Central Bank of the Republic of China (Taiwan)

Financial Stability Report

May 2013 | Issue No. 7

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About the Financial Stability Report

Key points of the task to promote financial stability

Promoting financial stability not only is 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 Stability Report is 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 30 April 2013.

I. Overview

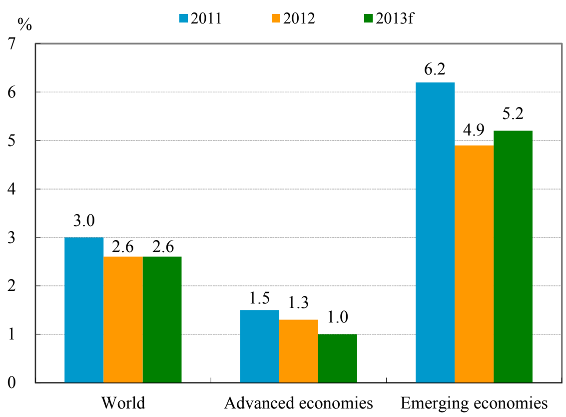
Macro environmental factors potentially affecting financial sector

Global economy set to rebound, while financial prospects showed signs of improvement

Global recovery proceeded at a mild pace, and inflationary pressures receded

The global economy remained sluggish in the first three quarters of 2012 constrained by the ongoing European sovereign debt crisis, along with the faltering recovery in the US labor market and the fiscal cliff controversy, hitting market confidence. Afterward, there were signs of a turnaround in the global economy, driven by: (1) the Board of Governors of the Federal Reserve System (FED) launching the third run of expanding asset purchases; (2) the European Central Bank (ECB) adopting Outright Monetary Transactions (OMT) to restore market confidence; and (3) Japanese Prime Minister Abe deploying a more aggressive economic renaissance plan.

Chart 1.1 Global economic growth rates



Note: Figures for 2013 are Global Insight estimates.
Source: Global Insight (2013/4/15).

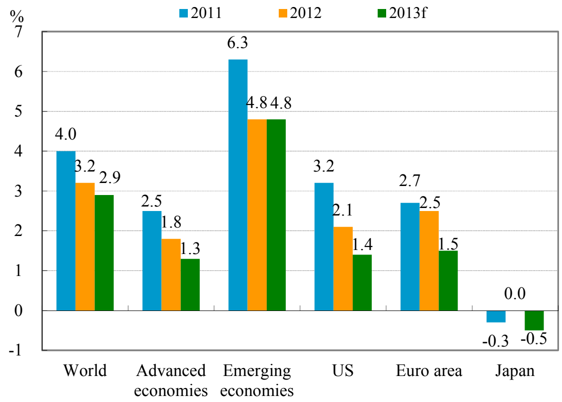
In 2013, with concerns over US fiscal retrenchment dampening its economic growth, together with doubts about the downturn in the euro area still lingering, the global recovery moved to a moderate expansion path. Global Insight predicted world real gross domestic product (GDP) growth to reach 2.6% in 2013, approximating that registered in the 2012.[1] Real GDP in advanced economies was forecast to drop to 1.0% throughout the year, lower than the 1.3% recorded in 2012. Output in emerging economies is expected to nudge to

[1] Global Insight Estimate in 15 April 2013.

5.2% over the same period from 4.9% in 2012 (Chart 1.1).

