Central Bank of the Republic of China (Taiwan)

Financial Stability Report

May 2011 | Issue No. 5

Table of contents

About the Financial Stability Report ..... **I**

I. Overview **1**

II. International and domestic economic and financial conditions **16**

2.1 International economic and financial conditions 16

2.2 Domestic economic and financial conditions 30

III. Non-financial sectors **46**

3.1 Corporate sector 46

3.2 Household sector 50

3.3 Real estate market 52

IV. Financial sector **63**

4.1 Financial markets 63

4.2 Financial institutions 75

4.3 Financial infrastructure 97

Box 1 Recent measures to manage capital flows in emerging economies **36**

Box 2 Basel III: capital and liquility reforms **39**

Box 3 Systemic risks and macroprudential supervision **43**

Box 4 The CBC's targeted prudential measures to stablize the property market **58**

Box 5 Development history and prospects of Taiwan's bond markets **69**

Box 6 Measures in response to the exit of the blanket deposit insurance scheme **106**

Box 7 Impacts of the IFRS 9 on Taiwan's financial industry and necessary measures **108**

Appendix: Financial soundness indicators **112**

Explanatory notes **115**

Compilation of financial soundness indicators **115**

Abbreviations **123**

About the Financial Stability Report

Key points of the task to promote financial stability

Promoting financial stability is not only one of the operational objectives pursued by the Central Bank of the Republic of China (Taiwan), the CBC, but also lays the cornerstone for the effective implementation of monetary policy. To achieve this objective, in addition to serving as lender of last resort when necessary, the CBC regularly monitors the financial system and the overall economic and financial environment. This allows it to be constantly aware of the potential vulnerabilities and risks that could threaten financial stability so that the relevant financial authorities and market participants can respond in a timely manner to avoid financial turbulence.

In its work to promote financial stability, the CBC focuses primarily on the risks that could affect the stability of the overall financial system. Nevertheless, the CBC still pays close attention to the status of individual institutions as their weaknesses can trigger systemic risks.

Purpose of this report

The Financial System Report was issued annually. The aims of this report are to offer insight into the state of Taiwan's financial system and its potential vulnerabilities and risks, and to spark broad-based discussion that will enhance awareness of risk among market participants and spur them to take responsive action in a timely manner. This does not mean, however, that the risks mentioned in this report are sure to occur. Furthermore, this report is intended to serve as a reference for financial authorities, market participants, and others interested in the subject. Readers are advised to interpret or quote the information contained herein with caution.

Definition of financial stability

There is as yet no universally accepted definition of "financial stability." Defined positively, "financial stability" can be thought of in terms of the financial system's ability to: (1) facilitate an efficient allocation of economic resources both spatially and intertemporally; (2)

assess and manage financial risks; and (3) withstand adverse shocks. From a negative view, "financial instability" refers to the occurrence of currency, banking, or foreign debt crises, or inability of the financial system to absorb adverse endogenous or exogenous shocks, and allocate resources efficiently, with the result that it cannot facilitate real economic performance in a sustained manner.

Note: Except as otherwise noted, all data and information cited in this report is current as of 31 March 2011.

I. Overview

Taiwan's financial system remained stable

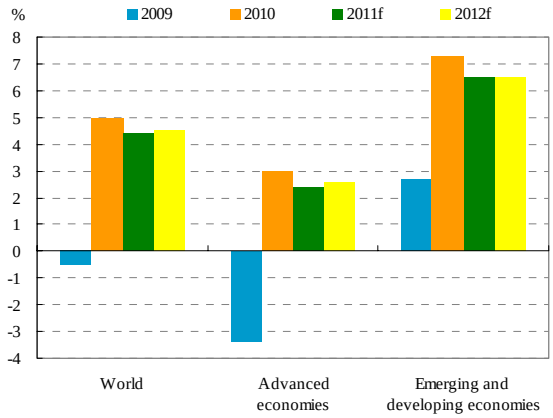
In 2010, the financial system in Taiwan remained stable. Financial markets continued to function normally. Most domestic financial institutions, except for a few life insurance companies, registered healthy profits and maintained sound asset quality alongside adequate capital levels. Payment and settlement systems operated smoothly, and potential computer system problems related to the "centenary bug" in financial information systems were well addressed. The recovery of both global and domestic economies proceeded steadily but the global financial system remained fragile. This, coupled with continued international capital flows into emerging economies, warrants increased vigilance as they could potentially expose domestic financial system to vulnerabilities. At the same time, with the government implementing measures to stabilize the real estate market and to moderate banks' credit risk relating to housing loans, investment sentiment in the real estate market shifted towards a more conservative stance, while buyer bargaining power saw an increase in specific areas where construction projects have risen most notably. In this context, precautionary measures and the enhancement of risk management are advised for financial institutions with high concentrations on real estate-related loans.

Sustained global economic recovery was underway but fragilities remained in the financial system

Global recovery proceeded at a solid pace, but speeds varied across regions, while inflationary pressures built up in some areas

The global economy saw a strong upturn in the first half of 2010 but moved to a moderate rate of growth in the second half of 2010 driven by waning inventory rebuilding, along

Chart 1.1 Global economic growth rates



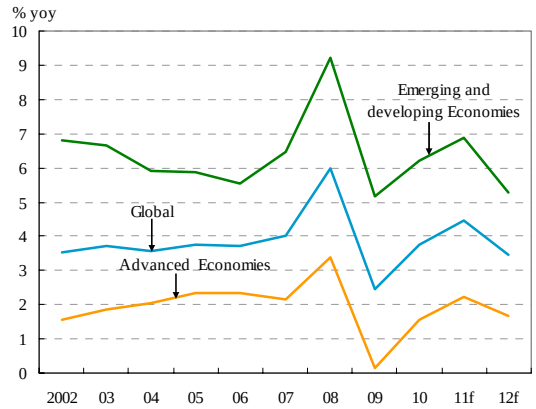
Note: Figures for 2011 and 2012 are IMF estimates.
Source: IMF, "World Economic Outlook," April 2011.

with the buildup of downside risks in advanced economies due to setbacks in resolving ongoing sovereign debt turmoil in Europe. According to International Monetary Fund (IMF) statistics, the growth rate of the world economy rebounded substantially to 5.0% through 2010 from -0.5% a year earlier, and global output was forecast to experience an ongoing growth rate of 4.4% and 4.5% in 2011 and 2012, respectively.[1] However, the recovery remained unbalanced across regions. Affected by fiscal imbalances, mounting unemployment rates, and lingering fragilities in the financial system, the recovery progressed moderately in advanced economies. In contrast, thanks to continued increases in domestic demand and strong world trade transactions, emerging and developing economies grew at a robust pace, particularly in emerging Asia, which continued to outpace other regions (Chart 1.1).

Fueled by surging prices for both oil and raw materials, inflationary pressures increased in 2010 and are expected to continue an upward trend in 2011 before becoming more subdued in 2012. In some emerging and developing economies, overheating pressures are building alongside soaring food prices. The IMF estimated the headline inflation rate (consumer price index, CPI) in emerging and developing economies increased to 6.2% in 2010 from 5.2% one year earlier and predicted it will continue elevating to 6.9% in 2011. This reflects that inflationary pressures have been mounting. In advanced economies, inflationary pressures were broadly contained as economic growth moderated and inflation expectations were well anchored. Headline inflation is estimated to rise to 1.6% in 2010 and projected to remain positive at 2.2 % in 2011 (Chart 1.2).[2]

The IMF and some other international organizations indicated that uncertainty continues to cloud the global growth outlook. These uncertainties mainly include: (1) the extension of the sovereign debt crisis; (2) the absence of progress in formulating medium-term fiscal consolidation plans in some advanced economies; (3) soaring raw materials prices; (4) concerns about overheating economies in emerging economies; and (5) rising trade protectionism.

Chart 1.2 Global headline inflation rates



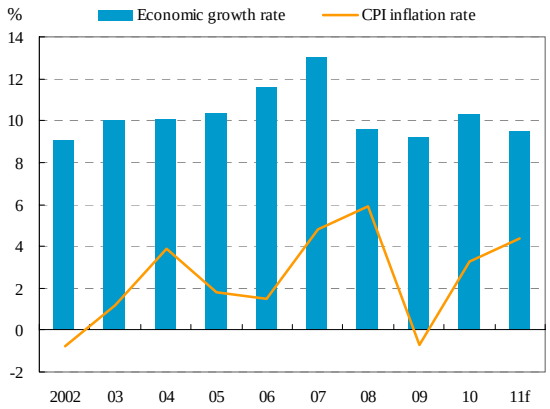
Note: Figures for 2011 and 2012 are IMF estimates.
Source: IMF, "World Economic Outlook," April 2011.

[1] IMF (2011), "World Economic Outlook," April.
[2] See Note 1.

Mainland China's output growth accelerated alongside the buildup of inflationary pressure

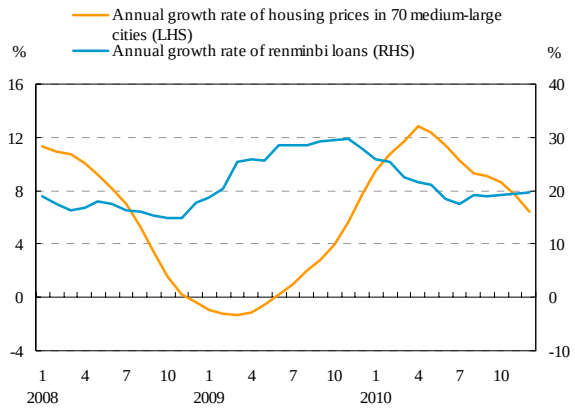
Mainland China's economic growth kept accelerating in 2010 Q1 but turned to become more temperate in the following quarter as the official authorities adjusted macro-control measures and the People's Bank of China (PBC) tightened monetary policy. Nevertheless, the economic growth rate for the whole year of 2010 still registered a high of 10.3%. Global Insight predicts that Mainland China's output growth through 2011 may slightly drop to 9.3%.[3] Regarding consumer prices, the CPI inflation rate saw an upward trend in 2010 spurred by stronger consumption demand and rising food prices. Against this backdrop, the government successively took measures to stabilize commodity prices twice and carried out strict investigations to restrain hoarding and speculative activities which took advantage of bank credit to bid up the prices of agricultural products. The CPI inflation rate through 2010 still stood at 3.3% despite these efforts. Global Insight projects Mainland China's inflation rate to further increase to 4.5%[4] in 2011, indicating continued upward inflationary pressure (Chart 1.3).

Chart 1.3 Economic growth rate and CPI inflation rate in Mainland China



Note: Figures for 2011 are Global Insight projection.
Sources: National Bureau of Statistics of China, Thomson DataStream and Global Insight.

Chart 1.4 Annual growth rates of housing sales prices and banks' loans in Mainland China



Sources: People's Bank of China and National Bureau of Statistics of China.

The implementation of easy monetary policy in Mainland China contributed to excessive credit expansion and overheating in the property market during 2009. To prevent a property bubble and contain inflationary pressure, the PBC substantially contracted market liquidity in 2010 through tightening policy actions, including: (1) increasing the reserve requirement ratio for depository financial institutions six times by a total of three percentage points; (2) raising deposit and loan rates of financial institutions two

[3] Global Insight Estimate in April 2011.
[4] See Note3.

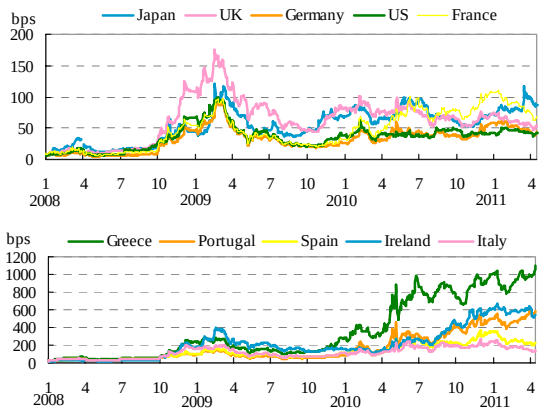
times; and (3) conducting open market operations several times. This, coupled with measures implemented by other official institutions (for example, the China State Council) to tame rising property prices, resulted in the growth of bank credit and housing prices turning to become more moderate (Chart1.4). From the beginning of 2011 onwards, the PBC continually adopted tightening monetary policies and the General Office of the China State Council also took further measures to impede overheating in the property market. As a result, the annual growth rates of renminbi loans and M2 fell, and cities with inflated building prices also experienced gradual price falls. Nevertheless, this situation is still worthy of continued vigilance with regard to the impact of the building price adjustment on the real estate industry and the loan quality of banks, as well as the debt servicing capability of local government financing platforms.

The global financial system has improved but fragilities remain

Underpinned by the improving economic climate, ample liquidity and expanding risk appetite, global financial market performance turned favorable in 2010. At the same time, global equity prices rose broadly, while the capital structures of banks improved. Reflecting this, the IMF revised downward its forecast for global asset writedowns and loan provisions to US$2.2 trillion.[5]

Nevertheless, the global financial system remained fragile. The two-track global recovery continued to pose considerable challenges to policy making.[6] In advanced economies, the slowdown in economic growth alongside their fiscal imbalances represented lingering concerns about sovereign debt sustainability. The credit default swap (CDS) spreads for sovereign bonds elevated markedly in euro area peripheral economies (Chart 1.5). This, coupled with the intensified interaction between sovereign and banking sector risks, led to renewed pressures in funding markets in the euro area. In contrast, massive capital inflows, spurred by stronger economic growth in emerging economies and easy monetary policies in advanced economies,

Chart 1.5 Sovereign CDS spreads in major advanced economies



Note: Figures are based on 5-year credit default swap.
Source: Bloomberg.

[5] IMF (2010), "Global Financial Stability Report," October.
[6] Advanced economies grew slowly, while emerging economies grew rapidly.

have raised concerns about asset price bubbles in the former. Moreover, potential vulnerabilities to sudden reversals of capital inflows would pose policy challenges for emerging economies.

In response to those problems facing financial systems across regions, the IMF suggests[7] that advanced economies should launch structural reforms, including: (1) advanced economies with higher foreign debts should further combine credible medium-term fiscal consolidation plans with better public debt management; and (2) an ongoing financial supervisory reform agenda to overhaul financial systems is required. Meanwhile, emerging economies also need to rely on macroprudential polices (such as more stringent loan-to-value ratios and limits on the combination of funding sources) to reduce overheating and financial imbalance risks, in addition to the implementation of prudent macroeconomic policies. Capital flow management measures could be resorted to when the above-mentioned approaches fail to effectively mitigate risks.

International financial regulatory reforms have made great progress

International financial regulatory reforms have recently made striking progress. In December 2010, the Basel Committee on Banking Supervision (BCBS) announced a comprehensive framework presenting the details of global regulatory standards on bank capital adequacy and liquidity (also known as Basel III). The framework set up standards covering both microprudential and macroprudential elements. The microprudential regulations, aimed at enhancing the resilience of individual banks, include: (1) better capital quality and higher capital levels; (2) the introduction of a leverage ratio; and (3) the formulation of two global minimum liquidity standards. The macroprudential policies, aimed at ensuring the soundness of the financial system as a whole, could entail: (1) creating capital buffers; and (2) imposing a capital surcharge or establishing stricter limits on large exposures to systemic risks. Basel III, which will adopt the transitional arrangements for implementing standards from 1 January 2013, poses significant challenges for financial regulators and the banking industry.

In addition, some initiatives are still under deliberation or discussion. These include: (1) guidance for identifying systemically important financial institutions and measuring their systemic risk contributions; (2) macroprudential policies to mitigate systemic risks; and (3) establishment of an effective cross-border bank resolution mechanism. Nevertheless, the European economies and the US have successively set up an independent body responsible for the oversight of systemic risks in hope of better monitoring these risks. The foregoing

[7] IMF (2011), "Global Financial Stability Report," April.

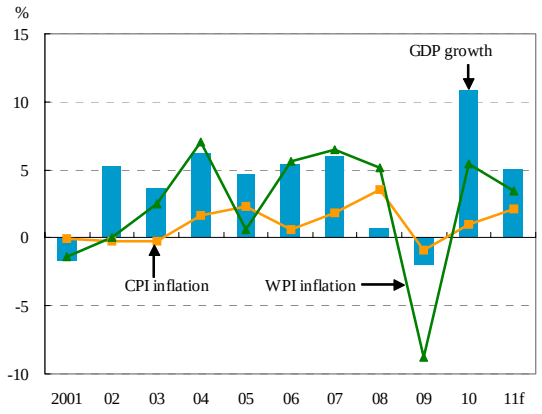
trend of international financial regulatory reforms warrants close attention.

Domestic economy expanded at an accelerated pace alongside stable prices, and external debt servicing ability remained robust

The domestic economy grew at an accelerated pace in the first half of 2010, and then expanded moderately in the second half of 2010 owing to the drag from slowing global growth momentum and a higher base compared to a year earlier. Based on the Directorate-General of Budget, Accounting and Statistics of the Executive Yuan (DGBAS) statistics, annual economic growth sustained a high level of 10.88% in 2010, the peak annual rate recorded since 1987. Looking ahead, exports are expected to expand steadily alongside a strong private consumption in 2011. However, affected by the influence of a much higher base, the DGBAS forecasts that the output growth rate may decline to 5.06% for the year as a whole[8] (Chart 1.6).

The wholesale price index (WPI) inflation rate visibly rose in the first half of 2010 as a result of rising international prices for agricultural and industrial raw materials as well as a lower base compared with the previous year. The WPI inflation rate tracked downward from June onwards and registered an annual average rate of 5.46% for the year as a whole. In parallel, the CPI inflation rate moved within a range of 0.2% to 2.4%, driven by an upsurge in retail prices owing to increasing costs. The annual headline (CPI) and core inflation rates in 2010 were 0.96% and 0.44%, respectively, reflecting stable domestic prices. Looking forward, fueled by still-strong global demand, supply shortages, and ample liquidity in financial markets, the prices of crude oil and agricultural and industrial raw materials are expected to keep surging. This will further push domestic wholesale and retail prices up. The DGBAS projects the annual WPI and CPI inflation rates in 2011 to register 3.42% and 2.10%,[9] respectively (Chart 1.6).

Chart 1.6 Economic growth rate and inflation rate in Taiwan



Note: Figure for 2011 is DGBAS forecast.
Source: DGBAS.

The current account surplus persisted in 2010, while foreign exchange reserves accumulated at record rates over the same period and

[8] The figures are based on a DGBAS press release on 19 May 2011.
[9] See Note 8.

further climbed to US$399.5 billion at the end of April 2011. This implies that Taiwan's foreign exchange reserves have a robust capacity to meet payment obligations for imports and to service short-term external debt. Moreover, outstanding external debt relative to annual GDP and annual exports registered 23.43% and 36.70% at the end of 2010, respectively, indicating that there were no signs of servicing pressure on external debt. Fiscal deficits turned to contract throughout the year, while outstanding government debt stayed elevated.

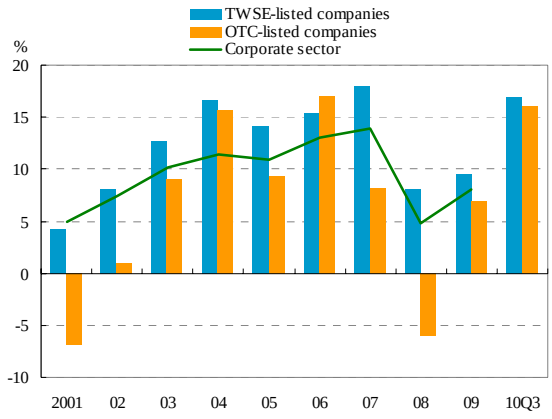
Non-financial sectors

Corporate sector

In the first three quarters of 2010, the profitability for Taiwan Stock Exchange (TWSE) listed and over-the-counter (OTC) listed companies rebounded (Chart 1.7), thanks to the sustained recovery in the global economy. The leverage ratio increased somewhat due to rising liabilities caused by an expansion in production capacity, while the current ratio showed a decline. Nevertheless, interest servicing capacity enhanced as a result of improving profitability, while credit quality remained sound, underpinned by the falling NPL ratio for corporate loans.

Taiwan's government adopted several special financing measures, expiring at the end of 2010, in support of corporations during the global financial crisis. However, the exit of the aforementioned measures, together with upward market interest rates, may once more pose financing and interest repayment pressures on those weaker or less competitive corporations. Meanwhile, the recent price hikes on imported raw materials, together with the impact of the Japan's earthquake and the ensued nuclear plant crisis in March 2011 on Taiwan's electronics and automobile industry supply chains, warrant close attention and timely responses.

Chart 1.7 Return on equity in corporate sector



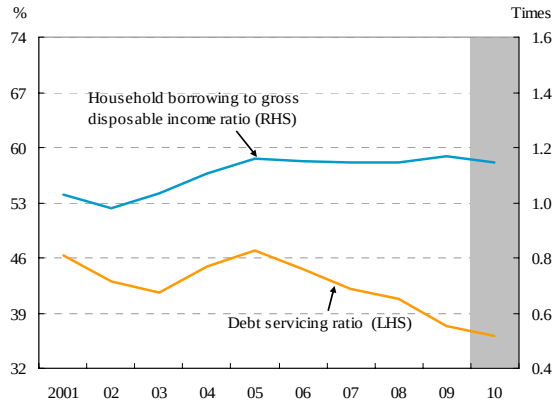
Notes: 1. Return on equity = net income before interest and tax / average equity.
2. The data are on an annual basis as 2010 Q3 figures are annualized results.
3. Latest figure for the corporate sector is as of the end of 2009, while those for TWSE-listed and OTC-listed companies are as of the end of 2010 Q3.
Sources: JCIC and TEJ.

Household sector

Household borrowing rebounded in 2010, backstopped by the bounce in the stock market and the buoyant real estate market. However, the ratio of household borrowing to GDP dropped to 82.17% at the end of the year, mainly due to a much faster pace in GDP growth. Thanks to a rise in gross disposable income, the ratio of household borrowing to gross disposable income declined to 1.15 over the same period, representing some alleviation of the household debt burden. Consequently, the ratio of household borrowing service and principal payments to gross disposal income also declined to 36.12%. Household short-term debt servicing capacity thus improved (Chart 1.8).

The NPL ratio of household borrowings from banks kept sliding and credit quality remained sound. The decreasing domestic unemployment rate, along with the fact that regular earnings turned to positive growth, helped to strengthen household debt servicing capacity. However, rising lending rates may intensify debt repayment pressures on some highly leveraged households.

Chart 1.8 Household debt servicing ratio

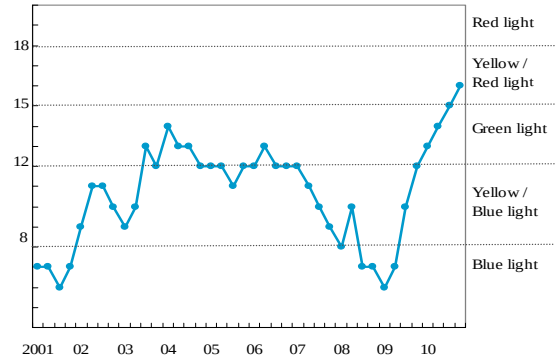


Notes: 1. Gross disposable income in shadow area is CBC estimate.
2. Debt servicing ratio = borrowing service and principal payment / gross disposable income.
Sources: CBC, JCIC and DGBAS.

Real estate market

Real estate prices kept soaring alongside a buoyant property market, inspired by hot money inflows and the effects of signing the Cross-Strait Economic Cooperation Framework Agreement (ECFA). Taiwan's real estate cycle indicators showed a yellow/red light, symbolic of a "moderately heated" market, in 2010 Q4 (Chart 1.9). This reveals that the property market boom continued throughout the year 2010. Meanwhile, the number of vacant residential properties remained high, while the real estate industry acted more aggressively with regard to introducing new construction projects. If those

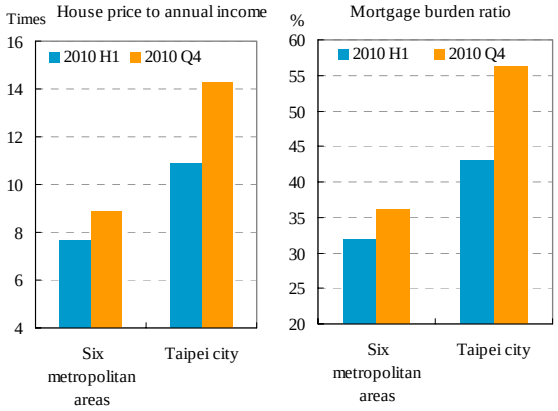
Chart 1.9 Real estate cycle indicators



Sources: "Quarterly Report of Taiwan Real Estate Cycle Indicators," Architecture and Building Research Institute, Ministry of the Interior (MOI); Taiwan Real Estate Research Center.

projects are successively completed, it may further push the supply of new houses up. However, from February 2011 onwards, investment sentiment in the real estate market shifted towards a more conservative stance, while buyer bargaining power saw an increase in specific areas where construction projects have risen most notably. The reasons behind this were that the CBC and the Financial Supervisory Commission (FSC) urged financial institutions to enhance their risk management associated with real estate-related credit extension and the Ministry of Finance (MOF) planned to impose the Specifically Selected Goods and Services Tax.[10]

Chart 1.10 House price to income ratio and mortgage burden ratio



Notes: 1. Mortgage burden ratio = monthly mortgage expenditure / household monthly income.
2. Six metropolitan areas refer to Taipei City, New Taipei City, Taoyuan and Hsinchu City and County, Taichung City, Tainan City, and Kaohsiung City.
Source: "Taiwan Housing Demand Survey Report," MOI.

As a consequence of surging housing prices, the mortgage burden for homebuyers became heavier. The average house price to income ratio and the average mortgage burden ratio in six metropolitan areas both struck new highs, registering 8.9 and 36.0%, respectively, in 2010 Q4. This was particularly apparent in Taipei City, which saw the heaviest mortgage burden and registered a ratio of housing price to income and mortgage burden of 14.3 and 56.2%, respectively (Chart 1.10). Real estate-related loans grew steadily through the whole of 2010, but the annual growth rate turned to moderate from the third quarter of the year onwards. Meanwhile, mortgage interest rates trended upward in the wake of the CBC's rate rises.

Financial sectors

Financial market

Trading volume rebounded slightly in the bills and bond markets, while yield spreads ranged between 59 and 105 basis points

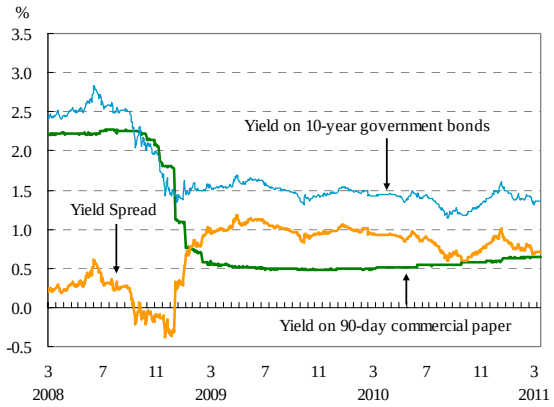
Trading volumes of the bills and the bond markets in 2010 were higher than a year earlier. In the bills market, the outstanding amount of bills issuance in the primary market as well as the trading volume in secondary bills markets both rebounded. This was mainly bolstered by the

[10] The Specifically Selected Goods and Services Tax Act was promulgated on 4 May 2011 and took effect on 1 June 2011.

short-term funding demands of government and corporations as well as banks' financing needs. As for the bond market, the trading volume for the whole of 2010 saw an increase, while the outright transactions turned to contract from September onwards owing to the expectation of rising market rates and the lack of willingness of bond dealers to trade by the end of the year. As a result, the monthly turnover ratio hit a five-year low in December 2010 and continued to remain at a low level in 2011 Q1.

Regarding market interest rates, short-term and long-term rates stayed flat in the first half of 2010. In the second half of 2010, short-term interest rates escalated steadily following gradual rises in the CBC's policy rates. Meanwhile, government bond yields trended downward in 2010 Q3 and then rose again in November, primarily because of a dramatic rise in yields on US government bonds and the introduction of the FSC's measures to tighten restrictions on foreign investment in government bonds. Reflecting this, yield spreads fluctuated between 59 and 105 basis points throughout the year as a whole. In 2011 Q1, yield spreads contracted steadily, even recording a low of 67 basis points, as a result of increasing short-term rates and declining government bond yields (Chart 1.11).

Chart 1.11 Yield spread

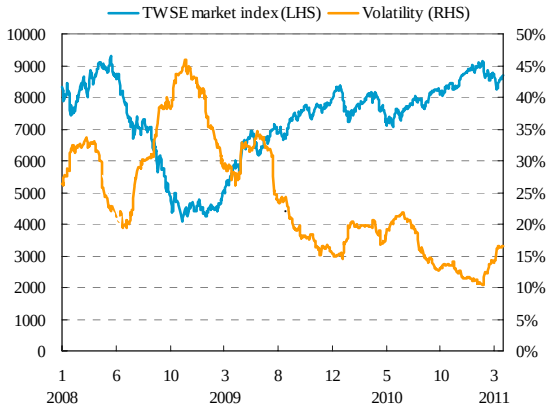


Note: Yield spread refers to yield on 10-year government bonds minus yield on 90-day commercial paper.
Source: Bloomberg.

Stock indices fell somewhat after recording new highs, while volatility and turnover ratios declined

Underpinned by the confluence of the continued buoyancy in major global stock markets and the emerging effects of signing the ECFA, the Taiwan Stock Exchange Weighted Index (TAIEX) kept climbing in 2010. However, it experienced a temperate drop in the second quarter of the year due to spillovers from the European sovereign debt crisis and the massive repatriation of foreign capital. The TAIEX climbed to its highest

Chart 1.12 TWSE market index and volatility



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

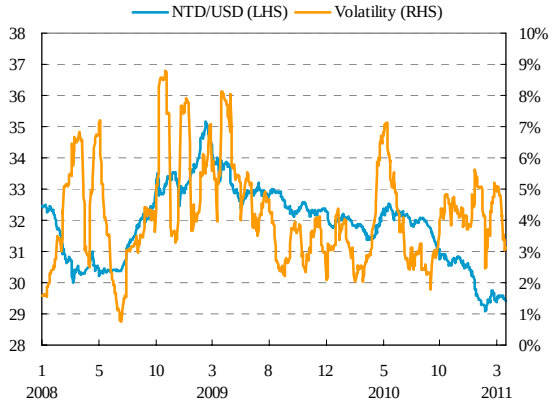
point of 8,973 at the end of December, an increase of 27% compared to the low of June. In 2011 Q1, the TAIEX reached its highest point of 9,145 before the Chinese Lunar New Year holidays, and then dropped to 8,683 at the end of March owing to global political turmoil and rising oil prices. Volatility in the TWSE market was remarkable in the first half of 2010 but generally subdued in the following months of the year. However, market volatility resurged in 2011 Q1 amid a decline in the local stock market. Nevertheless, the risks involved in stock investments were relatively low compared to those during the global financial crisis of 2008 and 2009 (Chart 1.12).

The average monthly trading value on the TWSE market contracted slightly in 2010, but activity in the stock market remained buoyant. Moreover, its turnover ratio in terms of trading value shifted downward and hit a 5-year low due to a sharp increase in total market value. Afterward, affected by the local stock market slump and the Chinese Lunar New Year holidays, the monthly trading value and turnover ratio in the TWSE market continued their downward direction in January and February 2011, while the numbers reflected a rebound in March.

The NT dollar exchange rate appreciated notably but remained relatively stable compared to other currencies

Except for depreciating in mid-2010, on the back of increasing hedging needs for US dollars caused by the European sovereign debt crisis and the military confrontations on the Korean peninsula, the NT dollar exchange rate against the US dollar showed an appreciating trend for the year as a whole. Above all, the NT dollar exchange rate experienced strong appreciation in the second half of 2010, arising from the continued capital inflows, and stood at 30.368 against the US dollar at the end of December 2010, appreciating by 5.47% compared to the end of 2009. The NT dollar exchange rate kept appreciating in January 2011 but began to depreciate in February. This was mainly driven by lingering concerns about the political turmoil in the Middle East and North Africa, and the repatriation of foreign capital from emerging economies due to heightened consideration of the likelihood of economic downturn

Chart 1.13 Movements of NT dollar exchange rate against US dollar



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

following tighter monetary policies in those economies. However, international capital flowed back to emerging economies in the aftermath of Japan's earthquake. As a result, the NT dollar exchange rate appreciated in March, reaching 29.418 against the US dollar at the end of that month (Chart 1.13).

The fluctuation of the NT dollar exchange rate increased slightly in May 2010 but followed a more moderate path in the second half of the year. The annual average volatility stood at 3.74% for the year as a whole. In 2011 Q1, the average volatility in the NT dollar exchange rate against the US dollar increased further to 4.42%, though the volatility was relatively stable (Chart 1.13). Still, the NT dollar exchange rate was relatively stable compared to the volatility in the exchange rates of other major currencies (such as the Japanese yen) against the US dollar.

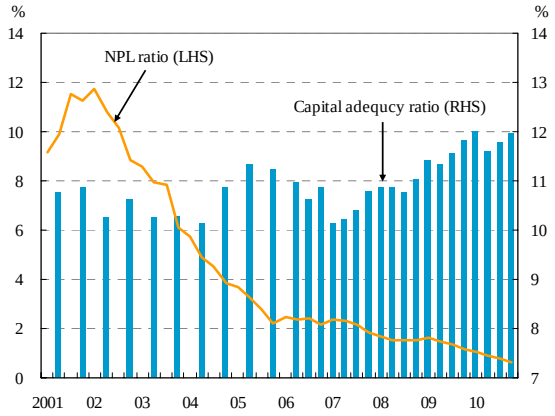
Financial institutions

Domestic banks

In 2010, the growth in loans increased notably, and asset quality remained satisfactory (Chart 1.14). However, the concentration of credit exposure to real estate loans continued elevating, while the proportion of corporate loans extended by domestic banks for electronics, electric machinery and machinery-related industries also trended upward. The estimated Value at Risk (VaR) for market risk exposures of domestic banks had limited influence on their capital adequacy. Liquidity risk was moderate on the back of ample funds.

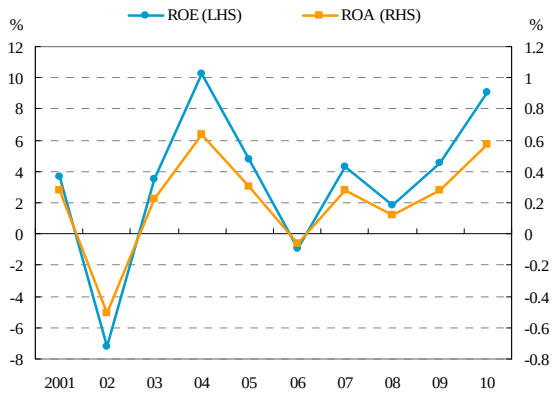
The profitability of domestic banks rose substantially in 2010, bolstered by the rebound of net interest income and the dramatic reduction in bad debt expenses. The average return on equity (ROE) and return on assets (ROA) elevated to 9.08% and 0.57%,

Chart 1.14 NPL and Capital adequacy ratios of domestic banks



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

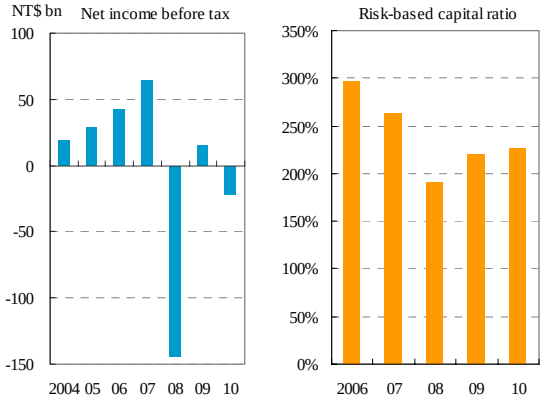
Chart 1.15 ROE & ROA of domestic banks



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

respectively (Chart 1.15). This, coupled with a persistent rise in average capital adequacy ratios (Chart 1.14), strengthened the capability of domestic banks to bear risks. Nevertheless, there are several uncertainties that could possibly undermine their future profitability, such as: (1) the amendment of the regulations related to setting aside additional provisions for normal credit assets; and (2) the third revision of Taiwan's Statements of Financial Accounting Standards (SFAS) No.34 "Financial Instruments: Recognition and Measurement."

Chart 1.16 Net income before tax and risk-based capital ratio of life insurance companies



Source: FSC.

Life insurance companies

The accumulated net loss before tax of life insurance companies stood at NT$ 21.8 billion in 2010, revealing a deterioration in operating performance. Nevertheless, thanks to the amendment of capital adequacy regulations, the average risk-based capital (RBC) ratio ascended to finish the year higher than the statutory minimum of 200% (Chart 1.16).

