I. Overview

Taiwan's financial system remained stable despite some potential risks

In the second half of 2008, Taiwan's financial markets fluctuated sharply amid spillovers from the global financial crisis but gradually returned to smooth functioning after proactive policy actions taken by the government. The asset quality of domestic financial institutions remained satisfactory despite a sharp decline in profitability. Except for a few banks and life insurance companies, the majority of financial institutions played their intermediation role effectively on the back of adequate capital levels. Payment and settlement systems operated smoothly with improved efficiency. Reflecting this, the financial system in Taiwan remained stable. Nevertheless, the domestic economy entered a recession. Whether it will trigger deterioration in the credit conditions of the real sector and cause the financial system to assume higher risks warrants closer monitoring.

Global financial crisis impacted the real and financial sectors

The global financial turmoil sparked by the US subprime mortgage crisis extended into 2008 and in September entered a new phase of disorder following the bankruptcy of Lehman Brothers. With globalization prevailing in the financial services industry, the impact of the crisis has spread out from the US to other countries, from advanced countries to emerging and developing economies, from the housing market to financial institutions and financial markets, from the financial sector to the real economy. Furthermore, it resulted in a vicious circle with an adverse feedback loop between the financial system and the real economy.

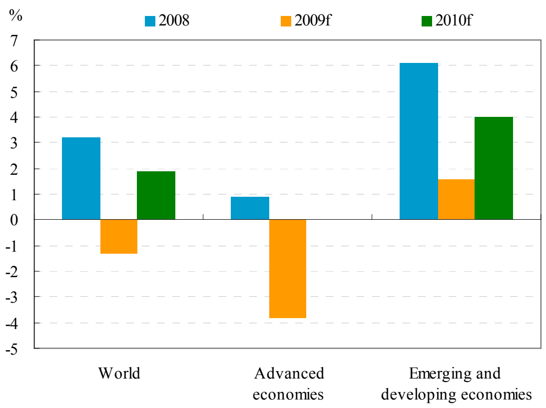
The causes of the global financial crisis are complex and intertwined but may be summarized as follows: (1) a decrease in investors' concerns about risks due to excessive liquidity worldwide; (2) loose credit underwriting standards resulting from the prevalence of the originate-to-distribute business model; (3) information asymmetry and principal-agent problems in the securitization process; (4) conflicts of interest and model bias at rating agencies; (5) risk management at financial institutions was outpaced by financial innovation; and (6) fair value accounting and the new Basel capital accord (Basel II) led to pro-cyclical leveraging in financial institutions.

The global financial crisis not only severely affected the financial sector but also spread to the real economy. With respect to the financial sector, financial institutions in major countries faced skyrocketing non-performing loan ratios, tightened credit underwriting standards, and sizable losses. In April 2009, the International Monetary Fund (IMF) updated its estimates of write-downs on the global holdings of US-originated assets to US$2.7 trillion. Against the backdrop of turbulent financial market conditions, short-term interest rates surged dramatically driven by stringent funding conditions, the sub-prime mortgage-backed securities index dropped markedly, outstanding balances of the asset-backed commercial paper (ABCP) market were scaled back substantially, and share prices tumbled in the stock markets of the US, Japan, Europe and emerging Asian countries before a rebound emerged in March 2009.

Regarding the real economy, economic growth in advanced economies turned negative in the second half of 2008 in the wake of the financial crisis. The IMF projected the global economy would undergo a downturn with a growth rate of -1.3% in 2009 before a moderate recovery in 2010. The advanced economies would suffer a substantial contraction in economic activity with a growth rate of -3.8% in 2009, while the emerging and developing economies would fall to a growth rate of 1.6% over the same period (Chart 1.1). In addition, due to elevated uncertainties following the financial crisis, consumer confidence was persistently eroded before a slight rebound in March 2009. There was an acute rise in unemployment rates in advanced economies, and significant increases in unemployment also posed challenges to emerging economies. The consumer price index (CPI) in major industrial economies has been declining since mid-2008, reflecting increasing deflationary risks.