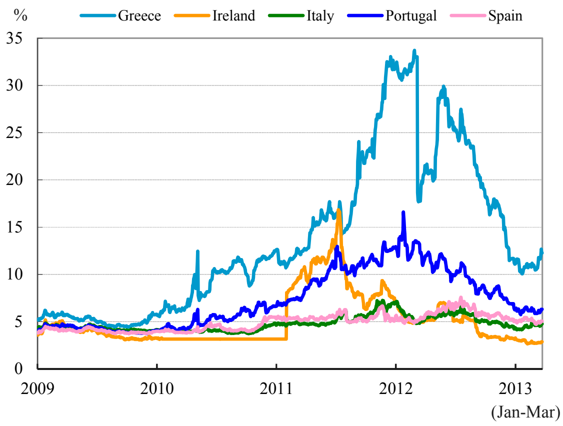
Global prices of food and crude oil at one stage dramatically surged in the wake of climate and geopolitical uncertainty in 2012 Q3. Subsequently, commodity prices regained stability with improvements in the climate in cereal producing regions and a still-subdued global economy. In 2012, global inflation showed a more moderate reading than a year earlier, registering a consumer price index (CPI) inflation rate of 3.2%, down from 4% in 2011. The CPI inflation rates for advanced and emerging economies both declined through 2012 compared to the previous year (Chart 1.2).

Chart 1.2 Global headline inflation indices



Note: Figures for 2013 are Global Insight estimates.
Sources: Official websites of the selected economies and Global Insight (2013/4/15).

Chart 1.3 Government bond yields in euro area GIIPS



Note: All figures are based on 10-year government bond yields except for Ireland's data which are on a 5-years basis.
Source: Bloomberg.

International financial markets have improved

In 2012, the European sovereign debt crisis continued to flare up on occasion affecting global financial markets. In response, the ECB launched the second phase of its three-year Longer-Term Refinancing Operation (LTRO), which provided the banking system with a total amount of one trillion euros or so in low rate loans, and cut the policy rate to a record low of 0.75%.[2] Thereafter, the OMT program, announced by the ECB in September that pledged unlimited and fully sterilized purchases of government-issued bonds in the secondary market, coupled with the introduction of the European Stability Mechanism (ESM) in October, contributed to a plunge in government bond yields for the distressed GIIPS[3] and, in turn, helped international markets gradually resume stability (Chart 1.3).

[2] The ECB further reduced the policy rate by 25 basis points to 0.5% in an attempt to promote economic growth in the euro area.
[3] The GIIPS refers to the euro area periphery economies of Greece, Ireland, Italy, Portugal, and Spain.

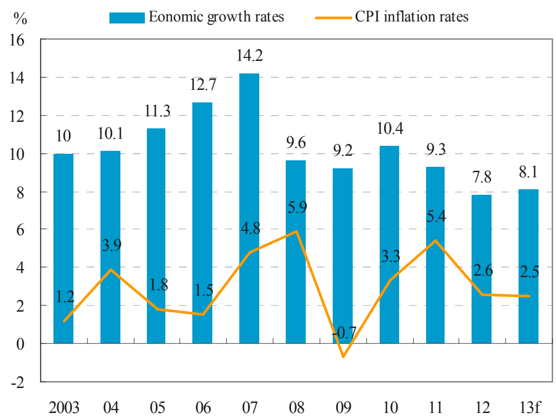
International financial conditions improved notably in 2013 Q1, buttressed by the responsive measures and the quantitative easing monetary policies aggressively carried out by the major European economies, the US and Japan. Nevertheless, the banking industry in the euro area periphery economies still faced challenges emanating from elevated funding costs, worsening asset quality and meager profits. Furthermore, monetary easing policies leading to protracted low rates over a long period of time will increase financial sectors' vulnerability and sensitivity to unexpected rises in interest rates. In addition, the spillover of the monetary easing policies taken by advanced economies spurred a rise in the volatility risk of asset prices in emerging economies. Consequently, the World Bank suggested that the central banks in East Asia should put capital controls in place to curtail excessive inflows in the short term.[4]

Mainland China's economy saw a mild rebound alongside a build-up in credit expansion

In 2012 Q4, Mainland China's economic growth rebounded following consecutive declines in the first three quarters and registered a thirteen-year low of 7.8% for the whole year, though still above its 7.5% official growth target. Global Insight projected Mainland China's economic growth in 2013 to rebound to 8.1%; however, uncertainties over recovery prospects still lingered according to economic statistics in the first quarter of the year. With regard to consumer prices, food prices resumed their downtrend and through 2012 CPI inflation posted a fall of 2.6%, reflecting alleviating inflationary pressures (Chart 1.4).

