sell-off from foreign investors, the Taiwan Stock Exchange Weighted Index (TAIEX) of the Taiwan stock Exchange (TWSE) market dropped to 4,090 in late November 2008, after reaching a high of 9,295 in mid-May of the same year. However, the TAIEX index stopped falling and fluctuated between 4,200 and 4,800 in early 2009 before gradually climbing to 5,993 at the end of April, a rise of 46.53% compared to the lowest point of last November. The main reasons behind this rebound were the net buying of foreign investors, inflows of residents' portfolio investments from abroad and the emerging effects of easing restrictions on cross-strait securities investment. Meanwhile, Taiwan's GreTai Securities Market Index (GTSM Index) of the over-the-counter (OTC) market closely tracked the movements of the TAIEX, falling sharply to a low of 55 in late November 2008 after hitting a peak of 163 in May of the same year, and then climbing to 91 at the end of April 2009, an increase of 65.45% from its lowest point in November 2008 (Chart 5.5).

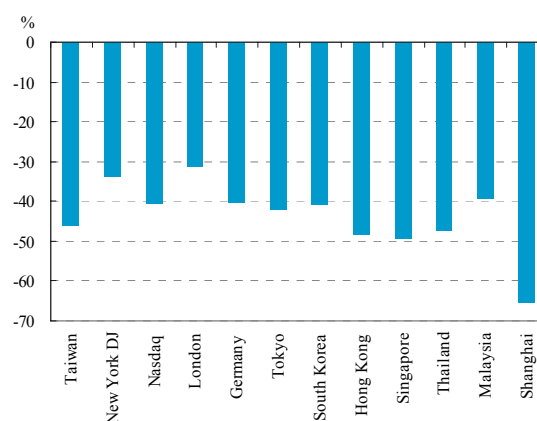
Compared with major stock markets around the world, the Taiwan stock market dropped by 46.03% in 2008, only next to the markets in Hong Kong, Singapore, Thailand, and Shanghai (Chart 5.6).

Chart 5.5 Taiwan stock market indices



Sources: TWSE and GTSM.

Chart 5.6 Comparison of major stock market performances



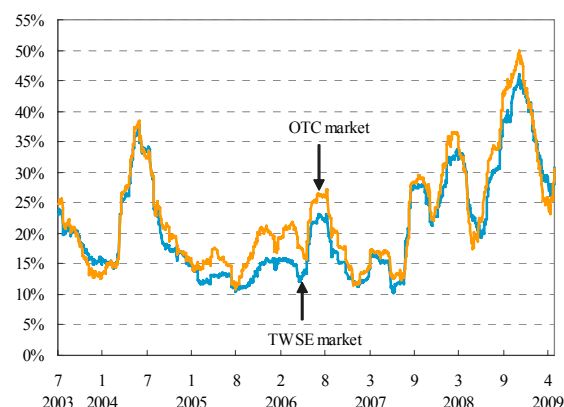
Notes: 1. Figures are for 2008.

2. Taiwan's data is for the TWSE market.

Source: TWSE.

Broken down by sectors, most indices were in bear territory in 2008 Q4. The indices for the optoelectronics sector and electronics-related sector performed the most poorly, dropping by 35.11% and 37.78%, respectively, whereas the index for the cement sector performed the best, increasing by 16.11% against the downward trend due to domestic demand stimulus projects and the needs for construction related to rebuilding disaster areas in China. The indices for the biotechnology & medical care sector, food sector, and glass and ceramic sector also trended up. In 2009 Q1, most indices entered bullish territory, while the indices for the electronic products distribution sector and optoelectronics sector performed the best, increasing by 29.54% and 28.74%, respectively, but the indices for the finance and insurance sector and glass and ceramic sector performed poorly³⁶, with drops of 6.78% and 1.35%, respectively.

Chart 5.7 Stock price volatility



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

Triggered by the global stock market slump from July 2008, the volatility in the TWSE and OTC markets trended up and hit a new 5-year high, reaching 46.00% and 49.95%, respectively, at the end of November 2008. Market volatility subsided from its peak and stood at 30.74% and 30.52% for the TWSE and OTC markets (Chart 5.7), respectively, at the end of April 2009. Although market volatility moderated somewhat, the risk in equity investments remained.

Trading value and turnover ratio decreased dramatically but saw significant rises in March 2009

As a result of diminishing investor confidence and the retreat of foreign capital, the TWSE market was mostly sluggish and suffered from a dramatic decrease in total trading value in the second half of 2008. The average monthly trading value in this period was just NT\$1.63 trillion, a significant decrease of 50.02% year on year. However, the turnover ratio in terms of trading value on the TWSE in 2008 dropped slightly and stood at 145.45% due to the corresponding trend in trading value and

³⁶ With the estimated benefits of the upcoming cross-strait financial MOU (memorandum of understanding), the indices for the finance and insurance sectors performed better than the TAIEX in April 2009.

market value. In early 2009, the trading value in the TWSE market continued to shrink. Nevertheless, it began to expand from March and the monthly average number registered NT\$2.31 trillion in the same month owing to foreign investors' net stock purchases. The monthly average turnover ratio also moved in an upward direction and maintained a level of 146.20% in 2009 Q1. The trading value in the OTC market also contracted markedly by 75.49% year on year in the second half of 2008, resulting in a significant decrease in the turnover ratio to 238.71% in 2008. However, the ratio increased modestly to 252.28% in 2009 Q1 (Chart 5.8).

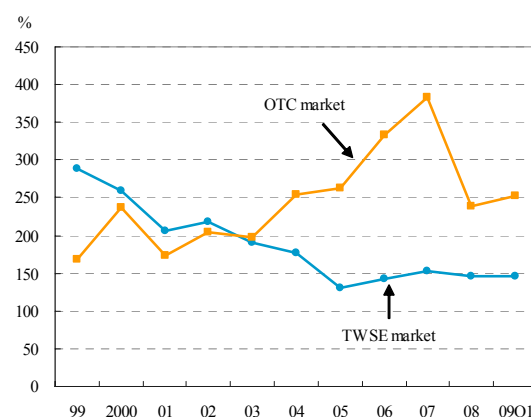
Compared to major stock markets around the world, the annual turnover ratio on the TWSE in 2008 was lower than those on New York's Dow Jones, and the stock markets in London, Germany, South Korea, and Shenzhen, while approximately equal to those in Tokyo and Shanghai, but higher than those in the neighboring markets of Hong Kong, Singapore, Thailand, and Kuala Lumpur (Chart 5.9).

5.1.3 Foreign exchange market

The NT dollar exchange rate reversed from depreciation to appreciation and trading volume shrank considerably in 2008 Q4

After continuous appreciation in the first half of 2008, the NT dollar exchange rate turned to enter a period of depreciation in the second half of 2008, mainly due to the increasing hedging needs for US dollars caused by the global financial crisis and the recession, together with foreign capital outflows from the Taiwan stock market. The NT dollar exchange rate

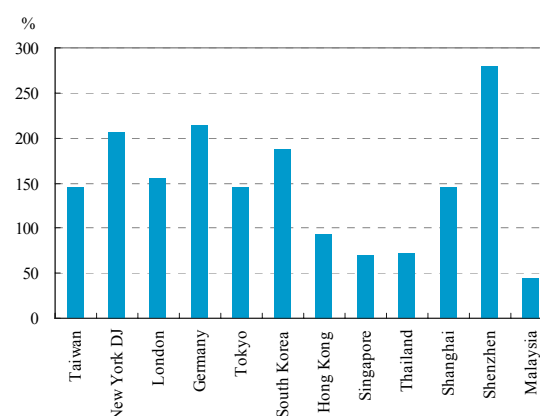
Chart 5.8 Annual turnover ratio in Taiwan's stock markets



Note: 2009 Q1 figures are annualized results of the accumulated monthly turnover ratios.

Sources: TWSE and GTSM.

Chart 5.9 Comparison of turnover ratios in major stock markets



Note: Figures refer to accumulated turnover ratios in 2008. Taiwan's data is for the TWSE market.

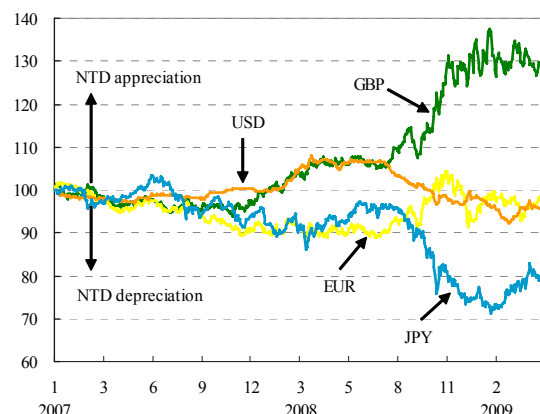
Source: TWSE.

stood at 32.86 against the US dollar at the end of 2008, depreciating by only 1.27% year on year. From early 2009, due to shrinking exports and increasing US dollar demand, the NT dollar depreciated to 34.95 at the end of February. In March, it reversed from depreciating to appreciating owing to capital inflows and a weak US dollar and appreciated to 33.23 against the US dollar at the end of April, showing a slight depreciation of 1.12% compared to the end of 2008 (Chart 5.10). As for other key international currencies, the value of the yen went up significantly from 2008 Q3 as a result of the repatriation of yen carry trade funds back to Japan, which led the NT dollar to depreciate against the yen by 19.78% in 2008. Furthermore, the NT dollar appreciated against the pound and the euro by 33.99% and 3.02%, respectively, over the same period (Chart 5.10).

Affected by 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 in 2008 Q4 fell to US\$16.1 billion, a decrease of 16.39% year on year. Notably, the daily trading volume in December 2008 fell to US\$12.3 billion, a new record low since 2006, but saw a slight increase in early 2009 (Chart 5.11).