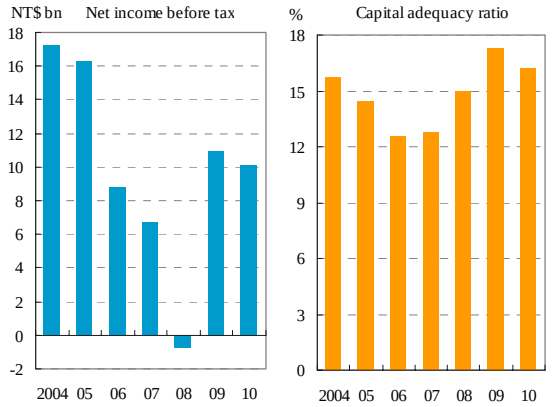
Benefiting from a rebound in domestic and overseas financial markets, the average return on investment of life insurance companies rose to 4.44% in 2010. The CBC continually raised policy rates from June 2010 onwards, contributing to alleviating the potential losses driven by negative interest rate spreads. However, the operating performance of life insurance companies still faced hardship as rapid movements of international hot money between global financial markets raised the volatility of global stock markets and foreign exchange markets. Furthermore, the FSC allowed insurance companies to: (1) invest in specific securities issued by the Mainland China's government and corporations as well as real estate in Mainland China; and (2) to raise their overseas investment positions under certain conditions. Against this backdrop, life insurance companies were required to enhance their risk control mechanisms thoroughly to mitigate investment risks.

Bills finance companies

In 2010, the total assets of bills finance companies resumed positive growth by virtue of the rebound of bonds and bills investment positions. Profitability contracted somewhat because

of the reduction of interest revenues on their holdings of bonds and bills. Credit quality remained satisfactory, while the average capital adequacy ratio descended notably due to the amendment of relevant regulations but remained above 12% for each firm (Chart 1.17). The ratio of major liabilities to net worth also went up slightly.

Chart 1.17 Net income before tax and capital adequacy ratios of bills finance companies



Source: CBC.

The liquidity risk of bills finance companies remained high as a maturity mismatch between assets and liabilities still persisted. The outstanding balance of guarantees also rose manifestly, upheld by increasing finance demand for corporate funds. In order to reduce the liquidity risk of bills finance companies as well as prevent them from taking excessive credit risks, the FSC successively amended related regulations aimed at reducing both the ceiling on the ratio of main liabilities to net worth and the ratio of outstanding guarantees and endorsements to net worth. In this context, all the bills finance companies met the required caps in terms of the FSC's criteria.

Financial infrastructure

The information systems in financial institutions and the payment systems in Taiwan faced potential computer system problems related to the country's "centenary bug" at the end of 2010. Fortunately, such problems were well addressed and the aforementioned systems continued to function normally, thanks to the strengthened supervision and appropriate responses from financial institutions. Moreover, a new domestic US dollar bills market was launched on 6 December 2010, which allowed domestic companies with US dollar demands for trade-related purposes to issue US dollar bills for funding. One major domestic bank, Mega Bank, coincided with the new scheme and activated its US dollar settlement system at the same time, which also provided US dollar interbank remittance services. It not only shortened the US dollar payment process, allowing for real-time interbank US dollar remittances with zero time lags, but also removed the additional fees charged by foreign correspondent banks during the remittance process.

There were several breakthroughs regarding financial regulations or supervisory measures during the year 2010, including: (1) the interim blanket guarantee for deposits was phased out

at the end of 2010 before resuming the limited deposit insurance coverage scheme on 1 January 2011; and (2) the financial services industry early harvest provisions of the ECFA were decided upon and became effective on 1 January 2011, following the signing of the ECFA in June 2010. These developments have important implications for improving the soundness of the financial system and promoting the development of the financial industry in the long run. Furthermore, the first-phase draft of the International Financial Reporting Standards (IFRS) 9 “Financial Instruments,” which is expected to have a visible impact on local banks, will become effective in 2013, while its second-phase draft is expected to be finalized in 2011 Q3. In response, early planning, assessment of the potential impacts and precautionary measures are warranted for Taiwan’s financial institutions.

II. International and domestic economic and financial conditions

2.1 International economic and financial conditions

The global recovery continued to accelerate in 2010, but at varying speeds across countries and regions. In emerging and developing economies, particularly in Asia, the economy grew strongly, but the macroeconomic risks of overheating were building. In advanced economies, the risk of a double-dip recession subsided, though recovery proceeded moderately and unemployment remained high. In the euro area periphery, affected by the combined interactions of weak sovereign balance sheets and financial pressures, economic growth was modest or even declined. Meanwhile, Mainland China experienced a rapidly accelerating economy. The implementation of a tightening monetary policy and macroprudential policies to tame the housing boom contributed to moderating excessive credit expansion and surging house prices, but inflationary pressures remained elevated.

Over the year 2010, the global financial system witnessed marked improvement, but financial stability was still not secured. In advanced economies, slow growth prospects and weak fiscal positions, together with sovereign-debt-crisis driven refinancing pressures in the euro area funding market, resulted in the financial system remaining vulnerable. At the same time, strong capital inflows to emerging economies raised concerns about rapid credit growth and asset price bubbles, contributing to a build up of macrofinancial risks.

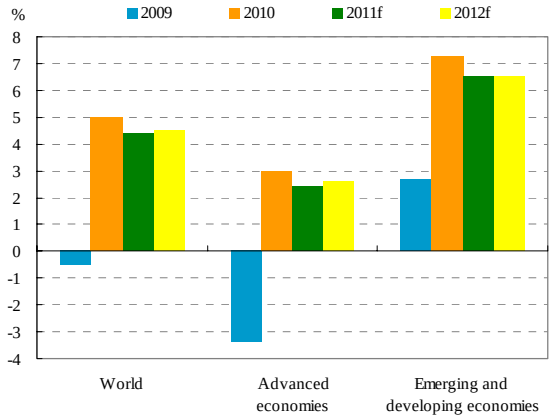
Global recovery proceeded at a solid pace, but speeds varied across regions

The global economic recovery solidified in 2010. A rise in inventory rebuilding and fixed investment, boosted by the buoyant activity in manufacturing and world trade transactions, fueled the strong growth in output in the first half of 2010. From the second half of 2010 onwards, however, the buildup of downside risks in advanced economies, driven by waning inventory rebuilding along with setbacks in resolving ongoing sovereign debt turmoil, the global economy moved to a more moderate rate of growth. International Monetary Fund (IMF) statistics stated that the global economic growth rate rebounded substantially to 5.0% through 2010 from -0.5% a year earlier.[11] Looking forward, although political uncertainty in Northern Africa and the Middle East has heightened fears of oil supply hazards, it is offset by

[11] Except as otherwise noted, all IMF estimates and forecast data and information related to economic growth rates and CPI annual growth cited in this chapter relate to those published in the World Economic Outlook (WEO), April 2011.

improving conditions in global financial markets, continued robust economic activity in emerging and developing economies, as well as returning confidence in the output of advanced economies. As a consequence, the global economy is forecast to experience an ongoing growth rate of 4.4% and 4.5% in 2011 and 2012, respectively (Chart 2.1).

Chart 2.1 Global economic growth rates



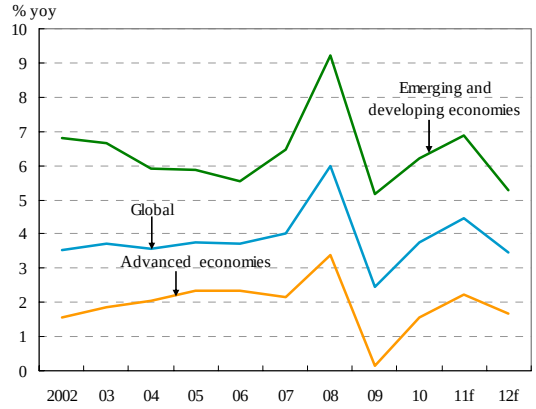
Note: Figures for 2011 and 2012 are IMF estimates.
Source: IMF, "World Economic Outlook," April 2011.

The recovery remained unbalanced across regions. Thanks to continued increases in domestic demand and strong world trade transactions, emerging and developing economies grew at a robust pace. The IMF estimated that output growth expanded by 7.3% in 2010, particularly in emerging Asia, which has continued to outpace other regions with an economic growth rate of 9.5%. Looking ahead, output growth in emerging and developing economies is expected settle down to a more modest 6.5% in 2011 and remain broadly unchanged in 2012 (Chart 2.1).

Recovery continued in advanced economies, but proceeded at a tepid pace. Supported by the recently implemented fiscal stimulus measures to spur growth momentum, together with a stronger-than-expected rebound in private consumption expenditure, output in the United States and Japan witnessed a favorable improvement after reaching a trough and gradually began to recover. The full impact of the earthquake in March 2011 on Japan's macroeconomy is projected to be limited, but uncertainty remains elevated.[12] Growth in the periphery of the euro area has been subdued and even declined as a result of fiscal imbalances and still-moribund real estate markets. Fortunately, this adverse impact was mainly offset by an expansion in output in Germany, boosted by stronger domestic demand. The IMF estimates that real GDP in advanced economies rebounded by 3.0% in 2010 from -3.4% a year earlier, still well below the growth rate of 7.3% in emerging and developing economies, and will register a moderate growth rate of 2.4% and 2.6% in 2011 and 2012, respectively (Chart 2.1).

[12] Regarding potential economic impacts on Japan, the IMF projects Japan's output to decrease by 1.4% in 2011, a downward revision of 0.2 percentage points compared to the October 2010 WEO, and then pick up to 2.1% in 2012, a 0.3 percentage point upward revision. In addition, the Global Insight preliminary estimates suggest that the adverse impact on global growth in 2011 will be in the 0.1-0.2% range, with a correspondingly small rebound in growth in 2012. It also projects that Japanese real GDP growth could drop by 0.05% in 2011, and then rebound to 3.57% in 2012, boosted by the subsequent reconstruction effort.

Chart 2.2 Global headline inflation rates



Note: Figures for 2011 and 2012 are IMF estimates.
Source: IMF, "World Economic Outlook," April 2011.

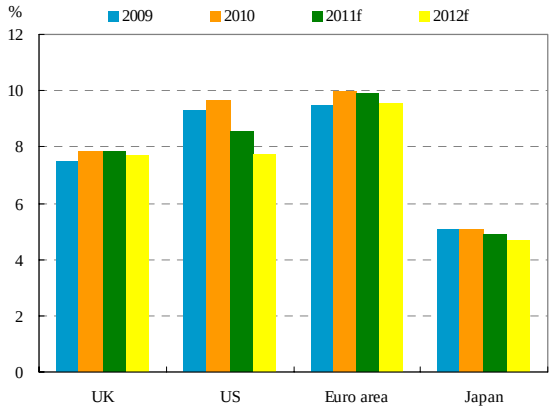
As for consumer prices, from early 2010 onwards, in response to robust global demand, sluggishness in the supply of selected commodities, and the depreciation of the US dollar, prices for both oil and raw materials surged. This, together with adverse weather conditions, continued natural disasters and geopolitical uncertainty, spurred hikes in crop and energy prices. The inflationary pressure is expected to continue an upward trend in 2011 before becoming more subdued in 2012. In some emerging and developing economies, overheating pressures are building in response to soaring food prices, rapid credit growth and rising asset prices. The IMF estimates that headline inflation rates (consumer price index, CPI) in emerging and developing economies increased to 6.2% in 2010 from 5.2% one year earlier. With surging inflationary pressures, the CPI inflation rate is predicted to keep elevating to 6.9% in 2011, and then exhibit a downward trend to 5.3% in 2012. In advanced economies, inflationary pressures were broadly contained as economic growth moderated and inflation expectations were well anchored. Headline inflation is estimated to rise slightly to 1.6% in 2010 and projected to remain positive at 2.2 % in 2011, before settling at about 1.7% in 2012 (Chart 2.2).

In 2010, unemployment rates remained persistently high in many advanced economies. Among major advanced economies, the US saw a peak of 9.6% during the year but by April 2011 it had fallen to 9.0%.[13] Nevertheless, the labor market remains slack. In the UK, the unemployment rate continued to rise and stood at 7.88% in 2010 owing to a reduction of jobs in the public sector. The average unemployment rate in the euro area registered 9.98% for 2010. The Netherlands and Austria benefited from stronger labor markets, while unemployment rates moved upward in Portugal, Italy, Ireland, Greece and Spain. Among those economies, Spain suffered from the highest unemployment rate of 20.1%. In Japan, the unemployment rate peaked in June 2010 and then declined moderately, bolstered by the ongoing economic recovery. The IMF projects that the unemployment rate in advanced economies would decrease somewhat in 2011 and 2012 (Chart 2.3).

[13] The figure is based on a U.S. Bureau of Labor Statistics (BLS) news release on 6 May 2011.

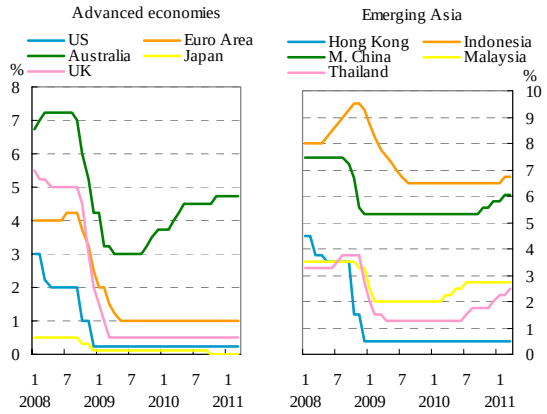
Regarding monetary policy, most advanced economies continued to adopt easy monetary policies in 2010 [14] in an effort to boost domestic recovery, given well-anchored inflation expectations and soaring unemployment rates. The Board of Governors of the Federal Reserve System (FED), the Bank of England (BOE) and the European Central bank (ECB) all kept their policy rates unchanged.[15] Meanwhile, the Bank of Japan (BOJ) cut the policy rate and brought back its zero interest rate policy in October 2010[16] in view of continued deflation, an appreciating yen and sluggish stock market. In contrast, the Reserve Bank of Australia successively raised the cash rate target four times, each by 25 basis points, to 4.75% from March to November 2010 due to concerns about mounting inflationary pressures. In emerging Asian economies, some central banks (for example, Mainland China, Malaysia and Thailand) subsequently hiked policy rates in 2010 as a result of sustained economic growth, accelerating inflation and excessive credit expansion, while others such as Hong Kong and Indonesia kept policy rates unchanged. In the beginning of 2011, Mainland China and Thailand saw continued hikes in policy rates. Additionally, the Bank of Indonesia and the ECB also raised policy rates by 25 basis points in February and April of the year, respectively, in the face of rising inflationary pressures (Chart 2.4).

Chart 2.3 Unemployment rates in major economies



Note: Figures for 2011and 2012 are IMF estimates.
Source: IMF, "World Economic Outlook," April 2011.

Chart 2.4 Policy rates in selected economies

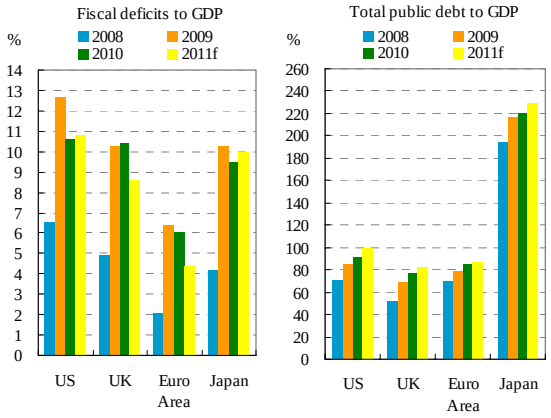


Notes: 1. Advanced economies: figure for Australia is based on cash rate target; for the US, federal funds rate target; for the UK, official bank rate; for the euro area, the main refinancing operations fixed rate; and for Japan, uncollateralized overnight call rate.
2. Emerging Asia: figure for Hong Kong is based on discount window base rate; for Mainland China, financial institution one year lending base rate; for Thailand, 1-day repurchase rate; for Indonesia, Bank Indonesia rate; for Malaysia, overnight policy rate.
3. Figures are end-March 2011 data.
Source: Central banks' websites.

[14] For instance, the Federal Open Market Committee (FOMC) unleashed its second round of quantitative easing (QE2) in November 2010 and planned to purchase a further US$600 billion of longer-term Treasury securities by the end of June 2011.
[15] As of March 2011, the FED maintained the target range for the federal funds rate at 0 to 0.25%, while the BOE policy rate remained at a historical low of 0.5% from March 2009 onwards.
[16] The BOJ cut the uncollateralized overnight call rate from 0.1% to be within the range of 0 to 0.1% in October 2010.

As for fiscal policy, fiscal deficits in advanced economies with fragile fiscal positions improved notably in 2010 from a year earlier. This improvement was mainly backstopped by increasing fiscal revenues due to economic recovery, together with a reduction in fiscal expenditures as financial supports were being phased out following the retrenchment of government spending. Nevertheless, the IMF foresees that the pace of these fiscal consolidations will moderate and proceed at varying speeds across countries in 2011. With the unwinding of new fiscal stimulus packages, the US and Japan, which also encountered reconstruction problems after the earthquake, both delayed their pace of fiscal adjustments. By contrast, major European economies tended to remain on course regarding the retrenchment of their fiscal deficits. For example, the fiscal stimulus measures in Germany and France were subsequently phased out, while Spain and the UK fulfilled sharper cuts in their government spending. Similarly, sizable fiscal adjustment plans are also under way in Greece, Ireland and Portugal (Chart 2.5). In 2009, fiscal positions in major emerging economies (for example, Brazil, Mainland China and India) became weaker due to fiscal expansion. Nevertheless, the IMF estimates that the overall fiscal balance in emerging economies is anticipated to improve with a broadly stable government debt level, mainly spurred by higher raw material prices and delays in capital expenditure projects in some emerging economies (such as Russia, Saudi Arabia and Turkey).

Chart 2.5 Fiscal deficits and public debt in major economies



Note: Figures for 2011 are IMF estimates.
Source: IMF.

According to recent papers on the development of the global economy from the IMF, the Organisation for Economic Co-operation and Development (OECD) and Asian Development Bank (ADB),[17] uncertainty continues to cloud the global growth outlook, including: (1) sovereign debt crisis in the euro area periphery may spread to the core European economies; (2) the absence of progress in formulating medium-term fiscal consolidation plans in key advanced economies; (3) soaring raw material prices exert upward pressure on inflation; (4) favorable trade conditions and strong capital inflows in emerging economies raise concerns about overheating the economy, mounting inflation and asset price bubbles; and (5) global imbalances, rising trade protectionism, and renewed turbulence in foreign exchange markets

[17] IMF, "World Economic Outlook," October 2010 and April 2011; IMF, "World Economic Outlook Update," January 2011; OECD, "Economic Outlook," Volume 2010/2, November 2010; ADB, "Asia Economic Monitor," December 2010.

stemming from government interventions.

In order to ensure that the global recovery is moving on a sustainable path, the IMF offered the following recommendations to address global imbalances:

- Advanced economies should: (1) resume credit supply by speeding up the restructuring of their financial systems; (2) implement well-specified fiscal consolidation plans; (3) overhaul financial regulations and financial supervisory regimes; and (4) enhance the potential for output growth, so as to restore internal balances.

- Emerging economies should: (1) initiate fiscal consolidations and policy rate rises; and (2) adopt macroprudential instruments and incorporate capital flow management measures where necessary, so as to restore external balances.

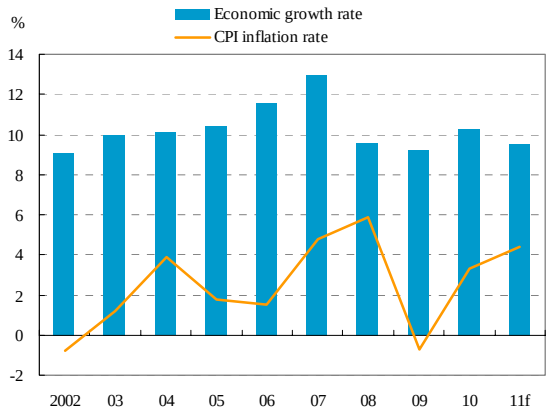
In addition, the OECD also suggests that: (1) macroeconomic policies should be met with fiscal consolidations, the implementation of accommodative policy rates should be adjusted with the pace of economic recovery, and financial reform should be ongoing; (2) structural reform is needed to heighten the efficiency of fiscal consolidations, to improve labor markets, and to reduce the impact of global imbalances on savings and investments.

Mainland China's economic growth accelerated and inflationary pressure built up, but credit expansion slowed down

Mainland China's economic growth accelerated and pressure on consumer prices built up

Underpinned by a series of economic stimulus measures, Mainland China's private consumption and investment continuously increased. Economic growth increased to 11.9% in 2010 Q1 from 11.4% in 2009 Q4. In response to rapid credit expansion and an overheated housing market, the China State Council adjusted macro-control measures and the People's Bank of China (PBC) tightened money supply. Together with contracted exports that resulted from a slowdown in the global economic recovery, Mainland China's economic growth started to cool down in the

Chart 2.6 Economic growth rate and CPI inflation rate in Mainland China



Note: Figures for 2011 are Global Insight projection.
Sources: National Bureau of Statistics of China, Thomson DataStream and Global Insight.

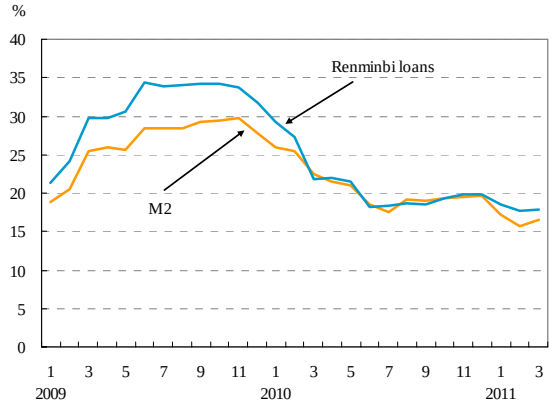
second quarter and registered rates of 10.3% and 9.6% in Q2 and Q3 2010, respectively. Nevertheless, economic growth for the whole of 2010 still reached 10.3%. Global Insight projects Mainland China's economic growth rate through 2011 to slightly decrease to 9.3%[18] (Chart 2.6).

Regarding consumer prices, the CPI inflation rate showed an upward trend in 2010 due to increased consumption demand and rising food prices. In May, the CPI inflation rate reached 3.1%, exceeding the official annual target of 3% for the first time. Subsequently, the flood that hit major agricultural regions pushed up grain prices further and made the China State Council take seven measures in August to stabilize the prices of agricultural products. However, the CPI inflation rate still surged to an annual peak of 5.1% in November, a new high in 28 months. To contain price inflation, the China State Council further announced sixteen measures in November to stabilize prices and the China Banking Regulatory Commission (CBRC) asked commercial banks to prevent loans from being diverted to bid up agricultural products via hoarding and speculation. The CPI inflation rate dramatically increased from -0.7% in 2009 to 3.3% in 2010 and reached a new high of 5.4% in March 2011. Global Insight projects Mainland China's inflation rate to register 4.5%[19] in 2011, indicating a buildup in inflationary pressure (Chart 2.6).

Monetary policy tightened, and bank credit and property price growth slowed

In 2009, due to extremely easy monetary policy, Mainland China's bank credit boomed as the annual growth rates of renminbi loans and M2 all reached historical highs of 34.4% and 29.7%, respectively. As a large amount of newly granted loan funds poured into the property market, the annual growth rate of building sales prices in Mainland China's 70 medium-large cities reached a five-year high of 12.8% in April 2010, suggesting an overheating property market. In order to prevent a property bubble and alleviate inflationary pressure, the PBC substantially contracted market liquidity by raising the reserve requirement ratio (RRR) for

Chart 2.7 Annual growth rates of M2 and renminbi loans in Mainland China

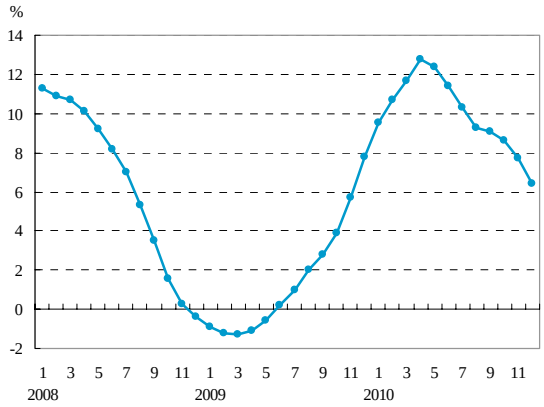


Source: PBC.

[18] Global Insight Estimate in April 2011.
[19] See Note 18.

depository financial institutions six times by a total of three percentage points, raising 1-year renminbi benchmark deposit and lending rates of financial institutions two times to 2.75% and 5.81%, respectively, and conducting open market operations several times. Other official institutions, including the China State Council, successively implemented measures to curb property price rises (Table 2.1). The growth of bank credit and property prices therefore slowed down, and in December the annual growth rates of renminbi loans and M2 decreased to 19.9% and 19.7%, respectively, and the annual growth rate of building sales prices in 70 medium-large cities settled down to 6.4% (Chart 2.7 & Chart 2.8).

Chart 2.8 Annual growth rates of building sales prices in 70 medium-large cities of Mainland China



Note: From 2011 onwards, the National Bureau of Statistics of China stopped publishing a national total sales price index of building in 70 medium-large cites.
Source: National Bureau of Statistics of China.

Starting 2011, in response to increased inflationary pressure, the PBC continuously tightened the money supply by raising the RRR rate and the benchmark deposit and lending rates.[20] The General Office of the China State Council further took measures to curb property prices (Table 2.1). Consequently, the annual growth rates of renminbi loans and M2 decreased to 17.9% and 16.6% (Chart 2.7), and the number of cities with inflated building sales prices also gradually decreased.[21] However, building price adjustment may weigh on the real estate industry and the loan quality of banks, and thus warrants close attention.

Meanwhile, according to Mainland China's economic stimulus plan that was rolled out during the financial crisis, fixed capital formation, which was the key engine of economic growth, was attributed to enormous infrastructure investments from all levels of government. Local governments, facing fiscal constraints and legal restrictions on bank borrowing and bond issuance, established local government financing platforms (LGFPs)[22] to fund investments. Some banks relaxed lending terms for LGFPs for their implicit local

[20] During January to April 2011, the PBC again raised the RRR rate by a total of 1.5 percentage points and 1-year deposit and loan rates to 3.25% and 6.31%, respectively.

[21] Starting 2011, the National Bureau of Statistics of China stopped publishing the national total sales price index of building in 70 medium-large cites and only published a sales price index of building for individual cities. In Q1 2011, the building prices of most medium-large cities kept increasing but the number of cities with inflated building prices gradually decreased. In January 2011, more than 80% of medium-large cities registered inflated building prices, but the proportion decreased to 70% and 60% in February and March, respectively.

[22] The local government financing platforms are independent legal entities set up by local governments via financial grants, injection of land or shares.

government guarantee.[23] The number and borrowing scale of LGFPs therefore have grown rapidly in the last two years, which has raised doubts about the fiscal health of local governments and the debt servicing capacity of LGFPs. Therefore, Mainland China's official authorities began to implement a series of measures in order to strengthen the management of LGFPs starting mid-2010 so as to decrease fiscal risk and strengthen the health of banks.

Table 2.1 Measures adopted by Mainland China to curb property prices in 2010 and 2011 Q1

Date	Announced by	Measures
2010.1.7	The General Office of the State Council	The down payment ratio for second-time homebuyers should not be less than 40%.
2010.4.17	The State Council	1. The down payment ratio for first-time homebuyers should not be less than 30%. 2. The down payment ratio for second-time homebuyers should not be less than 50% and the lending rate is not allowed to be less than 1.1 times the PBC benchmark lending rate. 3. Banks in areas with excessively rising house prices could suspend mortgage lending to third-time homebuyers. 4. Banks could suspend mortgage lending to non-resident citizens who fail to offer certificates which evidence payment of taxes or social insurance for one year or more.
2010.5.25	The Ministry of Finance of Mainland China	1. Strengthen the collection of land value appreciation tax. 2. Raise pre-levy rate of land value appreciation tax. 3. The assessment-based levy rate of land value appreciation tax should not be lower than 5%, and forbid tax authorities taking assessment as major means for collection of land value appreciation tax.
2010.9.29	The People's Bank of China (PBC) The China Banking Regulatory Commission (CBRC)	1. Suspend mortgage lending to third-time homebuyers. 2. Suspend mortgage lending to non-resident citizens who fail to offer certificates which evidence payment of taxes or social insurance for one year or more. 3. Restate that the down payment ratio for first-time homebuyers should not be less than 30%, for second-time homebuyers should not be less than 50% and the lending rate should not be less than 1.1 times the PBC benchmark lending rate.
2010.9.29	The Ministry of Finance of Mainland China	Starting 1 October 2010, cancel the personal income tax exemption for home-sellers who purchase another house within one year.
2010.11.4	The Ministry of Housing and Urban-Rural Development of Mainland China The State Administration of Foreign Exchange	1. Offshore individuals are allowed to purchase only one residence to live in. 2. Offshore institutions that have branch or representative offices in Mainland China are only permitted to purchase properties for business use in cities where they are registered.
2011.1.26	The General Office of the State Council	1. Homeowners who sell homes within five years of acquisition will be charged full transaction taxes. 2. Raise minimum down payment ratio for second-time homebuyers to 60% and restate that the lending rate should not be less than 1.1 times the PBC benchmark lending rate. The branches of the PBC may raise the aforementioned ratio and

[23] Some local governments guaranteed the debts of LGFPs. If such debts are not self-liquidating, their insolvency may impair the fiscal health of local governments.

		floor rate according to local government policy. 3. Impose fines and withdraw land use rights from developers if they fail to obtain building construction licenses within two years. Real estate developers are not allowed to transfer underlying land or development items if their paid-in construction investments are less than 25% of the amount (excluding land price) of the project planned. 4. Cities with surging or high house prices and large cities, such as municipalities, should implement house purchase limit policies. Suspend selling houses to residents who already owned two or more houses, nonresidents who already owned one or more houses or nonresidents who fail to offer certificates which evidence payment of taxes or social insurance.

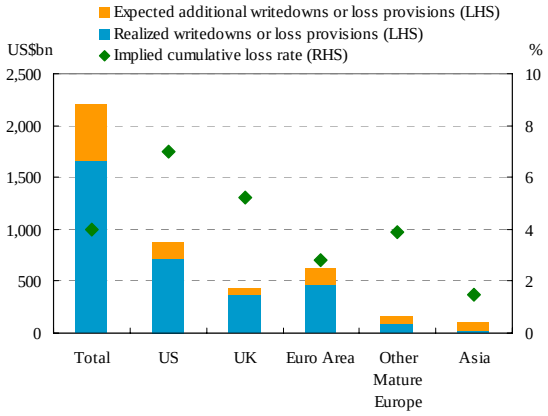
Source: CBC staff summary.

The global financial system has improved but fragilities remain

Driven by the improving economic climate, ample liquidity and greater risk appetite, global financial market performance turned favorable in 2010. At the same time, global equity prices rose broadly, while the capital levels of banks improved. In October 2010, the IMF revised downward its forecast for global asset writedowns and loan provisions to US$2.2 trillion (Chart 2.9). More than three-quarters of them had already been realized or recognized, leaving a residual amount of about US$550 billion.

The vulnerabilities threatening global financial stability subdued, but the global financial system remained fragile. The two-track global recovery[24] continued to pose considerable challenges to policy making. In advanced economies, the slowdown in economic growth alongside fiscal imbalances raised concerns about sovereign debt sustainability. The intensified interaction between sovereign and banking sector risks led to renewed pressures in funding markets in the euro area, and, as a result, induced a pronounced rise in funding costs to governments and banks. Meanwhile, the household debt burden followed an upward trend, while credit risks in the

Chart 2.9 Global bank writedowns or loss provisions



Notes: 1. Figure for realized writedowns or loss provisions are based on 2007 Q2-2010 Q2 data, while for expected additional writedowns or loss provisions is 2010 Q3-2010 Q4 data.
2. "Other Mature Europe" includes Denmark, Norway, Iceland, Sweden and Switzerland. "Asia" includes Australia, Hong Kong, Japan, New Zealand and Singapore.

Source: IMF, "Global Financial Stability Report," October 2010.

[24] Advanced economies grew slowly, while emerging economies grew rapidly.

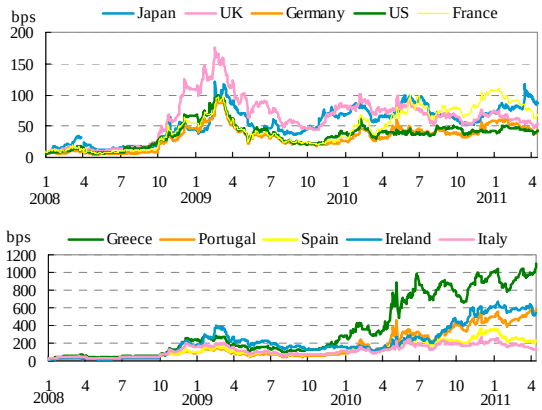
banking sector heightened. Stronger economic growth in emerging economies, coupled with accommodative monetary policy in advanced economies, spurred massive capital flows into emerging economies, in turn contributing to higher leverage ratios in financial markets. This not only raised concerns about asset price bubbles but also created upward pressure on inflation.

The financial systems in advanced economies were still at risk

In the second quarter of 2010, the Greek sovereign debt problem once again spurred a recurrence of financial turbulence in the euro area, but the financial system gradually resumed stability in the wake of a range of measures, such as financial support from the European Union (EU) and the IMF as well as the announcement of fiscal adjustment plans by Greece. In November, however, the sovereign debt crisis resurged as lingering concerns about fiscal sustainability and the banking system in Ireland resurfaced. Deteriorating European sovereign debt risks spilled over to other economies and financial systems. The correlation of sovereign bond spreads in Portugal, Italy, Ireland, Greece and Spain (PIIGS) increased markedly with intensifying financial tensions. The credit default swap (CDS) spreads for sovereign bonds of the PIIGS nations also elevated dramatically and even influenced those of France and Germany (Chart 2.10). In the euro area, some banks faced substantial selling pressure on their equities and bonds, while many banks became mired in difficulties of rising funding costs, shortening financing terms and the inability to access funding markets. The confluence of funding pressures and weak balance sheets in the banking sector led to financial system fragility in the euro area and exposed it as highly vulnerable to further market turmoil.

In the US, the financial system improved but financial vulnerabilities persisted, including: (1) the financial system needed to raise more capital to keep on tackling the impact stemming from ongoing deleveraging and financial supervisory reform; (2) a lackluster real estate market and a backlog of foreclosures hindered credit extension and the return to a normally functioning mortgage market; (3) the focus of market concern on credit risks in government-sponsored enterprises (GSEs) shifted to fiscal balances,

Chart 2.10 Sovereign CDS spreads in major advanced economies



Note: Figures are based on 5-year credit default swap.
Source: Bloomberg.

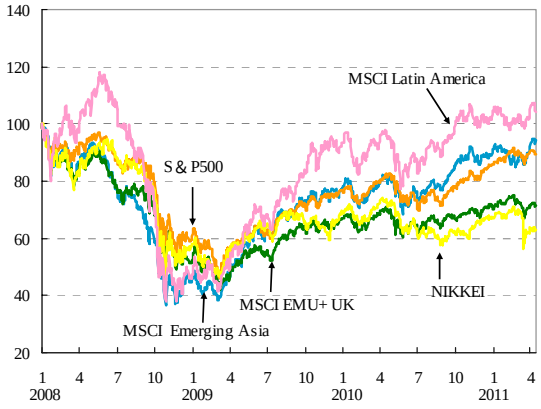
and how the government sector might deal with excessive debt burdens is still an open question. In Japan, banks have been facing low capital levels and depressed profitability. This, together with a stock market downturn, exacerbated pressures on Japanese banks' capitalization and profitability. The banking system was also vulnerable to weakening sovereign funding access. Moreover, an earthquake in Japan exacted a terrible human toll and asset damage, leading to a further deterioration in the banking sector.

Over the past years, several economies have been phasing out their emergency supports. Meanwhile, the effects of low-interest-rate policies have gradually subsided and fiscal stimulus packages have met considerable political criticism. Against this backdrop, the IMF supposes that the monetary and fiscal support policies instituted merely had near-term effects and more structural reforms are needed in the long run. These recommendations include: (1) advanced economies with higher foreign debts (such as euro area economies, the US and Japan) should further combine credible medium-term fiscal consolidation plans with better public debt management; and (2) an ongoing financial supervisory reform agenda to overhaul the financial system is required.[25]

Strong capital inflows into emerging economies raised concerns over the gradual buildup of macrofinancial risks

Relatively favorable fundamentals and stronger growth potential in some emerging economies, together with lower interest rate levels in advanced economies, evoked the resurgence of massive global capital inflows to emerging economies, particularly to Asia and Latin America. According to IMF statistics, international capital movements, which were moderate during the financial crisis, rebounded in 2010 bolstered by asset reallocation by institutional investors, the carry-trade, and expectations of foreign exchange rate appreciation incentives. The international capital flows into emerging economies were estimated to register about 4% of GDP in those economies.

Chart 2.11 Performance of key international equity indices



Note: 1 January 2008 = 100.
Source: Bloomberg.

Abrupt increases in capital inflows into emerging economies have pushed up their

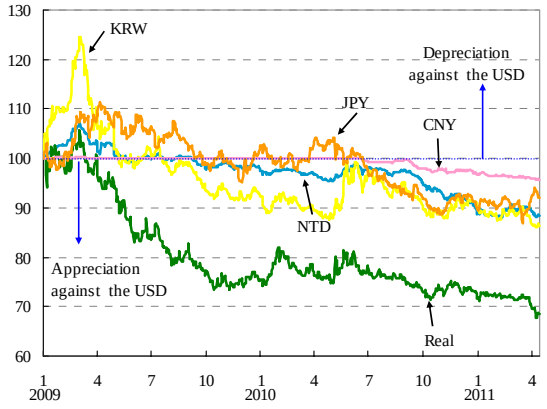
[25] IMF, "Global Financial Stability Report," April 2011.

equity prices. From 2010 onwards, equities indices in emerging markets have been generally buoyant, particularly in Latin America and some emerging Asian economies (Chart 2.11). Capital inflows also triggered excessive credit expansion in emerging economies, reflecting a sharp rise in non-financial sector debt-to-GDP ratios. In some economies (for example, Brazil, Chile, Mainland China, India and South Korea), these ratios have become close to historical highs for the past 15 years. Furthermore, heavy capital inflows have enabled weaker enterprises to easily access funds by issuing bonds, resulting in a further deterioration in the credit quality of assets held by investors. If interest rates unexpectedly rise in advanced economies, economic prospects worsen in emerging markets, or investor appetites change, it could lead to sudden reversals of capital inflows and compromise the soundness of the financial system.