In the face of economic slowdown and eased inflationary pressure, the People's Bank of China (PBC) twice lowered required reserve ratios and the benchmark deposit and lending rates of financial institutions. Meanwhile, the PBC increased the money supply by means of reverse repo operations. Accordingly, movements of the M2 annual growth rate and new renminbi loans remained stable. However, the PBC's monetary policy stance turned more cautious in January 2013 due to a build-up in credit expansion.

Chart 1.4 Economic growth rates and CPI inflation rates of Mainland China



Note: Figures for 2013 are Global Insight projections.
Sources: National Bureau of Statistics of China and Global Insight (2013/4/15).

[4] World Bank (2012), *East Asia and Pacific Economic Update*, Volume 2.

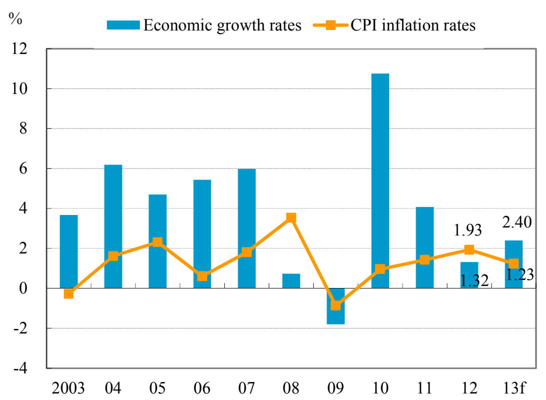
Moreover, in response to the booming housing market, Mainland China announced a new series of measures to curb housing price rises in January 2013, but their short-term effect will likely be limited. In addition, an increased expansion of the shadow banking system accompanied with high leverage and a less comprehensive supervisory mechanism may have a dramatic impact on the financial system with the unfolding of economic fluctuations.

Domestic economy grew at a decelerating pace, while consumer prices rose mildly

In the first half of 2012, Taiwan's economic growth momentum trended up moderately on account of the flagging global economy but resumed a stable level in the second half of the year. The annual economic growth rate dropped to 1.32% in 2012, exhibiting a significant fall from 4.07% a year earlier. Consumer prices at one time trended upwards owing to foreign and domestic factors, but subsequently turned to decline steadily. The average CPI inflation rate of 2012 was 1.93%,[5] still at a mild level. Looking ahead, in view of the lackluster global economy as well as the lower-than-expected growth in exports and private consumption, the Directorate-General of Budget, Accounting and Statistics (DGBAS) revised down its forecast for Taiwan's economic growth rate to 2.40% throughout 2013, while the annual CPI inflation rate was estimated to drop back to 1.23% over the same period[6] (Chart 1.5).

The scale of external debt revealed a moderate level at the end of 2012, while foreign exchange reserves continued accumulating over the same period due to persistent current account surpluses and climbed to US$405.1 billion at the end of April 2013. This implies that Taiwan's foreign exchange reserves have a robust capacity to service external debt. Regarding the government's fiscal position, fiscal deficits markedly contracted after hitting a peak in 2009 and accounted for 2.32% of annual GDP in 2012, below internationally recognized warning levels.[7] Outstanding public debt at all levels of government stood at NT$5.75 trillion at the end of 2012, higher

Chart 1.5 Economic growth rates and CPI inflation rates of Taiwan



Note: Figure for 2013 is forecast by DGBAS.
Source: DGBAS.

5 The figures are based on a DGBAS press release on 6 May 2013.
6 The figures are based on a DGBAS press release on 24 May 2013.
7 As for the ratio of fiscal deficits to GDP for the states of the European Union, the cutoff point for risk is 3% according to the Maastricht Treaty and the subsequent Stability and Growth Pact.