To cope with the impact stemming from the US sub-prime mortgage crisis, many countries have adopted a succession of measures designed to stabilize the financial system and to revitalize the economy via expansionary fiscal policies. Regarding measures to stabilize the financial system, many countries successively cut policy rates. In addition, the US Federal Reserve System (Fed) and Bank of England utilized innovative funding facilities (such as the US Term Auction Facility and the UK Special Liquidity Scheme) to inject funds into the financial markets. Furthermore, national governments actively

Chart 1.1 Global economic growth rates



Note: Forecast for advanced economies in 2010 is 0%.
Source: IMF, "World Economic Outlook," April 2009.

implemented a series of policy measures to enhance the soundness of financial institutions' balance sheets so as to help them sustain, including: (1) providing guarantees for deposit and non-deposit debt of financial institutions; (2) strengthening the capital structure of individual financial institutions; and (3) revitalizing financial institutions' assets. With respect to economic stimulus measures, the US, UK and major Asian countries have actively executed expansionary fiscal policies and launched a variety of macroeconomic stimulus packages, comprising: (1) offering tax cuts or tax rebates to stimulate private consumption; (2) expanding public expenditures; (3) promoting employment; and (4) supporting the housing market. The scale of these packages exceeds 2% of GDP in their corresponding countries.

The impact of the current financial crisis on global economic activity has been unexpectedly severe. A variety of data sources indicate that global financial and economic conditions will remain weak in the short run and are expected to face further substantial challenges in the future. These include deteriorating economic activity, moderating credit growth, rising external funding pressures on emerging economies, intensifying deflationary risks in advanced economies and escalating protectionism. Governments and international organizations successively proposed a number of recommendations on supervisory reform to avoid the recurrence of financial crises in the future, including: (1) enhancing supervision of the practice of financial institutions' operations, such as improving the practice of mortgage operations, mitigating information asymmetry and principal-agent problems in the securitization process, eliminating conflicts of interest and model bias at rating agencies, and streamlining the design of structured products; (2) strengthening the supervisory framework in individual countries, with examples such as the US blueprint for reforming its supervisory structure and the UK plan to revamp financial supervision and regulation; (3) improvements in several accounting issues such as fair value accounting and establishing a uniform global accounting standard; (4) amending Basel II's capital requirements on trading book, asset securitization and off-balance sheet instruments, and urging more countries to implement Basel II; (5) enhancing the supervision of private equity funds (including hedge funds); and (6) establishing a mechanism for consistent and systemic cross-border cooperation and coordination.

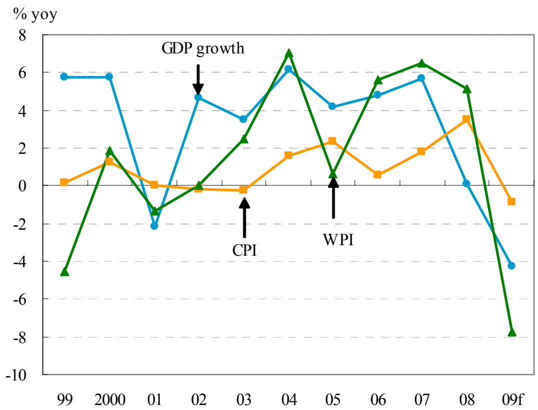
Since the causes and policy responses regarding the global financial crisis are a worthy reference for domestic financial authorities and financial industry participants, an exclusive chapter is included in this report to better the understanding of the crisis.