Sizable capital inflows also put upward pressure on currency appreciation in emerging economies, for example, the NT dollar, renminbi, real and won all faced such problems (Chart 2.12). To prevent exchange rates from being disrupted by international capital inflows and undermine the stability of financial markets and commodity prices, some emerging economies successively initiated a number of capital flow management measures aimed at containing short-term capital inflows (Box 1). In addition, some central banks and financial supervisors (such as in Taiwan, South Korea, Singapore and Hong Kong) also introduced targeted credit control measures for real estate-related loans by financial institutions to prevent domestic asset prices from being disrupted by speculative demand.

In response to strong capital inflows, the IMF suggests that emerging economies need to rely on macroprudential polices (such as more stringent loan-to-value ratios and limits on the combination of funding sources) to reduce overheating and financial imbalance risks, in addition to the implementation of macroeconomic policies (for example, more flexible exchange rates, accumulating foreign exchange reserves and fiscal tightening). Capital flow management measures could be resorted to when the above-mentioned approaches fail to effectively mitigate risks. The IMF supposes that the signs point to the fact that these capital inflows to emerging economies were driven by increased structural changes in global asset allocation. Emerging

Chart 2.12 Movements of various currencies against the US dollar



Note: 1 January 2009 = 100.
Source: Bloomberg.

economies should deploy policies aimed at strengthening local financial market deepening to enhance their capacity to absorb inflows. These policies could entail the streamlining of corporate bond issuance procedures, removal of barriers for securities issuance and improvement of financial regulations and infrastructure.

International financial regulatory reforms have made greater progress

From 2010 onwards, international financial regulatory reforms have made striking progress. In December 2010, the Basel Committee on Banking Supervision (BCBS) announced a comprehensive framework presenting the details of global regulatory standards on bank capital adequacy and liquidity (also known as Basel III). The framework set up standards covering both microprudential and macroprudential elements. From the microprudential perspective, regulations aimed at enhancing the resilience of individual banks have put in place explicit criteria and are expected to be abided by national supervisors. These approaches entail better capital quality and higher capital levels, the expansion of the coverage of risk-weighted assets, the introduction of a leverage ratio and the formulation of two global minimum liquidity standards. The macroprudential policies could entail creating counter-cyclical capital buffers as well as imposing a capital surcharge or establishing stricter limits on large exposures for systemic risks and linkages. These policies, which aim to ensure the stability of the financial system as a whole, are emerging issues and their implementation could pose significant challenges to policymakers. More details about Basel III are summarized in Box 2, while the implications of systemic risks and macroprudential supervision are listed in Box 3.

In addition, the deliberation or discussion of some initiatives are under way and still await further action. These include guidance for identifying systemically important financial institutions and measuring their systemic risk contributions, macroprudential policies to mitigate systemic risks as well as the establishment of an effective cross-border bank resolution mechanism. Nevertheless, the European economies and the US have successively set up an independent body responsible for the oversight of systemic risks in hopes of better monitoring systemic risks as follows that warrant close attention.

- The European Systemic Risk Board (ESRB), which came into force in December 2010 and started operation in January 2011, is mainly composed of the governors of national central banks in the European Union (EU). It is in charge of macroprudential supervision which indentifies, measures and monitors threats to the financial stability of the EU, and the establishment of an early warning mechanism. The ESRB shall suggest policy responses,

where necessary, to mitigate various risks.

- Under the US Dodd-Frank Wall Street Reform and Consumer Protection Act of July 2010, the Financial Stability Oversight Council (FSOC), composed of the head of supervisory agencies in the US, is charged with monitoring and addressing systemic risks arising from large financial institutions, financial instruments and financial activities.

- In the UK, the Financial Policy Committee (FPC) was set up under the Bank of England to monitor the macroeconomic and financial issues that may threaten the resilience of the financial system, and to adopt macroprudential tools.

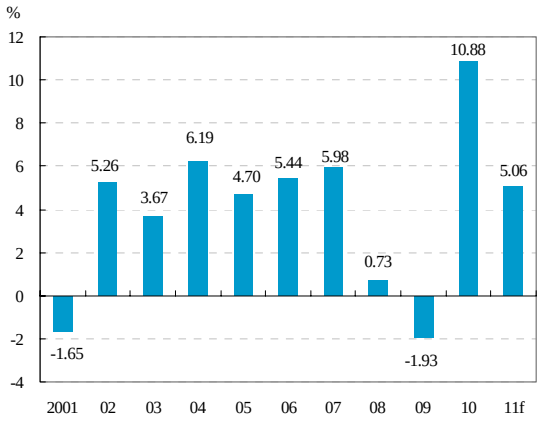
2.2 Domestic economic and financial conditions

Taiwan's economy saw solid growth through 2010 with stable commodity prices. Short-term external debt servicing ability remained strong on the back of a continued surplus in the current account and ample foreign exchange reserves. The scale of external debt continued to expand but at a moderate pace, and overall external debt servicing ability stayed robust. The government's fiscal deficits shrank, whereas government debt elevated.

Domestic economy expanded at a robust pace

In the first quarter of 2010, economic growth rebounded to 13.59%, a record-high since 1978 Q4 and sustained a high level of 12.86% in the following quarter. These high growth rates mainly were underpinned by sharp growth in exports which resulted from brisk foreign demand due to gathering momentum in the global economic recovery, upward momentum in private investment, mild growth in private consumption, and a lower base compared to a year earlier. In the second half of the year, private investment continued to expand alongside rising private consumption. But meanwhile economic growth turned to moderate, registering 10.69% and 7.3% in the last two quarters of 2010, respectively, on the back of slowing growth momentum alongside the continued influence of a high base in the previous year. Based on DGBAS statistics,

Chart 2.13 Economic growth rates in Taiwan



Note: Figure for 2011 is forecast by DGBAS.
Source: DGBAS.

annual economic growth registered a robust 10.88% in 2010,[26] the highest annual growth rate recorded since 1987, from -1.93% in 2009 (Chart 2.13).

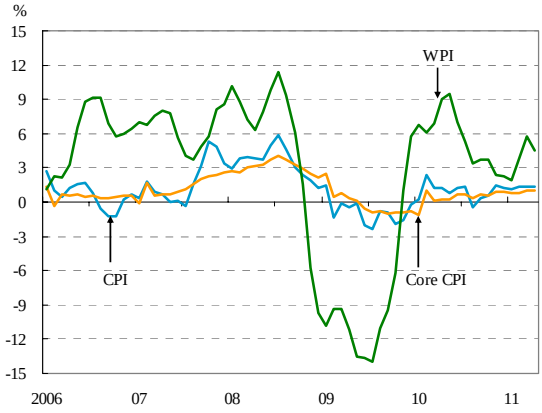
From the start of 2011 onwards, exports expanded steadily and private consumption performed well. However, affected by the influence of a much higher base, the DGBAS preliminary statistics show that the output growth rate stood at 6.55% in the first quarter of 2011 and may decline to 5.06% for the year as a whole[27] (Chart 2.13). Moreover, domestic automobile, electronics and telecommunication industries, which heavily rely on key components as well as machinery and equipment from Japan, could take an adverse hit as a result of supply disruption following the recent earthquake and tsunami in Japan. Meanwhile, the number of Japanese tourists visiting Taiwan is estimated to decline in the short term. Nevertheless, this unfavorable impact may have been offset to some extent by the fact that many domestic firms subsequently benefited from offering capacity support to Japanese firms or receiving transfer orders from customers. Therefore, the overall impact of Japan's earthquake on Taiwan's economy is generally expected to be limited.[28]

Domestic prices remained stable

From the beginning of 2010 onwards, the international prices of agricultural and industrial raw materials (such as of crude oil, natural gas, and grains) exhibited large increases compared to the same period of the previous year. Reflecting this, together with a lower base, the wholesale price index (WPI) inflation rate visibly rose before gradually declining after hitting a peak of 9.43% in May 2010. The annual WPI inflation rate stayed at 5.46% in 2010, far above the -8.74% recorded a year earlier.

Driven by the upsurge in retail prices of gasoline and imports owing to increasing costs, coupled with the deferred effects of imposing a higher tax on tobacco in June 2009 and soaring overseas travel fares, the CPI inflation rate moved within a range of 0.2% to 2.4% in

Chart 2.14 Consumer and wholesale price inflation rates



Note: Figures are measured on a year-on-year change basis.
Source: DGBAS.

[26] The figures are based on the DGBAS press release on 19 May 2011.
[27] See Note 26.
[28] According to Global Insight analysis, Taiwan, South Korea and Thailand are more vulnerable than other Asian economies to sustained disruptions in Japanese output. The impact, which is expected to be relieved in the second half of 2011, would not pose any serious threat to those economies.

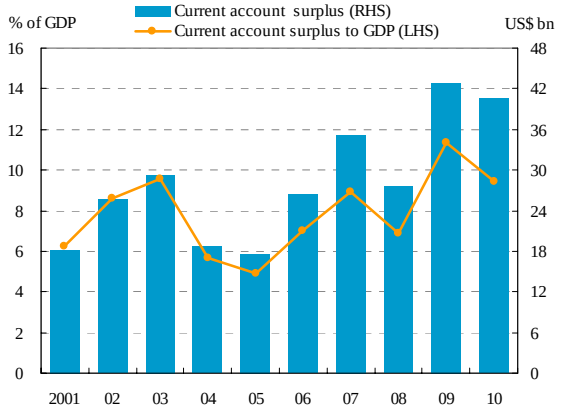
2010, except for a negative recording in August due to the influence of a high base in the prices of certain commodities and products (for example, gas, cars, motorcycles and vegetables) a year earlier. In parallel, the core CPI[29] inflation rate mostly remained below 1% during the same period (Chart 2.14). The annual headline CPI and core CPI inflation rates in 2010 were 0.96% and 0.44%, respectively, higher than the -0.87 and -0.14% a year earlier. This showed a stable price level for the year 2010.

The average WPI inflation rate from January to April 2011 dropped to 4.04%, while the average CPI and core CPI inflation rates continued to accelerate by 1.29% and 0.89%,[30] respectively, over the same period, revealing that commodity prices increased somewhat in the earlier part of 2011 (Chart 2.14). Looking ahead, fueled by the still-strong global demand, shortage of supply due to adverse weather conditions, and ample liquidity in markets, the prices of crude oil and agricultural and industrial raw materials are expected to keep surging. This will further push domestic wholesale and retail prices up. The DGBAS projects the annual WPI and CPI inflation rates in 2011 to register 3.42% and 2.10%,[31] respectively.

Current account surpluses persisted and foreign exchange reserves stayed abundant

Taiwan's imports and exports both saw visible increases in 2010 thanks to the ongoing global economic recovery and solid growth in emerging Asian economies. Despite the fact that the trade surplus was slightly lower than a year earlier as the rise in imports was larger than that of exports, the current account surplus still persisted and registered US$40.62 billion through the whole of 2010, or 9.44% of annual GDP[32] (Chart 2.15). As for the financial account, massive net inflows from other investments[33] mostly offset sustained

Chart 2.15 Current account surplus

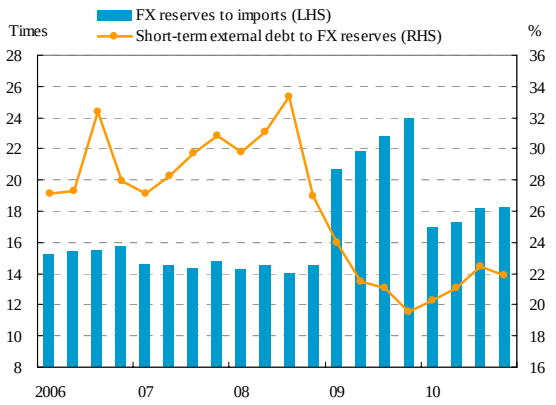


Note: Current account surplus and GDP are annual figures.
Sources: CBC and DGBAS.

[29] The term "core CPI" in this report refers to the consumer price index excluding perishable fresh fruits and vegetables, fish and shellfish, and energy.
[30] The figures are based on a DGBAS press release on 5 May 2011.
[31] See Note 26.
[32] For the ratio of current account deficit to GDP, the cutoff point for risk is 3%. A country in which the reading is greater than 3% and has risen by at least 5 percentage points from the previous year is considered to be at relatively high risk.
[33] The "net inflows from other investment" was mainly contributed to by two parts in 2010. In the banking sector, it included the redemption of foreign loans and a rise in both the inbound remittance of funds from banks' foreign branches and the deposits received from non-residents. In the private sector, it resulted from the withdrawal of foreign deposits.

net outflows from direct investments and portfolio investments, leading to a shrinkage in the annual balance of net outflows in the financial account of US$0.61 billion. Over the same period, the balance of payments recorded a surplus of US$40.17 billion as result of the sizable current account surplus and small net outflows in the financial account.

Chart 2.16 Short-term external debt servicing capacity



Notes: 1. FX reserves and external debt are end-of-period figures.
2. Imports are average monthly figures.
Sources: CBC, DGBAS and MOF.

The continuous balance of payments surplus, coupled with the fact that major currencies (such as the euro) held as part of Taiwan's foreign exchange reserves appreciated against the US dollar over the same period, pushed foreign exchange reserves to continue accumulating to record highs and register US$382 billion at the end of 2010, and further climb to US$399.5 billion at the end of April 2011. This reflects ample foreign exchange reserves. Nevertheless, the ratio of foreign exchange reserves to imports declined to 18.25 months,[34] led by excessive growth in imports. Furthermore, the ratio of short-term external debt to foreign exchange reserves elevated to 21.90%[35] owing to a notable expansion in short-term external debt (Chart 2.16). These two ratios, nevertheless, were still below internationally recognized warning levels. This implies that Taiwan's foreign exchange reserves have a robust capacity to meet payment obligations for imports and to service short-term external debt.

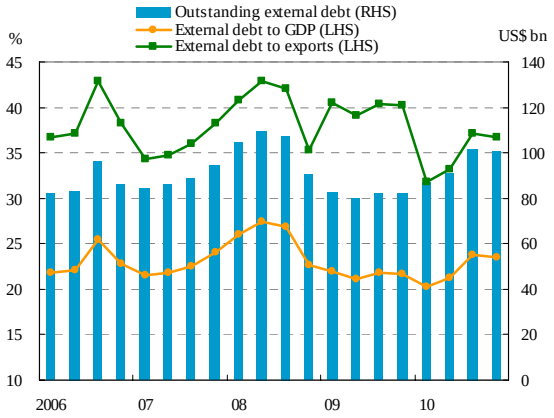
External debt contracted after following an upward trajectory and debt servicing capacity remained strong

There was a substantial increase in Taiwan's external debt[36] in the first three quarters of 2010 resulting from a sharp upsurge in private external debt. However, external debt decreased somewhat in 2010 Q4, triggered by the reduction in debt owed by domestic banks to foreign banks and the balance of NT dollar deposits held by non-residents. Overall, outstanding

[34] A country with a ratio of foreign exchange reserves to imports more than three months is considered to be at relatively low risk.
[35] The general international consensus is that a reading of less than 50% indicates relatively low risk.
[36] External debt is defined by the CBC as the combined amount owed to foreign parties by Taiwan's public and private sectors, including long-term debt with a maturity of greater than one year and short-term debt with a maturity of one year or less. The term "public external debt" refers to debt that the public sector is either obligated to repay directly or has guaranteed (starting from December 2004, figures for public external debt include outstanding foreign debt arising from repo transactions between the CBC and international financial institutions). The term "private external debt" refers to private-sector foreign debt that is not guaranteed by the public sector.

external debt stood at US$100.8 billion, or 23.43% of annual GDP, at the end of 2010, implying a low level of external debt. [37] Moreover, the ratio of external debt to annual exports declined to 36.70% as of the end of 2010, due to the strong rebound in exports, indicating that export revenues were still sufficient to cover external debt (Chart 2.17), and there were no signs of servicing pressure on external debt.[38]

Chart 2.17 External debt servicing capacity

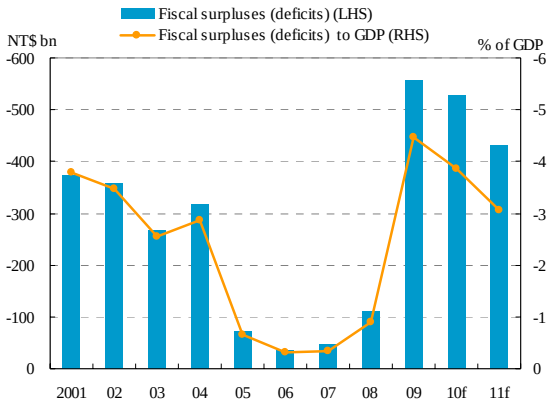


Notes: 1. External debt are end-of-period figures.
2. GDP and exports are annual figures.
Sources: CBC, DGBAS and MOF.

Fiscal deficits turned to contract while government debt stayed elevated

Driven by the expansion of infrastructure construction expenditures undertaken with the aim of revitalizing the economy, fiscal deficits increased sharply and reached a historical high in 2009. However, these declined in 2010 and registered NT$526.4 billion, partly because fixed capital investments of the government and state-run enterprises contracted gradually with the fall in major infrastructure construction demand. This, coupled with healthy GDP growth, caused the ratio of fiscal deficit to annual GDP to decline to 3.07% in 2011, [39] following a drop to 3.87% in 2010 (Chart 2.18).

Chart 2.18 Fiscal position



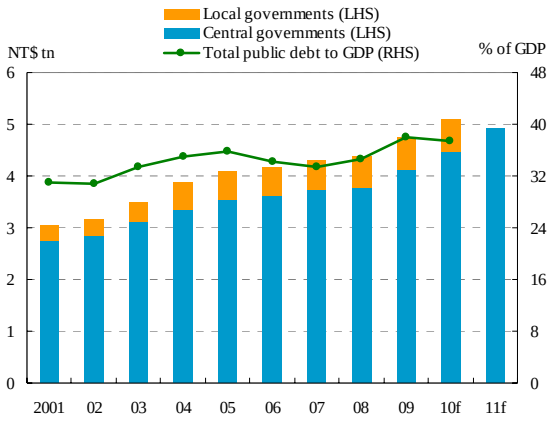
Notes: 1. Fiscal position data include those of central and local governments.
2. Data of fiscal surpluses (deficits) are annual figures. Figures for 2010 and 2011 are budget accounts.
Sources: MOF and DGBAS.

In 2010, outstanding public debt at all levels of government [40] expanded to NT$5.10 trillion, or 37.48%[41] of annual GDP, well

[37] The general international consensus is that a country with a ratio of external debt to GDP lower than 50% is deemed to be at relatively low risk.
[38] The general international consensus is that a ratio of external debt to exports of less than 100% indicates relatively low risk.
[39] In contrast with the 1992 European Union Maastricht Treaty and the subsequent Stability and Growth Pact, fiscal deficits in EU member nations are not allowed to exceed 3% of GDP.
[40] The term "outstanding debt at all levels of government" as used in this report refers to outstanding non-self-liquidating debt with a maturity of one year or longer. Final audited figures for outstanding one-year-or-longer non-self-liquidating public debt (NT$5.10 trillion) issued by all levels of government during the 2010 fiscal year is equivalent to 39.15% of the average GNP for the preceding three fiscal years (NT$13.02 trillion). This figure is below the ceiling of 48% (i.e. 40% for central government and 8% for local governments) set out in the Public Debt Act.
[41] In contrast with the Maastricht Treaty and the subsequent Stability and Growth Pact, outstanding debt in EU member nations is not allowed to exceed 60% of GDP.

above the NT$4.75 trillion[42] in 2009, as fiscal deficits stayed high and governments relied on debt issuance to finance debt servicing expenditures. It is expected that public debt will further grow at a firm pace in 2011 with the ongoing implementation of large-scale infrastructure projects[43] (Chart 2.19).

Chart 2.19 Public debt



Notes: 1. Outstanding public debt refers to non-self-liquidating debt with a maturity of one year or longer, excluding external debt.
2. Outstanding public debt for 2010 and 2011 are budget accounts; the 2011 number for local governments is not available.

Sources: MOF and DGBAS.

[42] If adding in debt with a maturity of less than one year and self-liquidating debt, outstanding public debt at the end of 2009 stood at NT$5.83 trillion.

[43] Refer to the "i-Taiwan 12 projects," which are expected to raise a total investment of NT$3.99 trillion via private investment and government budget in twelve prioritized infrastructure projects within eight years.

Box 1
Recent measures to manage capital flows in emerging economies

From the second quarter of 2009 onwards, rebounded investor risk appetite and continued low interest rate policies in advanced economies, coupled with an upturn of economic prospects in emerging economies, fueled strong capital inflows for portfolio investment into emerging Asian and Latin American economies, and consequently raised concerns about the mounting risks of inflation and asset price bubbles. In response, many Asian and Latin American economies successively launched a variety of measures to manage capital flows since 2010, including imposing taxes on foreign investors for their inbound remittances, placing ceilings on foreign exchange positions held by financial institutions or corporations, and easing restrictions on domestic funds for offshore investments. The key components of these measures are summarized in Table B1.1.

Table B1.1 Recent capital flow management measures in selected emerging economies

Economies	Date	Measures
South Korea	October 2010	1. Capped corporate foreign exchange hedging limit to 100% of export receipts. 2. Set a ceiling on foreign exchange (FX) forward positions of domestic banks to 50% of equity capital. 3. Set a ceiling on FX forward positions of foreign bank branches to 250% of equity capital.
	19 October 2010	Inspected banks involved in FX derivative activities.
	January 2011	Proposed to impose a tax on the purchase/sale of depository receipts: 1. Imposed a levy on either 22% of capital gains or 11% of initial public offering (IPO) funds, whichever is lower. 2. Imposed a 0.3% tax on exchange transactions, and 0.5% on over-the-counter (OTC) transactions.
	1 January 2011	Reimposed a 15.4% withholding tax on interest income and 22% on capital gains for all foreign holdings of short-term government bonds.
	March 2011	Lowered limits on domestic banks' FX forward positions from 50% of equity capital to 40%, and foreign bank branches from 250% to 200%.
	Date to be determined	Proposed to impose a 0.2% tax on less-than-one year tenor foreign currency loans by domestic banks, a 0.1% tax on 1-3 year tenor loans, a 0.05% tax on 3-5 year tenor loans and a 0.02% tax on above 5-year tenor loans. This proposal, expected to be submitted to the congress in May 2011, could be effective from 1 July 2011 given the passage of the bill.
Thailand	16 September 2010	Relaxed five regulations relating to the banning capital outflows, including: 1. Removed the cap on offshore direct investments by Thai

		corporations. 2. Relaxed the limit on the provision of credit by Thai corporations to non-related enterprises to USD50 million per year. 3. Increased the limit on offshore purchases of real estate by Thai corporations to USD10 million per year. 4. Raised the ceiling on foreign currency deposits held by Thai corporations to USD500 thousand from USD300 thousand. 5. Raised the cap on offshore foreign currency deposits held by Thai exporters to USD50 thousand from USD20 thousand.
	12 October 2010	Companies with FX revenues are allowed to transfer FX funds from their local FX account to onshore counterparties. FX transactions below USD50 thousand only need to provide documentation on remittance purposes.
	13 October 2010	Revoked the waiver on a 15% withholding tax on interest income and capital gains on foreign investments in government bonds.
Indonesia	17 June 2010	1. Introduced a one-month holding period on Bank Indonesia Certificates (SBIs) and issued nine- and twelve-month SBIs. 2. Expanded the difference between the overnight call rate and the Bank Indonesia rate to 2% from 1%.
	January 2011	Capped banks' short-term FX borrowing to 30% of equity capital.
	March 2011	Raised required reserves on FX positions held by banks to 5% from 1% in March 2011, and further increased it to 8% in June 2011.
Taiwan	2 August 2010	Imposed a US dollar denominated margin for short sale accounts held by foreign investors.
	11 November 2010	Reinstated a 1995 rule that caps foreign investments of nonresident inbound remittances at 30%, to include government bonds.
	27 December 2010	Reduced the limit of the add-up position of local currency non-delivery forwards (NDFs) and options to one-fifth of total position from one-third.
	1 January 2011	Raised required reserves on local currency demand deposit accounts held by nonresidents to 90% from 9.775% on the increment exceeding the outstanding balance recorded on 30 December 2010, and 25% (from 9.775%) on balances below the end-2010 level. Required reserves for such accounts are non-remunerated.
Brazil	20 October 2009	Imposed a 2% IOF tax (financial operations tax) on foreign exchange inflows for the purchase of Brazilian equities instruments and fixed income instruments.
	19 November 2009	Imposed a 1.5% tax on American Depository Receipts (ADR) issued by Brazilian corporations.
	1 April 2010	Imposed a 0.38% tax on FX outflows when converting Depository Receipts (DR) to local shares.
	5 October 2010	Raised the IOF tax on foreign exchange inflows for the

		purchase of fixed income instruments to 4% from 2%.
	20 October 2010	1. Further increased the IOF tax on foreign exchange inflows for the purchase of fixed income instruments to 6% from 4%. 2. Raised the futures margin to 6% from 0.38%.
	4 April 2011	Banks are required to deposit cash in the Brazilian central bank account to cover 60% of short positions, given that their holdings of US dollar denominated short positions either exceed USD3 billion or their equity capital, whichever is lower. Deposits for such accounts are non-remunerated.

Sources: CBC, IMF April 2011 GFSR, Nomura Global Economics and BNY Mellon NetInfo.

Box 2
Basel III: capital and liquility reform

Regarding recent global financial turmoil, the main reasons the financial crisis became so aggravated were that the banking sector employed excessive leverage, maintained an inadequate and deteriorated capital base and held insufficient liquidity buffers. The crisis was further amplified by a procyclical deleveraging process and the interconnectedness of systemically important financial institutions, resulting in significant global economic loss. To address these issues, the Basel Committee on Banking Supervision (BCBS) has introduced a number of capital and liquidity reforms[1] (Basel III) since 2009, which were finalized and published in December 2010 after endorsement by the G20 leaders at their November Seoul Summit.

1. Basel III: capital and liquidity reforms

The Basel III reforms not only emphasize microprudential supervision that raise the resilience of individual financial institutions when facing stressed conditions, but also have a macroprudential focus that helps to reduce the potential impacts coming from common exposures of banks and procyclicality.

1.1 Microprudential supervision reforms

The microprudential supervision reforms introduced in Basel III include three parts: (1) strengthening capital and liquidity regulations of individual banks; (2) enhancing related financial supervision, risk management and internal governance; and (3) reinforcing market discipline. The first part, capital and liquidity reforms, will significantly influence the global banking industry, and is described as follows.

Strengthening regulatory capital frameworks

Raising capital quality

Banks are required to raise their capital quality, which includes employing common equity as the predominant form of capital along with a stricter definition of common equity. Furthermore, the BCBS further requests banks, when issuing non-common Tier 1 and Tier 2 instruments, to incorporate provisions that require such instruments to either be written off or converted into common equity once they are determined to be non-viable by the relevant authorities.[2]

Enhancing risk coverage

With regard to securitization transactions, Basel III introduces higher risk-weights for complex securitization financial instruments and raises the capital charge for off-balance sheet exposures, while requiring banks to adopt more careful credit analyses on securitization transactions. Regarding trading book transactions, Basel III requires banks to calculate stressed value-at-risk at least every week and set aside additional capital charges accordingly, while banks using models to calculate specific risk are subject to the incremental risk capital charge. Additionally, Basel III also urges banks to strengthen capital charges and risk management for counterparty risk.

Increasing capital ratios

In order to enhance the loss absorbing capacity of banks, Basel III raises the common equity Tier 1 ratio from 2% to 4.5% and Tier 1 capital ratio from 4% to 6%, while asking for an additional capital conservation buffer of 2.5%, comprising only common equity, and a countercyclical capital buffer of 0-2.5%.[3]

Introducing a leverage ratio

Basel III introduces a non-risk based leverage ratio, which is calculated by dividing Tier 1 capital by total assets. The Tier 1 capital for the leverage ratio should be based on the new definition set out in Basel III, while total assets consists of on- and off-balance sheet assets. The preliminary leverage ratio is 3% and will commence in a parallel run starting from 1 January 2013. Any adjustments to the leverage ratio will be carried out in the first half of 2017 and the leverage ratio will be migrated to a Pillar I treatment on 1 January 2018.

Proposing international liquidity standards

During financial crises, liquidity can evaporate very quickly. In response, the BCBS has developed two minimum standards for funding liquidity, including: (1) the Liquidity Coverage Ratio (LCR) to strengthen banks' resilience to short-term liquidity needs; and (2) the Net Stable Funding Ratio (NSFR) to improve the problem of liquidity mismatch for banks over a longer time horizon. The minimum requirement for both ratios is 100%.

1.2 Macroprudential supervision reforms

Reducing procyclicality

In order to reduce procyclicality, the BCBS has proposed two capital requirements related to macroprudential supervision, including a capital conservation buffer and a

countercyclical capital buffer, and suggested that the International Accounting Standards Board (IASB) adopt an expected loss approach for provisioning. The capital conservation buffer is designed to ensure that banks hold additional capital of 2.5% above the regulatory minimum. Restrictions on capital distribution will be imposed on banks if their capital conservation buffer falls below 2.5% so as to retain their capital. Regarding the countercyclical capital buffer of 0-2.5%, Basel III requires national authorities to monitor domestic credit growth with reference to the ratio of credit to GDP and other related indicators and apply adequate judgments in determining the size of such buffers.[4]

Addressing systemic risk and interconnectedness

The BCBS and the Financial Stability Board (FSB) are developing an integrated approach, including combinations of systemic capital surcharges, contingent capital and bail-in debt, which requires systemically important financial institutions to have loss absorbing capacities beyond the minimum standards. Moreover, the BCBS is developing quantitative and qualitative indicators to assess the systemic importance of financial institutions while studying viable alternative measures to strengthen the additional loss absorbency of systemically important financial institutions and reduce the risk of spillover among such institutions, including liquidity surcharges, tighter large exposure restrictions and enhanced financial supervision. Furthermore, according to the lessons learnt from the financial crisis, the orderly resolution of cross-border problem banks is key to decreasing systemic risk and solving the too-big-to-fail problem. Therefore, setting up a resolution mechanism for cross-border banks is also an important reform issue for the BCBS.

2. Potential impacts of Basel III on domestic banks

Based on the results of a quantitative impact study of Basel III conducted by the BCBS and the FSB, the BCBS announced the granting of an eight-year transition period for banks to raise capital ratios progressively starting from 2013 until full implementation of Basel III in 2019. In Taiwan, the Financial Supervisory Commission (FSC) has conducted preliminary calculations of capital ratios in accordance with Basel III standards using banks' data as of June 2010. The results indicated that the average common equity ratio of domestic banks was 7.54%, above the standard of 7% to be implemented in 2019, and the average Tier 1 capital ratio was 7.8%, also above the standard of 7.25% set to come into effect in 2017.[5] In line with the eight-year phase-in period of Basel III, the FSC has announced that banks will be required to strengthen risk

absorbing capacities and meet international supervisory guidance through adequate long-term capital planning and dividend policies.

Notes: 1. The Basel Committee on Banking Supervision (2010), "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems" and "Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring," December.

2. The Basel Committee on Banking Supervision (2011), "Minimum Requirements to Ensure Loss Absorbency at the Point of Non-viability," January.

3. The Basel Committee on Banking Supervision (2010), "Guidance for National Authorities Operating the Countercyclical Capital Buffer," December.

4. Regarding the procedures and guidance for operating the countercyclical capital buffer regime, see the publication listed in note 3.

5. The Financial Supervisory Commission (2010), press release, 16 September.

Box 3
Systemic risks and macroprudential supervision

Systemic risks played a role as an important accelerator in the global financial crisis which originated from the US subprime mortgage debacle in 2007 and then spilled over to the rest of the world. The crisis revealed that microprudential supervision alone was insufficient to achieve financial stability. Supervisory authorities also need to strengthen macroprudential supervision to assess and address systemic financial risks to ensure the stability of financial system.

1. The definition and sources of systemic risks

Systemic risk may be defined as a risk of disruption to financial services that is: (1) caused by an impairment of all or parts of the financial system; and (2) may have serious negative consequences for the real economy (IMF, BIS and FSB, 2009).

There are two potential sources of systemic risks (BOE, 2009):

- Aggregate risks: the risks arising from the collective tendency of financial institutions to assume excessive risk in an upswing and then to become excessively risk-averse during the downswing. It could bring about procyclical effects on real economic activities and undermine the stability of the financial sector and real economy.
- Network risks: the risks arising from the interconnectedness or common exposures across the system leading to joint failures of financial institutions at a given point of time.

The global financial crisis has shown that relying only on microprudential supervision of individual institutions and market discipline is insufficient to detect and mitigate systemic risks. Supervisory authorities should adopt macroprudential measures through regulations and supervisions (i.e. macroprudential supervision policies) to address the two sources of systemic risks and the spillover channels of excessive leverage and maturity mismatches in order to maintain financial stability.

2. The international adoption of macroprudential supervision policies

Macroprudential supervision seeks to enhance the stability of the whole financial system and, therefore, should take the interactions between the financial system and the real economy into account (BIS, 2010). According to a survey of 33 central banks in November 2009 (CGFS, 2009), it showed that macroprudential instruments mainly targeted credit growth as well as the size and composition of bank balance sheets, as

presented in Table B3.1. In fact, Asian countries implemented a variety of macroprudential instruments during the 1997 Asian financial crisis.

Table B3.1 Macroprudential instruments adopted by central banks

Objectives	Types of instruments	Examples
Measures targeting credit growth	1. Limits calibrated to borrower risk characteristics	Loan-to-value caps, loan-to income limits, foreign currency lending limits
	2. Absolute limits	Aggregate or sectoral credit growth ceilings, limits on exposures by instrument
Measures targeting size and composition of bank balance sheets	1. Measures to limit interconnectedness (1) Limits on leverage	(1) Size-dependent leverage limits or asset risk weights, capital surcharges for systemically important institutions
	(2) Financial system concentration limits	(2) Limits on interbank exposures
	2. Measures to limit procyclicality (1) Capital	(1) Time-varying capital requirements, restrictions on profit distribution
	(2) Provisioning	(2) Countercyclical/dynamic provisioning
	3. Measures to address specific financial risks (1) Liquidity risk	(1) Loan-to-deposit limits, core funding ratios, reserve requirements
	(2) Currency risk	(2) Limits on open currency positions or on derivatives transactions

Note: The table includes only instruments where the main or usual purpose is macroprudential. This excludes instruments such as official interest rates, emergency liquidity provisions and foreign exchange market intervention, since these are mainly used for other policy purposes, even though their usage might often have macroprudential benefits.

Source: Committee on the Global Financial System (2010).

3. Macroprudential supervision policies adopted by the CBC

Promoting financial stability is one of the operational objectives pursued by the CBC. To achieve this objective, besides adopting appropriate monetary and foreign exchange policies to provide a beneficial financial environment, the CBC has used various macroprudential tools in a timely manner in recent years, as well as serving as the lender of last resort when necessary, so as to maintain financial stability. The macroprudential tools deployed by the CBC are as follows:

- Declaring to take asset prices into consideration when setting monetary policies; promulgating the Regulations Governing the Extension of Land Collateralized Loans and Housing Loans in Specific Areas by Financial Institutions, which set limitations on loan-to-value ratios and other lending terms for real estate loans for the purposes of

enhancing credit risk management in financial institutions and maintaining financial stability.

- Strengthening macroprudential analysis and surveillance, as well as issuing the Financial Stability Report periodically to offer insight into the state of Taiwan's financial system and its potential risks and spur market participants to take responsive actions in a timely manner.
- Enhancing the prudential supervision of the liquidity of financial institutions, as well as monitoring the funding maturity structure of individual financial institutions and the overall liquidity stance in the financial system in response to the exit of the blanket deposit insurance scheme.

4. Further challenges in the future

The importance of macroprudential supervision policies in maintaining financial stability has drawn international recognition and a high degree of attention. However, there are numerous implementation challenges, including:

- There may be tradeoffs between macroprudential policies and other policy measures. For example, central banks raising policy rates to cope with rising property prices and heightened inflationary pressures may increase the vulnerability of banking systems.
- Effective tools for assessing systemic importance are still not available. Also, supervisory tools targeting systemically important institutions, such as systemic capital and liquidity surcharges, and restrictions on credit growth, need to be further calibrated and agreed on internationally.
- Risk models and tools to evaluate systemic risks lack maturity and need to be improved. Some macroprudential supervisory tools are in the initial stages of development and their effectiveness is yet widely recognized.
- Reinforcing macroprudential supervision may involve a restructuring of the existing supervisory framework and accountability, which would have extensive effects throughout the financial system.