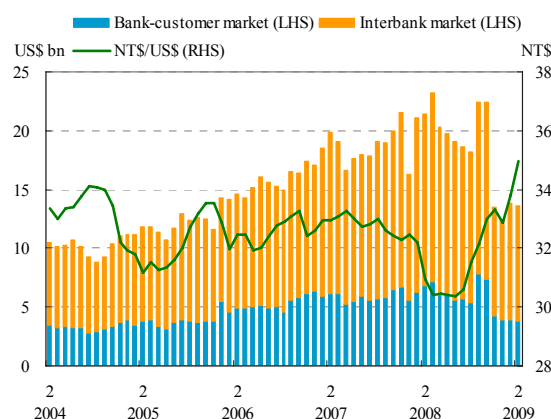
A breakdown by counterparty trades shows that the average daily trading volume in the interbank market accounted for 67.85% of the total in 2008 Q4, while the bank-customer market made up a 32.15% share. As for types of transactions, spot trading accounted for 49.54% of the total, followed by foreign exchange swaps with 35.37%.

Chart 5.10 Movements of NT dollar exchange rates against key international currencies



Note: 2 January 2007 = 100.
Source: CBC.

Chart 5.11 NT\$/US\$ exchange rate and foreign exchange market trading volume

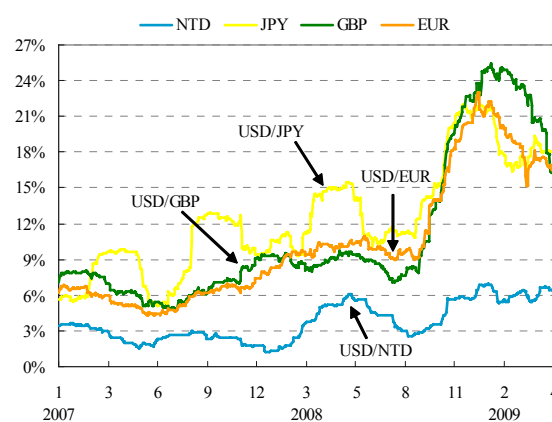


Note: Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
Source: CBC.

NT dollar exchange rate volatility against the US dollar increased but was relatively stable compared to other currencies

In the second half of 2008, volatility in the NT dollar exchange rate against the US dollar increased dramatically and the average volatility over Q4 reached up to 5%. In early 2009, the NT dollar exchange rate depreciated hastily and the average volatility accordingly stood at a high of 6.92% in January. Although the volatility declined for a short time after a peak in January, the appreciation of the NT dollar exchange rate in March caused it to rise again and reach 7.04% at the end of April. Notwithstanding the increase in the volatility in the NT dollar exchange rate against the US dollar, the NT dollar exchange rate was relatively stable compared to the volatility in the exchange rates of major currencies such as the pound, euro and yen against the US dollar (Chart 5.12).

Chart 5.12 Exchange rate volatility of various currencies against US dollar



Note: Volatility refers to the annualized standard deviation of 60-day daily returns.

Source: CBC.

5.2 Financial institutions

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

5.2.1 Domestic banks

The growth in loans extended by domestic banks slowed down and credit risk in real estate-related loans and corporate loans increased modestly in the second half of 2008. Asset quality remained sound but showed signs of potential deterioration. Market risk relating to stock prices increased substantially; however, its impact on capital adequacy ratios was limited. Liquidity risk remained low as the banking system benefited from holding ample liquidity. The profitability of domestic banks declined substantially in 2008 as their profit sources were continuously eroded. Despite the fact that domestic banks as a whole remained adequately capitalized, closer monitoring of their increasing credit and market risks is warranted.

Credit risk

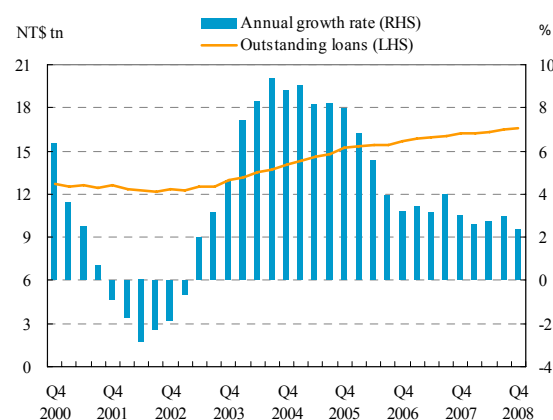
Customer loan growth slowed

Customer loans³⁷ 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 2008 stood at NT\$16.57 trillion and accounted for 56.07% of total assets. The annual growth rate in loans continuously decreased to a mere 2.38% in December 2008, the lowest figure recorded since 2004, showing a marked slowdown (Chart 5.13). In 2009 Q1, the year-on-year loan growth rate declined further to only 0.02% in March, with annual growth rates of -0.24% and 0.75% for individual loans and corporate loans, respectively.

The concentration of credit exposure in the real estate market continued increasing

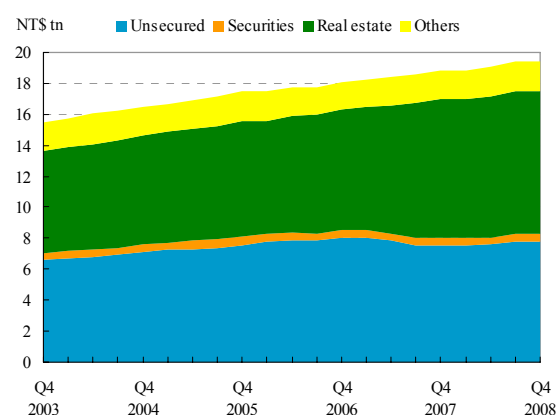
The concentration of credit exposure in the real estate market has trended upward in recent years, with the second half of 2008 being no exception. The outstanding real estate-related loans³⁸ of domestic banks reached NT\$6.50 trillion and accounted for 39.21% of total loans as of the end of 2008. In addition, real estate secured credit granted by domestic banks amounted to NT\$9.24 trillion or 47.50% of total credit at the end of 2008. This ratio was 4.97 percentage points higher than the figure five years ago (Chart 5.14) and trended upward further to 48.13% at the end of March 2009. Among individual banks, thirteen had ratios of real estate secured credit to total credit of over 60% as of the end of 2008.

Chart 5.13 Outstanding loans and annual loan growth rate in domestic banks



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

Chart 5.14 Credit by type of collateral in domestic banks



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

³⁷ The term “customer loans” herein refers to amounts lent by local business units of domestic banks to their customers. It excludes interbank lending.

³⁸ The term “real estate-related loans” includes loans for construction, house purchases, and house refurbishments.

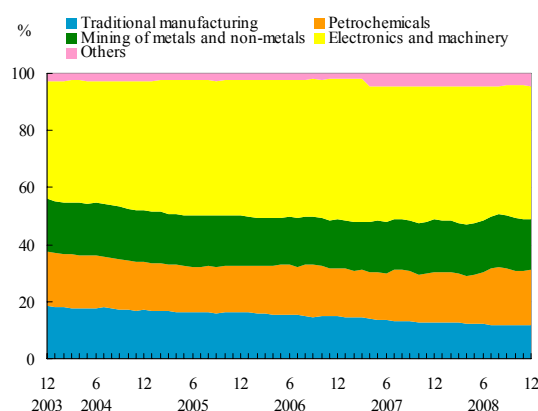
Currently, the non-performing loans (NPL) ratio of real estate-related loans was relatively low. However, the debt servicing capability of residential mortgage borrowers may be undermined in the face of rising unemployment rates, declining real incomes and shrinking personal wealth under the current sluggish economic environment. Together with a cooling off in the real estate market and downward pressures on housing prices, the credit risk of real estate-related loans could possibly increase.

Credit risk of corporate loans continued to grow

Outstanding corporate loans of domestic banks stood at NT\$7.50 trillion at the end of 2008, while loans to the manufacturing sector accounted for the largest share of 47.01% of the total. Within the manufacturing category³⁹, the largest proportion of loans were to electronics and machinery-related industries, which stood at NT\$1.65 trillion and accounted for 46.71% of the total⁴⁰ (Chart 5.15). The ratio continued rising to 47.69% at the end of March 2009.

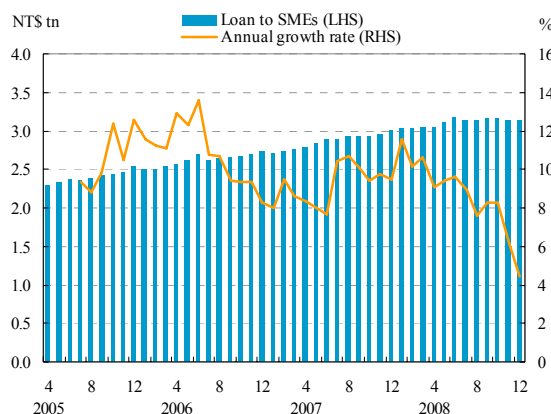
In the second half of 2008, domestic banks became more conservative in extending credit to small and medium enterprises (SMEs)⁴¹. The total loans to SMEs stayed at NT\$3.14 trillion as of the end of 2008, accounting for 41.84% of total corporate loans, while the annual growth rate declined dramatically to 4.42% in December 2008 (Chart 5.16) and turned to be negative with -0.82% reported in March 2009. Among loans to SMEs, the amount guaranteed

Chart 5.15 Loans to the manufacturing sector by domestic banks



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

Chart 5.16 Outstanding loans to SMEs by domestic banks



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

³⁹ Loans to the manufacturing sector are divided into four categories by industry, including electronics and machinery-related industries, mining of metals and non-metals related-industries, petrochemicals related-industries and traditional manufacturing industries. The remainders are classified as "others."

⁴⁰ The production value of electronics and machinery-related industries accounted for 39.86% of total manufacturing production value at the end of 2008, which is less than loans to electronics and machinery makers as a percentage of total loans to the manufacturing sector.

⁴¹ Domestic banks' loans to SMEs were based on FSC data.

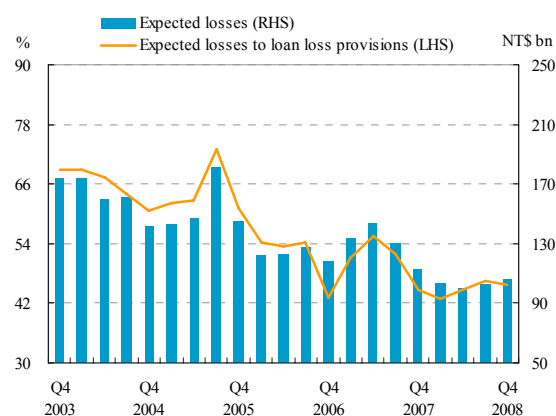
by the Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) declined by 9.32% year on year and registered NT\$478.5 billion, or 14.25% of the total SMEs loans at the end of 2008, while the guaranteed amount and guarantee coverage percentage stood at NT\$310.8 billion and 64.96%, respectively.