Domestic economy entered a downturn and inflationary pressures receded

In the second half of 2008, the declining world economy severely affected Taiwan's export momentum and the manufacturing sector. Private investment shrank rapidly, while private consumption declined steadily. Statistics from the Directorate-General of Budget, Accounting and Statistics (DGBAS) indicated that Taiwan's economic growth registered -1.05% and -8.61% in 2008 Q3 and Q4, respectively, causing annual economic growth to drop materially to 0.06% in 2008 from the previous year's 5.70%. Looking ahead, Taiwan's exports and private investment are expected to contract markedly along with waning private consumption, despite the government's persistent efforts to mitigate these adverse impacts and boost domestic demand by expanding public investment. The DGBAS forecast that Taiwan's economy will post a negative growth rate of -4.25% in 2009. Its preliminary statistics revealed that economic growth fell to a trough of -10.24% in 2009 Q1 owing to a marked contraction in exports. However, the economy was expected to gradually improve from Q2 onwards and return to positive territory in Q4.[1] With respect to prices, in the second half of 2008, the deteriorating world economy and sharp declines in the prices of crude oil, raw materials and commodities contributed significantly to receding inflationary pressures. Preliminary statistics from the DGBAS indicated that the wholesale price index (WPI) and CPI inflation rates stood at 5.15% and 3.53% in 2008, respectively. It was projected the annual WPI and CPI inflation rates will fall to 7.75% and 0.84%, respectively, in 2009 (Chart 1.2).

Taiwan's foreign exchange reserves continued to accumulate and reached US$304.7 billion in April 2009, indicating that Taiwan's foreign exchange reserves have a strong capacity to meet payment obligations for imports and to service short-term external debts. As of the end of 2008, outstanding external debts registered 23.07% in relation to annual GDP, far lower than the internationally recognized warning level, whereas the ratio of external debts to annual exports was merely 35.31%, which to some extent reflected that there were no signs of servicing pressure on external

Chart 1.2 Economic growth rate and inflation rate in Taiwan



Note: Figures for 2009 are DGBAS forecasts.
Source: DGBAS.

[1] The figures for the GDP and related growth rates are based on DGBAS statistics released on 21 May 2009 (hereafter quoting the same source).

debts. With respect to the government's fiscal conditions, rising infrastructure spending aimed at spurring domestic demand caused the fiscal budget deficit to increase dramatically in 2008, registering 2.35% in relation to annual GDP. The ratio, however, is still below the internationally recognized warning level. Moreover, public debts are likely to grow further on the back of ongoing implementation of economic stimulus measures.

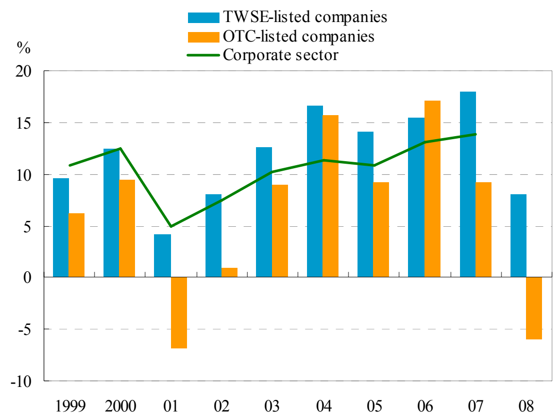
Non-financial sectors

Profitability and financial structure in the corporate sector deteriorated in 2008 but showed slight improvement in 2009 Q1

Against the backdrop of a sharp decline in domestic and foreign economic activities, the profitability of both TWSE-listed and OTC-listed companies shrank considerably in 2008. Their return on equity (ROE) ratio dropped to 8.08% and -5.97%, respectively, together with a marked rise in leverage ratios (Chart 1.3), indicating aggravated financial structures in the corporate sector. In 2009 Q1, the profitability of both TWSE-listed and OTC-listed companies still declined heavily year on year but with a smaller downward movement. Furthermore, there was a slight improvement in financial structures owing to reduced liabilities.

Current ratios and average interest coverage ratios for TWSE-listed and OTC-listed companies both dropped notably in 2008 and did not exhibit much improvement in 2009 Q1, showing a weakening short-term debt servicing capacity. With a rise in the number of enterprises applying for financial relief recently, credit risks heightened, albeit the non-performing ratio of corporate loans remained low. In addition, TWSE-listed and OTC-listed companies, confronted with decaying performance and massive corporate bond redemptions, faced rising pressures on funding.