References:

1. Bank for International Settlements (2010), "80th Annual Report."
2. Bank of England (2009), "The Role of Macroprudential Policy," Discussion Paper, November.
3. Committee on the Global Financial System (2010), "Macroprudential Instruments and Frameworks: a Stocktaking of Issues and Experiences," CGFS Papers, No.38.
4. IMF, BIS and FSB (2009), "Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations," Report to G20 Finance Ministers and Governors, October.

III. Non-financial sectors

The corporate sector, household sector, and real estate market constitute the main sources of risk for credit exposure of Taiwan's financial institutions. The degree of indebtedness and solvency in the corporate sector and household sector, as well as the real estate cycle, have far-reaching impacts upon the asset quality and profitability of financial institutions.

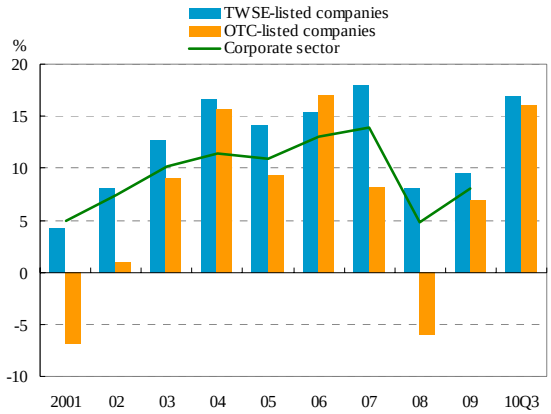
3.1 Corporate sector

From the second half of 2009 onward, overall profitability of the corporate sector improved amidst gradual recovery of the global and domestic economies. Driven by increased foreign and domestic demand, the performance of both Taiwan's export and industrial production was strong in 2010, which resulted in significantly increase of the profitability of TWSE-listed and OTC-listed companies for the first three quarters of 2010 compared to the same period of the previous year. The leverage ratio increased slightly due to rising liabilities caused by an expansion in production capacity, while the current ratio showed some decrease. However, the interest servicing capacity of corporate sector enhanced and the credit quality of corporate loans remained sound, as the NPL ratio continuously decreased. Nevertheless, the impact of the Japan's earthquake and the price hikes in energy and raw materials on the profitability of domestic corporations and supply chain requires continuous attention and timely responses.

Profitability increased continuously throughout 2010

The profitability of the corporate sector gradually increased amidst the recovery of the global economy and improvements in domestic economic indicators from the second half of 2009. The return on equity

Chart 3.1 Return on equity in corporate sector



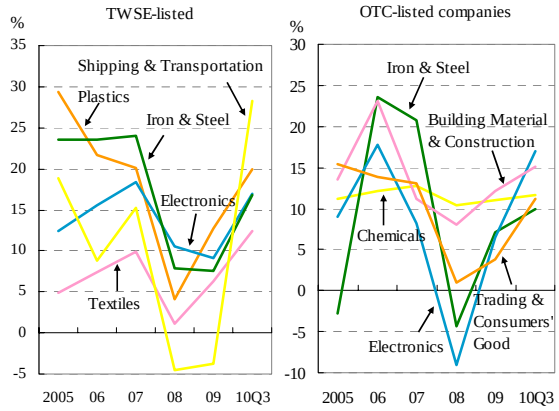
Notes: 1. Return on equity = net income before interest and tax / average equity.
2. The data are on an annual basis as 2010 Q3 figures are annualized results.
3. Latest data for the corporate sector is as of the end of 2009, while that for TWSE-listed and OTC-listed companies are as of the end of 2010 Q3.

Sources: JCIC and TEJ.

(ROE) for the corporate sector increased to 8.07% in 2009 as TWSE-listed and OTC-listed companies' ROEs rose to 9.58% and 6.91%, respectively. Thanks to the strong growth of emerging countries and increased demand from Europe and the United States, total export/import value, export orders, the industrial production index and its annual growth rate in 2010 all reached historical highs. All of these, together with a steady increase in private consumption, greatly enhanced the profitability of the corporate sector. The annual ROEs for TWSE-listed and OTC-listed companies rose to 16.95% and 16.01%, respectively, for the first three quarters of 2010, much higher than those reported in 2009 (Chart 3.1).

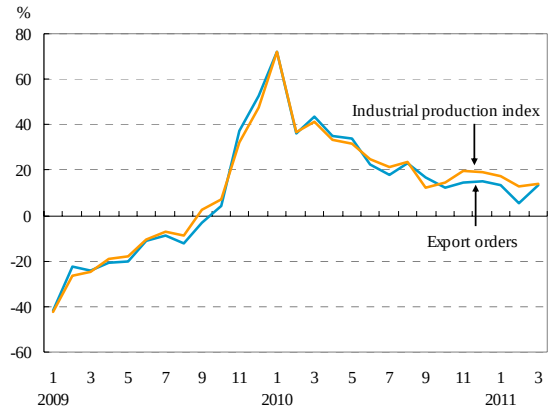
All major industries for TWSE-listed companies reported rebounding profitability for the first three quarters of 2010. Among them, the shipping and transportation industry stood out, returning to profit from loss and delivering an ROE that hit a 10-year high. For OTC-listed companies, the profitability of the electronics industry, which accounted for more than 75% of total revenue of OTC-listed companies, was the best. Other industries also saw better performance than in 2009 (Chart 3.2).

Chart 3.2 Return on equity of TWSE-listed and OTC-listed companies by major industries



Notes: 1. Return on equity = net income before interest and tax / average equity.
2. The data are on an annual basis as 2010 Q3 figures are annualized results.
Source: TEJ.

Chart 3.3 Annual growth rates of export orders and industrial production index



Note: Industrial production index in 2006 was 100.
Source: MOEA.

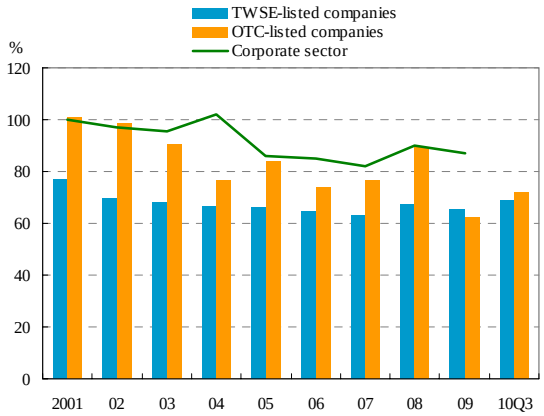
In 2010, driven by rising global demand, Taiwan's export orders and the industrial production index increased by 26.14% and 26.93%, respectively, for the whole year, and registered double-digit annual growth for each month. Moreover, underpinned by strong sales of smartphones and tablet computers, and the surging demand for inventory amid concerns over supply chain disruption caused by the Japan's earthquake, Taiwan's export orders and the industrial production index hit a record high in March 2011 with annual growth rates of

13.37% and 13.82%, respectively (Chart 3.3). Looking ahead, steady global economic growth, strong demand from Mainland China and tariff cuts on items included in the Early Harvest List under the Cross-Strait Economic Cooperation Framework Agreement (ECFA) that came into effect on 1 January 2011 are expected to support the profitability of the corporate sector in the future.

Rising leverage ratio for listed companies

For the corporate sector as a whole, the financial structure improved and the average leverage ratio fell to 86.88% at the end of 2009 as the recovery of profitability increased its equity. In 2010, with expectations of further economic recovery, domestic corporations expanded production capacity and in turn increased liability. As a result, the average leverage ratios for TWSE-listed and OTC-listed companies rose to 69.01% and 72.17%, respectively, at the end of September 2010, but still lower than those for the entire corporate sector in 2009 (Chart 3.4).

Chart 3.4 Leverage ratio in corporate sector

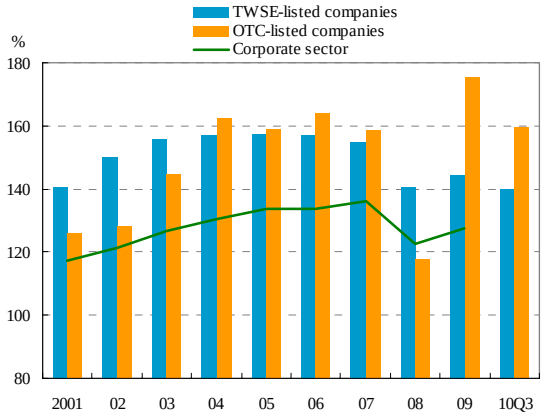


Notes: 1. Leverage ratio = total liabilities / equity.
2. End-of-period figures.
3. Latest figure for the corporate sector is as of the end of 2009, while those for TWSE-listed and OTC-listed companies are as of the end of 2010 Q3.
Sources: JCIC and TEJ.

Decreasing current ratio for listed companies, but interest servicing capacity remained strong

In 2009, short-term debt servicing capacity of the corporate sector as a whole improved with both the current ratio and the interest coverage ratio rising to 127.65% and 8.54, respectively, due to increases in current assets and income. The current ratios for TWSE-listed and OTC-listed companies fell to 139.71% and 159.69%, respectively, at the end of September 2010 as a result of increased short-term liabilities. Owing to the

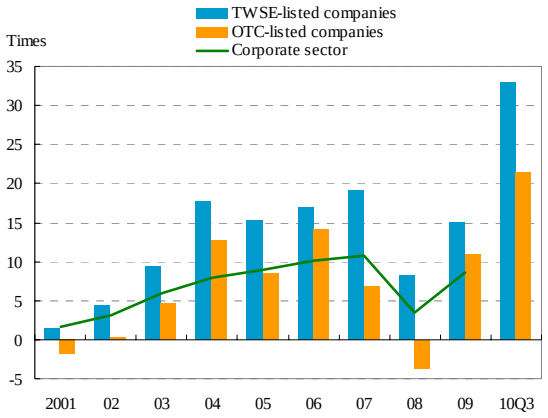
Chart 3.5 Current ratio in corporate sector



Notes: 1. Current ratio = current assets / current liabilities.
2. End-of-period figures.
3. Latest figure for the corporate sector is as of the end of 2009, while those for TWSE-listed and OTC-listed companies are as of the end of 2010 Q3.
Sources: JCIC and TEJ.

profitability boom in the first three quarters of 2010, however, the interest coverage ratios for TWSE-listed and OTC-listed companies leaped to 33.07 and 21.38, respectively, the highest levels since 2001 (Chart 3.5 & 3.6), reflecting that interest servicing capacity of corporate sector significantly improved.

Chart 3.6 Interest coverage ratio in corporate sector



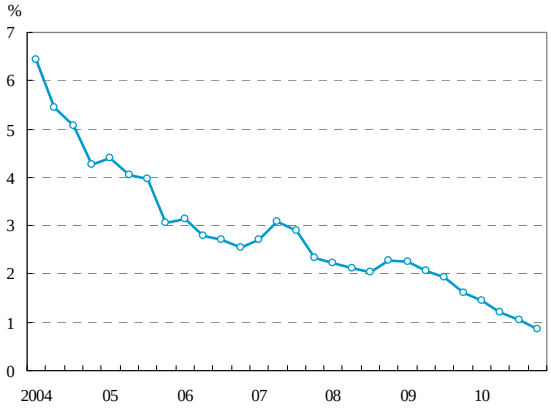
Notes: 1. Interest coverage ratio = income before interest and tax / interest expenses.
2. Figures are on an annual basis as 2010 Q3 referred to the accumulation from January to September 2010.
3. Latest figure for the corporate sector is as of the end of 2009, while those for TWSE-listed and OTC-listed companies are as of the end of 2010 Q3.

Sources: JCIC and TEJ.

Credit quality of corporate loans remained sound

The NPL ratio for corporate loans continued to decline to 0.88% at the end of 2010 due to a continuation of decreasing non-performing corporate loans (Chart 3.7). During the global financial crisis, Taiwan's government adopted several special financing measures in support of corporations, such as the Debt Renegotiation Relief Program and associated supporting arrangements that expired at the end of 2010. The expiration of the aforementioned program, which brought corporate financing back to the market mechanism, together with rising market interest rates that followed the policy rate rises of the CBC, resulted in doubts about whether some weaker or less competitive corporations may once again face financing and interest repayment pressures. This situation is worthy of close attention.

Chart 3.7 NPL ratio of corporate loans



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

Meanwhile, the recent price hikes on imported raw materials may put industries that consume a lot of energy or rely heavily on imported raw materials for production under pressure of rising costs and shrinking profits. In addition, the impact of the Japan's earthquake and nuclear plant crisis on domestic electronics and automobile industry's supply chains, the rise in the price of oil as a result of turmoil in North Africa and the Middle East, and the aggravated exchange rate volatility in emerging economies all contributed to an environment

of elevated business risk for corporations, which warrants close attention and timely responses.

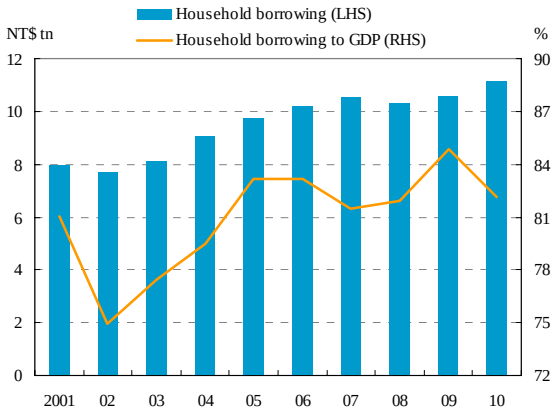
3.2 Household sector

The household debt burden eased and debt servicing capacity strengthened as disposable income expanded faster than borrowing. Overall credit quality of household borrowing also remained satisfactory. However, as interest rates gradually move upwards, highly leveraged households may face even heavier indebtedness. Thus, the debt repayment capacity for those households warrants close attention.

Household borrowing slightly increased

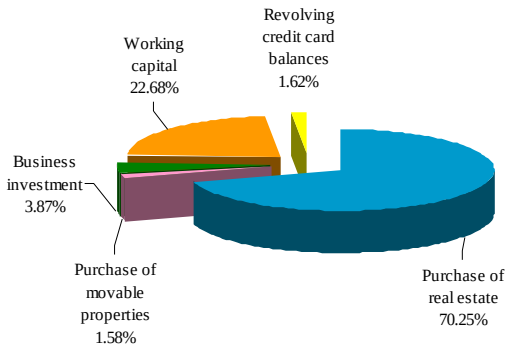
Following booming local stock and real estate markets, total household borrowing[44] at the end of 2010 reached NT$11.19 trillion (Chart 3.8) with an year-on-year growth rate of 5.69%. The largest share of household borrowing went for the purchase of real estate (70.25%), followed by working capital loans[45] (22.68%), while revolving balances on credit cards accounted for only 1.62% (Chart 3.9). Except for revolving credit card balances, the balances for every other kind of loan increased in 2010. Among them, business investment loans, mainly for margin purchases, had the greatest annual growth rate of 29.92%, while real estate purchase loans increased by 4.72%.

Chart 3.8 Household borrowing to GDP



Note: Household borrowing data are end-of-period figures.
Sources: CBC, JCIC and DGBAS.

Chart 3.9 Household borrowing by purpose



Note: Figures are as of the end of 2010.
Sources: CBC and JCIC.

[44] The term "household borrowing" as used in this section refers to outstanding loans and revolving credit card balances taken out by households from the following financial institutions:
(1) Depository institutions: domestic banks (including medium business banks), local branches of foreign banks, credit cooperatives, credit departments of farmers' associations, credit departments of fishermen's associations, and the Remittances & Savings Department of Chunghwa Post Co.
(2) Other financial institutions: trust and investment companies, life insurance companies, securities finance companies, and securities firms.

[45] The term "working capital loans" includes outstanding cash card loans.

The ratio of household borrowing to GDP dropped to 82.17% at the end of 2010, mainly due to a much faster pace in GDP growth (Chart 3.8). Compared to other selected countries, the growth of total household borrowing in Taiwan, South Korea, and Australia remained positive and higher than the previous year. As a percentage of GDP, household borrowing in Taiwan was lower than in the US and Australia, but higher than in South Korea and Japan (Chart 3.10).

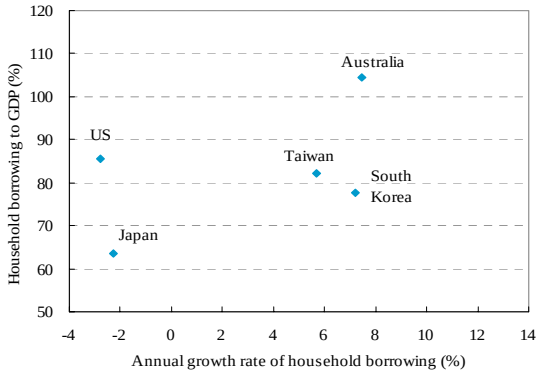
Household short-term debt servicing capacity slightly improved

In 2010, as total household borrowing increased at a slower pace than disposable income,[46] the ratio of household borrowing to gross disposable income was brought back to 1.15 times, reflecting a slightly reduced debt burden.

The debt servicing ratio decreased year by year and registered 36.12% at the end of 2010 due to the increase in household disposable income that was triggered by domestic economic recovery. Household short-term debt servicing capacity thus improved (Chart 3.11).

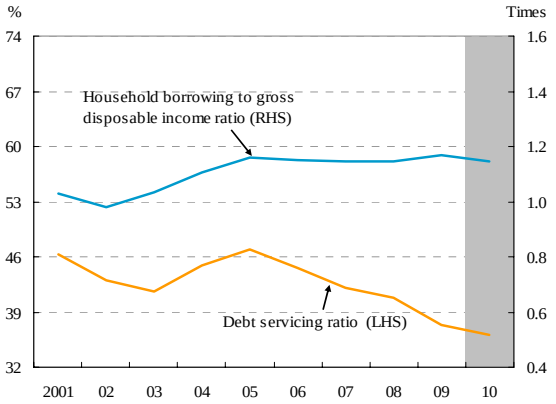
The fact that both the domestic unemployment rate gradually decreased and the regular earnings growth rate turned positive in 2010 helped to improve the debt servicing capacity of household sector

Chart 3.10 Household indebtedness in selected countries



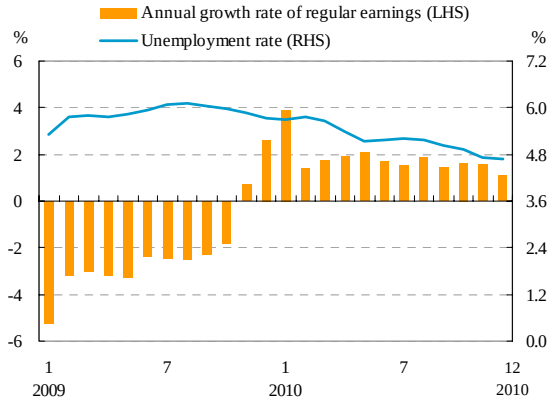
Note: Figures for Taiwan are as of the end of 2010. The others are as of the end-September 2010.
Sources: Fed, BOJ, BOK, ABS, IMF, DGBAS, CBC and JCIC.

Chart 3.11 Household debt servicing ratio



Notes: 1. Gross disposable income in shadow area is CBC estimate.
2. Debt servicing ratio = borrowing service and principal payment / gross disposable income.
Sources: CBC, JCIC and DGBAS.

Chart 3.12 Unemployment rate and regular earnings growth rate



Source: DGBAS.

[46] Gross disposable income = disposable income + rental expenses + interest expenses.

(Chart 3.12). However, as the CBC raised interest rates by 0.125% each time for four times from June 2010, inducing lending rates to move upward, the debt repayment pressures of highly leveraged households might increase and thus warrants close attention.

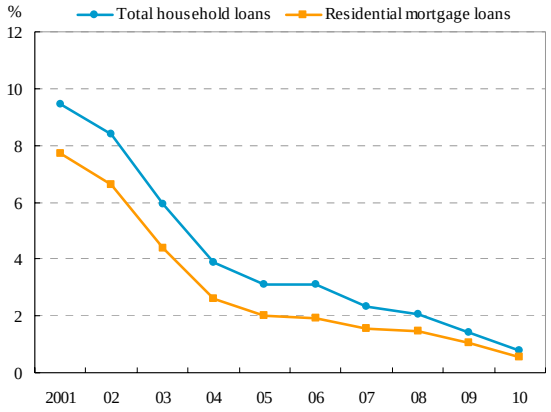
NPL ratio of household borrowing dropped to record low

At the end of 2010, the NPL ratio of household borrowing from banks was down from 1.41% a year earlier to 0.77%, the lowest level in ten years (Chart 3.13). The main reason behind this was that NPLs for real estate purchases, the largest share of household borrowing, contracted due to the real estate market rebound in 2010.

3.3 Real estate market

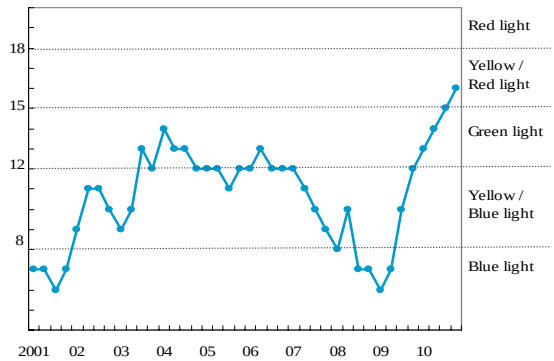
The real estate market continued to warm up in 2010, while house prices in specific areas surged and mortgage burdens elevated. Outstanding real estate-related loans continued to increase, albeit at a decreasing growth rate, as mortgage interest rates slowly rose. In response to surging house prices in specific areas and the concentration of banks' credit in the real estate market, the government implemented a series of measures and the housing market began showing signs of cooling starting February 2011. Its potential impact on the real estate-related business and asset quality of financial institutions is worth closer monitoring.

Chart 3.13 NPL ratio of household borrowing



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

Chart 3.14 Real estate cycle indicators



Sources: "Quarterly Report of Taiwan Real Estate Cycle Indicators," Architecture and Building Research Institute, Ministry of the Interior (MOI); Taiwan Real Estate Research Center. .

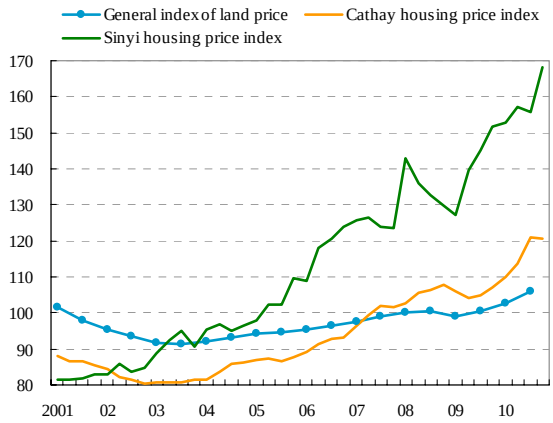
Real estate market rebounded

Taiwan's real estate cycle indicators [47] jumped to a 10-year high of 16 points in 2010 Q4, a yellow/red light indicating a

[47] The real estate cycle indicators show five types of market outlooks with different colored lights. A red light indicates a "heated market," a yellow/red light indicates a "moderately heated market," a green light indicates a "stable market," a yellow/blue light indicates a "moderately declining market," and a blue light indicates a "sluggish market."

moderately heated market, compared to 6 points of blue light indicating a sluggish market in 2009 Q1 (Chart 3.14). The composite indices of leading indicators[48] and coincident indicators[49] also displayed upward trends, revealing that the real estate market was apparently warming up. However, the recent survey showed that sentiment of real estate firms regarding the property market in the first two quarters of 2011 turned weak as a result of the proposed implementation of the Specifically Selected Goods and Services Tax.

Chart 3.15 Land and house price indices

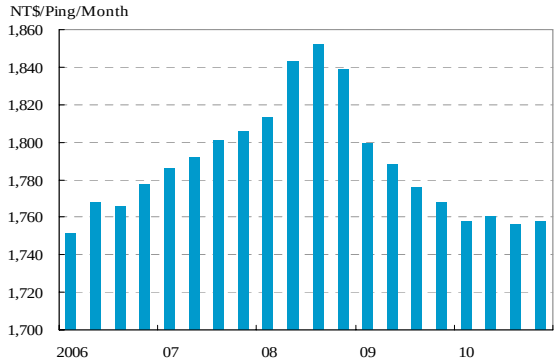


Note: General index of land price is released semiannually (i.e. in March and September).
Sources: MOI, Cathay Real Estate, and Sinyi Real Estate Inc.

House prices rose as the property market warmed up but turned cautious in February 2011

Inspired by an influx of short-term international capital, the signing of the ECFA and the upgrading of five cities, real estate prices continued to climb and indices repeatedly struck new highs in 2010. The Taiwan area land price index hit 105.93 in September 2010, dramatically rising by 5.53% year on year. In addition, the Sinyi housing price index (for existing buildings) reached 168.25 in the fourth quarter of 2010, up 10.91% year on year, with the sharpest increase coming in Taipei City and New Taipei City, while the Cathy housing price index (for new construction) also climbed to 120.77, up 12.95% year on year (Chart 3.15), with housing prices in several regions hitting new highs time and again. Starting from February 2011, however, as the CBC and the FSC implemented measures to strengthen the banks' risk management on real estate-related loans, and the MOF proposed to implement the Specifically Selected Goods and Services Tax, the house buyer bargaining power increased in the areas where construction projects has risen notably.

Chart 3.16 Average office rental rate in Taipei



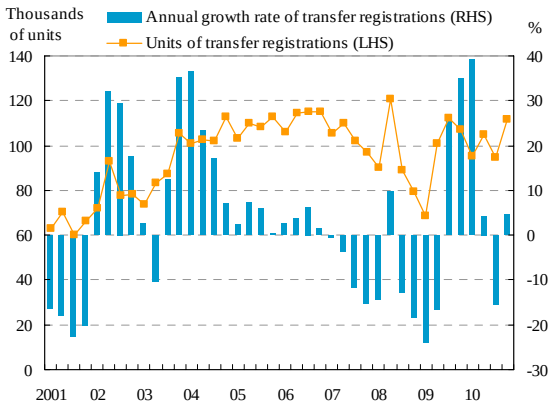
Source: Colliers International "Taipei Office Market Overview."

[48] The composite index of leading indicators is made up of the following five components: GDP, monetary aggregate M2, construction sector's stock price index, changes of outstanding construction loans, and consumer price index.
[49] The composite index of coincident indicators is made up of the following six components: undeveloped land transaction index, base lending rate, construction permit floor space, standard unit price for new construction projects, new loans for property purchases, and housing occupancy rate.

Despite surging house prices in Taipei in 2010, the momentum of rising office rentals weakened due to the release of new offices and declining office demand as financial firms' offices integrated and corporations moved out. The average office rental rate was NT$1,758 per ping (approximately 3.3 square meters) per month in 2010 Q4, a slight year-on-year decrease of 0.57% (Chart 3.16).

As for transactions in the housing market, market conditions were prosperous in the first half of 2010, but cooled down in Q3 as a result of measures that aimed to strengthen the risk management on real estate-related loans of banks, and then rebounded in Q4 as the market expected an upward movement of house prices. The number of building ownership transfers registered 407 thousand units for the whole year of 2010, up 4.74% year on year (Chart 3.17). The housing market continued to warm up in the first two months of 2011, as the number of building ownership transfers for those two months increased by 7.84% year on year. However, the market sentiment became cautious in March as a result of the proposed promulgation of the Specifically Selected Goods and Services Tax.

Chart 3.17 Building ownership registrations

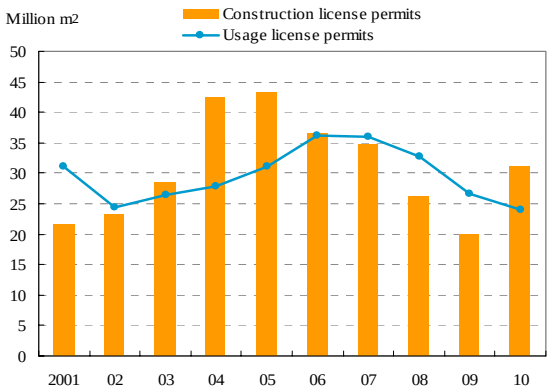


Source: Monthly Bulletin of Interior Statistics, MOI.

The supply outlook for new properties is expanding and residential property vacancies remain high

Affected by a decrease of new construction projects over the past few years, the total floor space of usage permits dropped by 9.5% in 2010 (Chart 3.18). Those for commercial and residential property both showed declines, with a higher decrease of 52.73% for commercial property.

Chart 3.18 Floor space of construction license permits and usage license permits



Source: Monthly Bulletin of Interior Statistics, MOI.

In 2010, inspired by the buoyant housing market, the real estate industry acted more aggressively with regard to introducing new construction projects. Total floor space of construction license permits substantially increased by 56.53% year on year, with the

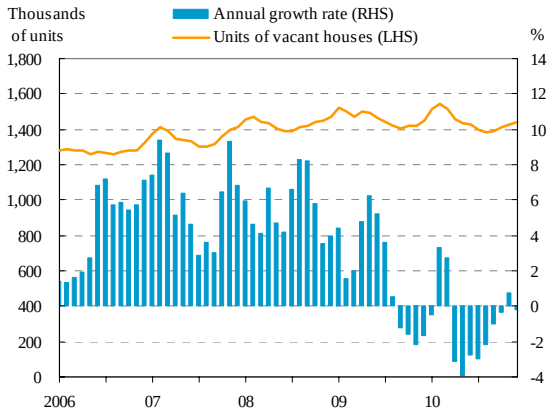
largest increase of 65.92% for residential property. If analyzed by cities, Taichung City and New Taipei City saw the highest growth. Considering that the real estate industry competes to build new construction, new house supplies will increase in the future.

As estimated by the number of units consuming less electricity than the minimum service charge from the Taiwan Power Company, the average number of vacant residential properties in 2010 decreased 0.86% year on year, but still stood at the high level of 1.445 million units (Chart 3.19).

Mortgage burden kept increasing

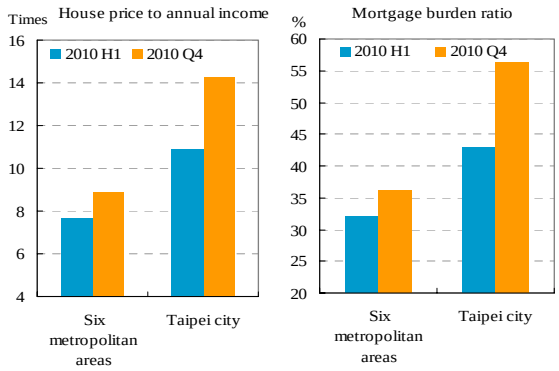
Following climbing housing prices, the mortgage burden continuously increased for house buyers. The average house price to income ratio for the six metropolitan areas reached 8.9 in 2010 Q4 as the average mortgage burden ratio registered 36.0%, both reaching new highs. Among the metropolitan areas, the mortgage burden was heaviest in Taipei City as the housing price to income ratio and mortgage burden ratio reached 14.3 and 56.2%, respectively (Chart 3.20).

Chart 3.19 Estimated units of vacant houses



Source: Taiwan Power Company.

Chart 3.20 House price to income ratio and mortgage burden ratio



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

Real estate-related loans continued to grow but at a slower pace, while mortgage interest rates gradually increased

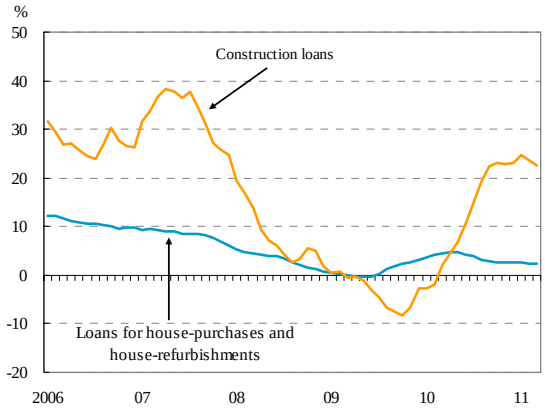
Outstanding loans for house purchases and house refurbishments granted by banks[50] continued to grow and reached a historical high of NT$5.83 trillion at the end of 2010. Although the annual growth rate of such loans continued to increase in the first two quarters of 2010, it turned to be more temperate in Q3 and slid to 2.53% in

[50] Refers to domestic banks and the local branches of foreign banks.

December 2010 due to the effect of the CBC's measures to strengthen the risk management on real estate-related loans of banks. Construction loans steadily climbed and reached NT$1.29 trillion in December 2010 with the annual growth rate bouncing to 23.2% from -2.77% a year earlier. In 2011 Q1, the growth of loans for house purchases and house refurbishments continued to slow with an annual growth rate of 2.30% in March. Total outstanding construction loans repeatedly reached new highs, though the annual growth rate slightly moderated to 22.68% in March 2011 (Chart 3.21).

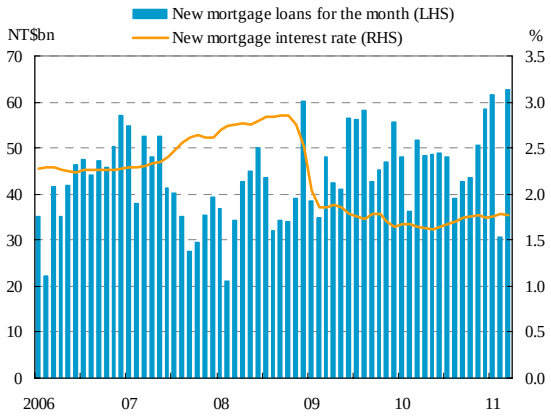
New loans for house purchases granted by the five largest banks remained at high levels in the first half of 2010. Due to the CBC's measures to strengthen mortgage risk management, new loans for house purchases contracted in the third quarter but resumed their climb in October and reached a new high of NT$62.6 billion in March 2011 as the property market warmed up. With respect to financing costs, the interest rate for new mortgages decreased to 1.62% in May 2010 and gradually rebounded to 1.77% in March 2011, following the CBC's policy rate hikes (Chart 3.22).

Chart 3.21 Annual growth rate of real estate-related loans



Source: CBC.

Chart 3.22 New mortgages – amount and interest rate



Source: CBC.

Government adopted a series of measures in response to surging house prices

In response to surging house prices in specific areas and banks' excessive concentration of credit in real estate related loans, the CBC, the Ministry of Finance, and the FSC have adopted the following measures to enhance the soundness of the housing market and financial stability:

1. The CBC has adopted a series of targeted prudential measures since October 2009, including moral suasion and the promulgation of the Regulations Governing the Extension of Land Collateralized Loans and Housing Loans in Specific Areas by Financial Institutions

(Box 4) with the aim of discouraging property and land speculation fueled by bank credit and urging financial institutions to enhance risk management associated with credit extension so as to protect depositors' rights and promote financial stability.

2. The MOF reinforced tax audits on speculative real estate transactions and proposed the Specifically Selected Goods and Services Tax, which imposes a tax of 10%~15% on the sale price of non-self-use residences and city land with building permits (land for construction in urban planning areas) that were bought less than two years ago, while not applicable to reasonable, ordinary or involuntary transfers of properties. The aforementioned statute was promulgated by the President on 4 May 2011 and took effect from 1 June 2011.

3. On 21 March 2011, the FSC announced three measures to supervise the real estate lending risks of banks, including: (1) clearly defining self-use residence loans and raising capital charges for non-self-use residence loans;[51] (2) requesting banks to strengthen concentration risk management of real estate lending, ascertain the purpose of loans and cautiously determine real estate values; (3) including the extension of real estate lending into one of the key items subject to financial examination.

In summary, the overall asset quality of real estate-related loans remained satisfactory, with the average NPL ratio staying low for the time being. However, as the property market has begun to show signs of cooling, it may undermine the real estate related credit extension business and asset quality of financial institutions and thus warrants close attention.

[51] The FSC issued a directive on 21 April 2011, allowing the use of either a 45% risk weight or 35%/75% risk weight under the LTV method for new self-use residence loans granted by banks, while non-self-use residence loans were assigned a risk weight of 100%. Self-use residence loans refer to loans applied for by nationals without domestic residence for the purpose of purchasing residences for self-use.

Box 4
The CBC's targeted prudential measures to stablize the property market

In view of a surge in housing prices in specific areas and excessive concentration of the loan portfolios of banks, the CBC successively launched a range of targeted prudential measures to safeguard the financial system and the development of the property market from October 2009. The measures included: (1) moral suasion to financial institutions; (2) improvement in the collection and analysis of statistics; and (3) regulations to govern real-estate loans in specific areas granted by financial institutions. With the aforesaid measures, the CBC aimed at urging banks to strengthen their risk management of real estate loans and promoting sound development of the property market.

1. Moral suasion to financial institutions and improvement in the collection and analysis of housing loan data from October 2009

Initially, the CBC adopted the following measures:

- Urged banks to rein in risks related to mortgage loans (October 2009);
- Addressed asset market problems in the Board meeting and reached a decision under which the Board will take asset prices into account in its monetary policy setting (December 2009);
- Requested the Bankers Association of the Republic of China to remind borrowers of preferential loans regarding the risk of increasing repayment and rising effective interest rates as soon as grace periods expire (January 2010);
- Used moral suasion to encourage 15 domestic banks with regard their investment-oriented borrowers to: (1) lower the loan to value (LTV) ratio (ceiling of 70%); (2) raise the interest rate higher than that of general housing loans; and (3) remove the grace period (March 2010); and
- Required banks to submit call reports regarding the extension of newly approved mortgage loans to general borrowers and investment-oriented borrowers by region every 15 days. Target examinations will be undertaken where necessary, so as to ensure banks' compliance with the aforementioned policies (April 2010).