The prevailing global and local economic slowdowns caused a decrease in the profitability in the corporate sector and weakened companies' financial structures and short-term debt repayment capacities. As SMEs tend to be less transparent in financial disclosure and possess weaker loss absorption capacity to weather the current recession, their debt repayment and refinancing ability face far greater challenges. Credit risk of domestic banks relating to corporate loans is thus likely to witness gradual growth.

Asset quality remained sound despite potential deterioration

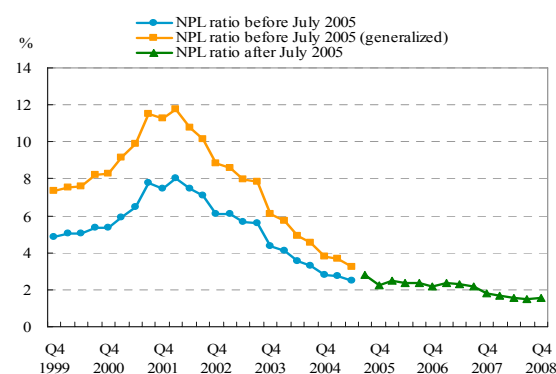
At the end of 2008, the outstanding classified assets⁴² of domestic banks stood at NT\$612.3 billion, and the average classified asset ratio was 2.07%, increasing by 5.61% and 0.02 percentage points, respectively, compared to the figures at the end of June 2008. Expected losses on classified assets were estimated at NT\$106 billion,⁴³ increasing by 6.53% from the end of June 2008 (Chart 5.17). In 2009 Q1, banks' asset quality showed signs of deterioration, with the outstanding classified assets ratio elevating to 2.36% and their expected losses

Chart 5.17 Expected losses on classified assets of domestic banks



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

Chart 5.18 Average NPL ratio of domestic banks



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

⁴² The Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans break down credit assets into five different categories, as follows: category one – normal credit assets; category two – credit assets requiring special mention; category three – substandard credit assets; category four – doubtful credit assets; category five – loss assets. Other assets break down into four different categories, as follows: category one for normal assets, while category two, category four, and category five are for specially mentioned, doubtful, and loss assets, respectively. The term “classified assets” herein includes all assets classified as category two to five.

⁴³ Loss herein refers to the losses from loans, acceptances, guarantees, credit card revolving balances, and factoring without recourse.

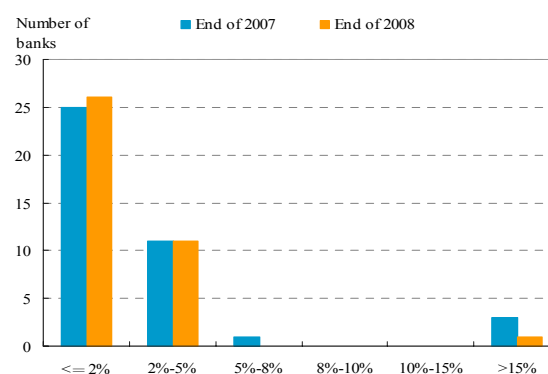
increasing to NT\$111.3 billion at the end of March. However, the provisions set aside by domestic banks were still sufficient to cover expected losses while the ratio of expected losses to loan loss provisions stood at 45.69% as of the end of 2008 (Chart 5.17).

The outstanding NPLs of domestic banks stood at NT\$285.9 billion as of the end of 2008, increasing by 1.67% from the end of June 2008. Although the average NPL ratio increased slightly to 1.54%, it remained at a low level (Chart 5.18), before rising further to 1.62% at the end of March 2009. Among individual banks, all had NPL ratios of less than 5%, except for one⁴⁴ with a ratio as high as 33.14%, while twenty-six had ratios of less than 2% (Chart 5.19). Compared to the US and other neighboring Asian countries, the NPL ratio of domestic banks was lower than in the US, Japan, Thailand, Indonesia, and Malaysia, but higher than in Hong Kong and South Korea (Chart 5.20).

The loan loss provisions of domestic banks were substantially enhanced in order to cope with the rise in NPLs in 2008 Q4. As a result, the NPL coverage ratio at the end of 2008 increased to 69.48%, while the loan loss reserve ratio rose to 1.07% (Chart 5.21), indicating that domestic banks started to set additional provisions aside to deal with possible future loan losses.

The asset quality of domestic banks remained sound but showed signs of deterioration. Together with potential weakness in the financial health and repayment capability of the corporate and household sectors caused by the economic recession, the credit risk of domestic banks could conceivably escalate.

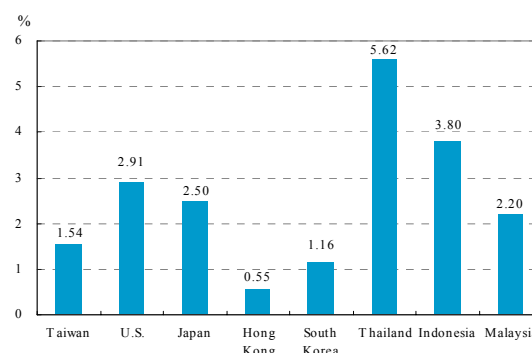
Chart 5.19 Distribution of NPL ratios of domestic banks



Note: Excludes interbank loans.

Source: CBC.

Chart 5.20 NPL ratios of banks in selected countries



Note: Figures for Japan and Hong Kong are end-September 2008 data. The others are end-December 2008.

Sources: CBC, FDIC, FSA, HKMA, FSS, BOT, BI, and BNM.

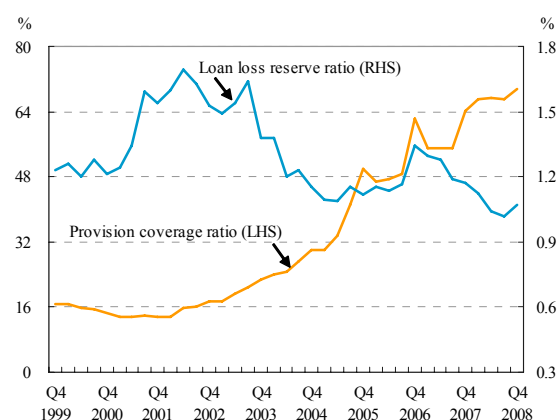
⁴⁴ This bank was taken into conservatorship by the Central Deposit Insurance Corporation (CDIC) on 26 September 2008.

Market risk

Estimated Value-at-Risk dropped

The capital requirements for market risks in domestic banks, based on Basel II calculations, followed a decreasing trend and only accounted for 2.32% of eligible capital at the end of 2008. The decline was because banks continued to cut market risk positions from the second half of 2007 after the eruption of the US subprime crisis. The estimated Value-at-Risk (VaR)⁴⁵ for market exposure of domestic banks stood at NT\$124 billion at the end of 2008, dropping by 4.62% from the end of June 2008. Among market risks, equity risk accounted for the largest share at 59.52% of the total VaR, followed by interest rate risk at 38.87%, while foreign exchange risk contributed a mere 1.61%. Compared to the end of June 2008, equity risk rose notably as a

Chart 5.21 Provision coverage ratio and loan loss reserve ratio of domestic banks



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

Source: CBC.

Table 5.1 Market risks in domestic banks

Unit: NT\$ bn

Types of risk	Items	End-June 2008	End-Dec. 2008	Changes	
				Amount	%
Foreign exchange	Net position	87.6	43.6	-44.0	-50.23
	VaR	3.1	2.0	-1.1	-35.48
	VaR / net position	3.54	4.59		1.05
Interest rate	Net position	3,058.9	3,191.6	132.7	4.34
	VaR	64.3	48.2	-16.1	-25.04
	VaR / net position	2.10	1.51		-0.59
Equity	Net position	525.4	451.9	-73.5	-13.99
	VaR	62.6	73.8	11.2	17.89
	VaR / net position	11.91	16.33		4.42
Total VaR		130.0	124.0	-6.0	-4.62

Source: CBC.

⁴⁵ The VaR (Value at Risk) with each category of risk for the test period is estimated by a multivariate historical simulation model for foreign exchange risk, a constant correlation generalized autoregressive conditional heteroscedasticity model for interest rate risk, and a quantile autoregression model for equity risk in this report. The confidence level is 99%, a holding period of ten trading days is used and exposure positions are assumed unchanged. The models are estimated using 250 foreign exchange rate, interest rate, and stock price samples.

result of increasing volatility in the stock market, even with declining equity positions, while interest rate risk and foreign exchange risk diminished due to a reduction in the volatility of long-term interest rates and net foreign exchange positions, respectively (Table 5.1).

The effects of market risks on capital adequacy ratios were limited

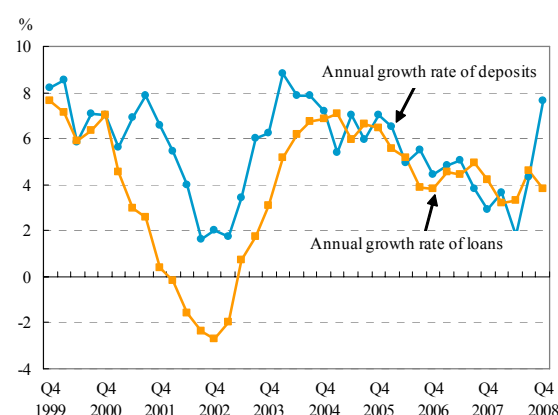
As of the end of 2008, the effects of VaR for foreign exchange rates, interest rates, and stock prices upon the capital adequacy ratios of domestic banks were 0.002, 0.15, and 0.52 percentage points,⁴⁶ respectively. Assuming that the above-mentioned risks were mutually independent and occurred simultaneously, market risk would cause a decrease of 0.65 percentage points in the average capital adequacy ratio, and induce the current ratio of 10.91%⁴⁷ to fall to 10.26%.