Chart 1.3 Return on equity in corporate sector

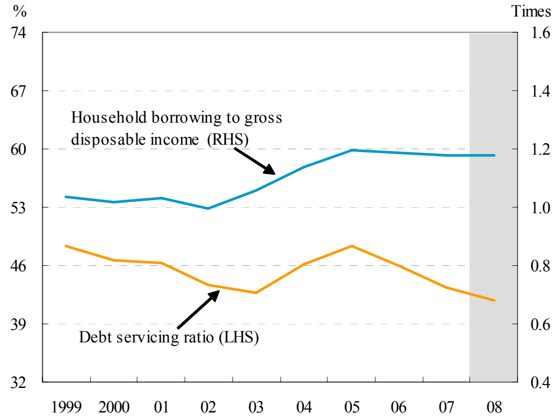


Note: Return on equity = net income before interest and tax / average equity.
Sources: JCIC and TEJ.

Household short-term debt servicing capability improved, but borrowing burden remained heavy

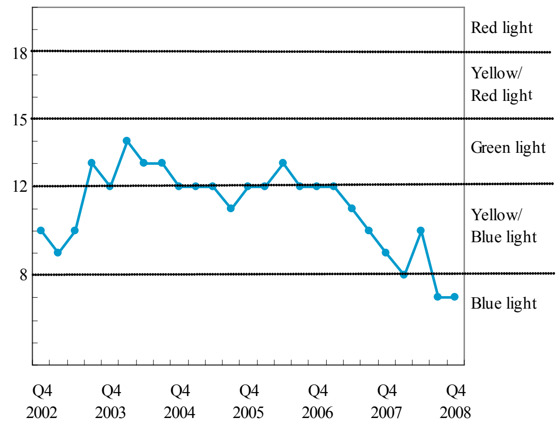
In the second half of 2008, supported by steadily contracting short-term household borrowing, which alleviated the pressures on principal and interest payments, household debt servicing capacity gradually improved. Moreover, against the backdrop of the prevailing economic slowdown, coupled with cautious lending policies of banks and softened individual borrowing demand, household borrowing growth turned negative. However, households' borrowing burdens remained heavy as disposable income contracted synchronously (Chart 1.4). The non-performing loan ratio of household borrowing stayed at a low level, indicating satisfactory credit quality. Nevertheless, adverse effects, such as sluggish domestic economic growth, declining real incomes, and a rising unemployment rate, might undermine household debt servicing capabilities in the future, resulting in increased credit risk in bank loans to this sector.

Chart 1.4 Household debt servicing ratio



Note: Gross disposable income in shaded area is CBC estimate.
Sources: CBC, JCIC, and DGBAS.

Chart 1.5 Real estate cycle indicator



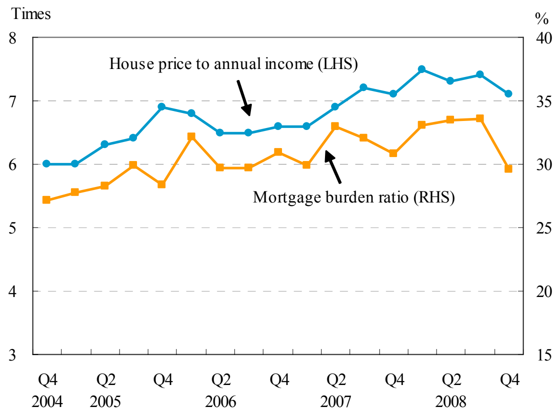
Note: A red light indicates a "heated market," while a blue light indicates a "sluggish market."
Source: "Quarterly Report of Taiwan Real Estate Cycle Indicators," Architecture and Building Research Institute, MOI.

Real estate market stayed sluggish

In the second half of 2008, Taiwan's real estate cycle indicator recorded a blue light for two consecutive quarters (Chart 1.5), representing a sluggish real estate market. House prices remained high but there were some signs of cutbacks in prices. Lackluster economic activity and more conservative attitudes in financial institutions' mortgage loan policies led transaction volumes to shrink conspicuously. The supply of newly constructed residential property remained at high levels, while vacancy rates climbed steadily. The mortgage burden ratio declined as homebuyers turned to purchasing smaller or lower-priced properties. However, the cost burden of homebuyers remained heavy as the house price to income ratio was still high (Chart 1.6).