2. Regulations to govern the extension of housing loans in specific areas by financial institutions in June 2010

Most banks adjusted their mortgage loan policies in the face of a range of moral suasions

by the CBC. Nevertheless, concerns about the excessive concentration on real estate loans of banks lingered, and the house-purchase burden faced by homebuyers grew heavier on the back of the notable rise in housing prices in specific areas. Meanwhile, there was an increasing need for a uniform lending standard for housing loans among financial institutions. Against this backdrop, the CBC Board approved the promulgation of the Regulations Governing the Extension of Housing Loans in Specific Areas in June 2010. The key points of the Regulations included: (1) capping the LTV ratio on second (or more) housing loans for home purchases in specific areas at 70%; and (2) removing the grace period for such loans (Table B4.1).

Table B4.1 Regulations Governing the Extension of Housing Loans in Specific Areas by Financial Institutions

Scope	1. Financial Institutions referred to in the Regulations include domestic banks, local branches of foreign banks, credit cooperatives, Agricultural Bank of Taiwan, credit departments of farmers' and fishermen's associations, Chunghwa Post Co., and insurance companies. 2. The scope of "Specific Areas" prescribed in the Regulations includes Taipei City and ten districts in New Taipei City. 3. The "new housing loans" granted by financial institutions in the aforementioned areas.
New housing loans	Financial institutions shall, before extending new housing loans to individual borrowers against collateral located in specific areas, verify the borrowers' credit history related to housing loans with the Joint Credit Information Center. With regard to housing loans newly extended to borrowers who have other outstanding housing loans, financial institutions shall: 1. Limit new housing loans to no more than 70% of the appraisal value of the collateral; 2. Remove grace periods; and 3. Grant no additional loans against the same collateral for home refurbishments, as working capital, or for other purposes.
Effective date	The Regulations shall enter into force on 25 June 2010. Loans already approved by financial institutions on or before the cutoff date, may be disbursed in accordance with the original terms and conditions granted when the loans were approved.

Source: CBC.

3. Ongoing moral suasion and improvement in the collection of information regarding land collateralized loans in the second half of 2010

In addition to ongoing moral suasion, the CBC further enhanced the collection and analysis of land collateralized loans following the promulgation of the aforementioned regulations governing housing loans in specific areas. These measures included:

- Reminding financial institutions to be alert to activities stemming from massive purchases of existing houses by speculators who may take advantage of fake

applicants to apply for housing loans, while urging financial institutions to curb such new loans in the hope of promoting effective risk management (July 2010);

- Using moral suasion to encourage banks to draw up appropriate criteria for land collateralized loans aimed at reinforcing risk management associated with land acquisition financing, whereby banks shall: (1) require borrowers to offer elaborate and concrete plans of construction projects; (2) set up reasonable LTV ratios and interest rates; and (3) adopt a package of measures (for example, withdrawal of loans or raising interest rates) to discipline borrowers who fail to commence construction on schedule (September 2010).
- Requiring banks to submit monthly call reports regarding the extension of newly approved land collateralized loans, so as to monitor the relevant credit extension of individual banks (October 2010).

4. The amendment of regulations to govern real estate loans granted by financial institutions (December 2010)

The CBC's policy measures to govern housing loans in specific areas showed promising results during the third quarter of 2010. Nonetheless, buoyant property transactions since October of that year have led to concerns about the increasing credit extension of banks' housing loans in other unregulated regions neighboring the specific areas. With regard to the enhancement of risk management for land collateralized loans granted by banks, there were mounting problems that mortgage risk management would be inconsistent between public banks and private banks in terms of various loan standards. As a result, the CBC Board approved the amendment of the Regulations Governing the Extension of Land Collateralized Loans and Housing Loans in Specific Areas in December 2010 (Table B4.2). This measure aimed primarily at dampening speculative activities in the property market fueled by bank credit, while urging financial institutions to reinforce their credit risk management so as to protect the interests of depositors and promote financial stability. The key points of the amendment are shown as follows:

- For housing loans in specific areas, the efforts included: (1) extending the coverage of specific areas; (2) lowering the maximum LTV ratio for second (or more) housing loans by individuals to 60%; and (3) encompassing housing loans by companies in specific areas to be subject to the applicable regulations.
- As for land collateralized loans, it tightened underwriting standards for real estate loans collateralized by residential or commercial land plots located in urban planning

districts. Financial institutions shall: (1) require borrowers to present concrete plans of construction projects; and (2) cap the LTV ratio at 65%, where 10% of the approved loan amount shall not be disbursed until the construction commences.

Moreover, in order to help financial institutions and the public understand more details about the foregoing regulations, further explanations and Q & A were provided on the CBC's website in January 2011.

Table B4.2 Regulations Governing the Extension of Land Collateralized Loans and Housing Loans in Specific Areas by Financial Institutions

Scope	1. Financial Institutions referred to in the Regulations include domestic banks, local branches of foreign banks, credit cooperatives, Agricultural Bank of Taiwan, credit departments of farmers' and fishermen's associations, Chunghwa Post Co., and insurance companies. 2. In addition to Taipei City and ten districts in New Taipei City, the scope of "Specific Areas" prescribed in the Regulations is amended to also include three other New Taipei City districts. 3. Pursuant to these amendments, land collateralized loans shall be governed by the Regulations.
Housing loans in Specific Areas	1. The loan-to-value ratio will be capped at 60%, down from 70%, for home purchases in specific areas by individuals who have taken out other outstanding real estate loans. Financial institutions shall, before extending new housing loans to individual borrowers against collateral located in specific areas, verify the borrowers' credit history related to housing loans with the Joint Credit Information Center. With regard to housing loans newly extended to borrowers who have other outstanding loans for real estate purchases, financial institutions shall: (1) Limit new housing loans to no more than 60% of the appraisal value of the collateral; (2) Remove grace periods; and (3) Grant no additional loans against the same collateral for home refurbishments, as working capital, or for other purposes. 2. Housing loans extended to companies shall be governed by the Regulations and shall conform to relevant rules in the sub-paragraphs (1) to (3) prescribed above.
Land collateralized loans	When extending collateralized loans against collateral of residential or commercial land plots located in urban planning districts (including but not limited to aforementioned specific areas), financial institutions shall: 1. Require borrowers to present concrete plans of construction projects; 2. Apply a maximum LTV ratio of 65% of the acquisition cost or the valuation price of the collateral, whichever is lower, where 10% of the approved loan amount shall not be disbursed until the construction commences; extend no additional credit for working capital or other purposes; and 3.Bills finance companies shall comply with the rules in the above two paragraphs when providing guarantees to bill issuance against collateralized residential or commercial land plots located in urban planning districts.
Effective date	The Regulations shall enter into force on 31 December 2010. Loans already approved by financial institutions before the cutoff date may be disbursed in accordance with the original terms and conditions granted when the loans were approved.

Source: CBC.

5. Ongoing target examinations to ensure the compliance of policies by financial institutions

To carry out the targeted macroprudential measures and contain the concentration of credit risks in financial institutions, the CBC will continuously analyze financial institutions' regular call reports and conduct target examinations for certain financial institutions where necessary.

IV. Financial sectors

4.1 Financial markets

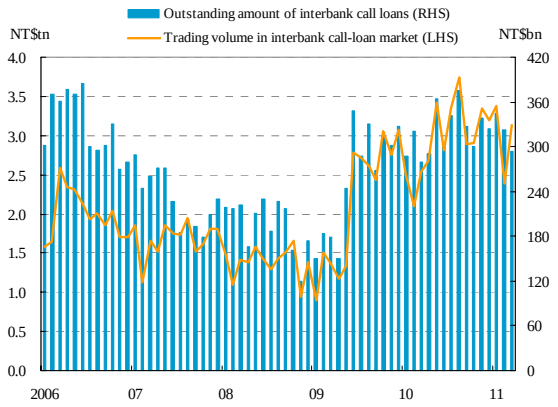
The trading volume of interbank call loans increased materially in 2010; in addition, trading volumes trended upwards in the bills and bond markets, while yield spreads between long-term and short-term rates varied between 59 and 105 basis points. As for the domestic stock market, stock indices reached record highs post the global financial crisis but then fell back moderately, and the volatility decreased. In the foreign exchange market, the NT dollar exchange rate appreciated obviously against the US dollar in the second half of 2010, but remained relatively stable compared to the exchange rates of other major currencies; moreover, the trading volume increased markedly.

4.1.1 Money and bond markets

Interbank call loan trading volume posted a significant increase, and trading volumes in bills and bond markets also rebounded

In 2010, the average monthly trading volume of interbank call loans increased by 38.01% year on year and the average daily outstanding amount also rose by 24.86% over the previous year. The reason was primarily because a large proportion of the funds remitted into Taiwan by foreign portfolio investors were channeled into interbank call loans by custodian banks, coupled with the ample liquidity provided by domestic banks. In 2011 Q1, the trading volume of interbank call loans remained at the same level as in 2010 Q4, except a remarkable decrease in February owing to the Chinese Lunar New Year holidays. However, the average outstanding amount of interbank call loans slightly descended on a monthly basis

Chart 4.1 Interbank call-loan market

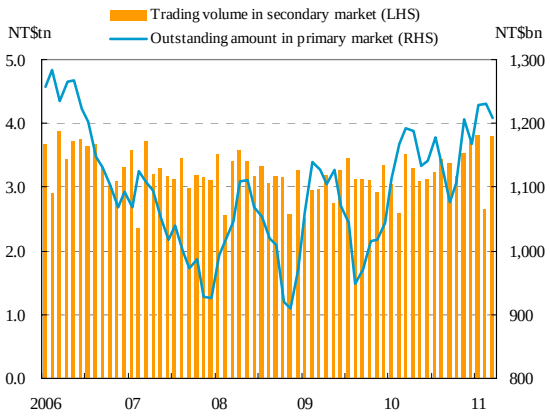


Note: Outstanding amount is the monthly average of daily data.
Source: CBC.

(Chart 4.1).

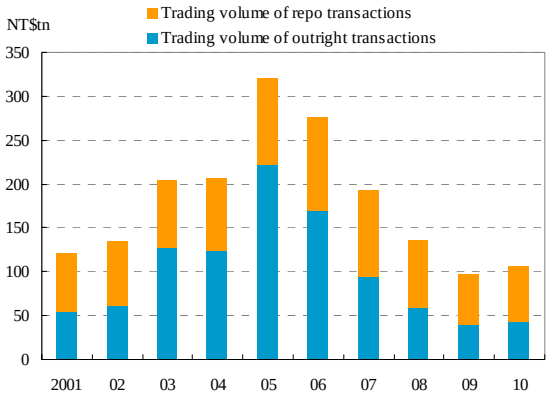
In 2010, there was an expansion in the trading volume and the outstanding amount in the primary and secondary bills markets. In the primary bills market, the outstanding amount of bills issuance continued to rise in 2010 Q1 and became volatile from Q2 onwards due to notable changes in the issuance amount of treasury bills, commercial papers, and certificates of deposit. The outstanding amount of bills issuance at the end of 2010 rose by 11.93% year on year. Broken down by instruments, the outstanding issuance amount of certificates of deposit at the end of 2010 increased by 36.83%, while that of commercial paper rose by 5.34%. Moreover, at the end of March 2011, the outstanding amount of bills issuance remained high. As for the secondary bills market, its trading volume,[52] affected by an increase in the issuance of commercial paper,[53] rose by 6.53% year on year in 2010. In 2011 Q1, the trading volume soared, except for a decline in February, affected by the Chinese Lunar New Year holidays (Chart 4.2).

Chart 4.2 Primary and secondary bills markets



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

Chart 4.3 Outright and repo transactions in the bond market



Source: CBC.

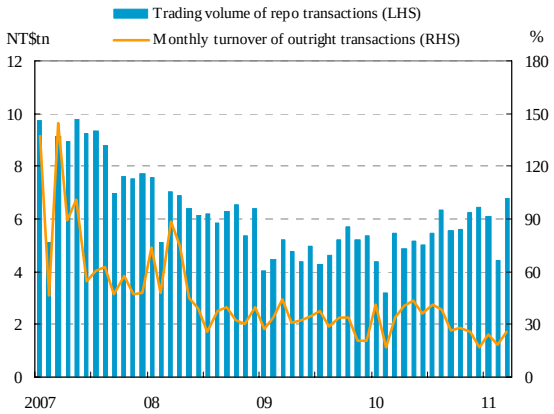
Regardless of the sluggish bond market in 2009, the trading volume trended upwards and rose by 8.99% year on year in 2010. Of the components, outright transactions and repo transactions increased by 8.24% and 9.50%, respectively (Chart 4.3). The monthly turnover ratio of outright transactions rebounded from a low in March 2010, despite ample liquidity and less bonds being traded in the market. From September onwards, owing to the lack of trading willingness of bond traders and the expectation of rising market rates, outright transactions dropped significantly and their monthly turnover ratio fell to a trough of 16.60% in December 2010, a five-year low. In 2011 Q1, the outright turnover ratio in the bond market

[52] Source: the FSC.
[53] The trading value of commercial paper was more than 80% of the trading volume in the secondary bills market. The effect of its change on the total trading volume was huge.

remained at a low level (Chart 4.4).

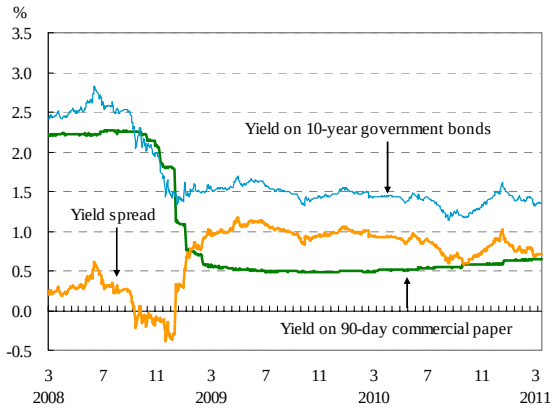
As bond markets have long been an important source of capital for government and corporations to raise medium- and long-term funds, the soundness of bond markets are closely related to financial stability. Nevertheless, the local bond market has been facing a bottleneck in its development during recent years. In response, the MOF, the CBC, and the bond market supervision authorities [54] jointly implemented measures relating to bond issuance, trading and settlement. However, as many financial institutions held large amounts of government bonds and were reluctant to trade them in the market, it is expected that the trading volume of outright transactions will remain low in 2011 (Box 5).

Chart 4.4 Bond transactions and turnover



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

Chart 4.5 Yield spread



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

Yield spreads ranged between 59 and 105 basis points

Short-term and long-term market interest rates remained at a similar level and yield spreads fluctuated within a narrow range in the first half of 2010. In the second half of 2010, following the CBC's policy rate rises since June, short-term market rates climbed up. On the other hand, government bond yields declined from July onward, due to the falling bond yields in the US and Japan caused by the expectation of another round of quantitative easing by major central banks and the insufficient government bond supply at home to meet the strong demand from domestic investment institutions. In November, as a result of soaring yields on US government bonds and tightening rules on foreign investment in Taiwan's government bonds, together with the lack of trading willingness of bond traders and higher than expected government bond

[54] The authorities include the FSC and the GTSM (GreTai Securities Market).

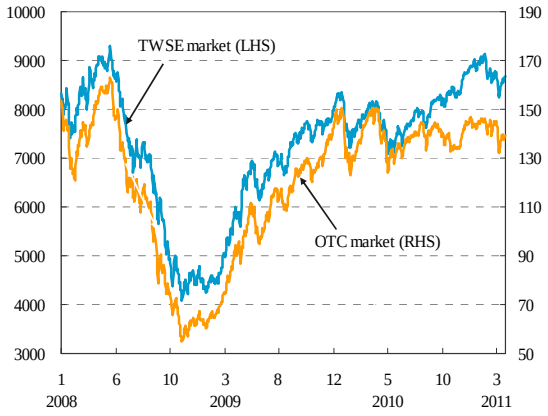
issuance in 2011, government bond yields rose again. In general, yield spreads fluctuated between 59 and 105 basis points throughout the year of 2010. In 2011 Q1, short-term rates increased gradually; nevertheless, government bond yields slumped due to increased purchase by life insurance companies and rebuilt positions by bond traders. As a result, yield spreads fluctuated between 67 and 90 basis points (Chart 4.5).

4.1.2 Equity markets

Stock indices dropped after hitting new highs, while volatility rebounded slightly after sharp falls

The Taiwan Stock Exchange Weighted Index (TAIEX) of the Taiwan Stock Exchange (TWSE) market hit a high in mid-April 2010, due to the strengthening of the world's major stock markets and the benefits of the signing of ECFA. However, the TAIEX dropped to an annual low of 7,072 on 9 June 2010, owing to the impact of the European sovereign debt crisis and the repatriation of foreign capital.[55] Afterwards, the TAIEX climbed to its annual high of 8,973 at the end of December, an increase of 27% from the trough in June. This strength was due to net stock buying by foreign institutional investors because of strong capital inflows into Asia, the ECFA becoming effective and robust performance in global stock markets. In 2011 Q1, amid the brighter outlook for the US recovery, the TAIEX further climbed up and reached 9,145 before the Chinese Lunar New Year holidays. However, owing to political turmoil in several countries and rising oil prices, the TAIEX dropped to 8,683 at the end of March, a decrease of 3.22% compared to that of the previous December. Meanwhile, Taiwan's GreTai Securities Market (GTSM) Index of the OTC market closely tracked the movements of the TAIEX, climbing to 144 in December 2010, after hitting a new low of 123 in May 2010. It fell to 139 at the end of March 2011, a decrease of 3.49% from the end of December 2010 (Chart 4.6). Compared to major stock markets around the world, the TAIEX's 9.58% rise in 2010 was higher than the stock indices of London, Tokyo, Hong Kong and Shanghai (Chart

Chart 4.6 Taiwan stock market indices



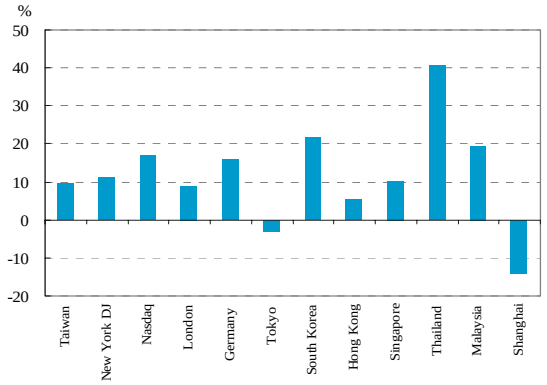
Sources: TWSE and GTSM.

[55] In May 2010, foreign investors (foreign institutional investors, overseas Chinese, and foreign individual investors) were net sellers of NT$127.2 billion worth of securities in Taiwan, with the net selling amount reaching a new high for a single month since 2008.

4.7).

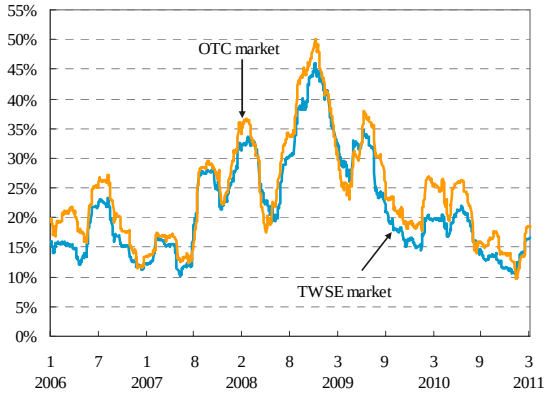
Broken down by sectors, most sector indices in the TWSE market were in bullish territory in 2010 and half of them outperformed the TAIEX. The Trading and Consumers' Goods Index performed the best due to an increase in aggregate demand from Mainland China and the effects of the ECFA, increasing by 52.45%. Additionally, the Transportation Index experienced large growth, increasing by 47.81%, owing to the effects of cross-strait direct flights. The Optoelectrical Industry Index performed poorly, with a drop of 11.05%. In 2011 Q1, most indices entered bearish territory following falls in international stock markets, while the Plastic Index and the Communications and Internet Industry Index both performed well. These two sectors benefited from soaring oil prices and strong demand for smartphones.

Chart 4.7 Comparison of major stock market performances



Notes: 1. Figures are for 2010.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

Chart 4.8 Stock price volatility



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

Equity market volatility was significant in the first half of 2010, especially that in the OTC market. In the second half of 2010, the volatility in the TWSE and OTC markets trended down and stood at 11.28% and 13.86%, respectively, at the end of December, while that in the TWSE market touched a new low since 2008. In 2011 Q1, the volatility in the TWSE and OTC markets declined further at the end of January, but then trended up and stood at 16.53% and 18.41%, respectively, at the end of March (Chart 4.8). Nevertheless, the risks involved in stock investments were relatively low compared to those during the global financial crisis of 2008 and 2009.

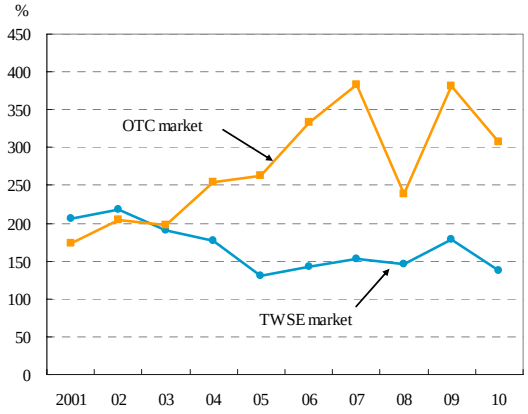
Transactions in the stock markets remained active

The TWSE and OTC markets were moderately active in 2010. The average monthly trading value on the TWSE market was NT$2.35 trillion, a moderate decrease of 4.93% year on year,

while its turnover ratio in terms of trading value in the same year decreased to 136.74%, touching a new low since 2006 (Chart 4.9). The trading value in the OTC market saw a significant increase in 2010. The average monthly trading value in the OTC market was NT$469.5 billion in 2010, an increase of 7.53% year on year, but its turnover ratio saw a significant fall to 306.68% from 380.61% posted in the previous year (Chart 4.9). In 2011 Q1, affected by the local stock market slump and the Chinese Lunar New Year holidays, the turnover ratios and monthly trading value in the TWSE and the OTC markets in January and February 2011 moved in a downward direction, while the numbers reflected a rebound in March.

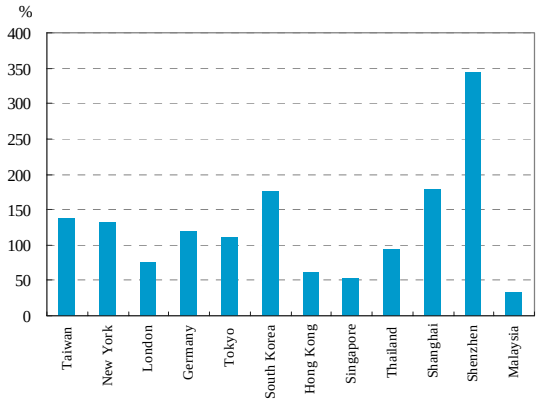
Compared to major stock markets around the world, the annual turnover ratio in the TWSE market in 2010 was lower than the neighboring stock markets in South Korea, Shanghai and Shenzhen, while approximately equal to that in New York's Dow Jones, but higher than those in London, Germany, Tokyo, Hong Kong, Singapore, Thailand and Malaysia (Chart 4.10).

Chart 4.9 Annual turnover ratios in Taiwan's stock markets



Sources: TWSE and GTSM.

Chart 4.10 Comparison of turnover ratios in major stock markets



Notes: 1. Figures refer to accumulated turnover ratios in 2010.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

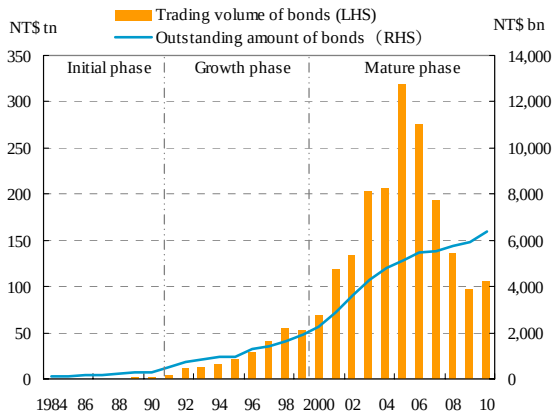
Box 5
History and prospects of Taiwan's bond markets

Bond markets play an important part in a country's capital markets as a key channel for corporations and the government to raise medium- and long-term funds. The soundness of bond markets is closely related to financial stability and is always the focus of the Ministry of Finance, the CBC and bond market supervisors (the FSC and the Gre Tai Securities Market). This box discusses the history and present condition of Taiwan's bond markets, and analyzes their future prospects.

1. History

The history of Taiwan's bond markets can be divided into three phases (Chart B5.1):

Chart B5.1 History of Taiwan's bond markets



Note: The trading volume and outstanding amount before 1984 are excluded here for being too small.
Source: CBC.

1.1 1949~1990

On 1 August 1949, the central government issued the first public bond and established the first bond market in Taiwan. During this period, bond issuance volume was small and most bonds were held by financial institutions as liquidity reserves, resulting in an insufficient supply of traded bonds. Coupled with limited market participants, secondary bond markets were inactive.

1.2 1991~1999

Since 1991, Taiwan's government issued more government bonds in order to raise necessary funds for the Six-year National Development Plan, leading to an increasing supply of government bonds in the market. Financial institutions also began to actively participate in bond markets. Furthermore, corporations started to raise funds through capital markets and issue corporate bonds. Beginning from 1997, government bonds were issued in book-entry form and the CBC implemented the real-time gross settlement (RTGS) mechanism for bond transactions. Transaction parties who conduct settlement through the same clearing bank are allowed to settle their transactions through the delivery versus payment (DVP) mechanism. These developments simplified government

bond management and lowered settlement risks faced by market participants. As a result, Taiwan's bond markets entered into a growth phase.

1.3 2000~present day

In July 2000, the Gre Tai Securities Market introduced the Electronic Bond Trading System (EBTS), providing bond dealers an online trading platform different from the price negotiations conducted via phone. The EBTS significantly improved trading efficiency and thus substantially increased the outright transaction volume. It was an important progress in Taiwan's bond market. Moreover, the Ministry of Finance, the CBC and bond market supervisors have continued to introduce measures regarding the improvement of bond issuance, trading and settlement. These included the introduction of a regular and moderate issuance system, reopening system, when-issued trading system, primary dealer system and lending facility for government bonds, the establishment of a corporate bond and financial debenture trading platform, as well as the opening of new bond-related financial products. They also introduced a delivery-versus-payment (DVP) mechanism for book-entry security transactions in order to reduce the settlement risk in bond markets.

The efficiency of Taiwan's bond markets improved substantially and both issuance and trading volume grew markedly. In particular, the bond trading volume hit a new high in 2005, making Taiwan's bond markets the second largest in Asia, only behind Japan's. In recent years, though, as Taiwan's bond markets have entered a mature phase, the trading volume has gradually decreased. Furthermore, during this phase, financial institutions bought and hoarded a great deal of bonds due to ample funds at hand, which resulted in an insufficient supply of bonds and an imbalance of supply and demand in the market, and in turn caused distortions of the government bond yield curve. Additionally, high volatility in the cost of bond borrowing also diminished the trading willingness of market participants. All these are crucial factors that have hindered the development of bond markets.

2.Current condition of bond markets

2.1 Primary market

Bond issuance outstanding at the end of 2010 amounted to NT$6.48 trillion, an increase of 6.4% from a year ago. Government bonds accounted for the largest share of 66.8% of the total, followed by corporate bonds at 18.6% and financial debentures at 12.6%[1]. The market share of each kind of bond remained stable (Table B5.1).

Table B5.1 Outstanding amount of bonds by category

Unit: NT$ Trillion, %

End of year or month	Total	Government bonds		Corporate bonds		Financial debentures		Beneficiary securities		Foreign bonds and international bonds	
		Outstanding amount	Ratio	Outstanding amount	Ratio	Outstanding amount	Ratio	Outstanding amount	Ratio	Outstanding amount	Ratio
2008	5.98	3.74	62.5	1.14	19.1	0.90	15.0	0.14	2.4	0.06	1.0
2009	6.09	3.97	65.2	1.14	18.7	0.81	13.3	0.11	1.8	0.06	1.0
2010	6.48	4.33	66.8	1.20	18.6	0.82	12.6	0.08	1.2	0.05	0.8
2011/2	6.45	4.32	66.9	1.22	18.9	0.81	12.5	0.06	1.0	0.04	0.7

Sources: CBC and FSC.

2.2 Secondary market

The amount of bonds traded in 2010 was NT$106.31 trillion, an increase of 9.0% year on year. The market share of government bonds in trading volume was roughly 98% before 2009 and decreased to 89.5% in 2010, while that of corporate bonds increased from 1.3% to 9%. The changes were mainly due to an adjustment to bond categories. As for financial debentures, beneficiary securities, foreign bonds and international bonds, the trading volume only accounted for a small share of the whole market (Table B5.2).

Table B5.2 Trading volume of bonds by category

Unit: NT$ Trillion, %

Year or month	Total	Government bonds		Corporate bonds		Financial debentures		Beneficiary securities		Foreign bonds and international bonds	
		Trading volume	Ratio	Trading volume	Ratio	Trading volume	Ratio	Trading volume	Ratio	Trading volume	Ratio
2008	135.51	133.75	98.7	1.39	1.0	0.21	0.1	0.08	0.1	0.08	0.1
2009	97.54	95.99	98.4	1.34	1.3	0.15	0.2	0.00	0.0	0.06	0.1
2010	106.31	95.21	89.5	9.56	9.0	1.36	1.3	0.12	0.1	0.06	0.1
2011/1-2	15.32	13.19	86.1	1.89	12.3	0.21	1.4	0.02	0.1	0.01	0.1

Source: CBC.

3. Looking into 2011

3.1 Primary market

The government bond issuance program of 2011, announced by the Ministry of Finance, showed that the government bond issuance amount will be slightly larger than that of 2010. The issuance amount of Type A government bonds in 2011 Q1 will be NT$185 billion, among which NT$110 billion will be used to refinance existing debt. This indicates that the supply of government bonds will not increase too much. As for corporate bond issuance, escalating interest rates resulting from the recovering economy

will encourage firms to increase bond issuances to fix their interest expenses at low levels. In addition, the FSC elevated the risk weight for non-self-use residence loans from 45% to 100% in order to enhance banks' risk management on real estate-related loans. In response, banks also tended to increase subordinated financial debentures issuance to meet the new capital requirement.

3.2 Secondary market

Currently, domestic funds are ample, but the supply of bond instruments is insufficient and most of them are hoarded by financial institutions. As a result, a structural imbalance between the supply and demand of bonds still exists. Therefore, the outright transactions of bond markets in 2011 are estimated to remain at the low levels seen in recent years.

Note: 1. Financial institutions started to issue subordinated financial debentures from 2002 to decrease their NPL ratios and increase their capital adequacy ratios.

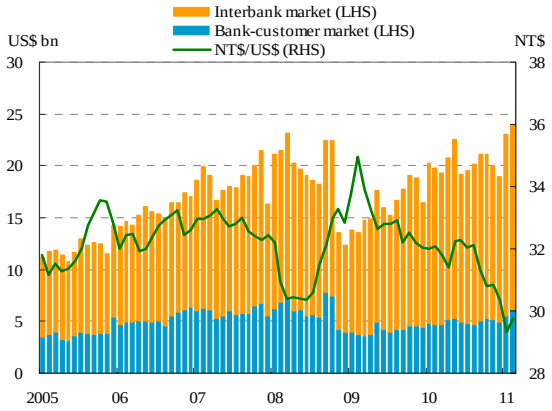
4.1.3 Foreign exchange market

The NT dollar exchange rate appreciated and the trading volume increased in the second half of 2010

Due to increasing hedging needs for US dollars triggered by the European sovereign debt crisis, the NT dollar exchange rate experienced depreciation in early 2010. Afterwards, it turned to a period of appreciation mainly due to considerable capital inflows to Asian markets.

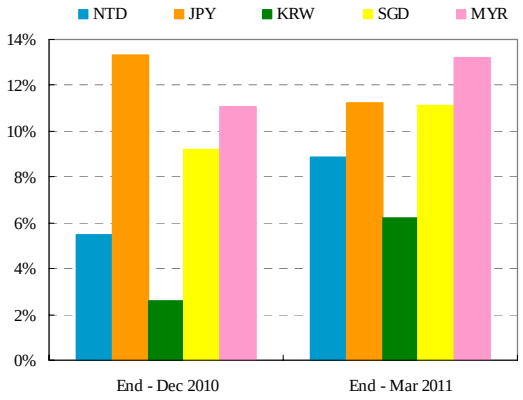
Up to mid-2010, the effects of the sovereign debt crisis in Europe prevailed in the region, and there were military confrontations on the Korean peninsula; therefore, the NT dollar exchange rate again entered into a period of depreciation and fell to 32.528 against the US dollar in early June, which was a new annual low in 2010. In the second half of 2010, the NT dollar exchange rate experienced appreciation, mainly due to Asian countries' implementation of tighter monetary policies and capital inflows to emerging markets caused by a second round of quantitative easing in the US. The NT dollar exchange rate stood at 30.368 against the US dollar at the end of December 2010, appreciating by 5.47% compared to the end of 2009 (Chart 4.11). At the beginning of 2011, the NT dollar exchange rate kept appreciating, reaching 29.300 against the US dollar at the end of January. Subsequently, owing to foreign investors repatriating capital from emerging economies as they considered an increased likelihood of economic slowdown following tighter monetary policies in those countries, and the increasing hedging needs for US dollars arising from the political turmoil in the Middle East and

Chart 4.11 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.

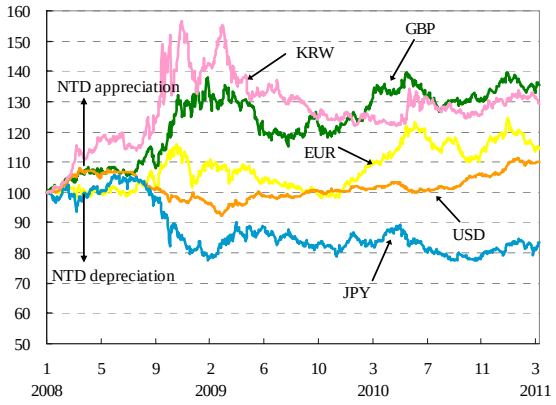
Chart 4.12 Appreciation percentages of major Asian currencies against the US dollar



Note: Appreciation percentages refer to exchange rates as of the end of 2010 and end-March 2011 compared to those as of the end of 2009.
Source: CBC.

North Africa, the NT dollar exchange rate turned to depreciation at the end of February. After a strong earthquake hit Japan, the NT dollar exchange rate appreciated in March, reaching 29.418 against the US dollar at the end of that month. Compared to other major currencies in Asia, the percentage of the NT dollar appreciation was lower than that of the Japanese yen, Singapore dollar and Malaysian ringgit (Chart 4.12).

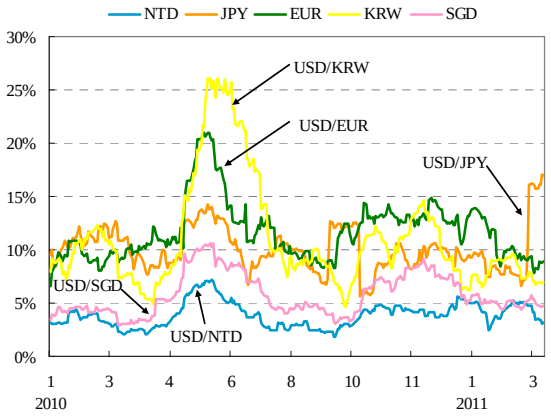
Chart 4.13 Movements of NT dollar exchange rate against key international currencies



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

As for other key international currencies, the value of the yen went up significantly as a result of the increasing hedging needs for international funds and the purchase in large amount of Japanese financial assets by Mainland China. As a result, the NT dollar depreciated against the yen by 6.92% year on year at the end of 2010. Conversely, the NT dollar appreciated by 9.66% and 13.70% against the British pound and the euro, respectively, over the same period; in addition, it appreciated by 2.78% against the Korean won (Chart 4.13).

Chart 4.14 Exchange rate volatility of various currencies against the US dollar



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

Owing to continued export growth and greater international capital movements, the foreign exchange market became more active in 2010 as the average daily trading volume registered US$20.2 billion, increasing by 24.72% year on year. In January-February 2011, the trading volume also increased significantly (Chart 4.11). A breakdown by counterparties shows that the average daily trading volume in the interbank market accounted for 75.52% of the total in 2010, while the retail sales market made up a 24.48% share. As for types of transactions, spot trading accounted for 42.86% of the total, followed by foreign exchange swaps with 42.32%.

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

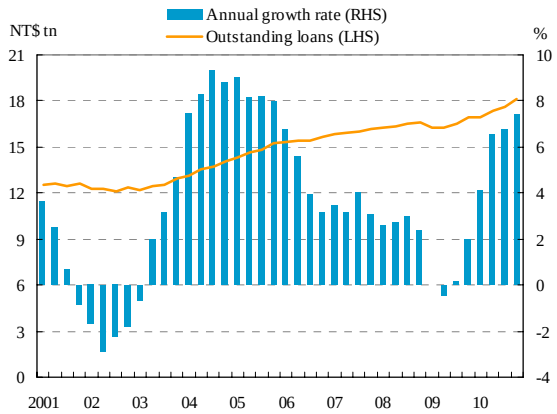
The volatility in the NT dollar exchange rate against the US dollar fluctuated between 2% and 4% in 2010 Q1, but then increased to an annual high in the middle of May. In the second half of 2010, however, volatility turned to a decrease as the NT dollar exchange rate appreciated at a more modest pace. Annual average volatility stood at 3.74% for the year as a whole. In 2011 Q1, the average volatility in the NT dollar exchange rate against the US dollar increased moderately to 4.42%, though it was relatively mild when compared to other currencies (Chart 4.14).