Liquidity risk

Liquidity remained ample in the banking system

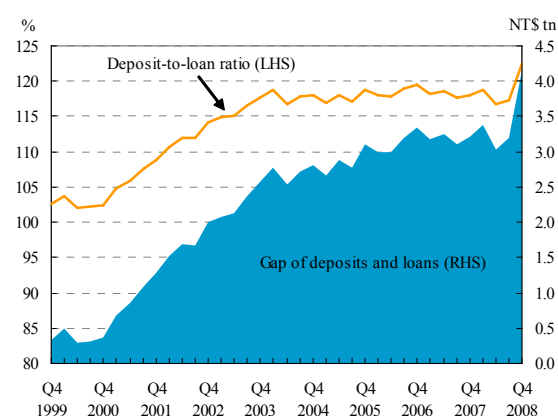
The deposits in domestic banks rose markedly in the second half of 2008 and grew by 7.66% year on year in December owing to a large amount of overseas funds flowing back into bank deposits. In contrast, the annual growth rate of loans dropped to 3.83% in December due to banks' more conservative credit policies (Chart 5.22). As a result, the average deposit-to-loan ratio of domestic banks increased dramatically and reached 122.34% at the end of 2008. The funding surplus (i.e. deposits exceeding lending demand) registered NT\$4.16 trillion,

Chart 5.22 Annual growth rate of deposits and loans of domestic banks



Source: CBC.

Chart 5.23 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.

⁴⁶ To avoid double counting, the regulatory capital required for market risks is deducted from the effects of VaR on the capital adequacy ratio.

⁴⁷ The term "capital adequacy ratio" used herein is based on regulatory capital which has deducted unamortized deferred losses on the sale of NPLs.

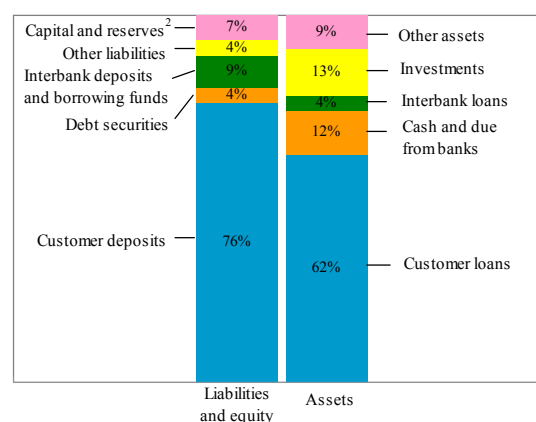
reflecting abundant liquidity in domestic banks (Chart 5.23). This situation continued in 2009 Q1, as the deposit-to-loan ratio rose to 127.31% as of the end of March.

As for the sources of funds, relatively stable customer deposits accounted for 76%, the largest share, of the total in domestic banks, followed by interbank deposits and borrowings at 9%, while debt securities issues contributed a mere 4% at the end of 2008. Regarding the uses of funds, customer loans accounted for the biggest share of 62% but declined by two percentage points from the end of June 2008 due to stricter credit policies, while cash and due from banks accounted for an increasing ratio of 12% of the total (Chart 5.24).

Overall liquidity risk was moderate

The average NT dollar liquid reserve ratio of domestic banks escalated to 22.70% in December 2008, well above the statutory minimum of 7% (Chart 5.25), and rose further to 25.43% in March 2009. The reserve ratio of each domestic bank in December 2008 was higher than 12%. Tier 1 liquid reserve,⁴⁸ mainly consisting of certificates of deposit issued by the CBC, accounted for 92.72% of total liquid reserves in December 2008, while Tier 2 and Tier 3 reserves accounted for 6.61% and 0.67%, respectively. This reveals that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risks were moderate.

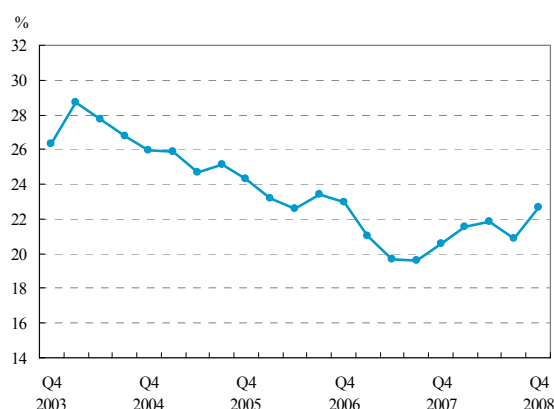
Chart 5.24 Sources and uses of funds in domestic banks



Notes: 1. Figures are end-December 2008.
2. Includes provisions.

Source: CBC.

Chart 5.25 Liquid reserve ratio of domestic banks



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

Source: CBC.

⁴⁸ 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.

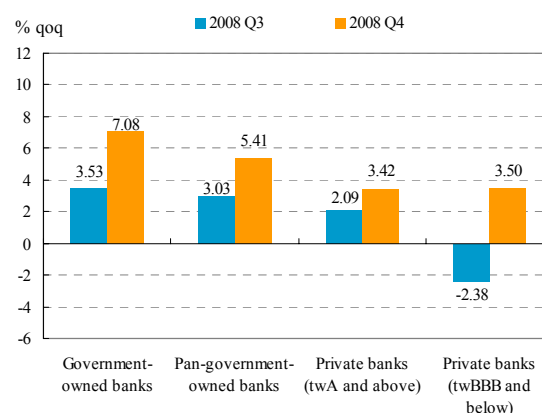
In September 2008, domestic depositors' confidence in some banks was affected as financial institutions in the US and other countries successively became mired in financial difficulties. As a result, a few private banks temporarily experienced a large number of withdrawals and suffered funding difficulties. To cope with this emergent situation, the CBC decreased discount rates and reserve ratios, expanded the scope of Repo facility operations, and provided foreign-currency loans to meet the foreign exchange liquidity demands of domestic banks. In addition, the government provided a blanket guarantee for deposits in all insured institutions (banks and community financial institutions). The above measures effectively eased the deposit drainages and liquidity tensions suffered by private banks (Chart 5.26).

Profitability

Profitability contracted significantly in 2008

Due to huge investment losses, domestic banks as a whole posted a net income before tax of NT\$34.4 billion in 2008, a decrease of 55.68% year on year. The average return on equity (ROE) and return on assets (ROA) slid to 1.86% and 0.12%, respectively (Chart 5.27). In 2009 Q1, the net income before tax of domestic banks stood at NT\$19.2 billion, 21.79% lower than the same period of 2008. Compared to the US and other Asia-Pacific neighboring countries, the profitability of domestic banks was relatively low (Chart 5.28).

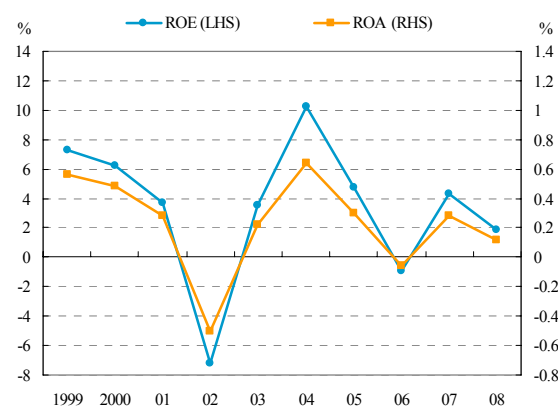
Chart 5.26 Changes in the balances of deposits in domestic banks



Notes: 1. Figures are the percentage change on a quarter-on-quarter basis.
2. There are two government-owned banks and five pan-government-owned banks.

Sources: CBC and credit rating agencies.

Chart 5.27 ROE & ROA of domestic banks



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

Source: CBC.

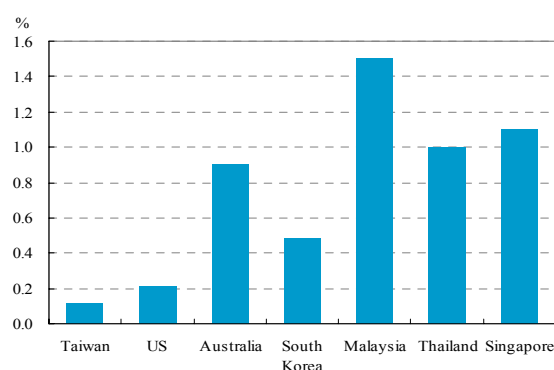
Among twenty-four banks with declining profitability in 2008, seventeen banks suffered losses and posted negative ROEs, mainly because of shrinking revenues or losses on investments. Moreover, the number of banks achieving a profitable ROE of 15% or more decreased from five in 2007 to only one in 2008 (Chart 5.29).

As for operating revenues and costs, total operating revenues of domestic banks declined by 13.15% year on year. This was mainly because : (1) net gains on financial instruments and other net revenues fell dramatically due to the weakened stock market and increasing provisions for potential losses associated with US subprime mortgage-related products; (2) net fees and commission income decreased materially under the influence of a sharp contraction in wealth management businesses such as structured notes and mutual funds; and (3) the increase in net interest income, the primary source of operating revenues, was limited by shrinking interest rate spreads between deposits and loans.⁴⁹ On the cost side, operating costs fell by 7.30% year on year as a result of a sharp decline in loan loss provisions, although non-interest expenses leveled off (Chart 5.30).

Future profitability might be undermined

Domestic banks reported decreasing investment exposures to US subprime mortgage-related products⁵⁰ and set loss provisions to cover most of the related investment losses. Thus, there will be limited influence on banks' future profitability. However, as the global financial crisis has shown little improvement and the domestic and foreign economies have entered severe

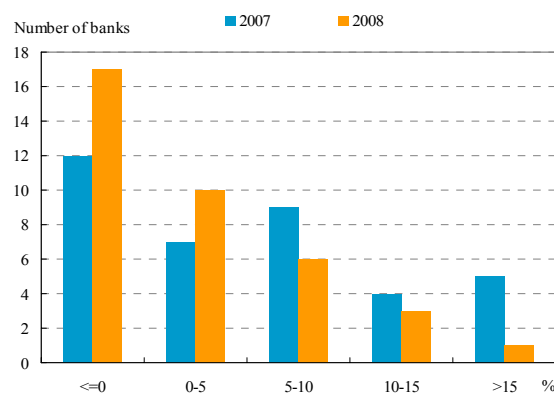
Chart 5.28 Comparison of ROA in selected countries



Note: Data for Singapore is for end-September 2008, while the others are for end-December 2008.