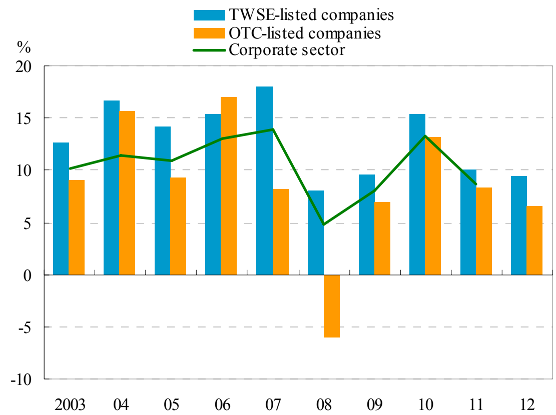
than the figure posted a year earlier. In response, Taiwan's government imposed several measures aimed at effectively controlling outstanding government debt.

Non-financial sectors

Corporate sector

In 2012, driven by the drag from waning global and domestic economic growth, the profitability of Taiwan Stock Exchange (TWSE) listed and over-the-counter (OTC) listed companies both decreased, especially in the plastics and steel industries which both recorded dramatic drops (Chart 1.6). The leverage ratio for TWSE-listed and OTC-listed companies both elevated slightly. Short-term debt servicing capacity of listed companies was lower than the previous year as a result of shrinking profitability but still remained at an acceptable level.

Chart 1.6 Return on equity in corporate sector

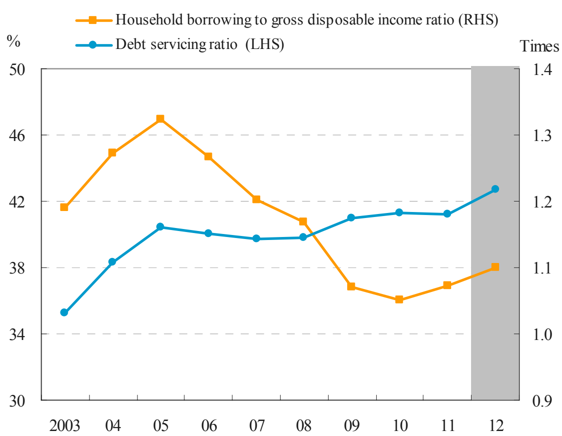


Notes: 1. Return on equity = net income before interest and tax / average equity.
2. Latest data for the corporate sector is as of 2011, while those for TWSE-listed and OTC-listed companies are as of 2012.

Sources: JCIC and TEJ.

The credit quality of corporate loans stayed satisfactory as the non-performing loan (NPL) ratio was still at a low level. Operating performances for certain TFT-LCD Panel and DRAM companies improved in 2012, but their weak debt servicing capacity stemming from considerable earlier losses has sparked concerns about the future credit quality of some financial institutions.

Chart 1.7 Household debt servicing ratio



Note: Gross disposable income in shadow area is CBC estimate.

Sources: CBC, JCIC and DGBAS.

Household sector

Household borrowing kept following an uptrend in 2012, and reached NT$11.76 trillion, or 83.77% of GDP, at the end of the year. Despite rising gross disposable household income over the same period, the ratio of household borrowing to gross disposable income went up to 1.22 times as the increase in household borrowing surpassed gross disposable income. As a result, the household debt burden mounted slightly. Meanwhile, the debt servicing ratio also ascended to 37.98% in 2012, indicating that short-term household debt servicing pressure increased somewhat (Chart 1.7).

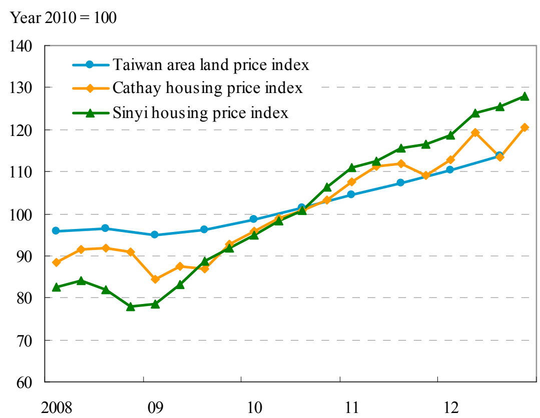
In 2012, the credit quality of household borrowings from banks remained sound, backstopped by a record-low NPL ratio. This, coupled with sliding domestic unemployment rates and increasing regular earnings, will be favorable to strengthen household debt-servicing capacity.