The CBC adopts a managed floating exchange rate regime and may step into the market to stabilize the exchange rate when seasonal or irregular disruptions cause disorderly conditions in the market. Though the volatility in the NT dollar exchange rate against the US dollar temporarily increased in 2010, the NT dollar exchange rate was relatively stable compared to the volatility in the exchange rates of major currencies such as the Japanese yen, euro, Korean won and Singapore dollar against the US dollar (Chart 4.14).

4.2 Financial institutions

4.2.1 Domestic banks

Chart 4.15 Outstanding loans and annual loan growth rate in domestic banks



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

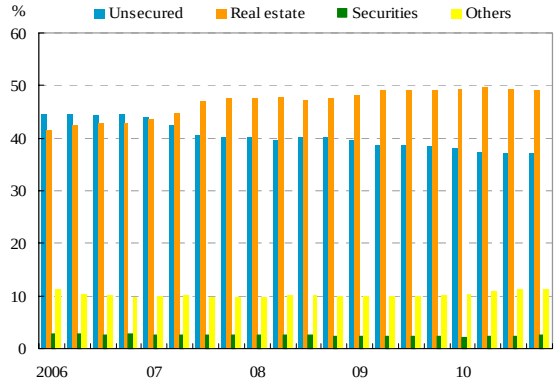
In 2010, the growth in loans increased notably, and asset quality remained satisfactory. However, credit risk concentration was still high and the concentration risk in the real estate market was increasing gradually. The estimated Value at Risk (VaR) for market risk exposures of domestic banks had limited influence on their capital adequacy. Liquidity risk was moderate too as the banking system benefited from ample liquidity. The profitability of domestic banks rose substantially and the capital adequacy continued to improve in 2010, strengthening the capability of domestic banks to bear risks.

Credit risk

Customer loan growth increased significantly

Customer loans[56] were the major source of credit risks for domestic banks. The outstanding loans of the local business units of domestic banks at the end of 2010 stood at NT$18.2 trillion and accounted for 54.27% of total assets. In 2010, due to the the economic recovory and increasing funding needs, the annual loan growth rate increased significantly and reached 7.42% in December (Chart 4.15). To analyze the borrowers specifically, the annual growth rate of individual loans and corporate loans both ascended markedly and registered 8.02% and 8.40%, respectively, at the end of 2010.

Chart 4.16 Credit by type of collateral in domestic banks



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

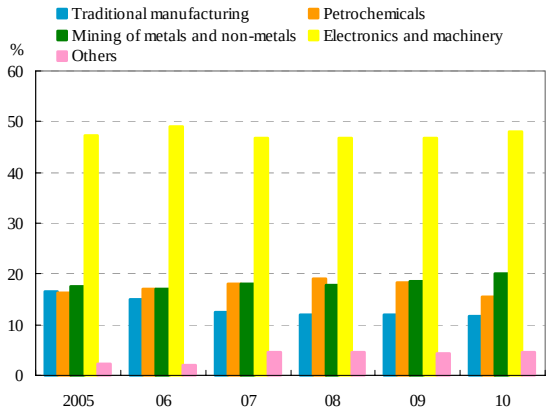
Credit exposure significantly concentrated in the real estate market, thus the relevant risk gradually climbed

The concentration of credit exposure in real estate-related loans continued growing from the previous year. Outstanding real estate-related loans of domestic banks reached NT$7.74 trillion and accounted for 42.62% of total loans as of the end of 2010. In addition, real estate-secured credit granted by domestic banks was also large, which amounted to NT$10.37 trillion, or 49.13% of total credit,[57] at the end of 2010 (Chart 4.16). Among individual banks, thirteen had ratios of real estate-secured credit to total credit of over 60%, reflecting a high concentration of credit risk.

[56] The term “customer loans” herein refers to lending by local business units of domestic banks to their customers. It excludes interbank lending.
[57] The term “credit” herein includes loans, guarantee payments receivable and acceptances receivable.

The NPL ratio of real estate-related loans remained relatively low. However, since the CBC and the FSC introduced several measures to enhance risk management for real estate-related loans, and the MOF will soon start to impose the Specifically Selected Goods and Services Tax, real estate market conditions are expected to turn less buoyant. The buyer bargaining power became larger in some areas with ample housing supply. Therefore, it would be advisable for banks with credit exposure highly concentrated in real estate-related loans to review their credit policies, such as loan-to-value, concentration and real estate appraisal, to cope with the potentially higher credit risks.

Chart 4.17 Weight of loans to the manufacturing sector by domestic banks

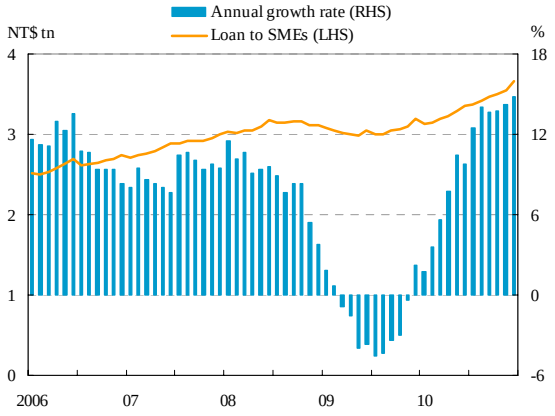


Notes: 1. End-of-period figures.
2. Weight of each sector = loans to each sector / loans to the whole manufacturing sector.
3. See note 58 for the definition of manufacturing sector.
Source: CBC.

Industrial credit concentration of corporate loans gradually increased

Outstanding corporate loans of the local business units of domestic banks stood at NT$7.92 trillion at the end of 2010, while loans to the manufacturing sector stood at NT$3.58 trillion and accounted for the largest share of 45.15% of the total.

Chart 4.18 Loans to SMEs by domestic banks



Source: FSC.

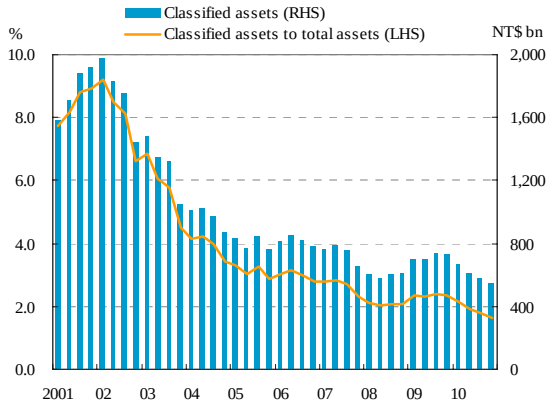
Within the manufacturing category,[58] the largest proportion of loans were for electronics, electric machinery and machinery-related industries, which stood at NT$1.72 trillion and accounted for 48.09% of the total loans to the whole manufacturing sector[59] (Chart 4.17). The ratio gradually increased in the past three years, reflecting an ascending industrial credit concentration.

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

[59] The production value of electronics, electric machinery and machinery-related industries accounted for 42.18% of total manufacturing production value at the end of 2010, which was less than loans to electronics, electric machinery and machinery-related industries as a percentage of total loans to the manufacturing sector.

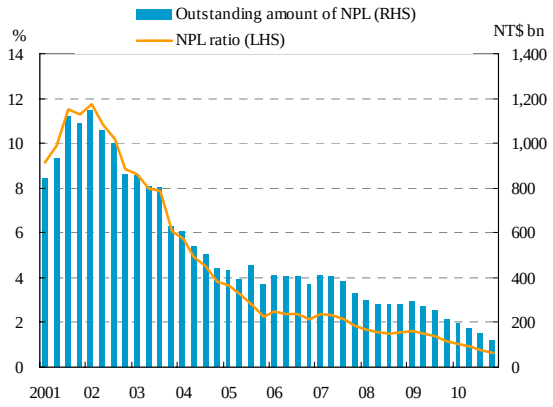
As the funding demand of SMEs increased from 2010 on due to the recovery of the global economy and strong growth in Asian emerging economies, outstanding corporate loans to SMEs by domestic banks grew markedly and registered NT$3.66 trillion[60] at the end of 2010, which accounted for 46.19% of total corporate loans, with an annual growth rate of 14.79% (Chart 4.18). Furthermore, in line with the government's Economic Vitalization Package and measures to promote employment, the Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) also implemented several projects to encourage financial institutions to lend to SMEs. As a result, the outstanding loans guaranteed by the SMEG rose significantly to NT$597.3 billion at the end of 2010 with an 18.11% year-on-year increase and accounted for 16.32% of total SME loans. The guarantee coverage percentage also increased to 78.09% from 73.72% a year earlier. These statistics point to the favorable conditions for SMEs to acquire necessary funds.

Chart 4.19 Classified assets of domestic banks



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

Chart 4.20 Average NPL ratio of domestic banks



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

As the profitability in the corporate sector rebounded and its interest servicing ability improved due to global economic recovery, the credit risk of domestic banks related to corporate loans is expected to drop. However, as Taiwan's electronics and information industry, an important borrower from domestic banks, heavily relies on components and equipment made in Japan, the potential impact on their future production and operation following the Japan's earthquake in March 2011 could further elevate the credit risk of domestic banks and thus warrants close monitoring.

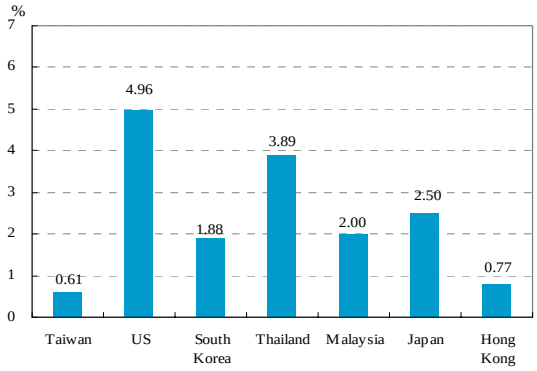
[60] Outstanding corporate loans to SMEs of domestic banks are the FSC data.

Asset quality remained satisfactory

As a result of massive write-offs of NPLs, the outstanding classified assets[61] and average classified asset ratio of domestic banks stood at NT$548.5 billion and 1.64% at the end of 2010, dropping considerably by 25.04% and 0.70 percentage points, respectively, over the previous year, with both registering ten-year record lows (Chart 4.19). At the same time, expected losses of classified assets[62] also significantly declined by 33.68% year on year to NT$64.4 billion and the ratio of expected losses to loan loss provisions stood at 26.00%, indicating sufficient provisions of domestic banks to cover expected losses.

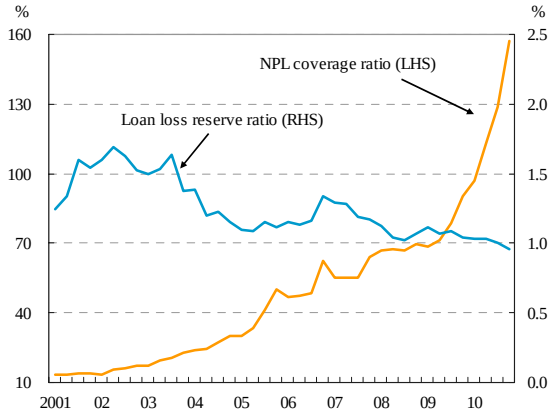
The outstanding NPLs of domestic banks stood at NT$123.0 billion at the end of 2010, contracting dramatically by 43.00% year on year. Meanwhile, the average NPL ratio fell to a ten-year low of 0.61% (Chart 4.20), while all banks had NPL ratios of less than 2%. Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was similar to that of Hong Kong and much lower than most of the other countries (Chart 4.21), reflecting the good loan quality in Taiwan's banking industry.

Chart 4.21 NPL ratios of banks in selected countries



Note: Figure for Japan is end-September 2010 data, while the others are end-December 2010.
Sources: CBC, FDIC, FSS, BOT, BNM, BOJ and HKMA.

Chart 4.22 NPL coverage ratio and loan loss reserve ratio of domestic banks



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

Owing to the substantial decrease in NPLs, the NPL coverage ratio at the end of 2010 rose dramatically to 157.32%, hitting a ten-year record high. However, the loan loss reserve ratio slightly dropped to 0.96% as a result of the marginal contraction of loan loss provisions (Chart 4.22).

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

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

Market risk

Estimated Value-at-Risk for market exposures rose

Using market data as of the end of February 2011, the estimated total VaR[63] calculated by the CBC's market risk model for foreign exchange, interest rate and equity exposures of domestic banks at the end of 2010 stood at NT$128.4 billion. The figure expanded significantly by 32.51% year on year (Table 4.1), mainly resulting from the increase in both the volatility and the position of interest rate risk.

The effects of market risk on capital adequacy ratios were limited

According to the estimated results mentioned above, market risk would cause a decrease of 0.67 percentage points in the average capital adequacy ratio and induce the current ratio of 11.94%[64] to fall to 11.27%. Nevertheless, the effects may be considered as limited.

Table 4.1 Market risk in domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2009	End-Dec. 2010	Changes	
				Amount	%
Foreign exchange	Net position	47.6	57.4	9.8	20.59
	VaR	1.4	2.2	0.8	57.14
	VaR / net position (%)	2.94	3.83		0.89
Interest rate	Net position	3,755.50	5,649.40	1,893.90	50.43
	VaR	50.1	115.8	65.7	131.14
	VaR / net position (%)	1.33	2.05		0.72
Equities	Net position	502.9	516.8	13.9	2.76
	VaR	50.9	34.1	-16.8	-33.01
	VaR / net position (%)	10.12	6.6		-3.52
Total VaR		96.9	128.4	31.5	32.51

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

[63] The market risk model describes dependencies among foreign exchange, interest rate and equity positions returns series, and provides a correlation structure between returns series. By means of a semi-parametric method, the new model constructs the sample distribution function of each asset return series using a Gaussian Kernel estimate for the interior and a generalized Pareto distribution (GPD) estimate for the upper and lower tails. The confidence level of the model is 99%, a holding period of ten trading days is used and exposure positions are assumed unchanged. The models are estimated using 1,000 foreign exchange rate, interest rate, and equity price samples.

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

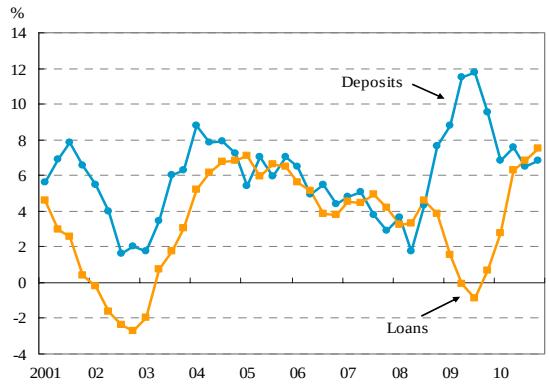
Liquidity risk

Banking system liquidity remained ample

Deposits in domestic banks continued to increase in 2010; however, the year on year growth rate of deposits declined to 6.80% in December due to a higher base. As for loans, the annual growth rate climbed markedly to 7.49% as a result of the warming up of economic activity and increasing financing demand from the corporate sector (Chart 4.23). The increase in loans exceeded that in deposits, hence the average deposit-to-loan ratio of domestic banks slightly decreased to 132.28% at the end of 2010. The funding surplus (i.e., deposits exceeding loans) registered NT$6.50 trillion, reflecting abundant liquidity in domestic banks (Chart 4.24).

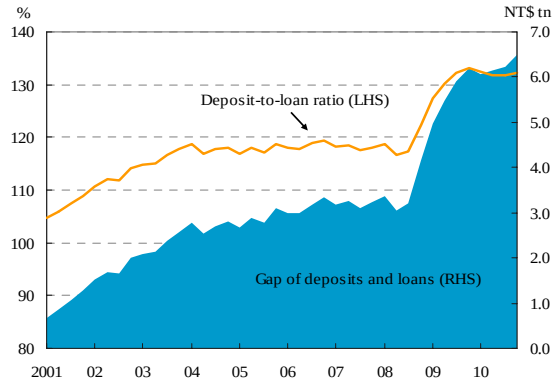
As for the sources of funds, relatively stable customer deposits accounted for the largest share of 77% of the total, which remained unchanged from the previous year, followed by interbank deposits and borrowings at 8%, while debt securities issues contributed a mere 3% at the end of 2010. Regarding the uses of funds, on account of better market conditions, customer loans accounted for the biggest share of 60% with a year on year increase of 1 percentage point, and investment reached 19%, while cash and due from banks declined from 15% at the end of the previous year to 9% of the total at the end of 2010 (Chart 4.25).

Chart 4.23 Annual growth rate of deposits and loans of domestic banks



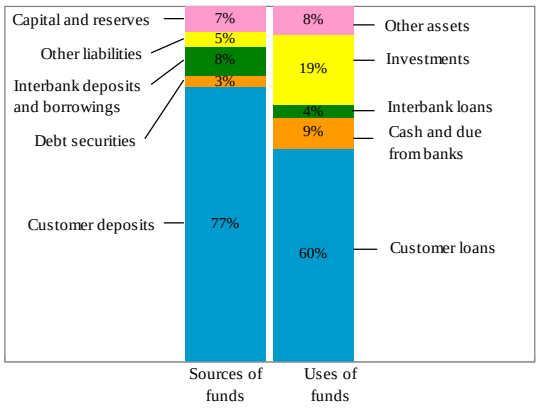
Source: CBC.

Chart 4.24 Deposit-to-loan ratio in domestic banks



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

Chart 4.25 Sources and uses of funds in domestic banks

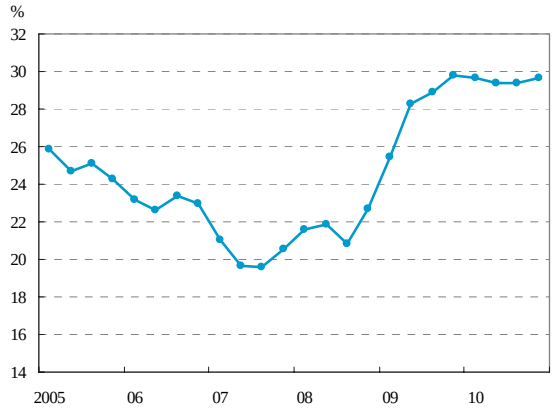


Notes: 1. Figures are end-December 2010.
2. Interbank deposits include deposits with the CBC.
Source: CBC.

Overall liquidity risk was moderate

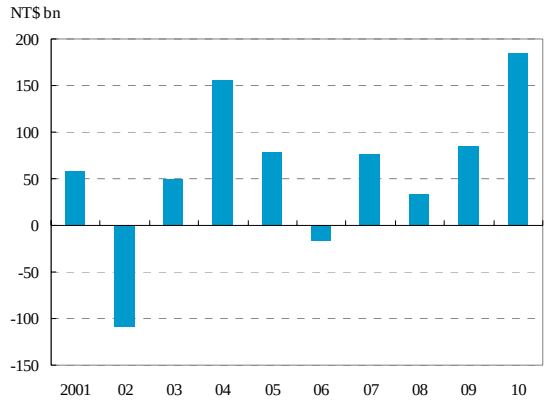
The average NT dollar liquid reserve ratio of domestic banks was 29.64% in December 2010, well above the statutory minimum of 7% (Chart 4.26), and the ratio of each domestic bank was higher than 13%. In the same period, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the CBC, accounted for 96.46% of total liquid reserves,[65] while Tier 2 and Tier 3 reserves accounted for 3.30% and 0.24%, respectively. This reveals that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risk was moderate.

Chart 4.26 Liquid reserve ratio of domestic banks



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

Chart 4.27 Net income before tax in domestic banks



Source: CBC.

Profitability

The highest profitability was recorded

Owing to the rebound of net interest income and the significant reduction in bad debt expenses, the combined net income before tax for domestic banks reached a historical high of NT$184.8 billion in 2010, which increased dramatically by NT$99.7 billion, or 117.08%, year on year (Chart 4.27). The average return on equity (ROE) and return on assets (ROA) rose from 4.52% and 0.28% in 2009 to 9.08% and 0.57%, respectively (Chart 4.28). However, compared to Asia-Pacific neighboring countries, the profitability of domestic banks was relatively low, and even lower than that of the US, where the recent global financial turmoil originated from (Chart 4.29).

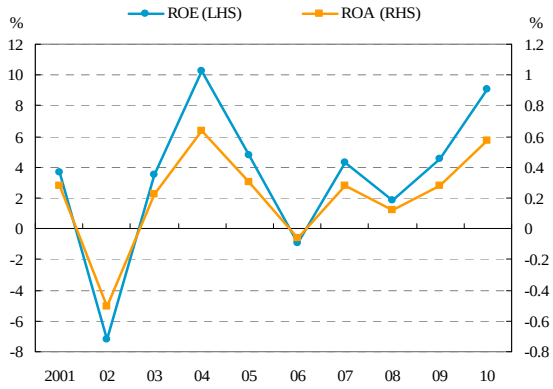
[65] Tier 1 liquid reserves include excess reserves, net due from banks in the call-loan market, re-deposits at designated banks with terms to maturity of no more than one year, certificates of deposit issued by the CBC, government bonds and treasury bills. Tier 2 liquid reserves include NT dollar-denominated 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.

Among the total thirty-eight domestic banks, only one reported a loss due to amortization of deferred losses on the sale of classified assets, while the others all posted profits, among which six banks had full-year profits of more than NT$10 billion. Eleven banks achieved a profitable ROE of 10% or more, increasing substantially from two in 2009 (Chart 4.30).

As for operating revenues and costs, total operating revenues of domestic banks stood at NT$529.6 billion in 2010, rising by NT$75.2 billion, or 16.55% year on year. Of which, net interest income, accounting for 59.52% of the total revenues, increased by NT$44.6 billion year on year as a result of the rebound of interest rate spreads between deposits and loans. Benefiting from the growth of the asset management business, net fee and commission income climbed to the highest level recorded, increasing by NT$30.1 billion and accounting for 23.56% of the total revenues. Because valuation profit and gain on the sale of financial assets and liabilities at fair value declined, net gains on financial instruments contracted dramatically by NT$22.1 billion, only accounting for 9.93% of total revenues.

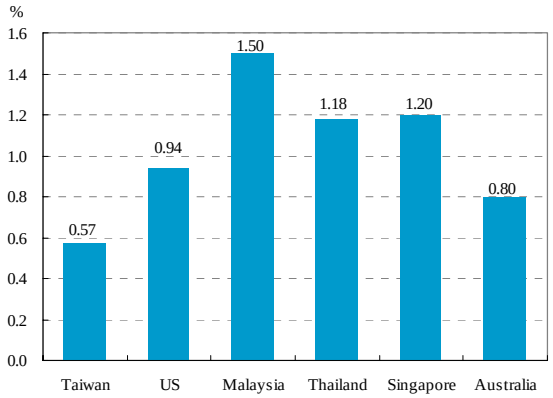
On the cost side, operation expenses increased due to the strong growth of new hires, while provisions decreased sharply to a record low level as a result of declining loan losses. Consequently, operating costs in 2010 declined to NT$345.0 billion, falling by NT$25.2 billion, or 6.80% year on year, the lowest level recorded since 1999 (Chart 4.31).

Chart 4.28 ROE & ROA of domestic banks



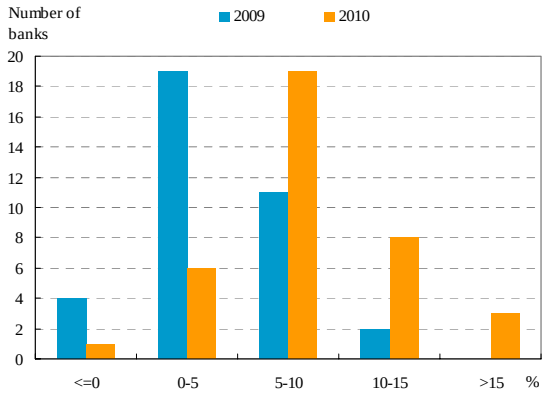
Notes: 1. ROE (return on equity) = net income before tax / average equity.
2. ROA (return on assets) = net income before tax / average total assets.
Source: CBC.

Chart 4.29 Comparison of ROA of banks in selected countries



Note: Data for Singapore is for the first three quarters of 2010, while the others are for the whole year of 2010.
Sources: CBC, FDIC, BNM, BOT, MAS and APRA.

Chart 4.30 Distribution of ROE of domestic banks



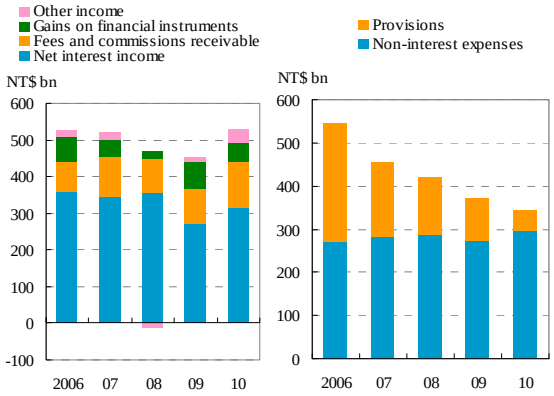
Source: CBC.

Factors that might undermine future profitability

After shrinking to 1.11 percentage points in 2009 Q2, the interest rate spread between deposits and loans gradually increased from its lowest and then gradually expanded to 1.40 percentage points in 2010 Q4, owing to the rising weighted average rates on loans and deposits caused by three policy rate hikes by the CBC in 2010 (Chart 4.32). The gradual rebound of interest rate spread will likely prove helpful to boost domestic banks' profitability.

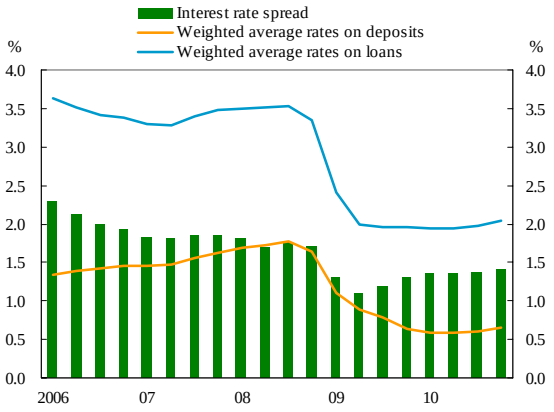
The asset quality of domestic banks kept improving, maintaining low level credit costs, and thus contributed to the high profitability of 2010. However, there are several uncertainties worth paying attention to: (1) the third revision of Taiwan's Statements of Financial Accounting Standards (SFAS) No.34 "Financial Instruments: Recognition and Measurement" takes effect from the beginning of 2011. Under SFAS 34, banks have to recognize impairment losses when the loss events occur or there is objective evidence of impairment of loans and accounts receivable. Owing to the pressure of setting aside additional provisions, domestic banks' future profitability might be impacted;[66] (2) from 2011, domestic banks are required to set aside additional provisions for normal credit assets at the rate of 0.5% of the outstanding. Although there is a 3-year grace period, certain impacts on future profitability are still expected; (3) the Debt Renegotiation Relief Program launched by the Bankers Association of the Republic of China ended on 31 December 2010, as did some related measures such as loan extensions and preferential mortgages. As a result, the default rate of those borrowers might increase and in turn raise the credit costs of domestic

Chart 4.31 Composition of incomes and costs of domestic banks



Source: CBC.

Chart 4.32 Interest rate spread between deposits and loans



Notes: 1. Interest rate spread = weighted average interest rates on loans - weighted average interest rates on deposits.
2. The weighted average interest rates on deposits and loans exclude preferred deposits of retired government employees and central government loans.
3. Excludes the data of medium business banks.

Source: CBC.

[66] According to the FSC's press releases on 12 Aug 2010, domestic banks need to set aside an additional NT$30 billion in provisions. However, due to the economic recovery and improved financial structure in the real sector, the amount is expected to decline.

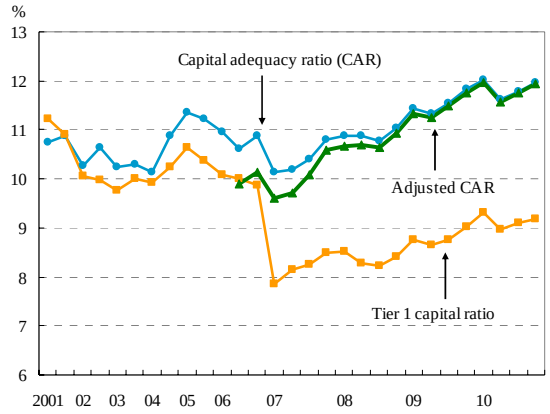
banks; (4) global financial markets were turbulent due to the Japan's earthquake in March 2011, the European sovereign debt crisis and the political instability in the Middle East and North Africa. If the turbulence worsens in the future, domestic banks' credit and investment positions could possibly be harmed.[67]

Capital adequacy

Capital adequacy ratios ascended slightly

Benefiting from accumulated earnings and the increase of common equity, net regulatory capital increased. As a result, the average capital adequacy ratio rose from 11.83% at the end of 2009 to 11.96% at the end of 2010. The Tier 1 capital ratio of domestic banks also increased to 9.17% (Chart 4.33). If unamortized deferred assets of NT$4.6 billion[68] arising from losses recorded on the sale of classified assets were deducted from regulatory capital, the adjusted capital adequacy ratio would come to 11.94%, up by 0.17 percentage points from the end of 2009. These figures reflect that the capital adequacy of domestic banks slightly improved in 2010. Compared to the US and some Asia-Pacific neighboring countries, the average capital adequacy ratio of domestic banks is about the same as that of Australia, but much lower than those of the US and some Asian countries (Chart 4.34).

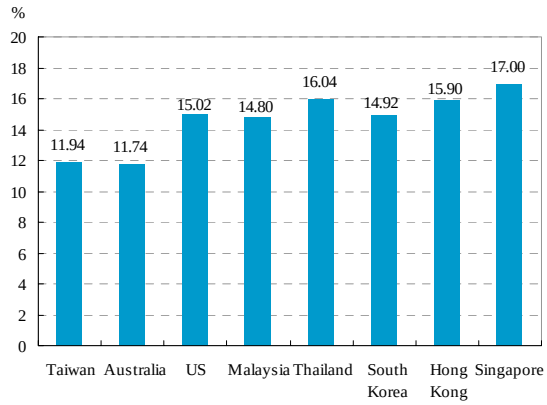
Chart 4.33 Capital adequacy ratio of domestic banks



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 – aforementioned unamortized deferred assets.

Source: CBC.

Chart 4.34 Comparison of capital adequacy ratios in selected countries



Notes: 1. Figures for Australia, South Korea and Singapore are end-September 2010 data, while the others are end-December 2010 data.
2. The figure for Taiwan is adjusted capital adequacy ratio.

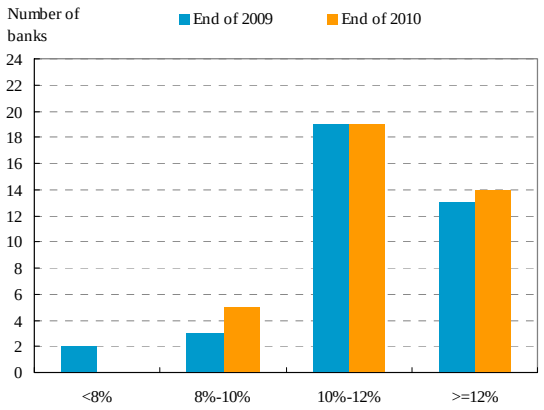
Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA and MAS.

[67] At the end of 2010, domestic banks had US$1.42 billion in claims on Japan and US$ 0.89 billion in claims on the most debt-laden European countries (dubbed PIIGS), respectively.

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

Further breaking down the components of regulatory capital, Tier 1 capital, which features the best risk bearing capacity, accounted for 76.64% of eligible capital, while Tier 2 capital registered 23.20% and Tier 3 capital contributed a mere 0.16% at the end of 2010. The ratios have remained broadly unchanged from the end of the previous year.

Chart 4.35 Number of domestic banks classified by adjusted capital adequacy ratios



Source: CBC.

All domestic banks held sufficient capital, though they are set to face stricter capital standards in the future

All domestic banks had capital adequacy ratios higher than the statutory minimum (8%) at the end of 2010, and there were fourteen banks with ratios above 12% (Chart 4.35). Even though domestic banks' capital adequacy ratios were gradually increasing, the FSC elevated the risk weight for non-self-use residence loans to 100% in April 2011 in order to enhance domestic banks' risk management of real estate-related loans. The required regulatory capital of domestic banks is expected to increase in the future. Moreover, the Basel Committee on Banking Supervision (BCBS) announced a new global regulatory standard on bank capital adequacy and liquidity (Basel III) in December 2010. Accordingly, in addition to the requirement of more capital and higher quality of capital than under current Basel II rules, banks are required to carry an additional "capital conservation buffer" and "countercyclical buffer," making for a great impact on the global banking system. Although the reform will be implemented over an eight-year transitional period, domestic banks should start to adjust their capital plans and dividend payout policies as soon as possible.

Credit ratings

Average credit rating level remained stable

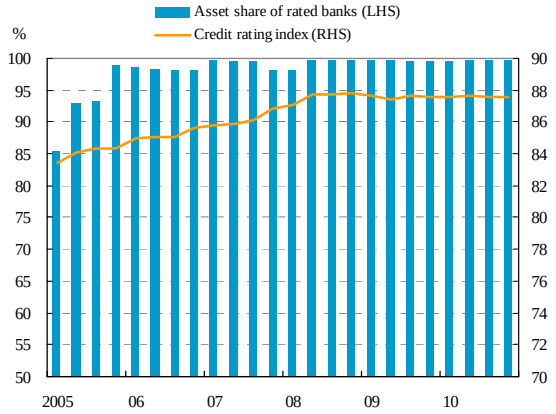
Based on Standard & Poor's "Banking Industry Country Risk Assessment (BICRA)" [69] and Fitch Ratings' "Banking System Indicator / Macro-Prudential Indicator (BSI/MPI)," [70] Taiwan's banking system rating remained unchanged in Group 4 and at level C/1, respectively, in February 2011 (Table 4.2). Compared to other Asian economies, the risks of Taiwan's banking industry were higher than those of Hong Kong and Singapore, about the same as those of Japan, South Korea, Malaysia and Thailand, but much lower than those of Mainland China, Indonesia and the Philippines.

Table 4.2 Systemic risk indicators for the banking system

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

Note: Figures are end-February 2011 data.
Sources: Standard and Poor's and Fitch Ratings.

Chart 4.36 Credit rating index of rated domestic banks



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

According to the rating results of individual banks released by credit rating agencies, one bank was downgraded in 2010, but a new bank with a high credit rating was established, resulting in an unchanged credit rating index.[71] This reflected that the overall credit rating of domestic banks remained stable (Chart 4.36).

[69] 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).

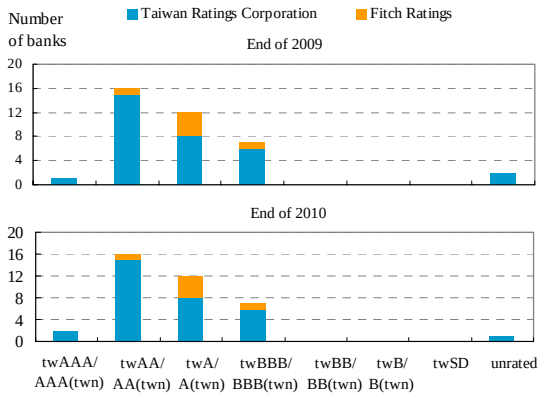
[70] Fitch Ratings has devised two complementary measures, the Banking System Indicator (BSI) and Macro-Prudential Indicator (MPI), to assess banking system vulnerability. The two indicators are brought together in a Systemic Risk Matrix that emphasizes the complementary nature of both indicators. The 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.

[71] 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.

Credit ratings are expected to be stable in the future

Most of the thirty-seven rated banks maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2010, remaining unchanged from the previous year, and only one bank had no credit rating (Chart 4.37). In addition, only one bank received a negative rating outlook or CreditWatch at the end of 2010, showing that credit ratings are expected to be stable in the future.

Chart 4.37 Number of domestic banks classified by credit ratings

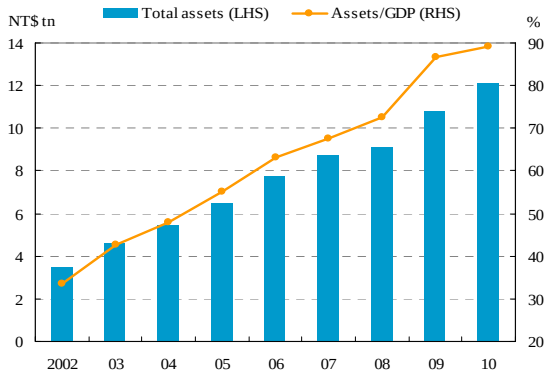


Sources: Taiwan Ratings Corporation and Fitch Ratings.

4.2.2 Life insurance companies

The total assets of life insurance companies continued growing in 2010, albeit at a reduced pace, while operating performance deteriorated and investment performance continued to be susceptible to the volatility of global stock markets as well as foreign exchange markets.

Chart 4.38 Total assets of life insurance companies



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

The average risk-based capital (RBC) ratio at the end of 2010 rose as a result of the amendment of relevant regulations and remained above the statutory minimum of 200%. The overall credit rating of life insurance companies was better than in the previous year.