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

Chart 5.29 Distribution of ROE of domestic banks



Source: CBC.

⁴⁹ The average interest rate spread between deposits and loans was 1.61 percentage points in 2008 Q4, shrinking from 1.69 percentage points in Q2.

⁵⁰ Outstanding exposures included US subprime mortgage-related stocks and bonds, and the securitized shares of subprime mortgages.

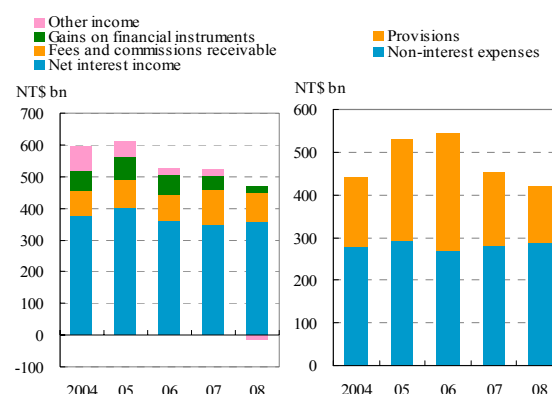
downturns, the future profitability of domestic banks faces several uncertainties, as follows: (1) escalating corporate and individual credit risks might increase the need for loan loss provisions; (2) narrowed interest rate spreads between deposits and loans will limit the growth of net interest income; and (3) increasing costs of reputational risk could arise from resolving disputes on the sale of structured notes.

Capital adequacy

Capital adequacy ratios increased slightly

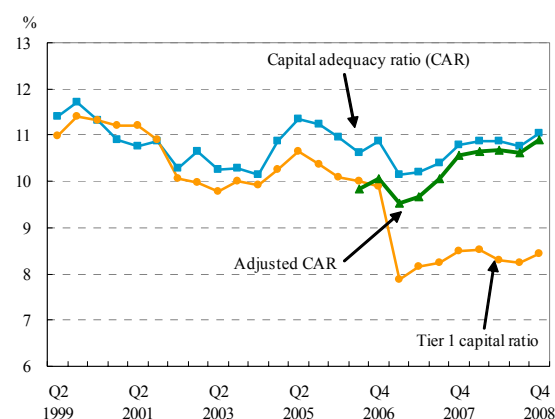
Though several banks suffered operating losses and eroded capital in the second half of 2008, the average capital adequacy ratio and Tier 1 capital ratio⁵¹ of domestic banks continued increasing to 11.04% and 8.43%, respectively, at the end of 2008 (Chart 5.31). This was mainly because some banks raised capital by equity offerings or issuing subordinated bonds, or reduced the amount of their capital deductions. Given that unamortized deferred assets of NT\$22.4 billion⁵² arising from losses recorded on the sale of classified assets were deducted from regulatory capital, the adjusted capital adequacy ratio came to 10.91%, up by 0.23 percentage points from the end of June 2008. It reflected that the capital adequacy of domestic banks improved slightly. However, compared to the US and some Asia-Pacific neighboring countries, the average capital adequacy ratio of domestic banks is lower (Chart 5.32).

Chart 5.30 Composition of incomes and costs of domestic banks



Source: CBC.

Chart 5.31 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.

⁵¹ The capital adequacy ratios and the Tier I capital ratios at the end of 2008 herein are according to audited financial statements.

⁵² Article 4 of the Regulations Governing the Capital Adequacy of Banks as amended on 5 January 2007 requires that unamortized losses recorded on the sale of non-performing assets in 2007 or later should be deducted from Tier 1 capital. This requirement does not apply to sales made on or before 31 December 2006.

Further breaking down the components of regulatory capital, Tier 1 capital, which features the best risk bearing capacity, accounted for 76.32% of eligible capital, while Tier 2 capital registered 23.40% and Tier 3 capital contributed a mere 0.28% at the end of 2008. The ratio of Tier 1 capital moderately increased, while those of Tier 2 and Tier 3 capital slightly decreased.

Very few banks held insufficient capital, with limited impact on the banking system

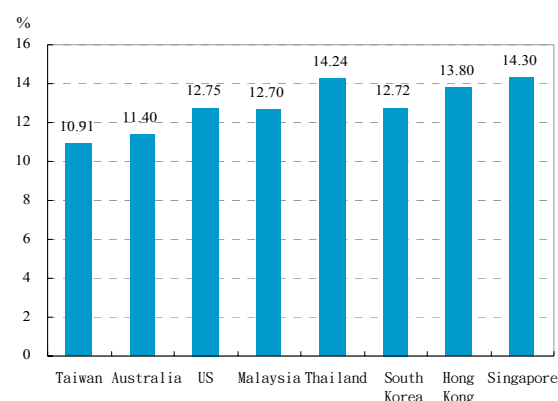
There were two banks with capital adequacy ratios under the statutory minimum (8%) at the end of 2008. As for adjusted capital adequacy ratios, four banks, with combined assets accounting for only 3.85% of the total, had ratios below the statutory minimum with limited impact on the banking system. In addition, there were twenty-six banks with ratios above 10%, two banks more compared with the end of June 2008 (Chart 5.33).

Credit ratings

Average credit ratings remained satisfactory

The rankings of Taiwan's banking system in the Standard & Poor's "Banking Industry Country Risk Assessment (BICRA)"⁵³ remained unchanged in Group 4 in the second half of 2008. In October 2008, Fitch Ratings upgraded Taiwan's ranking on its "Banking System

Chart 5.32 Comparison of capital adequacy ratios in selected countries

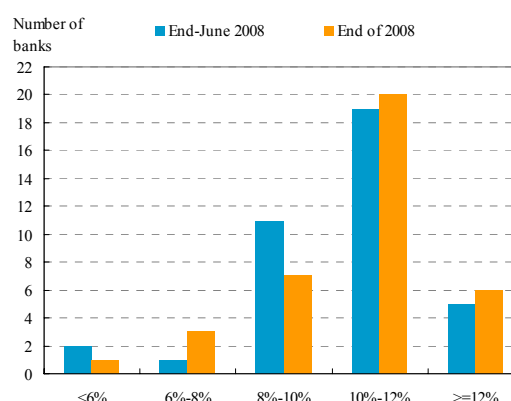


Notes: 1. Figures for Hong Kong and Singapore are end-September 2008 data, while the others are end-December 2008 data.

2. The figure for Taiwan is adjusted capital adequacy ratio.

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

Chart 5.33 Distribution of adjusted capital adequacy ratios of domestic banks



Source: CBC.

⁵³ 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).

Indicator / Macro-Prudential Indicator (BSI/MPI).⁵⁴ The BSI was upgraded from D to C, reflecting an improvement in both capital and loss reserves held by Taiwan's banking industry, while the MPI remained unchanged at level one (Table 5.2). Compared to other Asian economies, the risks in Taiwan's banking industry were higher than in Hong Kong, Singapore, and Japan, about the same as those in South Korea and Thailand, but much lower than in China, Indonesia, and the Philippines.

Although there were three banks with downgraded credit ratings in the second half of 2008, the credit rating index⁵⁵ continued to rise due to the increasing asset share of highly rated banks (Chart 5.34), reflecting the improvement in the overall credit rating level of domestic banks. In 2009 Q1, the overall credit rating level remained satisfactory, although one bank was downgraded, resulting in a slight decrease in the credit rating index.

Uncertainties over future credit ratings were high

Most rated banks received credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2008, while there was only one bank with a credit rating of twB- (Chart 5.35). It showed that the credit ratings of domestic banks generally remained unchanged in the second half of 2008, even under unfavorable economic conditions.

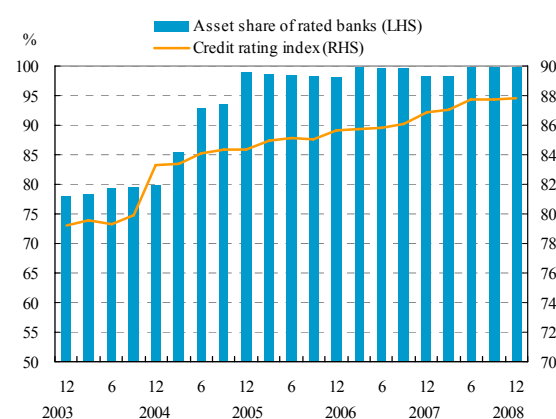
Table 5.2 Systemic risk indicators for the banking system

Banking System	Standard and Poor's	Fitch
	BICRA	BSI/MPI
Hong Kong	2	B/1
Singapore	2	B/1
Japan	3	B/1
South Korea	4	B/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-December 2008 data.

Sources: Standard and Poor's and Fitch Ratings.

Chart 5.34 Credit rating index of rated domestic banks



Note: End-of-period figures.

Sources: CBC.

⁵⁴ 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.

⁵⁵ 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.

However, there were five banks with a negative rating outlook at the end of 2008 due to increasing uncertainties regarding asset quality, low provisions, or the high pressure of maintaining adequate capital, and two banks with a “developing” rating outlook at the end of 2008. In 2009 Q1, there were four more banks with negative rating outlooks or CreditWatch owing to poor profitability or weakened capital adequacy. Uncertainties over future credit ratings of domestic banks remain high.