Real estate market

During the first three quarters of 2012, the trading volume in the housing market steadily contracted owing to the imposition of the Specifically Selected Goods and Services Tax, ongoing domestic economic slowdown, and the introduction of the Property Transaction Price Registration System in August. Afterward, the trading volume regained its upward momentum in Q4, fueled by the expansion of quantitative easing measures taken by Japan and the US that boosted positive market expectations. Nevertheless, the number of building ownership transfers for transaction for the whole year still dipped to a ten-year low of 330 thousand units, with an annual growth rate of -8.84%.

The Sinyi housing price index (for existing buildings) carried on hiking upwards throughout 2012, while the Cathay housing price index (for new constructions) rebounded in Q4 after a slowdown in the previous quarter (Chart 1.8). Among the major metropolitan areas, there was a sharp increase in house prices for Taoyuan County, Taichung City and Kaohsiung City, whereas house prices in Taipei City and New Taipei City reported slower growth rates but remained at high levels. With soaring housing prices, the average house price to income ratio and the average mortgage burden ratio for the six metropolitan areas registered 8.3 and 32.0%, respectively, in 2012 Q4. Taipei City stood out among the others and saw the heaviest mortgage burden as its house price to income ratio and the mortgage burden ratio reached

Chart 1.8 Land and house price indices



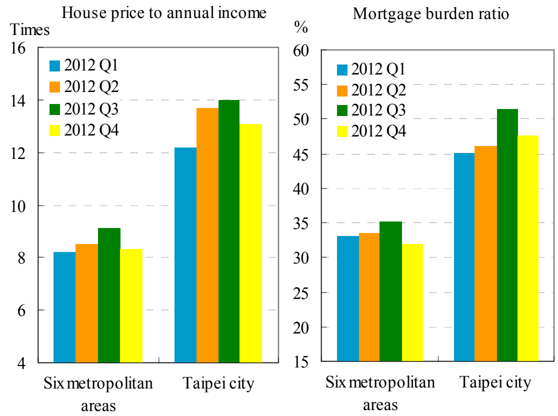
Notes: 1. Taiwan area land price index is released semiannually (i.e. in March and September).
2. The sample and compilation methods employed to generate the Cathay housing price index were changed in 2012 Q4 and applied retroactively to historical data.
3. For comparison purposes, all three indices used the same base year of 2010.

Sources: MOI, Cathay Real Estate and Sinyi Real Estate Inc.

13.1 and 47.6%, respectively (Chart 1.9).

The real estate-related loans of banks grew at a slower pace through 2012, while mortgage interest rates gradually increased. In addition, downward adjustment pressure on house prices in some areas with ample housing supply lingered amid the fact that massive new projects have been successively completed in recent years.

Chart 1.9 House price to income ratios and mortgage burden ratios



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.

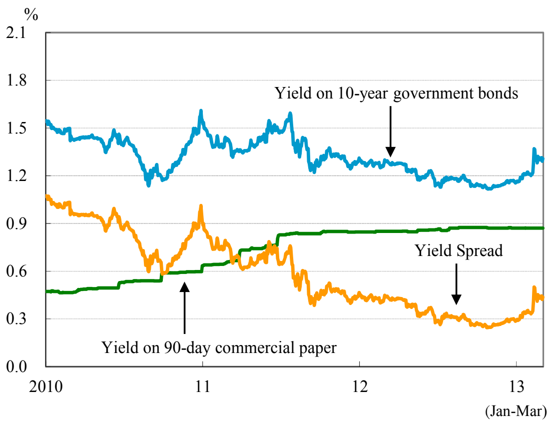
Source: "Taiwan Housing Demand Survey Report," MOI.