The range of asset growth slowed

The total assets of life insurance companies continually accumulated and reached NT$12.13 trillion at the end of 2010, equivalent to 89.10% of annual GDP (Chart 4.38). This represented an increase of 12.23%, slightly slower than in the previous year.

In comparison with the end of 2009, the increase in assets was chiefly contributable to (1) a surge of domestic and overseas securities investments, thanks to the rebound of global stock markets; (2) a slight growth of real estate investments created by the recent local market

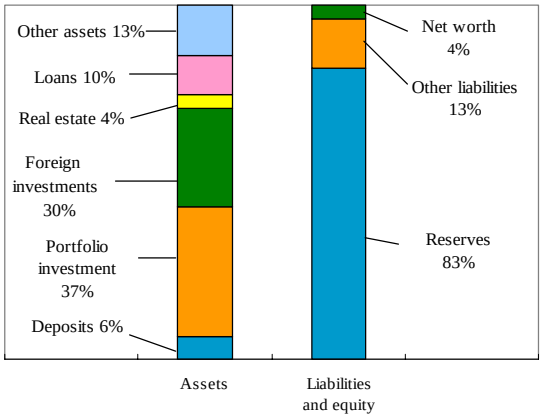
boom; and (3) a continual accumulation of the assets of insurance products held in segregated custody accounts, the major component of other assets, owing to the prosperity of domestic and overseas stock markets.

The structure of the life insurance industry changed slightly during 2010. Twenty-three domestic life insurance companies[72] held a 98.59% market share by assets at the end of 2010, while seven foreign life insurance companies sustained only 1.41%. The top three companies in terms of assets held a combined market share of 53.05%, while in terms of premium income, they held a combined market share of 55.26%. The combined market share in terms of assets of the top three companies declined by 1.12 percentage points, while that in terms of premium income rose by 2.33 percentage points year on year.

Funds invested in securities had a higher growth

The funds of life insurance companies at the end of 2010 were chiefly invested in domestic securities and foreign investments, accounting for 37% and 30%, respectively, while 10% of funds was in loans, 6% in cash and deposits and 4% in real estate. As for the sources of funds, various policy reserves constituted 83%, while net worth accounted only for 4% (Chart 4.39). The usable funds of life insurance companies continued growing in 2010, and, motivated by the boom in global stock markets, funds invested in domestic securities and foreign investments increased by 13.47% and 21.95%, respectively, year on year, reaching a historical high level. In addition, real estate investments also enjoyed a growth of 8.20%.

Chart 4.39 Asset/liability structure of life insurance companies



Note: Figures are end-December 2010 data.
Source: FSC.

The insurance industry did not increase it's ratio of real estate investments over the past few years.[73] However, expecting the insurance industry to consider both its earning capacity and its reasonable exploitation of society's land resources when making real estate investment decision, the FSC amended the relevant regulations[74] concerning real

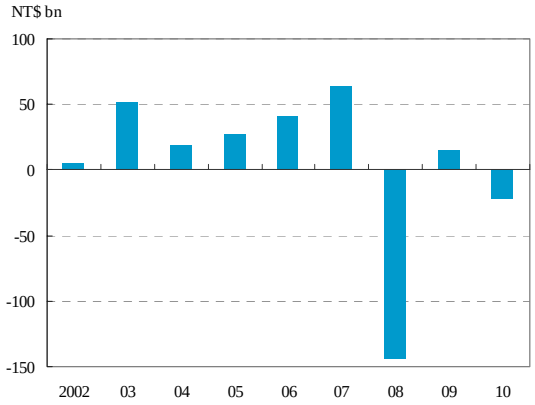
[72] Including foreign affiliates.
[73] According to a press release by the FSC on 6 April 2011, the ratio of real estate investment of the insurance industry remained at about 4% from 2006 to 2010.
[74] The FSC amended and promulgated " The Identifying Criterion and Handling Principles of Instant Application with Yield Concerning Real Estate Investment Undertaken by Insurance Industry " on 24 February 2011, adding the regulation that the investment of vacant land should comply with certain standards which exclude the application of parking lot and advertisement renting etc. from the identifying criterion of instant application with yield.

estate investment of insurance companies in February 2011, which will be reviewed timely, in order to limit investment in vacant land more strictly.

Enormous losses was reported in 2010

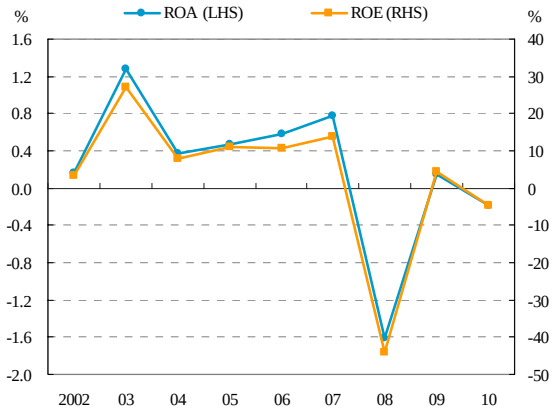
Influenced by a slump in domestic and overseas stock markets as well as increased hedging costs due to the volatility of the foreign exchange rate, life insurance companies experienced poor performance and registered enormous losses of NT$29.8 billion in the first half of 2010. As NT dollar appreciation enlarged foreign exchange losses in the second half of 2010, which offset the benefit from the recovery of domestic and overseas stock markets and resulted in poor investment performance in the same period, life insurance companies suffered enormous losses of NT$21.8 billion in 2010, far behind the net profit before tax of NT$14.9 billion in 2009 (Chart 4.40). During this period, average ROE and ROA slid to -4.76% and -0.19%, respectively (Chart 4.41). Should one company[75] which was taken into receivership by the FSC be excluded, the 2010 net loss before tax of life insurance companies as a whole would be reduced to NT$15.6 billion, with average ROE and ROA of -2.99% and -0.14%, respectively.

Chart 4.40 Net income before tax of life insurance companies



Source: FSC.

Chart 4.41 ROE & ROA of life insurance companies



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

In the second half of 2010, life insurance companies benefited from a rebound in domestic and overseas stock markets due to sustained strong growth in emerging Asian economies and the surging capital inflows resulting from the easy monetary policy of the US, and their average return on investment rose to 4.44% in 2010, higher than 3.55% in 2009. As the CBC continually raised interest rates from June 2010 onwards, it was anticipated that the return on

[75] Kuo Hua Life Insurance Co. was taken into receivership by the Insurance Stabilization Fund on 4 August 2009 and registered a net loss before tax of NT$6.14 billion in 2010.

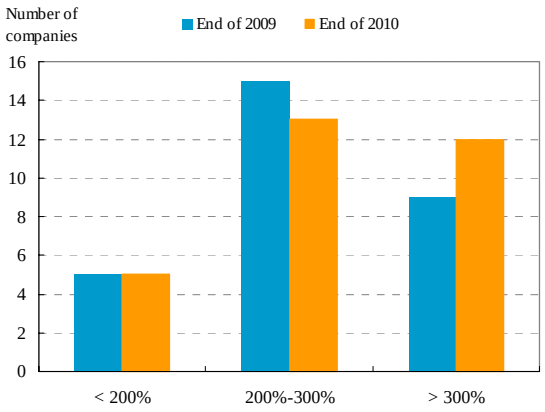
investment of life insurance companies would gradually rise, and the potential losses driven by negative interest rate spreads would be alleviated. However, the investment performance of life insurance companies will still face hardship as the rapid movement of short-term international capital between global financial markets raised the volatility of global stock markets and foreign exchange markets.

In addition, the FSC, after amending the Regulations Governing the Business of Overseas Investments by the Insurance Industry in August 2010, allowed insurance companies, under certain terms, to invest in specific securities issued by the government and corporations in Mainland China, and real estate was later included in October 2010. In December 2010, the FSC, amended the regulations again, and stipulated that if insurance companies, operating within the 45% limit of funds used in overseas investments, conduct the business of traditional foreign currency policies, then they could expand the limit of overseas investments according to more flexible formulae. These measures intended to improve the efficiency of usable funds and investment revenues as well as the flexibility of overseas investment allocations of insurance companies. However, while raising their overseas investment positions, life insurance companies were required to carry out their risk control mechanisms thoroughly in accordance with the regulations mentioned above and to self-evaluate the compliance of the Practical Guidelines for Risk Management of the Insurance Industry on a quarterly basis, in order to mitigate investment risk under the environment of more complex international financial market.

Average RBC ratio retained above the statutory minimum

In order to alleviate the pressure for life insurance companies to raise more capital and conform to the global trend of fair value accounting, the FSC amended the capital adequacy regulations in June 2010 to recognize the added value in the real estate investments as qualified regulatory capital.[76] As the amended regulations came into effect from 30 June 2010, the overall regulatory

Chart 4.42 Number of life insurance companies classified by RBC ratios



Source: FSC.

[76] However, the regulation on 10 June 2010 only applied to real estate for investment purposes, which had been held for over three years and the building upon it had been finished, in accordance with the principle of instant application with yield.

capital of life insurance companies increased markedly, and the average RBC[77] ratio rose slightly from 220.15% to 226.60% at the end of 2010, above the statutory minimum of 200%, even though they suffered enormous losses in 2010. By individual companies, there were twelve companies with ratios over 300%, increasing by three companies year on year, and there were five companies with ratios below 200%, the same as the end of 2009 (Chart 4.42), whose combined assets accounted for 4.14% of the total.

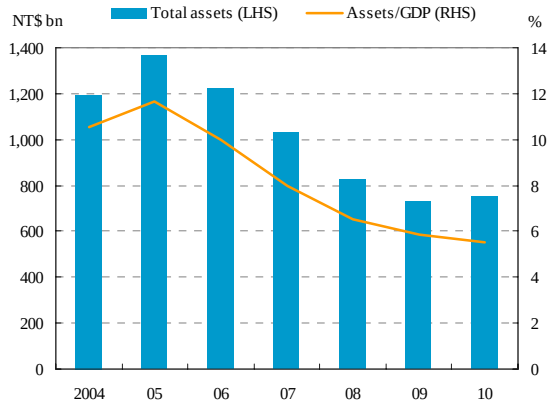
Overall credit ratings better than previous year

Of the eight life insurance companies rated by credit rating agencies, only one company was downgraded in 2010, much better than four companies in the previous year. Moreover, only one company was listed on negative rating on CreditWatch at the end of February 2011, in contrast with three a year earlier, reflecting the upgrading of overall credit ratings. The top three companies in terms of assets and premium market share were rated above twA+ or A+(twn), respectively, signifying their strong ability to meet all financial commitments.

4.2.3 Bills finance companies

The total assets of bills finance companies rebounded slightly in 2010. Although earnings declined a little year on year, and the average capital adequacy ratio descended due to the amendment of relevant regulations, the quality of credit assets remained sound. The problem of maturity mismatch between assets and liabilities in bills finance companies still existed, and liquidity risk remained rather high; however, the major liability to equity ratio conformed to the statutory ceiling. The outstanding balance of the commercial paper guarantee business undertaken by bills finance companies gradually rose, but was still below the statutory ceiling.

Chart 4.43 Total assets of bills finance companies



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

Total assets rebounded slightly

By virtue of rising bonds and bills investment positions, the total assets of bills finance companies stood at NT$754 billion at the end of 2010, equivalent to 5.54% of annual GDP

[77] According to Article 143-4 of the Insurance Act, the risk-based capital ratio (= regulatory capital / risk-based capital) of the insurance industry can not be below 200%.

and increased by 3.42% year on year (Chart 4.43). Of the nine bills finance companies, the top three companies held a combined market share of 73.48% by assets, while none of the other firms had a market share above 6% except for one company. For the past few years, owing to the synergy created by broadening operating scale and integrating resources, the tendency of bills finance companies to be merged with banks prevailed, and it seems inevitable that the assets and business scale of bills finance companies will contract further.

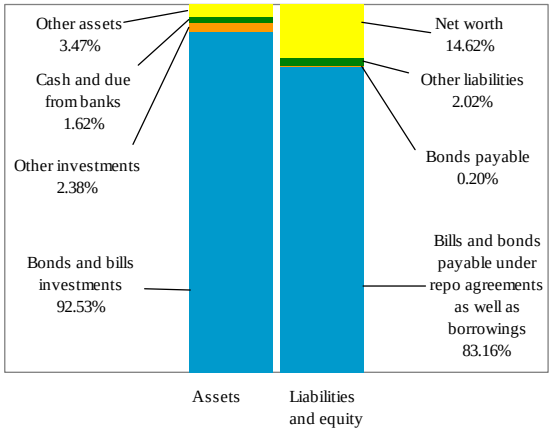
Regarding asset/liability structure at the end of 2010, bonds and bills investments on the asset side accounted for 92.53% of total assets, an increase of 1.25 percentage points year on year, while bills and bonds payable under repo agreements as well as borrowings on the liability side accounted for 83.16% of total assets and corporate bonds payable represented only 0.20% (Chart 4.44).

Profitability slightly decreased year on year

Bills finance companies posted a net income before tax of NT$10.1 billion in 2010, slightly lower than NT$11.0 billion in 2009 (Chart 4.45). The decrease in profitability was mainly driven by the fact that government bonds investments with higher yields had matured one after another, while newly issued bonds holdings had much lower yields, resulting in a dramatic decrease of interest revenues. At the same time, average ROE and ROA declined to 8.95% and 1.37%, respectively, lower than 9.65% and 1.41% in 2009 (Chart 4.46).

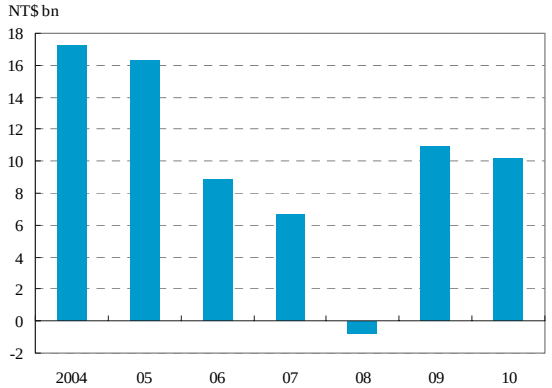
The CBC's decisions to raise policy rates from June 2010 compelled bills finance companies to face the pressure of rising funding costs as well as more unrealized losses of bills and bonds positions, which might be harmful to the future operation of bills finance companies. Nevertheless, driven by rising funding needs of corporate sector

Chart 4.44 Asset/liability structure of bills finance companies



Note: Figures are end-December 2010 data.
Source: CBC.

Chart 4.45 Net income before tax of bills finance companies



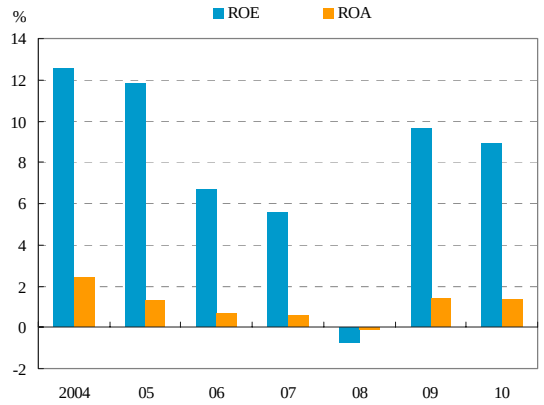
Source: CBC.

caused by continued global economic recovery, the commercial paper issuance went up again in 2010. In addition, the business of US dollar bills, which was approved to operate from December 2010,[78] may be conducive to the opening up of bills sources and enhancing profitability for bills finance companies.

Asset quality remained satisfactory

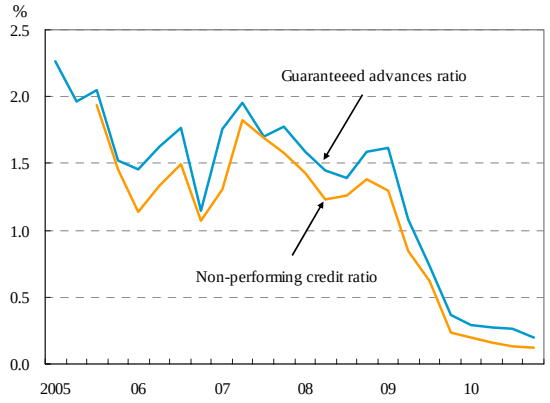
The guaranteed advances ratio was only 0.19% at the end of 2010, declining year on year, owing to a sharp drop of the guaranteed advances amount, and the non-performing credit ratio also declined to 0.12% (Chart 4.47). At the same time, the ratio of the aggregate amount of loss and guarantee reserves to guaranteed advances, as well as to non-performing credit, was 1309.08% and 2026.46%, respectively. It showed the reserves set aside remained sufficient to cover potential losses of guarantee business, though the amount decreased by a large measure.

Chart 4.46 ROE & ROA of bills finance companies



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

Chart 4.47 Guaranteed advances ratio of bills finance companies



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

Average capital adequacy ratio decreased, yet remained above 12% for each firm

After the FSC amended the Regulations Governing the Capital Adequacy Ratio of Bills Finance Companies, which requires companies to hold additional capital for operational risk, the capital adequacy level of bills finance companies dropped accordingly, and the average capital adequacy ratio registered 16.20% at the end of 2010, decreasing by 1.08 percentage points year on

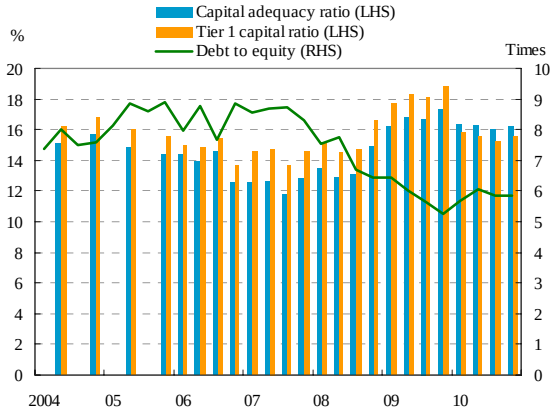
[78] In order to help the corporate sector to obtain short-term foreign funds and expand domestic financial instruments and scope, the CBC and the FSC agreed to set up an on-shore US dollar bills market which began from 6 December 2010. At the initial stage, it was based on commercial paper issued by domestic corporations guaranteed by banks only.

year. Furthermore, the Tier 1 capital ratio declined from 18.84% to 15.60% year on year, yet remained above 12% for each firm. The average multiple of debt to equity of bills finance companies also went up slightly to 5.84 times at the end of 2010 (Chart 4.48), reflecting a small elevation in financial leverage.

Liquidity risk remained high as maturity mismatch between assets and liabilities persisted

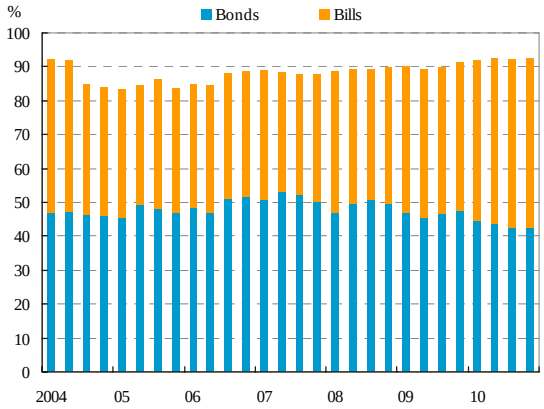
At the end of 2010, bonds and bills investments constituted 92.53% of total assets, while bonds investments accounted for 42.36% (Chart 4.49), the ratio declining year on year, yet still somewhat high. The sources of funds were mainly made up of interbank call loans and repo transactions, accounting for 83.16% of total assets. It was evident that a maturity mismatch between assets and liabilities still remained, and the demand for liquidity risk management was necessary.

Chart 4.48 Capital adequacy and leverage of bills finance companies



Source: CBC.

Chart 4.49 Bond & bill positions as percentage of assets at bills finance companies



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

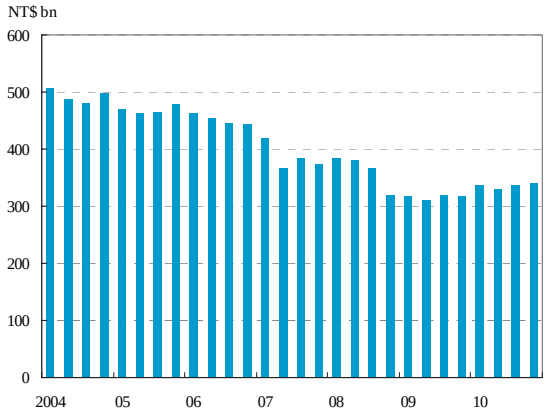
For the purpose of fulfilling differential supervisory strategies and in order to reduce the operational and liquidity risk in bills finance companies, the FSC amended the regulations in April 2010, restricting the ceilings[79] of major liabilities according to the capital scale of bills finance companies. After implementation, the multiple of major liabilities to net worth of each bills finance company complied with the regulated ceilings, registering an average multiple of 6.35 times at the end of 2010.

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

Outstanding balance of guarantees rebounded gradually

Because the funding demand of the corporate sector increased due to global economic recovery in 2010, the outstanding balance of commercial paper guarantees business undertaken by bills finance companies also rose manifestly, registering NT$341.8 billion at the end of the year, an increase of NT$25.5 billion or 8.06% year on year (Chart 4.50). In February 2010, the FSC restricted the multiple of guarantees and endorsements business to net worth undertaken by bills finance companies according to different capital adequacy ratio levels. At the end of the year, the average multiple registered 3.45 times and the multiple of all bills finance companies was below 4.2 times, conforming to the regulation-setting ceiling of five times.[80]

Chart 4.50 Outstanding commercial paper guarantees



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

[80] According to the amended " Directions for Outstanding Amount of Guarantees and Endorsements of Short-term Bills by Bills Houses " by the FSC on 24 February 2010, the ceiling of the multiple of outstanding commercial paper guaranteed to net worth for all bills finance companies could not exceed one, three, four and five times, respectively, depending on the level of its capital adequacy ratios of below 10%, above 10% but below 11%, above 11% but below 12%, or above 12%. As of the end of December 2010, the capital adequacy ratio of each bills finance company was above 12%, so the ceiling of five times was set for each one.

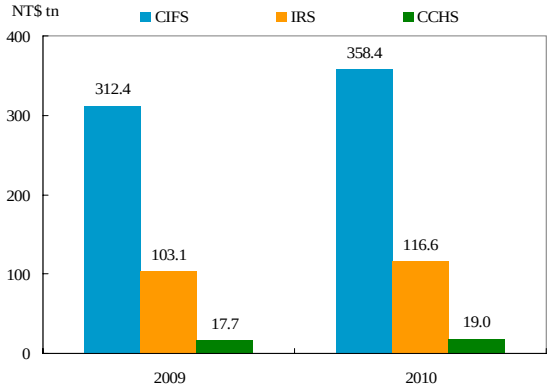
4.3 Financial infrastructure

4.3.1 Payment and settlement systems

Overview of systemically important payment systems

In 2010, the total transaction value of the three systemically important payment systems (SIPSs) [81] processing domestic interbank payments increased by NT$60.8 trillion from the previous year to NT$494 trillion. Among them, the CBC Interbank Funds-Transfer System (CIFS) was the most important and handled the final settlement of interbank funds transfers. In 2010, the transaction value of the CIFS reached NT$358.4 trillion, and accounted for 72.6% of the total (Chart 4.51).

Chart 4.51 Transaction value of the three SIPSs



Source: CBC.

Coping with the centenary bug problem in financial information systems

All financial information systems in Taiwan met the potential centenary bug problem of rolling over to three-digit year numbers when Taiwan entered into the 100th year of the republic on 1 January 2011. To ensure the smooth rollover of financial information systems, the FSC, the CBC and the Bureau of Agricultural Finance of the Council of Agriculture urged all financial institutions and clearing system operators to take prudent measures and carry out advanced testing. The FSC also assigned the Financial Information Service Co., LTD. (FISC) to monitor the proper operations and potential problems of the information systems in all financial institutions when entering into 2011. Due to the high level of preparedness, all financial information systems functioned well when the rollover time came.

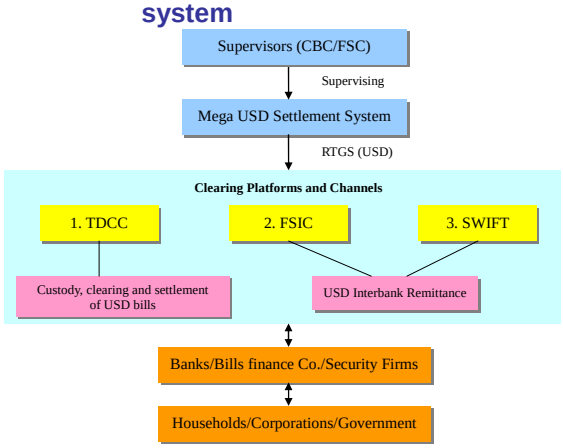
Establishing a domestic US dollar clearing and settlement system

The institutional framework

[81] The three SIPSs include the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) and the Check Clearing House System (CCHS).

To establish a domestic US dollar bills market, the CBC approved the Bills Finance Association to set up a domestic US dollar bills clearing and settlement system in 2007. This new system, similar to the NT dollar bills clearing and settlement system, designates the Taiwan Depository & Clearing Corporation (TDCC) to take responsibility for custody, clearing and settlement of US dollar bills and employs a delivery versus payment (DVP) mechanism. Additionally, dishonored US dollar commercial paper is encompassed in the "Dishonored Check Record Information" system run by the Taiwan Clearing House.

Chart 4.52 The operational framework of the USD clearing and settlement system



Source: Mega International Commercial Bank.

In 2008, the Bankers Association further designated Mega International Commercial Bank (Mega Bank) as the sole domestic US dollar settlement bank. The US dollar settlement system, established and operated by Mega Bank, adopts an RTGS mechanism which is similar to the NT dollar interbank settlement system. Aside from settlement services for US dollar bills transactions, it also provides US dollar interbank remittance services (Chart 4.52).

Current operations and benefits

The US dollar bills market was launched on 6 December 2010. In the initial stage, only commercial paper (CP) and asset-backed commercial paper (ABCP) were traded in the market, with CP being the dominant one. To meet the settlement needs of the new market, the Mega US dollar settlement system came online at the same time and 44 financial institutions participated in the system. From 6 December 2010 to the end of January 2011, US dollar commercial paper issuances amounted to US$110 million and the trading volume of the secondary market was US$550 million, while the accumulated amount of US dollar interbank remittances reached US$20.96 billion.

Through the new US dollar bills market, domestic firms with qualified credit ratings can issue US dollar commercial paper to meet their US dollar financing needs for business. Moreover, US dollar interbank remittance services provide the banking industry with a facility to transfer US dollar funds from one bank to another on the same day. It not only shortens the US dollar payment process and allows real-time settlement of domestic interbank

US dollar transfers as a result of improved fund management efficiency but also reduces the interbank remittance fees that used to be charged by foreign correspondent banks.

4.3.2 The CBC gradually raised policy rates and enhanced targeted prudential supervision on housing loans

In view of rising market interest rates and property prices due to the accelerating domestic economic recovery, together with heightened inflationary pressures, the CBC has raised policy rates four times since June 2010 (Table 4.3) and taken a series of targeted prudential measures on housing loans since October 2009. The prudential measures included actively urging banks to closely monitor the risks in housing loans and promulgating the regulations governing the extension of housing loans in specific areas (Box 4). These regulations are aimed at assisting financial institutions to avoid providing funds to speculators in the real estate market and encouraging financial institutions to adopt prudent credit risk management.

Table 4.3 CBC policy rate adjustments

Effictive date	Discount rate	The rate on accommodations with collateral	The rate on accommodations without collateral
1 April 2011	1.750	2.125	4.000
31 Dec. 2010	1.625	2.000	3.875
1 Oct. 2010	1.500	1.875	3.750
25 June 2010	1.375	1.750	3.625
19 Feb. 2009	1.250	1.625	3.500

Source: CBC.

4.3.3 The expiration of the interim blanket guarantee for deposits at the end of 2010

In the wake of the deepening international financial crisis, the financial system in Taiwan was temporarily in turmoil in 2008 Q4. To enhance depositors' confidence and stabilize the financial system, the government announced the temporary measure of a blanket deposit guarantee in October 2008, which was effective until the end of 2009, accompanied by a package of measures to strengthen financial supervision and regulations. Afterwards, considering the prolonged instability of the global and local economy in 2009, and extensions of the blanket deposit guarantee schemes adopted by several neighboring Asian countries, the government announced in October 2009 an extension of the blanket deposit guarantee to the end of 2010.

The blanket deposit guarantee effectively stabilized depositor confidence and further improved financial stability during this crucial period. As the local economy gradually recovered and the asset quality and profitability of domestic financial institutions also improved substantially in 2010, the government decided to exit from the blanket deposit

guarantee scheme and resume a system of limited deposit insurance coverage according to schedule. To ensure financial stability while exiting the blanket deposit guarantee, the government adopted several measures. These included the FSC working out and implementing the exit strategy, the CBC intensively monitoring the liquidity of financial institutions, and the CDIC strengthening public awareness, through the press and media, of the exit of the blanket deposit guarantee and the content of the new limited deposit insurance scheme (Box 6). With the cooperation and coordination of the supervisory authorities, Taiwan returned to a limited deposit insurance scheme beginning from 1 January 2011 while maintaining the proper functioning of financial systems.

4.3.4 Cross-strait financial interactions continued to proceed

Three Cross-Strait Financial Supervisory Memorandums of Understanding (MOUs) governing banking, insurance, as well as securities and futures were signed by the FSC and Mainland China's regulatory commissions on 16 November 2009 and entered into force on 16 January 2010. Moreover, on 16 March 2010, the FSC amended three regulations governing permission of companies conducting banking, insurance, and securities and futures business to engage in cross-strait commerce and investment activities. Since then, cross-strait financial interactions have progressed further, including: (1) the financial services industry early harvest provisions of the Cross-Straits Economic Cooperation Framework Agreement (ECFA) became effective on 1 January 2011, which offered domestic financial institutions favorable conditions when entering Mainland Chinese financial market; and (2) the FSC issued the Regulatory Principles for Investments in Mainland China's Enterprises by Banks, Financial Holding Companies and Their Affiliated Enterprises, which permits and assists domestic banks and financial holding companies to establish a business presence in Mainland China under the principles of prudent and gradual relaxation of investment restrictions.

Since 2010, Taiwan's financial institutions have been actively setting up branches and taking equity stakes in Mainland China's financial institutions, and Mainland China's financial institutions also have started to establish representative offices in Taiwan. To maintain domestic financial stability and economic soundness, when expanding business in Mainland China, Taiwan's financial institutions have to comply with exposure limits ordered by the FSC and, at the same time, uphold prudential controls toward the business risks that might emerge from accessing the Mainland China market.

The financial services industry early harvest provisions of the ECFA came into effect

The final agreement of the ECFA was signed during the 5th round of the Straits Exchange Foundation (SEF) and the Association for Relations Across the Taiwan Straits (ARATS) talks on 29 June 2010 and was approved by the Legislative Yuan on 17 August 2010. Furthermore, the financial services industry early harvest provisions of the ECFA took effect on 1 January 2011 and provide advantageous conditions for domestic institutions to set up branches in Mainland China and offer better financial services to Taiwanese firms there.

Table 4.4 Financial services industry early harvest provisions of the ECFA

Items	Financial Sectors	Specific Commitments
Commitments of the Taiwan side on liberalization of financial services sector	Banking and other financial services (excluding securities, futures and insurance)	The banks in Mainland China which have been permitted to incorporate representative offices in Taiwan and whose representative offices have so incorporated for one full year may apply for incorporation of branches in Taiwan.
Commitments of the Mainland China side on liberalization of financial services sector	Banking and related services	1. For Taiwan's banks to set up wholly owned banks or branches (not branches affiliated to a wholly owned bank) in the Mainland China with reference to the Regulation on Administration of Foreign-funded Banks, they shall have representative offices in Mainland China for more than one year before application. 2. For the operating branches of Taiwan's banks in Mainland China to apply to conduct RMB business, they shall have been operating in Mainland China for more than two years and been profitable in the preceding year before application. 3. For the operating branches of Taiwan's banks in Mainland China to apply to conduct RMB business for Taiwan's corporations in Mainland China, they shall have been operating in Mainland China for more than one year and been profitable in the preceding year. 4. The operating branches of Taiwan's banks in Mainland China may set up special agencies providing financial services to small businesses, the specific requirements of which shall follow the relevant rules in Mainland China. 5. Fast tracks shall be established for Taiwan's banks applying to set up branches (not branches affiliated to wholly owned banks) in central and western, as well as northeastern regions of Mainland China. 6. In conducting profitability assessment on the branches of Taiwan's banks in Mainland China, the relevant authorities shall take into account the overall performance of the Taiwanese bank under assessment.
	Insurance and related services	Groups formed by Taiwan's insurance companies through integration or strategic mergers shall be allowed to apply for entry into Mainland China's insurance market with reference

		to market access conditions for foreign-funded insurance companies: (1) total assets held by the group of over US$5 billion; (2) Taiwanese insurance companies in the group, any of which has been established for more than 30 years; and (3) a representative office established in Mainland China for over two years by any one of the group.
	Securities, futures and related services	1. Proper facility shall be provided to qualified Taiwan-funded financial institutions applying for qualification of Qualified Foreign Institutional Investor (QFII) in Mainland China. 2. Taiwan's Stock Exchanges and Futures Exchanges shall be included as soon as possible in the list of overseas exchanges recognized by Mainland China for qualified domestic institutional investors (QDII) to invest in financial derivatives; and 3. Relevant procedures shall be simplified for Taiwan's securities practitioners applying for and obtaining qualifications and certificates of practice in Mainland China.

Source: ECFA website.

Regulatory principles for the banking industry to invest in Mainland China

In order to help the domestic banking industry accelerate their moves to establish a presence in Mainland China and provide their customers with a more complete range of financial services, the FSC promulgated in December 2010, and amended in March 2011, the Regulatory Principles for Investments in Mainland China Enterprises by Banks, Financial Holding Companies, and Their Affiliated Enterprises.[82] Its important contents include the following:

- Establishing restrictions on the types and numbers of investee firms and the investment amount, which are summarized in Table 4-5.

- Stipulating caps on the total investment amounts by banking industry in Mainland China:

  - When banks or their overseas banking subsidiaries enter the Mainland China market by establishing branches or subsidiary banks or taking equity stakes in Mainland China's banks, or subsidiaries more than 50% owned by any bank investing in Mainland China, the total of the investment and cumulative appropriation of operating capital in Mainland China shall not exceed 15% of the bank's net worth at the time of application.

[82] To ease the limit, the FSC amended the Principles on 16 March 2011. Key points of the amendments include the following: (1) a provision that limited investment to only one financial services firm in Mainland China was repealed; (2) banks and financial holding companies are required to work with subsidiaries that invest in Mainland China to ensure that they establish a risk management mechanism for the financial services firms in which they invest, that such risk exposures be incorporated into the figures for total risk exposures of the bank or financial holding company, and that such mechanisms be reported to the board of directors of the bank or financial holding company for approval; and (3) at the time of application, the applicant must submit documentation on its risk management mechanism and the corporate group's method for controlling total risk exposure to Mainland China.

- The total investment amounts in Mainland China held by financial holding companies and their affiliates may not exceed 10% of the net worth of financial holding companies at the time of application.

Table 4.5 Summary of the regulatory principles for investments in Mainland China's enterprises by the banking industry

Investor	Investee firms	Investment restrictions
Financial holding companies, banks and overseas subsidiaries	Financial institutions	1. Limited to only one institution. 2. Subsidiaries that are more than 50% owned by banks or affiliates of financial holding companies, unless in accordance with relevant laws, are forbidden from investing in financial institutions in Mainland China.
Subsidiaries 100% owned by banks or financial holding companies	Financial leasing companies and other finance-related industries (except for financial institutions) that have been approved	1. Not limited to one financial services firm. 2. Shareholding ratio should be no less than 25% of the total voting shares of the investee firm.
Subsidiaries 100% owned by industrial banks	Venture capital, financial leasing companies and other finance-related industries (except for financial institutions) that have been approved	1. Not limited to one financial services firm. 2. Shareholding ratio should be no less than 25% of the total voting shares of the investee firm.
Subsidiaries with more than 50% of their shares owned by a bank	Other industries	Shareholding ratio should be no more than 5% of the total paid-in capital or issued stock of the investee firm.
Subsidiaries of financial holding companies	Other industries	Shareholding ratio should be no more than 15% of the total paid-in capital or issued stock of the investee firm.

Source: FSC.

Cross-Strait interaction of financial institutions

After the signing and implementation of the ECFA and the newly-issued regulations governing business and investment activities between Taiwan and Mainland China, several domestic financial institutions have already established branches in Mainland China or taken equity stakes in Mainland China's financial institutions, and four Mainland China's banks have set up representative offices in Taiwan (Table 4.6). The two-way interaction across the Taiwan Strait is entering a new stage.

Table 4.6 Cross-Strait interaction of financial institutions

Financial Sectors	Taiwan's financial institutions	Mainland China's financial institutions
Banking	1. Nine banks were approved by the FSC to establish branches in Mainland China. Six of them have commenced business already, while the other three are applying for the approval of Mainland China's authorities. 2. Six banks have set up representative offices in Mainland China.	Four banks were approved by the FSC to establish representative offices in Taiwan.
Insurance	Seven insurance companies were approved by the FSC to take equity stakes in Mainland China's insurance companies, while five of them have already obtained equity stakes.	
Securities and futures	1. Thirteen firms have set up 28 representative offices in Mainland China. 2. Two securities investment trust companies were approved by the FSC to establish branches in the Mainland China, and one was approved to create a joint venture with a Mainland China's securities company. 3. Seven securities investment trust companies applied to Mainland China's authority for qualified QFII status. Three of them have gotten approval, and one of the three has further gotten official approval of investment quota.	Eleven firms approved by Mainland China's authorities have registered as qualified domestic institutional investors (QDII) to invest in Taiwan.