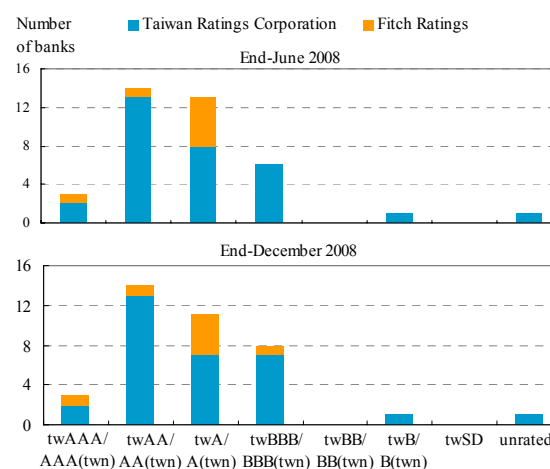
5.2.2 Life insurance companies

The asset growth of life insurance companies slowed down in 2008. They registered a huge combined net loss before tax of NT\$144.2 billion for the year, resulting in a sharp erosion of their net worth, and remained under great pressure from potential losses driven by negative interest rate spreads. As a result of temporarily adjusting the risk-based capital system and capital injections to support some companies, the average risk-based capital (RBC) ratio increased but still remained below the statutory minimum. As for credit ratings, some companies were downgraded or listed on negative rating outlooks or CreditWatch.

Asset growth slowed down

The total assets of life insurance companies increased slowly to NT\$9.16 trillion at the end of 2008, equivalent to 74.20% of annual GDP, while its annual growth rate decreased from 12.79% at the end of 2007 to 4.94% (Chart 5.36). The increase in assets was mainly supported by a surge of securities investments and deposits along with a certain degree of growth in loans. However, insurance products held in segregated custody accounts, the major component of other assets, shrank markedly owing to the continued decrease of investment-linked insurance policies resulting from the financial crisis and customer disputes regarding structured products.

Chart 5.35 Distribution of credit ratings of rated domestic banks



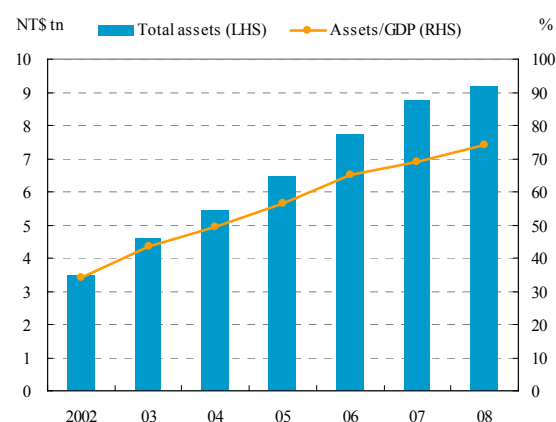
Note: Credit rating “twSD” refers to selective default.
Sources: Taiwan Ratings Corporation and Fitch Ratings.

The structure of the life insurance market in 2008 changed slightly. As of the end of 2008, twenty-three domestic life insurance companies held a 98.94% market share by assets, while seven foreign life insurance companies⁵⁶ commanded a share of only 1.06%. The top three companies held a combined market share of 56.40% and 44.50% in terms of assets and premium income, respectively. These ratios represented a high market concentration in the life insurance industry even though they decreased slightly compared to 2007.

Funds invested in deposits increased while securities investments grew slowly

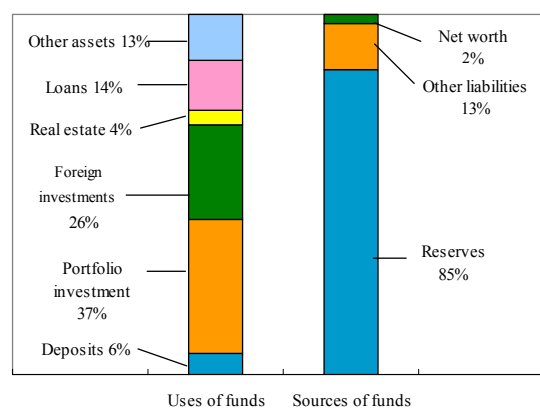
The funds of life insurance companies at the end of 2008 were mainly invested in domestic and foreign securities, accounting for 63% of funds, while 14% of funds were in loans and only 4% in real estate. As for the sources of funds, various policy reserves constituted 85%, while net worth accounted for only 2% of funds (Chart 5.37). Usable funds of life insurance companies in 2008 continued growing while deposits registered a marked increase of 25.97% owing to limited investment opportunities caused by the sluggish investment environment. Securities investments continued increasing but at a much slower pace of growth, whereas real estate investment growth remained steady.

Chart 5.36 Total assets of life insurance companies



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

Chart 5.37 Sources and uses of funds in life insurance companies



Note: Figures are end-December 2008 data.
Source: FSC.

⁵⁶ Including foreign affiliates.

Registering losses in 2008

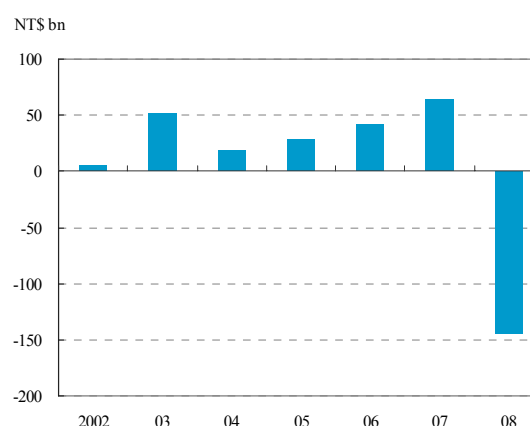
Life insurance companies as a whole registered a net loss before tax of NT\$77 billion in the first half of 2008, mainly led by the appreciation of the NT dollar as well as the enormous losses resulting from foreign investments. Although there was a sizable recovery of foreign exchange losses owing to the depreciation of the NT dollar in the second half of 2008, investment losses increased further due to the deepening international financial crisis, and policy reserves increased enormously on account of business expansion. As a result, total net losses before tax registered NT\$144.2 billion in 2008 (chart 5.38). Average ROE and ROA also declined substantially and stood at -44.03% and -1.61%, respectively (Chart 5.39). This shows that life insurance companies were the sector of the financial industry most affected by the financial crisis.

As a consequence of the poor performance of domestic and foreign financial markets, the average return on investment of life insurance companies was only 1.87% in 2008. This was much lower than the 3.78% registered in 2007, showing the deterioration in investment income resulting in the negative interest rate spread. As the depressed investment market and the massive decrease in interest rates after the CBC's seven consecutive discount rate cuts may continue to erode future investment returns, the negative interest rate spread might not improve in the near future and investment losses may take time to recover.

Average RBC ratio fell below the statutory minimum

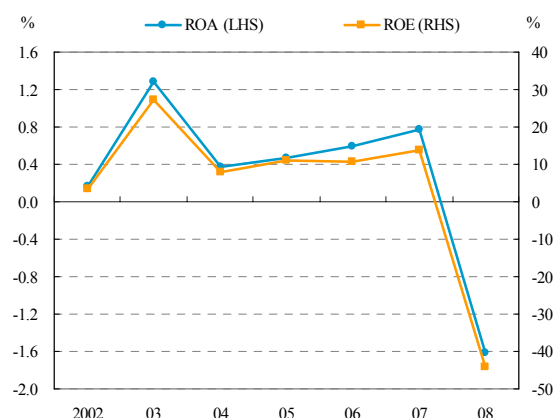
The net worth of life insurance companies registered NT\$ 222.1 billion at the end of 2008, a substantial decrease of 48.70% year on year due to huge losses during the year. In response to

Chart 5.38 Net income before tax of life insurance companies



Source: FSC.

Chart 5.39 ROE & ROA of life insurance companies



Note: ROA = net income before tax / average assets.
ROE = net income before tax / average equity.

Source: FSC.

the global financial crisis, however, the FSC temporarily adjusted the risk-based capital system⁵⁷ of the insurance industry, and some companies raised capital of over NT\$140 billion in total in 2008. As a result, the average RBC ratio⁵⁸ for life insurance companies increased considerably from 162.37% at the end of June 2008 to 190.37% at the end of the year, but was still below the statutory minimum of 200%. There were eleven companies with ratios of over 300%. However, eight companies had ratios below the statutory minimum, the combined assets of which accounted for 15.58% of the total (Chart 5.40). The financial structure of these companies needed to be improved.

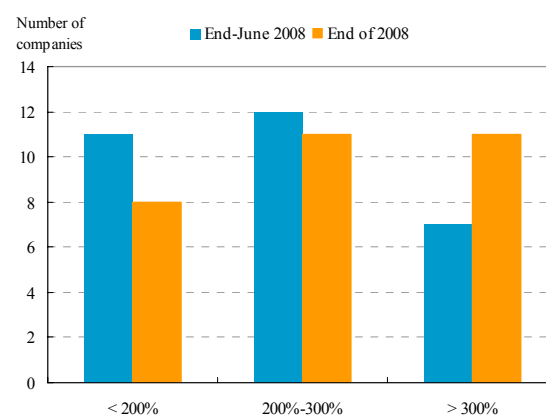
Credit ratings for the top three companies remained above twAA or AA (tw)

Of the twelve domestic life insurance companies rated by credit rating agencies, six companies were downgraded or listed on negative rating outlooks or CreditWatch during the period from July 2008 to January 2009, reflecting their weakness in profitability and capital. Nevertheless, the top three companies were rated above twAA or AA(twn), respectively, signifying their strong ability to meet all financial commitments.

5.2.3 Bills finance companies

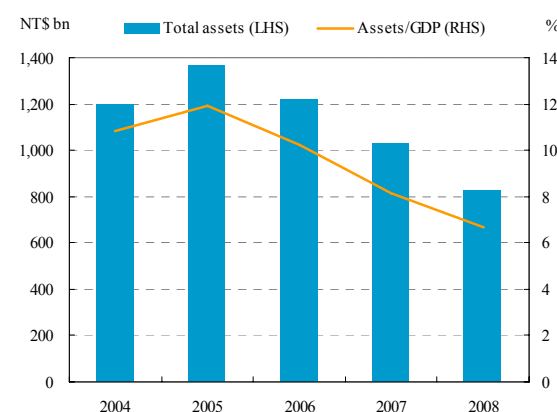
The total assets of bills finance companies continued to decrease in 2008. At the same time, profitability deteriorated but asset quality was satisfactory and capital adequacy improved.

Chart 5.40 RBC ratio of life insurance companies



Source: FSC.

Chart 5.41 Total assets of bills finance companies



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

⁵⁷ See the section “Measures to stabilize the financial system” of chapter six “Taiwan’s policy measures to cope with the global financial crisis” in this report.