Assessment of the financial sector

Financial markets

Trading volume slightly rebounded in the primary bond and bills markets, while the secondary markets remained tepid

Chart 1.10 Yield spread



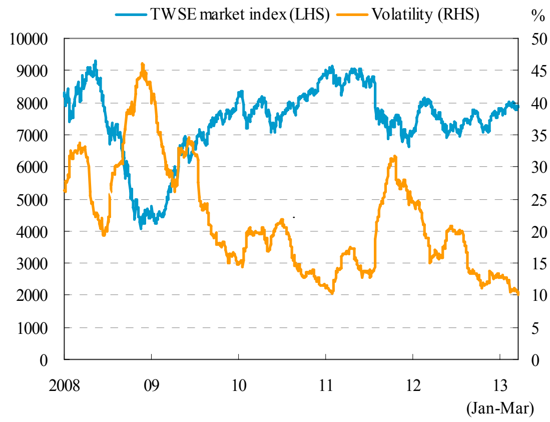
Note: Yield spread refers to yield on 10-year government bonds minus yield on 90-day commercial paper.

Source: Bloomberg.

In 2012, the outstanding amount of bills issuance saw a notable increase in the primary bills market, but trading volumes in the secondary market contracted slightly as massive amounts of commercial paper was bought by banks and then held to maturity. Similarly, the outstanding amount of bond issuance upsurged in the primary bond market spurred by higher willingness for bond issuance by enterprises and financial institutions, while trading volumes in the secondary market shrank due to fewer bonds being traded. In the beginning of 2013, the secondary bills and bond markets remained lackluster. Trading volumes saw a remarkable decline in February, owing to seasonal factors such as the Chinese Lunar New Year holidays, and then rebounded from March onwards.

With regard to market rates, 90-day commercial paper rates showed a stable trend in the secondary market in 2012, bolstered by ample liquidity in the domestic market. However, 10-year government bond yields trended downwards as stock market transactions contracted and capital flowed into the bond market. This resulted in a shrinkage in the yield spread between short-term and long-term rates, which hit an annual low of 25 basis points in November before steadily upswinging. At the end of March 2013, the yield spread amplified somewhat to 44 basis points, but still remained at a relatively low level (Chart 1.10).

Chart 1.11 TWSE market index and volatility



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

Stock indices kept tracking on an upward path together with dramatic fluctuations, while volatility resumed a downward trend

The Taiwan Stock Exchange Weighted Index (TAIEX) hit an annual high point of 8,144 in 2012 Q1. Subsequently, led by lower-than-expected economic performance in Europe and the US, together with the reintroduction of a stock trading income tax, the index reversed from ascending to descending. From Q3 onwards, with a rebound in global stock markets, the index resumed its upward trend together with dramatic fluctuations, registering 7,699 at the end of the year, for a rise of 8.87% year on year. In the beginning of 2013, the TAIEX continued on its upward path and subsequently recorded an increase of 2.85% in March compared to that at the end of 2012 (Chart 1.11).

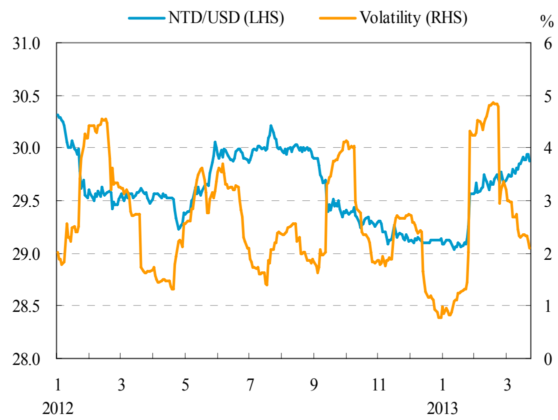
The volatility in the TAIEX stabilized after trending down in 2012, settling at 13.21% at the end of December. In early 2013, the volatility continued sliding as the local stock markets resumed stability and then reached 10.18% at the end of March (Chart 1.11).