Note: Data are until 22 March 2011.

Source: FSC.

4.3.5 Taiwan's Financial Industry should be well prepared to adopt the upcoming IFRS 9

On 14 May 2009, the FSC announced the full adoption of the International Financial Reporting Standards (IFRS) via a two-phase process[83] starting from the beginning of 2013. Some standards including IFRS 9 "Financial Instruments," IAS 19 "Employee Benefits," IAS 40 "Investment Property" and IAS 1 "Presentation of Financial Statements" will have

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

significant influences on Taiwan's financial industry. Among them, the impact of the IFRS 9 will be the most critical.

On 12 November 2009, the IASB published the IFRS 9. Its implementation will be divided into three phrases. The first phase, with regard to new standards for classification and measurement of financial assets and financial liabilities, as well as derecognition of financial instruments, is finalized and will be effective from 1 January 2013. The second phase for impairment of financial assets measured at amortized cost and the third phase for hedge accounting are still in the draft stage and are expected to be finalized in the third quarter of 2011. As Taiwan's financial industries will adopt the IFRS 9 in the future, its impacts will not only be on finance and accounting, information systems, remuneration practices, investor relationships, taxation, regulations and other legal matters, but also on financial conditions, profitability and capital charges of financial institutions. In particular, the impacts of the second phase, switching from the current "incurred loss model" to the "expected loss model," will be most significant. Therefore, financial institutions shall be well-advised to prepare early and evaluate the potential impacts so as to develop effective measures in response to the implementation of the IFRS 9 (Box 7).

Box 6
Measures in response to the exit of the blanket deposit insurance scheme

When the global financial crisis erupted in 2008, numerous countries expanded their deposit insurance coverage in order to diminish potential systemic risks. The Taiwanese government also announced a temporary measure of a blanket deposit guarantee in October 2008, which was effective until the end of 2009. This measure effectively restored the confidence of depositors and stabilized the local financial system. However, considering the prolonged instability of the global and local economies and financial systems in 2009 and the extensions of the blanket deposit guarantee schemes adopted by various neighboring Asian countries, the government announced in October 2009 an extension of the blanket deposit guarantee to the end of 2010.

To ensure the stability of the financial system when exiting from the blanket deposit guarantee scheme, the related authorities reached, after deliberate discussions, an agreement that the FSC was responsible for working out and implementing exit strategies, and that the CBC and the CDIC would take preventive measures to eliminate any potential emergent liquidity problems of financial institutions and to enhance public awareness of the exit of the blanket deposit guarantee.

1. Measures adopted by the FSC

The FSC devised and implemented the exit strategy of the blanket deposit guarantee scheme as follows:

- The FSC established a supervisory working group, with members from the FSC, the CBC, the MOF, the CDIC and related authorities, in July 2010 to periodically review the progress of the exit strategy implementation and to monitor the asset quality, liquidity and changes in the deposits and loans outstanding of individual banks.
- The CDIC proposed a package of measures to address the potential impacts of the exit of the blanket deposit insurance scheme in April 2010, which was reviewed by the related authorities and was approved by the Executive Yuan. Moreover, on 12 August 2010, the FSC, the MOF and the CBC jointly announced that the maximum deposit insurance coverage amount would be raised to NT$3 million starting from 1 January 2011. This policy resulted in an increase in the ratio of deposit accounts fully covered by deposit insurance to 98.6%.
- The FSC approved the Revised Implementation Scheme for the Deposit Insurance Risk-based Premium System on 24 November 2010, which raised the deposit insurance premium rates for insured banks and credit cooperatives and modified the risk grades,

in order to accelerate the accumulation of deposit insurance funds and to enhance the risk bearing capability of the CDIC.

- After consulting with the CBC and related authorities, the FSC proposed the revision of the Deposit Insurance Act to cover the interest of domestic currency deposits as well as the principal and interest of foreign exchange deposits in the scope of the deposit insurance scheme. This proposal was finalized and became effective on 29 December 2010.

2. Measures adopted by the CBC

The CBC was mainly in charge of the emergency liquidity assistance program of the exit strategy and actively participated in the aforementioned supervisory working group. Key measures adopted by the CBC are summarized as follows:

- Closely monitored the potential deposit movements induced by the exit of the blanket deposit insurance scheme within the banking industry, as well as actively oversaw the liquidity of banks and bills finance companies and provided the banking industry with sufficient liquidity, according to the Central Bank of the Republic of China (Taiwan) Act, so as to maintain financial stability.
- Required banks to report the ratios of the sum of large-amount deposits to total deposits in May 2010 in order to analyze the potential impact of the prospective movements of large-amount deposits within the banking industry.

Furthermore, on 25 September 2008, the CBC announced expansion of the scope of Repo facility operations, which included the expansion of eligible counterparties to cover securities firms and insurance companies, the extension of the term of the facility to within 180 days from 30 days, and the allowance of financial institutions to apply for the CBC's approval for Repo facility operations if they have emergent funding demands, in addition to the operations announced by the CBC.

3. Measures adopted by the CDIC

To ensure the smooth transition from the blanket coverage to the new limited insurance scheme, the CDIC held several local and international seminars in 2010 to call public attention to the reform of the deposit insurance scheme and to remind insured banks to enhance liquidity management improve business risk control and hold adequate capital.

In addition, starting from August 2010, the CDIC strengthened public awareness through mass media, posters in banks' premises and seminars on the exit of the blanket deposit guarantee and the introduction of the new limited deposit insurance scheme.

Box 7
Impacts of the IFRS 9 on Taiwan's financial industry and necessary measures

1. Main content of the International Financial Reporting Standards (IFRS) 9

On 12 November 2009, the International Accounting Standards Board (IASB) issued the IFRS 9 "Financial Instruments." The implementation of this standard is divided into three main phases and will replace IAS 39, referring to Taiwan's SFAS 34 "Financial Instruments: Recognition and Measurement." The first phase, covering the new standards for classification and measurement of financial assets, financial liabilities and derecognition of financial instruments, is finalized and will be effective from 1 January 2013. The second phase for impairment of financial assets measured at amortized cost and the third phase for hedge accounting are still in the draft stage and are expected to be finalized in the third quarter of 2011. This box introduces the contents of the first and second phases that will have significant impacts on financial institutions and lists the main differences between the IFRS 9 and Taiwan's SFAS 34 in Table B7.1.

1.1 The first phase: classification and measurement of financial assets

The IFRS 9 divides financial assets into two classifications, those measured at amortized cost and those measured at fair value. It is quite different from the accounting treatment in Taiwan's SFAS 34, which breaks down all financial assets into five different classifications. If satisfying both the "business model" test and the "contractual cash flow characteristics" test[1] at initial recognition, a financial instrument must be measured at amortized cost and assess impairment losses subsequently. Otherwise, it must be measured at fair value. In addition, if a hybrid contract contains a host that is within the scope of the IFRS 9, embedded derivatives will no longer be separated from the host contract. Instead, the entire hybrid contract is assessed and measured as a whole at amortized cost or at fair value.

1.2 The second phase: exposure draft for impairment of financial assets measured at amortized cost

From January 2011, the banking sector in Taiwan has recognized impairment losses using the "incurred loss model" stated in the third amendment to Taiwan's SFAS 34. When there is any objective evidence of impairment for financial assets, banks need to determine whether any impairment losses should be recognized and set provisions.[2] This approach is the same as IAS 39.

Under the incurred loss model, impairment losses are recognized only when there is objective evidence of impairment or a loss event. However, it is criticized in the regard that interest revenue is overstated in the periods before a loss event occurs and an impairment allowance is recognized too little and too late under this model. Addressing this, the IASB issued the exposure draft "Financial Instruments: Amortized Cost and Impairment" (the original edition) on 5 November 2009, which proposed an expected loss model for financial assets measured at amortized cost and considered initial expected credit losses as part of effective interest rate determinants. However, the expected loss model proposed in the original was considered too complicated and was not easy to implement. Hence, the IASB and the FASB jointly published a supplement to the IASB's original edition on 31 January 2011, which improves the impairment accounting for financial assets managed in an open portfolio, such as bank loans. This supplement retains the fundamental concept of expected credit losses proposed in the original but excludes expected credit losses from the determinants of the effective interest rate, the same as IAS 39. This revised draft is expected to be finalized in the third quarter of 2011.

Table B7.1 The main differences between the IFRS 9 and Taiwan's SFAS 34

Items	Taiwan's SFAS 34	IFRS 9
Classification of financial assets	Five classifications: 1. Fair value through profit or loss 2. Available-for-sale 3. Loan and receivable 4. Held-to-maturity 5. Cost less impairment	Two classifications: 1. Fair value through profit or loss 2. Amortized cost
Impairment of financial assets	Incurred loss model	Expected loss model
Unquoted equity instruments	Measured at cost	Measured at fair value
Hybrid instruments	Need to judge if embedded derivatives are closely related to the host financial asset.	If a hybrid contract contains a host that is within the scope of the IFRS 9, embedded derivatives will no longer be separated from the host contract. Instead, the hybrid contract is assessed as a whole.
Reclassifications	Allowed to reclassify assets under several circumstances.	Allowed to reclassify assets only when an entity changes its business model.

Source: CBC.

2. Impacts of the IFRS 9 on the financial industry in Taiwan

The IFRS 9 significantly changes the classification of financial assets. It is expected to have significant impacts on the financial industry, including: (1) how to implement the

two aforementioned tests to determine whether financial assets are measured at amortized cost or not; (2) how to establish the fair value model for unquoted equity instruments which used to be measured at cost under IAS 39; and (3) what the impacts of new classification of financial assets on capital adequacy will be.

As for the expected loss model of the second phase, it is quite different from the current incurred loss model and requires significant changes of finance systems by enterprises. Especially for financial institutions, the implementation cost will be significant and a transition period for implementation will be needed. Therefore, financial institutions may face the following challenges and impacts, including: (1) how to develop a system to estimate future cash flows and credit losses over the life of a financial asset or group of financial assets; (2) how to collect or obtain historical loss data or credit rating information for assets with similar credit risk characteristics; and (3) how to interact with regulatory requirements, especially Basel III capital requirements.

3. Necessary measures for financial institutions

The conversion to the IFRS will substantially impact not only finance and accounting, but also information systems, remuneration practices, investor relationships, as well as taxation, regulations and other legal matters. For the financial industry, the first significant impact is on information systems. In order to reduce the modifying cost for information systems, all departments within a financial institution should take enough time to adopt user acceptance tests before the new information system is in place. Secondly, though the IFRS 9 simplified the classification of financial assets, it will require more judgments when it is applied. Hence, all related departments within a financial institution should review the types of financial assets they hold and classify them according to the new classification models. Moreover, the IFRS is very different from the current accounting treatment in Taiwan and is expected to impact the financial positions, incomes and capital charges of financial institutions. Financial institutions should prepare early by evaluating the potential impacts, developing effective responsive measures and communicating with senior managers and investors in order to mitigate potential impacts.

Notes: 1. If the objective of the entity's business model is to hold the financial asset to collect the contractual cash flows, rather than to sell the instrument prior to its contractual maturity to realize its fair value changes, it satisfies the "business model" test. If the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding, it satisfies the "contractual cash flow characteristics" test.

2. In accordance with current provision regulations, banks were required to break down all assets into five categories and set aside provisions with different reserve ratios of 0.5%, 2%, 10%, 50% and 100%, respectively,. Although the banking sector adopted the “incurred loss model” to recognize impairment allowances from January 2011, the supervisory requirement is still effective as a minimum regulatory standard.

Appendix: Financial soundness indicators

Table 1: Domestic Banks Unit: %

Items \ Year (end of year)	2005	2006	2007	2008	2009	2010
Earnings and profitability						
Return on assets (ROA)	0.30	-0.06	0.28	0.12	0.28	0.57
Return on equity (ROE)	4.74	-0.94	4.32	1.86	4.52	9.08
Net interest income to gross income	66.11	68.34	66.38	78.53	59.54	59.52
Non interest expenses to gross income	47.84	51.21	54.07	62.97	59.81	55.99
Gains and losses on financial instruments to gross income	11.49	12.63	9.08	3.91	16.43	9.93
Personnel expenses* to non-interest expenses	-	55.37	55.93	54.80	57.56	57.67
Spread between lending and deposit rates (basis points)	2.45	2.09	1.83	1.76	1.23	1.37
Asset quality						
Non-performing loans to total loans	2.24	2.15	1.83	1.54	1.15	0.61
Provision coverage ratio	50.06	62.26	64.07	69.48	90.35	157.32
Capital adequacy						
Regulatory capital to risk-weighted assets	11.23	10.87	10.80	11.04	11.83	11.96
Tier 1 capital to risk-weighted assets	10.37	9.88	8.50	R 8.42	R 9.03	9.17
Capital to total assets	6.45	6.19	6.42	6.12	6.25	6.31
Non-performing loans net of provisions to capital	15.28	15.16	R12.24	10.33	6.41	2.91
Liquidity						
Customer deposits to total loans	118.70	119.41	117.98	122.34	133.13	132.28
Liquid assets* to total assets	-	-	R10.58	12.69	15.20	10.46
Liquid assets* to short-term liabilities	-	-	15.66	18.39	20.98	14.65

Table 1：Domestic Banks (cont.)

Unit: %

Items \ Year (end of year)	2005	2006	2007	2008	2009	2010
Credit risk concentration						
Household loans to total loans	46.51	46.74	46.59	45.48	46.41	46.67
Corporate loans to total loans	41.60	43.02	43.90	45.27	43.26	43.66
Large exposures to capital	137.32	144.28	136.85	142.38	142.48	141.73
Gross asset positions in financial derivatives* to capital	-	5.28	10.35	21.92	8.17	8.54
Gross liability positions in financial derivatives* to capital	-	4.79	5.44	16.48	8.44	10.02
Sensitivity to market risk						
Net open position in foreign exchange* to capital	-	3.11	5.02	2.41	2.43	2.72
Foreign-currency-denominated loans* to total loans	-	13.44	15.57	16.54	16.22	16.28
Net open position in equities* to capital	-	28.63	30.88	24.99	25.69	24.48
Foreign-currency-denominated liabilities* to total liabilities	-	19.86	22.20	20.41	19.48	20.31

Notes: 1. The items with "*" are only available from 2006. Liquidity asset related items are disclosed from 2007.

2. The data of earnings and profitability in 2006 and 2007 exclude Chinese Bank and Bowa Bank.

3. The figuers for "Spread between lending and deposit rates"exclude the data of the medium business banks. The figures for lending and deposit rates exclude preferred deposits rates of retired government empolyees and central government lending rates.

4. Figures with "R" are revised data.

Table 2: Non-financial Corporate Sector

Units: %, times

Items \ Year (end of year)	2005	2006	2007	2008	2009	2010Q3
Total liabilities to equity						
Corporate sector	86.10	85.21	82.20	90.02	86.88	-
TWSE-listed companies	66.06	64.27	R 63.28	R 67.54	65.43	69.01
OTC-listed companies	84.03	74.17	R 78.21	R 89.56	62.75	72.17
Return on equity						
Corporate sector	10.88	13.04	13.90	4.76	8.07	-
TWSE-listed companies	14.13	15.34	R 18.04	R 8.08	9.58	16.95
OTC-listed companies	9.26	17.06	R 8.20	R -5.98	6.91	16.01
Net income before interest and tax / interest expenses (times)						
Corporate sector	8.97	10.10	10.78	3.39	8.54	-
TWSE-listed companies	15.25	16.85	19.07	R 8.26	15.03	33.07
OTC-listed companies	8.38	R 14.06	R 6.79	-	10.85	21.38

Notes: 1. The data of all corporates are from JCIC, and those of TWSE-listed and OTC-listed corporates are from TEJ.

2. The figure of "Return on equity" for 2010Q3 is annualized result.

3. The data of "net income before interest and tax / interest expenses" for OTC-listed companies in 2008 is nil due to the net loss of the same year.

4. Figures with "R" are revised data.

Table 3: Household Sector

Unit: %

Items \ Year (end of year)	2005	2006	2007	2008	2009	2010
Household borrowing to GDP	83.15	83.17	81.47	R 81.92	R 84.84	82.17
Borrowing service and principal payments to gross disposable income	R 46.97	R 44.66	42.09	R 40.74	R 37.29	36.12

Notes: 1.The figures of disposable income for 2010 are CBC estimates.
2. The figure with "R" is revised data.

Table 4: Real Estate Market

Unit: %

Items \ Year (end of year)	2005	2006	2007	2008	2009	2010
Land price index	94.68	96.38	98.92	100.51	100.38	105.93
Residential real estate loans* to total loans	-	29.14	30.14	29.16	30.57	29.99
Commercial real estate loans* to total loans	-	10.74	11.84	12.14	12.47	13.25

Notes: 1.Figures of Land price index are on a end-September basis (March 2008 = 100).
2.The items with "*" are only available from 2006.

Table 5: Market Liquidity

Unit: %

Items \ Year (end of year)	2005	2006	2007	2008	2009	2010
The turnover ratio of trading value in stock market	131.36	142.20	153.28	145.45	178.28	136.74
The monthly average turnover ratio in bond market	215.69	140.58	74.65	47.93	31.56	32.40

Notes: 1.The turnover ratio in terms of trading value in stock market is the cumulative figure of the period.
2.The monthly average turnover ratio in bond market is the average figure of the period.

Explanatory notes: Compilation of financial soundness indicators

I. General notes

- *To facilitate international comparison, most items listed in "Appendix: Financial Soundness Indicators" are compiled in accordance with the "Compilation Guide on Financial Soundness Indicators" issued by the IMF in July 2004. However, a few indicators are not used for analysis in this report due to insufficient time series data.*

- *Unless otherwise stated, the data of all indicators are on a year-end (stock data) or year-to-date (flow data) basis.*

- *Compilation of Domestic Banks' Indicators*

1. The banks in this report as of the end of 2010 include Bank of Taiwan, Land Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, Chang Hwa Commercial Bank, Citibank Taiwan, The Shanghai Commercial & Savings Bank, Taipei Fubon Commercial Bank, Cathay United Bank, The Export-Import Bank of the Republic of China, Bank of Kaohsiung, Mega International Commercial Bank Co., Agricultural Bank of Taiwan, China Development Industrial Bank, Industrial Bank of Taiwan, Taiwan Business Bank, Standard Chartered Bank (Taiwan), Taichung Commercial Bank, King's Town Bank, HSBC Bank (Taiwan),Bank of Taipei, Hwatai Bank, Shin Kong Commercial Bank, Sunny Bank, Bank of Panhsin, Cota Commercial Bank, Union Bank of Taiwan, Far Eastern International Bank, Yuanta Commercial Bank, Bank Sinopac, E. Sun Commercial Bank, Cosmos Bank, Taishin International Bank, Ta Chong Bank, Jih Sun International Bank, EnTie Commercial Bank, and Chinatrust Commercial Bank, amounting to 38 banks.
2. The domestic banks' related indicators are calculated using unaudited data submitted regularly by domestic banks. The submitted data are different from the data posted on the banks' websites, which are audited and certified by certified public accountants or adjusted by the banks. The statistical basis for these two types of data is different.
3. Domestic banks' related indicators are calculated by aggregating the numerators and denominators of each ratio, and then dividing the total numerator by the total denominator to obtain the peer-group ratios. This methodology differs from the Winsorized mean on the quarterly "Condition and Performance of Domestic Banks" report compiled by the Department of Financial Inspection of the Central Bank of the Republic of China (Taiwan).

II. Explanatory notes on the indicators

1. Domestic banks' indicators

1.1 Earnings and profitability

1.1.1 Return on assets (ROA)

This indicator is used to analyze domestic banks' efficiency in using their assets.

ROA = net income before income tax / average total assets

- Net income: net income before income tax plus extraordinary items.
- Average total assets: the average of total assets at the beginning and the end of the period.

1.1.2 Return on equity (ROE)

This indicator is used to analyze banks' efficiency in using their capital.

ROE = net income before income tax / average equity

- Net income: same as 1.1.1.
- Average equity: the average of equity at the beginning and the end of the period.

1.1.3 Net interest income to gross income

This indicator is a measure of the relative share of net interest earnings within gross income.

- Net interest income: interest income less interest expenses.
- Gross income: net interest income plus non-interest income.

1.1.4 Non-interest expenses to gross income

This indicator is a measure of the size of administrative expenses to gross income.

Non-interest expenses include operating expenses other than interest expenses as follows:

- Personnel expenses.
- Other expenses related to operations.
    - Expenses for property and equipment, including: purchasing, ordinary and regular maintenance and repair, depreciation, and building rentals paid.
    - Other expenditure related to operations, including: purchases of goods and services (e.g. advertising costs, staff training service expenses, and royalties paid for the use of other produced or non-produced assets).
    - Taxes other than income taxes less any subsidies received from general government.

Gross income: same as 1.1.3.

1.1.5 Gains and losses on financial instruments to gross income

This indicator is to analyze business revenues from financial market activities as a share of gross income.

Gains and losses on financial instruments include the following items:

- Realized and unrealized gains and losses in the income statement arising on all financial assets and liabilities which are held at fair value through profit or loss, available for sale, and held to maturity.
- Gains and losses on financial assets or liabilities carried at cost.

- Gains and losses on debt instruments without active markets.
- Foreign exchange gains and losses.

Gross income: same as 1.1.3.

1.1.6 Personnel expenses to non-interest expenses

This indicator is to analyze personnel expenses as a share of non-interest expenses.

- Personnel expenses, including: wages and salaries, profit sharing and bonuses, allowances, pensions, social insurance and medical insurance, etc.
- Non-interest expenses: same as 1.1.4.

1.1.7 Spread between lending and deposit rates

This indicator is to analyze the effect of the interest rate spread upon net interest revenues and profitability.

- Spread between lending and deposit rates: the weighted average loan interest rate less the weighted-average deposit interest rate. The annual interest rate spread is the average of four quarters' spreads.

1.2 Asset quality

1.2.1 Non-performing loans to total loans

This indicator is to analyze asset quality in the loan portfolio.

- Non-performing loans

  According to the "Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing / Non-accrual Loans," non-performing loans include the following items:

  - Loans for which repayment of principal or interest has been overdue for three months or more.
  - Loans for which the bank has sought payment from primary/subordinate debtors or has disposed of collateral, although the repayment of principal or interest has not been overdue for more than three months.
- Total loans: Total loans include bills purchased, discounts, accrual and non-accrual loans, but excluding interbank loans.

1.2.2 Provision coverage ratio

This indicator is to analyze the provision policy for loan losses.

- Provision coverage ratio: loan loss provisions / non-performing loans

1.3 Capital adequacy

1.3.1 Regulatory capital to risk-weighted assets

This indicator is to analyze the capital adequacy of domestic banks. The minimum statutory ratio of regulatory capital to risk weighted assets of a bank is 8%, based on the Regulations Governing the Capital Adequacy Ratio and Capital Category of Banks.

- Regulatory capital: the eligible capital includes Tier 1 capital, eligible Tier 2 capital and eligible used Tier 3 capital.
- Risk-weighted assets: the term "risk-weighted assets" before the end of 2006 is the

aggregate amount of the risk-weighted assets for credit risk together with the capital requirements for market risk multiplied by 12.5. From the beginning of 2007, it is the aggregate amount of the risk-weighted assets for credit risk together with the capital requirements for market risk and operational risk multiplied by 12.5.

1.3.2 Tier 1 capital to risk-weighted assets

This indicator is to analyze the capital adequacy of domestic banks based on the core capital concept.

- Tier 1 capital: includes common stockholder's equity, non-cumulative perpetual subordinated debt, non-cumulative perpetual preferred stock, capital reserves (except the appreciation reserves of fixed assets), retained earnings, minority interest, and cumulative effect of equity adjustments, less supervisory deductions.
- Risk-weighted assets: same as 1.3.1.

1.3.3 Capital to total assets

This indicator is to analyze the degree of financial leverage on assets funded by other than banks' own funds.

- Capital: equity interest of owners in a bank (i.e. the difference between total assets and liabilities).
- Total assets: the sum of financial and non-financial assets.

1.3.4 Non-performing loans net of provisions to capital

This indicator is to analyze the potential impact on capital of non-performing loans.

Non-performing loans net of provisions to capital = (non-performing loans - specific loan provisions) / capital

- Non-performing loans: same as 1.2.1.
- Specific loan provisions: the minimum provision that a bank should allocate in accordance with Article 5 of "Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing / Non-accrual Loans."
- Capital: same as 1.3.3.

1.4 Liquidity

1.4.1 Customer deposits to total loans

This indicator is a measure of liquidity to indicate the degree of dependence on more stable sources of funds (customer deposits) to illiquid assets (loans).

- Customer deposits: including check deposits, demand deposits, time deposits, saving deposits, and money remittances.
- Total loans: same as 1.2.1.

1.4.2 Liquid assets to total assets

This indicator is to analyze the liquidity available to meet expected and unexpected demands for cash.

- Liquid assets: the core liquid assets comprising cash and cash equivalents, amounts due from the Central Bank, amounts due from banks, and call loans to banks (excluding amounts due from domestic banks which are included in the reporting population).

- Total assets: same as 1.3.3.

1.4.3 Liquid assets to short-term liabilities

This indicator is to analyze the liquidity mismatch of assets and liabilities, and provide an indication of the extent to which banks could meet the short-term withdrawal of funds without facing liquidity problems.

- Liquid assets: same as 1.4.2.
- Short-term liabilities: liabilities with remaining maturity of no more than one year, including deposits, borrowings, debt securities issued, and the net market value of financial derivatives positions (liabilities less assets), but excluding the transactions with domestic banks which are included in the reporting population.

1.5 Credit risk concentration

1.5.1 Household loans to total loans

This indicator is to analyze the concentration of loans to the household sector by domestic business units (DBUs) of domestic banks.

- Household loans: loans from DBUs of domestic banks to the household sector.
- Total loans: total loans (excluding export bills purchased and non-accrual loans) of DBUs of domestic banks.

1.5.2 Corporate loans to total loans

This indicator is to analyze the concentration of loans to local public and private corporate borrowers by domestic business units (DBUs) of domestic banks.

- Corporate loans: loans from DBUs of domestic banks to public and private non-financial corporate borrowers.
- Total loans: same as 1.5.1.

1.5.3 Large exposures to capital

This indicator is to analyze vulnerabilities at domestic banks arising from the concentration of credit risk on single individuals or corporate borrowers.

- Large exposures: refer to the total amount of credit to the first 20 private & government enterprises at domestic banks after integration.
- Capital: same as 1.3.3.

1.5.4 Gross asset positions in financial derivatives to capital

This indicator is to analyze the effect of price changes on gross asset positions in financial derivatives relative to capital.

- Gross asset positions in financial derivatives: total amounts of positive fair value in hedged and non-hedged financial derivatives such as swap, forward, and option contracts, excluding embedded derivatives inseparable from the underlying instruments.
- Capital: same as 1.3.3.

1.5.5 Gross liability positions in financial derivatives to capital

This indicator is to analyze the effect of price changes on gross liability positions in financial derivatives relative to capital.

- Gross liability positions in financial derivatives: total amounts of negative fair value in hedged and non-hedged financial derivatives such as swap, forward, and option contracts, excluding embedded derivatives inseparable from the underlying instruments.
- Capital: same as 1.3.3.

1.6 Sensitivity to market risk

1.6.1 Net open position in foreign exchange to capital

This indicator measures the mismatch of foreign currency asset and liability positions at domestic banks to assess the potential vulnerability of capital to exchange rate movements.

- Net open position in foreign exchange: the open foreign currency positions in balance sheet and financial derivatives, which are converted into NT dollars using the exchange rates as of the reporting date.
- Capital: same as 1.3.3.

1.6.2 Foreign-currency-denominated loans to total loans

This indicator is to analyze the share of foreign currency loans within gross loans.

- Foreign-currency-denominated loans: the loans to other financial institutions, corporate entities, and individuals that are payable in foreign currency, or in domestic currency but with the amount to be paid linked to a foreign currency.
- Total loans: including loans to customers and other financial institutions.

1.6.3 Net open position in equities to capital

This indicator is to analyze the effect of the fluctuation of banks' net positions in equities compared with own equity.

- Net open position in equities: the sum of on-balance-sheet holdings of equities and notional positions in equity derivatives.
- Capital: same as 1.3.3.

1.6.4 Foreign-currency-denominated liabilities to total liabilities

This indicator is to analyze the relative importance of foreign currency funding within total liabilities.

- Foreign-currency-denominated liabilities: the liabilities that are payable in foreign currency, or in domestic currency but with the amounts to be paid linked to a foreign currency.
- Total liabilities: the total amounts of current, non-contingent liabilities, and the liabilities positions in financial derivatives.

2. Non-financial corporate sector indicators

2.1 Total liabilities to equity

This indicator is a leverage ratio which is used to analyze the extent of activities that are financed through liabilities other than own funds.

- Total liabilities: including short-term and long-term liabilities.
- Equity: the equity interest of the owners in a corporate entity, including funds contributed by

owners, capital surplus, retained earnings, and other items related to owners' equity.

2.2 Return on equity

This indicator is to analyze profitability of non-financial corporations in using their capital.

Return on equity = net income before interest and tax / average equity (the "net income before interest and tax" is adopted according to the FSIs of the IMF).

- Net income before interest and tax: net income before tax plus interest expenses from continuing operation units.
- Average equity: the mean of the equity at the beginning and the end of current year.

2.3 Net income before interest and tax / interest expenses

This indicator is to analyze how well non-financial corporate income covers interest expenses.

- Net income before interest and tax: same as 2.2.
- Interest expenses: the interest expense payments on debt within the specified time period of the statement.

3. Household sector indicators

3.1 Household borrowing to GDP

This indicator is to analyze the level of household borrowing to gross domestic product (GDP).

- Household borrowing: household outstanding loans and credit card revolving balances from financial institutions. Financial institutions include depository institutions and other financial institutions (trust and investment companies, life insurance companies, securities finance companies, and securities firms).

3.2 Borrowing service and principal payments to gross disposable income

This indicator is to analyze the capacity of households to cover their debt payments.

- Borrowing service and principal payments: interest and principal payments made on outstanding loans and credit card revolving balances within the specified time period of the statement.
- Gross disposable income: the aggregate of the wages and salaries from employment, property and corporate income (interest, dividends and rent), and current transfers receipts less current taxes on income and wealth and other current transfers expenditures.

4. Real estate market indicators

4.1 Land price index

This indicator is to analyze the price movement of urban land prices in the Taiwan area.

- Land price index: the general index of urban land prices released by the Ministry of Interior each half year (in March and in September).

4.2 Residential real estate loans to total loans

This indicator analyzes the concentration of domestic banks' loans in residential real estate.

- Residential real estate loans: individual loans that are collateralized by residential real estate.

Residential real estate includes houses, apartments, and associated land (including owner use and rental use).

- Total loans: same as 1.2.1.

4.3 Commercial real estate loans to total loans

This indicator analyzes the concentration of domestic banks' loans in commercial real estate.

- Commercial real estate loans including: loans to corporate entities and individuals that are collateralized by commercial real estate, loans to construction companies, and loans to companies involved in the development of real estate. Commercial real estate includes buildings and associated land used by enterprises for retail, wholesale, manufacturing, or other purposes.
- Total loans: same as 1.2.1.

5. Market liquidity

5.1 The turnover ratio of trading value in stock market

This indicator is to analyze the average turnover frequency in the stock market (i.e. stock market liquidity).

- The turnover ratio of accumulated trading value: the accumulated value of monthly turnover ratio in terms of trading value within current year of the statement.
- The monthly turnover ratio in terms of trading value in stock market = total trading value / market value
- Total trading value: total trading value of stock transactions in the month.
- Market value: total market value of listed stocks as of the end of the month.

5.2 The monthly average turnover ratio in bond market

This indicator is to analyze the average turnover frequency in the bond market (i.e. bond market liquidity).

- Monthly average turnover ratio in bond market = total amount of monthly turnover ratio in terms of trading value in bond market / 12
    - Monthly turnover ratio in terms of trading value: trading value in the month / average bonds issued outstanding.
    - Trading value in the month: total bond trading value (excluding repo transactions).
    - Bonds issued outstanding: bonds that have been issued and are in the hands of the public.
    - Average bonds issued outstanding = (bonds issued outstanding at the month end plus bonds issued outstanding at previous month end) / 2

Abbreviations

ABCP	Asset-backed commercial paper
ABS	Australian Bureau of Statistics
ADB	Asian Development Bank
ADR	American Depository Receipts
APRA	Australian Prudential Regulation Authority
BCBS	Basel Committee on Banking Supervision
BICRA	Banking Industry Country Risk Assessment
BIS	Bank for International Settlements
BLS	Bureau of Labor Statistics
BNM	Bank Negara Malaysia
BOE	Bank of England
BOJ	Bank of Japan
BOK	Bank of Korea
BOT	Bank of Thailand
BSI	Banking System Indicator
CAR	Capital adequacy ratio
CBC	Central Bank of the Republic of China (Taiwan)
CBRC	China Banking Regulatory Commission
CCHS	Check Clearing House System
CDIC	Central Deposit Insurance Corporation
CDS	Credit default swap
CGFS	Committee on the Global Financial System
CIFS	CBC Interbank Funds-Transfer System
CNY	Chinese Yuan
CPI	Consumer price index
DBU	Domestic business units
DGBAS	Directorate-General of Budget, Accounting and Statistics of the

	Executive Yuan
DVP	Delivery-Versus-Payment
EBTS	Electronic Bond Trading System
ECB	European Central Bank
ECFA	Cross-Straits Economic Cooperation Framework Agreement
ESRB	European Systemic Risk Board
EU	European Union
EUR	Eurocurrency
FDIC	Federal Deposit Insurance Corporation
FED	Federal Reserve System
FISC	Financial Information Service Co., Ltd
FOMC	Federal Open Market Committee
FPC	Financial Policy Committee
FSB	Financial Stability Board
FSIs	Financial Soundness Indicators
FSC	Financial Supervisory Commission
FSOC	Financial Stability Oversight Council
FSS	Financial Supervisory Service
G20	Group of Twenty
GBP	Great Britain pound
GDP	Gross domestic product
GPD	Generalized Pareto distribution
GSEs	Government-sponsored enterprises
GTSM	GreTai Securities Market
HKMA	Hong Kong Monetary Authority
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IPO	Initial public offering
IRS	Interbank Remittance System
JCIC	Joint Credit Information Center
JPY	Japanese yen
KRW	Korean won

LCR	Liquidity coverage ratio
LGFPs	Local government financing platforms
LTV	Loan to value
MAS	Monetary Authority of Singapore
MOEA	Ministry of Economic Affairs
MOF	Ministry of Finance
MOI	Ministry of Interior
MOU	Memorandum of Understanding
MPI	Macro-Prudential Indicator
NDFs	Non-Delivery Forwards
NPL	Non-performing loan
NSFR	Net stable funding ratio
NTD	New Taiwan dollar
OECD	Organisation for Economic Co-operation and Development
OTC	Over-the-counter
PBC	People's Bank of China
PIIGS	Portugal, Italy, Ireland, Greece and Spain
QDII	Qualified Domestic Institutional Investors
QE	Quantitative easing
QFII	Qualified Foreign Institutional Investor
RBC	Risk-based capital
RMB	renminbi
ROA	Return on assets
ROE	Return on equity
RRR	Reserve requirement ratio
RTGS	Real-time gross settlement
SBIs	Bank Indonesia Certificates
SFAS	Statement of Financial Accounting Standards
SGD	Singapore dollar
SIPSs	Systemically important payment systems
SMEG	Small and Medium Enterprise Credit Guarantee Fund of Taiwan
SMEs	Small and medium enterprises
TAIEX	Taiwan Stock Exchange Weighted Index

TEJ	Taiwan Economic Journal Co., Ltd
TWSE	Taiwan Stock Exchange
USD	United States dollar
VaR	Value at Risk
WPI	Wholesale price index

Financial Stability Report

Publisher: Central Bank of the Republic of China (Taiwan)

Address: 2, Section 1, Roosevelt Road, Zhongzheng District, Taipei City 10066, Taiwan, R. O. C.

Tel: 886-2-2393-6161

http://www.cbc.gov.tw

Editor: Department of Financial Inspection

Central Bank of the Republic of China (Taiwan)

Publishing Frequency: June 2008 to May 2009 – semiannually; from May 2010 – annually

Publishing Date: May 2011

First Issue Date: June 2008

Distributors:

Government Publication Bookstore (Songjiang Store)

Address: 1F, 209, Songjiang Road, Zhongshan District, Taipei City 10467, Taiwan, R. O. C.

Tel: 886-2-2518-0207

Government online bookstore: http://www.govbooks.com.tw

Wunan Cultural Plaza Bookstore (Taichung Main Store)

Address: 1F, 6, Jhongshan Road, Zhongzheng District, Taichung City 40042, Taiwan, R. O. C.

Tel: 886-4-2226-0330

Printed by: Jhen Da typesetting printing company

Address: 7, Lane 51, Section 1, Nanchang Road, Zhongzheng District, Taipei City 10074, Taiwan, R. O. C.

Tel: 886-2-2396-5877

Price: NT$300 **GPN: 2009703514** **ISSN: 2071-8519**