⁵⁸ Risk-Based Capital (RBC) ratio for life insurance companies = regulatory capital/risk-based capital. Under Article 143-4 of the Insurance Act, this ratio must be at least 200%.

The bills finance companies faced a maturity mismatch between assets and liabilities and a contraction in the commercial paper guarantee business, while liquidity risk temporarily rose in September 2008 but then mitigated.

Total assets continued to contract

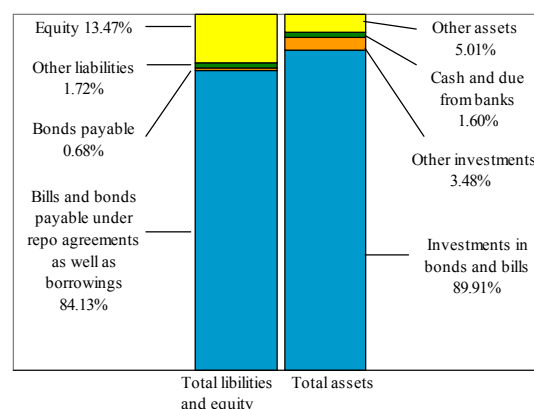
The total assets of bills finance companies continued to decline and stood at NT\$823.1 billion, or 6.67% of annual GDP, as of the end of 2008, with a decrease of 20.12% year on year (Chart 5.41). The main reasons behind this were that two bills finance companies were merged by their affiliated banks and that some bills finance companies reduced their investments in bonds and bills. The three largest bills finance companies commanded a market share by assets of 72.66% in total. For other firms, each of them had a market share below 7%.

As for asset/liability structure at the end of 2008, investments in bonds and bills on the asset side accounted for 89.91% of total assets, an increase of 0.64 percentage points compared to June 2008, while bills and bonds payable under repo agreements as well as borrowings on the liability side accounted for 84.13%, a decrease of 1.84 percentage points compared to June 2008 (Chart 5.42).

Profitability deteriorated but saw an improvement in early 2009

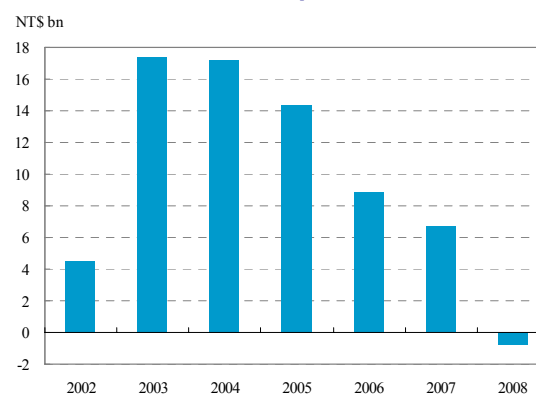
The profitability of bills finance companies deteriorated deeply as they posted a combined net loss before tax of NT\$0.78 billion in 2008, a big decrease compared to a gain of NT\$6.68 billion in 2007 (Chart 5.43). At the same time, ROE and ROA dropped dramatically to -0.71% and -0.08%, respectively (Chart 5.44). The deterioration in profitability was mainly the result of the narrowing spread between short-term and long-term interest rates as well as the losses of asset-backed commercial paper investments which were linked to defaulted

Chart 5.42 Asset/liability structure of bills finance companies



Note: Figures are end-December 2008 data.
Source: CBC.

Chart 5.43 Net income before tax of bills finance companies



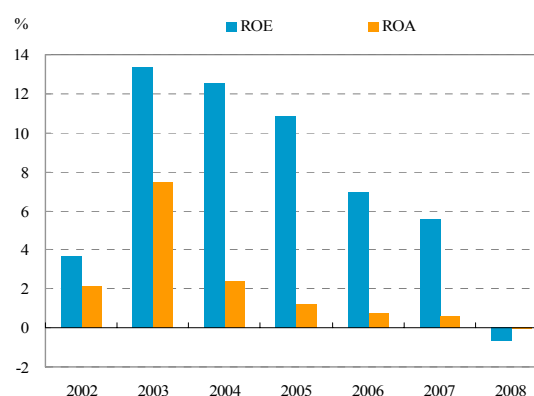
Source: CBC.

foreign underlying assets. Because the interest spread widened in early 2009, the profitability of bills finance companies improved and posted a combined net income before tax of NT\$3.51 billion in 2009 Q1.

Both the average capital adequacy ratio and financial leverage improved

The average capital adequacy ratio of bills finance companies increased and reached 14.96% as of the end of 2008. For individual companies, only one had a ratio slightly below 8% due to losses in 2008, while the others had ratios above 13%. The average Tier 1 capital ratio also rose and stood at 16.63% as of the end of 2008. Owing to a contraction in debt and an increase in equity, the average debt to equity ratio slid markedly to 6.43 times as of the end of 2008 (Chart 5.45). These improvements showed that the financial structure of bills finance companies was continually enhanced during the year.

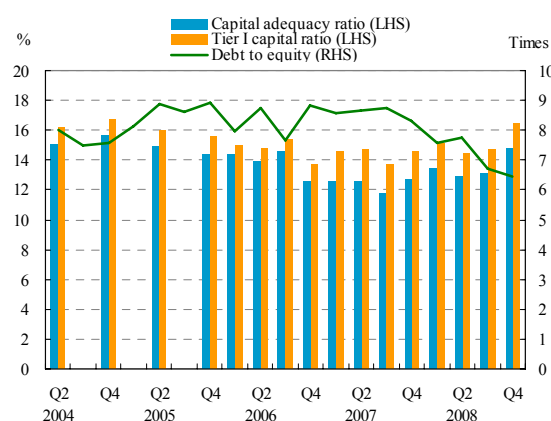
Chart 5.44 ROE & ROA of bills finance companies



Notes: 1. ROA = net income before tax / average assets.
2. ROE = net income before tax / average equity.
3. ROA in 2008 is merely 0.08%.

Source: CBC.

Chart 5.45 Capital adequacy ratio of bills finance companies



Note: The debt figures before 2003 included securities sold under repo agreements.

Source: CBC.

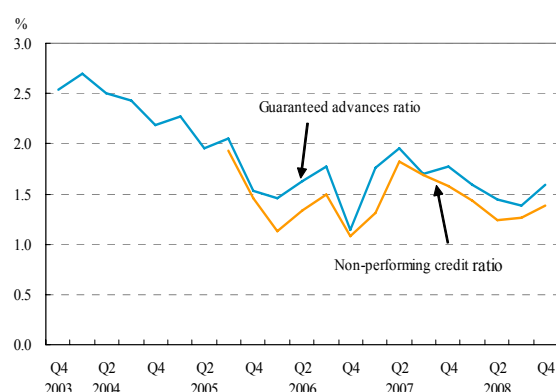
Credit quality remained satisfactory

The guaranteed advances ratio and non-performing credit ratio⁵⁹ for the guarantee business increased and stood at 1.59% and 1.38%, respectively, at the end of 2008, mainly driven by the contraction of outstanding guarantees. However, the quality of credit assets at bills finance companies remained satisfactory (Chart 5.46). The outstanding amount of stock-secured credit registered NT\$54.2 billion or 16.92% of total credit at the end of 2008, lower than the figure at the end of June 2008. In spite of the mild rebound in the stock market in 2009 Q1, the risk of stock-secured credit remained high.

Liquidity risk was mitigated

Investments in bonds and bills constituted 89.91% of the assets of bills finance companies as of the end of 2008. Long-term bonds, in particular, accounted for about 50% (Chart 5.47). As short-term borrowings and repos made up 84.13% of total assets, an apparent mismatch in asset-liability maturity persisted. Bills finance companies were exposed to high liquidity risk from September 2008 when funding from the call-loan market dramatically decreased. This mainly resulted from waning confidence in the domestic financial market alongside the fact that the call loans which bills finance companies borrowed from banks were not covered by the interim blanket deposit insurance scheme. However, the liquidity risk of bills finance companies mitigated in early 2009 as their operations improved due to widening interest rate spreads and ample liquidity in the financial market.

Chart 5.46 Guaranteed advances ratio of bills finance companies

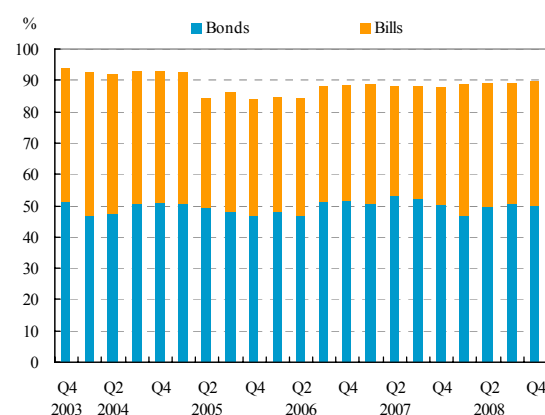


Notes: 1. Guaranteed advances ratio = overdue guarantee advances / (overdue guarantee advances + guarantees).
Non-performing credit ratio = non-performing credit / (overdue guarantee advances + guarantees).

2. The data of non-performing credit ratios are compiled from September 2005 onwards.

Source: CBC.

Chart 5.47 Bond & bill positions as percentage of assets at bills finance companies



Note: End-of-period figures.

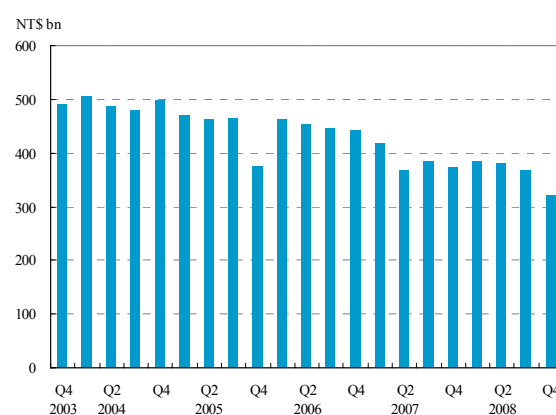
Source: CBC.

⁵⁹ Non-performing credit for guaranteed advances refers to those guarantee advances that are more than three months overdue.