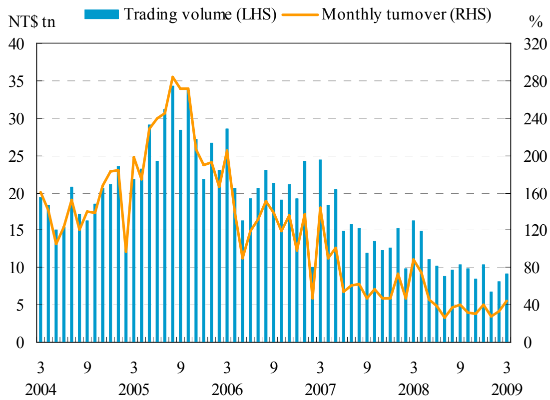
Driven by the CBC's successive rate cuts, banks' mortgage rates were sharply reduced. This, together with a series of supporting measures taken by the government, was expected to stabilize the domestic real estate market. These measures include extending the time limit for construction license permits, continuing to offer additional preferential mortgage loans for homebuyers, and giving the green light to Qualified Domestic Institutional Investors from China to invest in Taiwan's capital markets. Nevertheless, the following factors may continue to exert downward pressures on housing prices: (1) the rising unemployment rate and contracting private wealth could constrain both the willingness and capacity to purchase houses; and (2) increasing supply of newly constructed and foreclosed residential properties may lead to disequilibrium in the market. As a consequence, banks should pay close attention to related credit risks.

Chart 1.6 House price to income ratio & mortgage burden ratio



Note: Mortgage burden ratio = monthly mortgage expenditure/ household monthly income.
Source: "Taiwan Housing Demand Survey Report," MOI.

Chart 1.7 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 the month + bonds issued outstanding at the end of the previous month)/2
Sources: CBC and FSC.

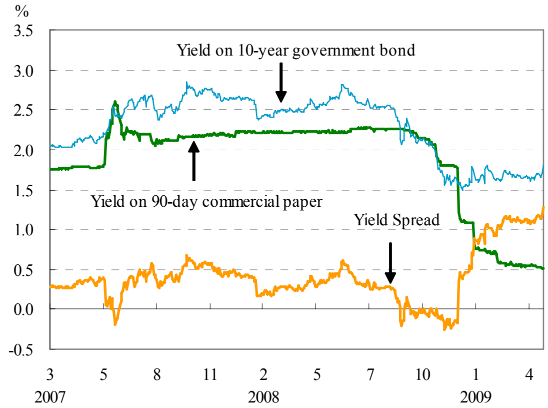
Financial sector

Financial market

Trading volume shrank in bill and bond markets, while yield spreads turned positive and widened notably

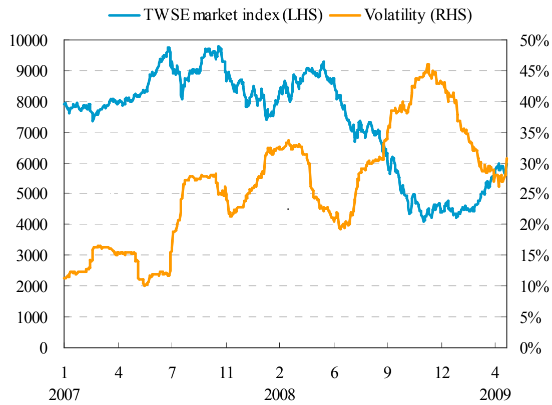
Influenced by the shrinking amount of commercial papers underwritten by bills finance companies, together with the increased outright sales and an extension in the period of repurchase transactions for the sake of reducing liquidity risk, the trading volume in the secondary bill market contracted in the second half of 2008 compared to the first half and had only picked up slightly by early 2009. The trading volume in the bond market remained at a low level as bond availability was greatly reduced since many financial institutions increased holdings of government bonds to effectively manage their idle funds (Chart 1.7). Bond yields dipped markedly after September 2008 due to increasing inflows of funds into the bond market. However, short-term interest rates was greatly brought down by the CBC's several rate cuts and expanded Repo facility operations, which were aimed to inject more funds into the market. This led yield spreads to turn positive and widen noticeably (Chart 1.8). Nevertheless, newly increased bond holdings bore higher interest rate risks as long-term interest rates were quite low.