The guarantee business shrank

The outstanding balance of commercial paper guaranteed by bills finance companies continued to decline in the second half of 2008. This figure dropped further to NT\$320.3 billion as of the end of 2008, down 15.60% from the end of June 2008. The main reason was that bills finance companies appeared to reduce customers' credit lines in response to the difficulty in obtaining financing from the call-loan market from September 2008 (Chart 5.48). In 2009 Q1, the outstanding balance continued dropping in January and began to increase slightly in February, but the figure at the end of March was still lower than that at the end of 2008.

Chart 5.48 Outstanding commercial paper guarantees



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

5.3 Financial infrastructure

5.3.1 Payment and settlement systems

Transactions of major systems

In 2008, the average daily transactions of the three major payment and settlement systems, the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) and the Check Clearing House System (CCHS)⁶⁰, reached 2.26 million transactions in volume or NT\$1.67 trillion in value, increasing by 0.95% or 5.61% year on year, respectively (Table 5.3). The transaction value of the IRS system decreased for the first time, contracting by 2.45% year on year in 2008. The main reason behind this was the average daily value for wire deposits⁶¹ declined owing to the contraction in mutual funds and securities transactions caused by the global financial crisis and economic sluggishness.

⁶⁰ The CBC Interbank Funds Transfer System (CIFS) is operated by the CBC, handling interbank fund transfers and payment settlements. The Interbank Remittance System (IRS) is operated by the Financial Information Service Co., Ltd (FISC), providing remittance services, including interbank remittances, ATM withdrawals, fund transfers, financial EDI and internet payments. The Check Clearing House System (CCHS) is supervised by the CBC and handles clearing and settlements of checks, promissory notes, and drafts among banks.

⁶¹ Remittance services provided by the IRS include: (1) wire deposits; (2) treasury remittances; (3) interbank remittances; (4) securities settlement payments; and (5) bills settlement payments.

Table 5.3 Average daily transactions for the three major payment and settlement systems

Items	Types of systems	2007	2008	Change (%)
Volume (in thousands of transactions)	CIFS	3.25	3.38	4.00
	IRS	1,652.24	1,717.69	3.96
	CCHS	580.74	536.48	-7.62
	Total	2,236.23	2,257.55	0.95
Value (in NT\$ bn)	CIFS	1,012.05	1,120.64	10.73
	IRS	474.92	463.31	-2.45
	CCHS	90.47	82.00	-9.36
	Total	1,577.44	1,665.94	5.61

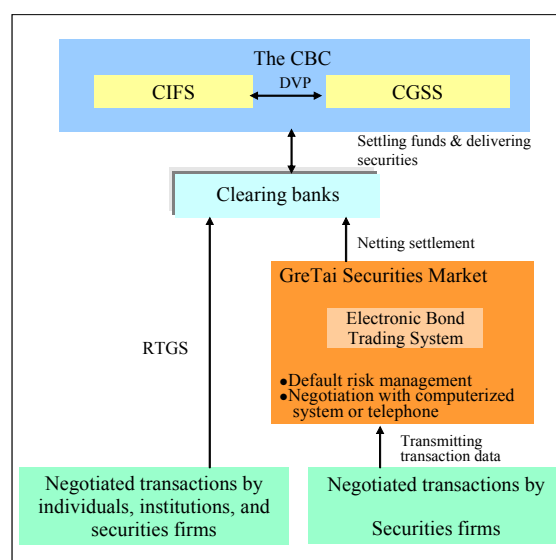
Source: CBC.

Integration of large-value payment systems

As government bonds dominated the domestic bonds market, the CBC set up the Central Government Securities Settlement System (CGSS) in September 1997 in order to enhance the efficiency of government bonds settlement.

Furthermore, the CBC linked the CGSS and the CIFS on a delivery versus payment (DVP) basis in April 2008 to improve settlement security and reduce settlement risk on government bond transactions and to conform to the Recommendations for Securities Settlement Systems.⁶²

Currently, the underwriting of central government bonds is done via central government bond dealers. As for the secondary market, except for the transactions between investors and securities firms, the transactions among securities firms are done and cleared through the GTSM Electronic Bond Trading System (EBTS),⁶³ and are

Chart 5.49 The framework of the Central Government Securities Settlement System

Source: CBC.

⁶² "Recommendations for securities settlement systems," Committee on Payment and Settlement Systems (CPSS) & International Organization of Securities Commissions (IOSCO), November 2001.

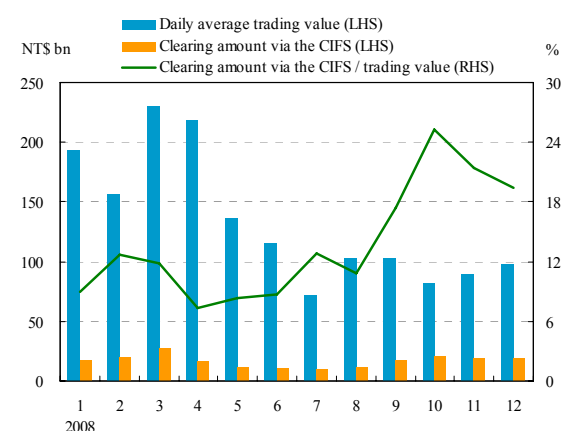
⁶³ The EBTS is operated by the GreTai Securities Market (GTSM), which is a non-profit organization with the mission of developing the over-the-counter market.

settled by sixteen clearing banks via the CIFS and the CGSS (Chart 5.49). After the development of the aforementioned systems, the CIFS was integrated with large-value payment systems for bonds, bills and stocks and complies with international recommendations calling for the use of central bank money for final settlement.

GTSM Electronic Bond Trading System and its liquidity saving mechanism

To enhance the settlement efficiency and security of book-entry central government bond transactions, the CBC incorporated the EBTS into the CIFS in July 2007 to allow payments to be done on a real-time basis. In addition, the EBTS has the advantage of decreasing liquidity needs for securities firms because it adopts a netting settlements mechanism. Consequently, the daily average trading value settled via the CIFS in December 2008 accounted only for 19.3% of the total trading amount (Chart 5.50).

Chart 5.50 GTSM Electronic Bond Trading System



Source: GTSM.

5.3.2 Financial market exit mechanism and ownership management

To enhance financial competitiveness, early warning mechanisms, financial supervision, and corporate governance as well as to place the financial market exit mechanism under the legal framework, the Banking Act of the Republic of China was amended on 30 December 2008, mainly to set up prompt corrective actions and a market exit mechanism based on the capital adequacy ratios of financial institutions, and to strengthen ownership management in banks.

Prompt corrective actions and financial markets exit mechanism

In order to enhance the safety and soundness of the banking sector, as well as to reduce the cost of dealing with problem financial institutions, the newly amended Banking Act introduces prompt corrective actions and classifies banks into four categories based on their capital adequacy ratios, namely well capitalized, undercapitalized, significantly undercapitalized and critically undercapitalized. For those undercapitalized or significantly undercapitalized banks, the Financial Supervisory Commission (FSC) shall take necessary

enforcement actions,⁶⁴ such as suspending certain business operations or the duties of management, or placing restrictions on obtaining or disposing certain assets, to urge them to improve their capital adequacy.

Those banks with a capital adequacy ratio or equity to total assets ratio lower than 2% will be deemed as critically undercapitalized. Except for the aforementioned enforcement actions, the FSC shall take them over within 90 days when they are classified as being critically undercapitalized or when they fail to comply with the recapitalization or merger plans within a certain time limit required by the FSC.

Prompt corrective actions assist the FSC in identifying banks with weakening capital structures at an early stage and implementing necessary enforcement and remedial actions on a timely basis, and thus help to strengthen banks' capital adequacy and to ensure the safety and soundness of banking system. Moreover, the FSC are required to take over critically undercapitalized banks within a certain period of time. This requirement will help to speed up the market exit mechanism so as to avoid delaying the resolution of problem banks, as well as to reduce their resolution cost.

Enhancing ownership management in banks

To enhance the transparency of ownership and the fit and proper management, the amended Banking Act stipulates that a single party or single group of related parties holding an equity stake of more than 5% in a bank is required to file with the FSC within ten days, and such a party or group seeking to acquire an equity stake of more than 10%, 25% or 50% must file with the FSC for prior approval. Should the stockholder fail to notify the FSC or obtain prior approval, voting rights for the stockholding exceeding the preceding ratios shall be expropriated and the excess stockholding shall be disposed of within a certain period of time required by the FSC.

5.3.3 Revision of inventory accounting standards

Fair presentation and transparency of financial statements of enterprises are essential to financial institutions' credit decisions. To enhance inventory management, improve transparency in financial statements and promote investors' confidence, as well as to conform

⁶⁴ For undercapitalized banks, the enforcement actions include requiring them to submit recapitalization and operational enhancement proposals or limiting the increase of their risk weighted assets. For significantly undercapitalized banks, in addition to those enforcement actions taken for undercapitalized banks, the enforcement actions also include suspending the duties of management, placing restrictions on obtaining or disposing assets, restricting transactions between related parties, limiting deposit interest rates, lowering compensation for management, or designating receivers to take over the banks.

to internationally accepted accounting standards, the revision of the Statement of Financial Accounting Standards No. 10, Inventory Accounting Standards (SFAS 10), was effected as scheduled on 1 January 2009.

The major amendments to SFAS 10 are as follows:

- Inventories are required to be stated as the lower of cost or net realizable value instead of the lower of cost or market value.
- Inventories should not be written down to net realizable value on the basis of total items.
- Using the last-in, first-out formula to measure the cost of inventories is not permitted.
- Any write-down of inventories to net realizable value should be recognized as cost of goods sold when they occur.
- Fixed cost must be allocated on the basis of the normal capacity of the production facilities. Unallocated overheads are recognized as costs of goods sold.
- New accounting treatments are developed for cost of inventories of a service provider.

The FSC has adopted a series of measures to alleviate the impacts of SFAS 10 on enterprises, such as allowing the deferral of the recognition of losses caused by lower capacity utilization until the end of 2009 and proposing to release the trading restrictions for listed securities. Through these measures, it is expected that the impacts of SFAS 10 can be minimized and the compliance of Taiwan's SFAS with internationally accepted accounting standards can be improved.