Chart 1.8 Yield spread



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

Chart 1.9 Taiwan stock market index and volatility



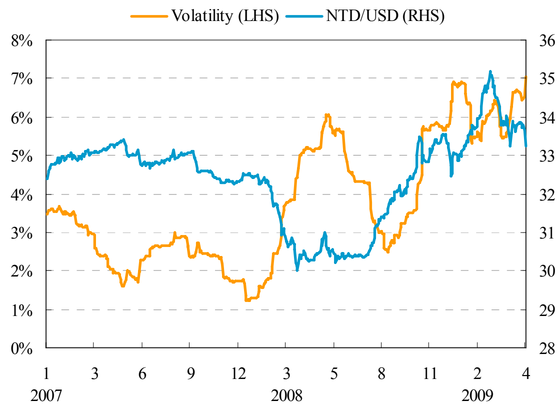
Note: Volatility refers to the annualized standard deviation of 60-day daily index returns.
Source: TWSE and OTC.

Stock prices bottomed out, while volatility moderated after a sharp increase

Affected by the global stock market crash, poor performance in the domestic economy, and massive sell-off from foreign investors, the Taiwan Stock Exchange Weighted Index (TAIEX) slumped to a low of 4,090 in the second half of 2008. Compared to major stock markets around the world, Taiwan was one of the hardest-hit markets, but the fall in its stock price index in 2008 was smaller than those in Hong Kong, Singapore, Thailand and Shanghai. Fueled by a sharp rise in orders for the products of domestic electronic companies and their inventory restocking, the TAIEX stabilized in early 2009. Subsequently, the TAIEX rebounded from March onwards thanks to net foreign capital inflows, a reversal of investment funds back from overseas to local equity markets and a more open policy towards China's investment in Taiwan. The Taiwan stock markets' volatility increased dramatically post July 2008, reflecting a rise in investment risks. The volatility moderated somewhat from early 2009 onwards, but investment risks arising from volatile share prices still remained at a high level (Chart 1.9).

The NT dollar reversed from appreciation to depreciation, but remained relatively stable despite higher volatility

Chart 1.10 NTD/USD exchange rate and volatility



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

After experiencing appreciation for six months, the NT dollar exchange rate against the US dollar turned to depreciation in the second half of 2008 due to the increasing hedging needs for US dollars and continued outward remittance by foreign investors. The NT dollar exchange rate continued to trend downward in early 2009 as the global economy worsened, exports dwindled and demand for US dollars became stronger in the domestic foreign exchange market. However, the NT dollar exchange rate began to pick up after March, led by renewed foreign capital inflows and a weaker US dollar. The NT dollar stood at 33.23 per US dollar at the end of April.

In the second half of 2008, volatility in the NT dollar exchange rate against the US dollar increased dramatically, hitting a peak of 6.92% in January 2009, and then decreased temporarily. The volatility, however, soared again in March as the NT dollar began appreciating (Chart 1.10). Nevertheless, compared to major currencies, the NT dollar exchange rate was relatively stable.

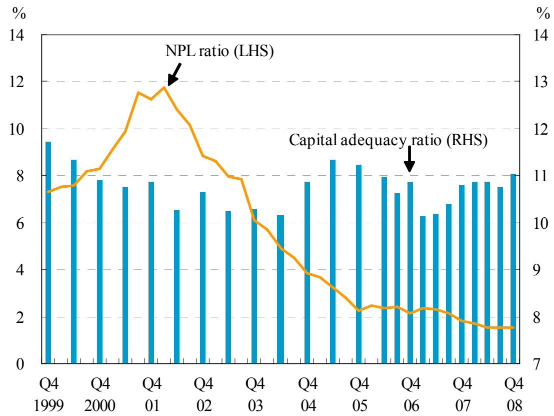
Financial institutions

Domestic banks maintained satisfactory asset quality and adequate capital levels, but credit risks and market risks increased

The non-performing loan (NPL) ratio of domestic banks registered 1.54% at the end of 2008 (Chart 1.11), reflecting a satisfactory asset quality, but then moved up slightly to 1.62% in March 2009. Funding remained ample in the banking system and liquidity risks were moderate on the whole. In September 2008, a few private banks temporarily experienced a large number of withdrawals and suffered funding difficulties. However, the liquidity tensions of these banks eased after the CBC's expansion of Repo facility operations and the government's blanket guarantee for deposits of all insured institutions. Amid worsened domestic economic conditions, domestic banks faced heightened credit risks in their credit exposure to the corporate sector, household sector and the real estate market, while their market risk in equity investments also increased notably.

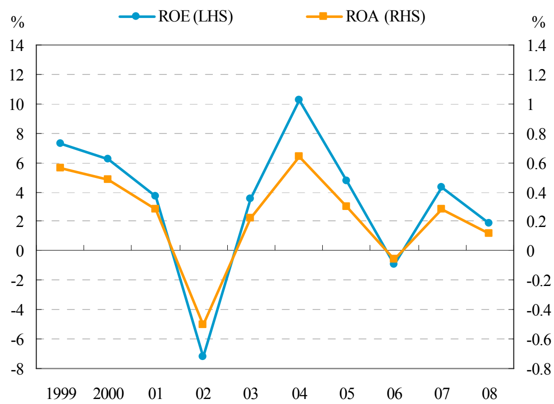
Profitability at domestic banks posted a sharp decline of 55.68% in 2008 from the previous year, while both return on equity and return on assets fell (Chart 1.12). Bank profitability also contracted by 21.79% in 2009 Q1 on a year-on-year basis. Shrinking interest rate spreads between deposits and loans, coupled with increasing disputes and contracting wealth management business, may erode the profitability of domestic banks and pose considerable challenges to their operations. Domestic banks' capital remained adequate (Chart 1.11); however, whether their credit and market risk losses will further increase and in turn affect their capital adequacy conditions warrants closer monitoring.

Chart 1.11 NPL and capital adequacy ratios of domestic banks



Note: The capital adequacy ratio data are on a semiannual basis prior to June 2006 and on a quarterly basis beginning September 2006.
Source: CBC.

Chart 1.12 ROE & ROA of domestic banks

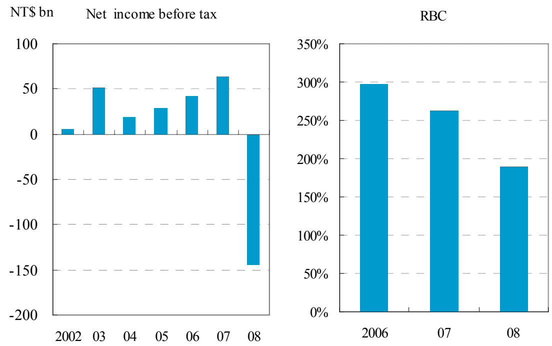


Notes: 1. ROE (return on equity) = net income before income tax/average equity.
2. ROA (return on assets) = net income before income tax/average total assets.
3. Figures for 2006 and 2007 exclude the Chinese Bank and Bowa Bank which were taken into conservatorship in 2007.
Source: CBC.

Life insurers were subject to losses and weakened capital conditions

The asset size of Taiwan's life insurance companies grew at a slower pace in the second half of 2008. Moreover, in the face of deteriorating domestic and external investment environments, along with limited investment opportunities, life insurance companies' uses of funds revealed marked increases in bank deposits, while securities investments grew moderately and real estate investments edged up. Life insurers as a whole suffered a considerable loss of NT$144.2 billion in 2008 as a result of investment loss recognition and increased provisions in insurance policy reserves. The average return on investment at life insurance companies dropped notably in 2008, and negative interest rate spreads imposed a heavy burden on profitability. The net worth of life insurance companies contracted sharply at the end of 2008 compared with the previous year due to operating losses. However, the average risk-based capital (RBC) ratio at the end of 2008 was higher than the figure posted at the end of June 2008, primarily because of the fact that the FSC released an interim measure to adjust the risk-based capital system of the insurance industry and some life insurance companies raised capital (Chart 1.13).

Chart 1.13 Net income before tax and risk-based capital ratios of life insurance companies

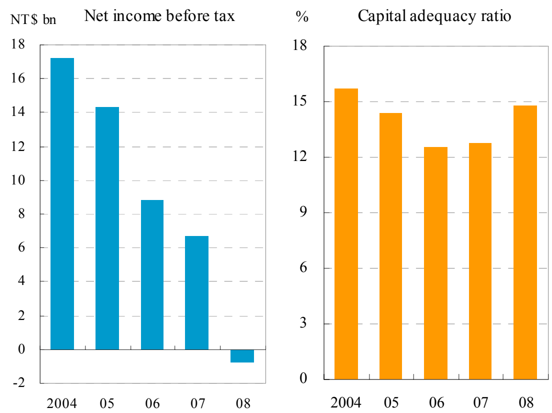


Note: The risk-based capital (RBC) ratios are end-of-year figures.
Source: FSC.

Profits of bills finance companies turned negative, but capital remained adequate

The total assets of bills finance companies continued to contract in the second half of 2008. The guaranteed advances ratio stood at 1.59% at the end of 2008, indicating a satisfactory level of asset quality. Affected by shrinking interest rate spreads and losses in asset-backed commercial paper holdings, the profits of bills finance companies turned negative in 2008 but improved in early 2009 due to gains from bond holdings. The overall capital adequacy rate heightened at the end of 2008 and the leverage ratio improved (Chart 1.14). Liquidity risks once increased but appeared to be moderated from early 2009 onwards, while the outstanding balance of commercial paper guarantees contracted steadily.

Chart 1.14 Net income before tax and capital adequacy ratios of bills finance companies



Note: The capital adequacy ratios are end-of-year figures.
Source: CBC.

Taiwan's policy measures to cope with the global financial crisis

The domestic economy entered a downturn in the second half of 2008 amid the global financial crisis. In order to alleviate the adverse impact stemming from the crisis, in addition to the Economic Stimulus Package in September 2008, the government adopted a series of measures to spur domestic demand, stabilize the financial system and maintain the momentum of economic growth. The major measures are listed as follows:

Easy monetary policy

- Successively lowering policy rates seven times from September 2008 to March 2009 by a total of 2.375 percentage points to reduce funding costs for individuals and enterprises;
- Lowering the required reserve ratios to promote bank lending; and
- Expanding the CBC's Repo facility operations to provide sufficient liquidity to the markets.

Measures to stabilize the financial system

- Adopting an interim blanket deposit guarantee to restore depositors' confidence and the health of financial institutions;
- Taking action to stabilize the stock market, such as narrowing the percentage fall limits of share prices, and encouraging listed companies to buy back their own shares as treasury stocks or board members to purchase their own company's shares;
- Resuming short selling on stocks and giving the green light to Qualified Domestic Institutional Investors from China to invest in Taiwan's capital markets so as to increase securities market momentum and expand capital market size;
- Assisting enterprises to raise funds, such as setting up a task force to help enterprises resolve their financing problems, allowing a six-month grace period for principal repayment for well-functioning corporate borrowers with good repayment records, expanding the operation of the Small and Medium Enterprise Credit Guarantee Fund, and assisting enterprises to raise funds from capital markets;
- Assisting individuals to acquire loans from banks, such as providing on two separate occasions additional preferential mortgage loans to eligible homebuyers as well as extending the expiration date or deferring principal repayment of loans on a case-by-case basis;
- Temporarily adjusting the rules on the calculation of risk-based capital ratios for the insurance industry.

Expansionary fiscal policy

- Launching the program of Expanding Investment in Public Works to Revitalize the Economy, which totaled NT$500 billion for a period of four years;
- Distributing consumption vouchers to stimulate private consumption;
- Lowering the estate and gift tax rates to attract capital inflows; and
- Implementing job growth programs to effectively reduce the unemployment rate.