The NT dollar exchange rate reversed from appreciation to depreciation but remained relatively stable compared to other currencies

In the first half of 2012, the NT dollar exchange rate against the US dollar continued its appreciating trend from the previous year. In the second half of the year, the NT dollar exchange rate resumed its appreciation and reached an annual high of 29.090 in early November in virtue of foreign capital inflows to Asian emerging markets arising from the third round of quantitative easing taken by the US. In turn, the NT dollar fluctuated mildly and registered 29.136 against the US dollar at the end of December, increasing by 3.96% year on year. In early 2013, yen depreciation provoked Asian currencies to depreciate against the US dollar. This, coupled with advance purchases of US dollars by firms and increasing capital outflows by foreign investors, fueled the NT dollar exchange rate to turn to a period of depreciation, reaching 29.875 against the US dollar at the end of March (Chart 1.12).

The volatility in the NT dollar exchange rate against the US dollar fluctuated between 1% and 5% in 2012, revealing a much milder annual average of 2.57%. In early 2013, the average volatility trended upwards, led by yen depreciation, but regained its downward trend to post a value below 3% from the middle of March onwards (Chart 1.12). 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.

Chart 1.12 Movements of NT dollar exchange rate against US dollar



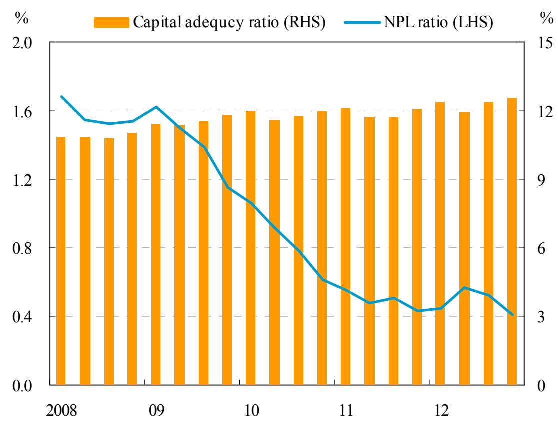
Note: Volatility refers to the annualized standard deviation of 20-day daily returns.
Source: CBC.

Financial institutions

Domestic banks

In 2012, the growth in loans granted by domestic banks increased moderately, arising from state-owned enterprises turning to the bond market to raise funds and a contraction in loans to government agencies. The NPL ratio kept touching new lows, implying satisfactory asset quality (Chart 1.13), along with ample loan loss reserves. The concentration of credit exposure in real estate-related loans gradually improved. Furthermore, the outstanding credit to customers in Mainland China consecutively mounted but merely accounted for a small share of total credit. The estimated Value at

Chart 1.13 NPL and capital adequacy ratios of domestic banks

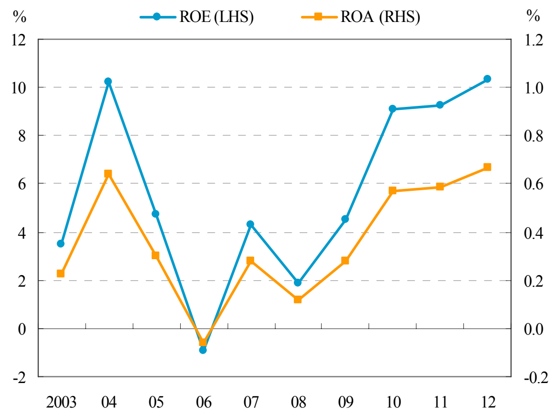


Source: CBC.

Risk (VaR)[8] for market risk exposures of domestic banks had limited influence on capital adequacy. Liquidity risk was moderate on the back of ample funds.

The combined net income before tax for domestic banks reached a historical high of NT$240.7 billion in 2012, in which offshore banking units and overseas branches acounted for about one-third. The average return on equity (ROE) and return on assets (ROA) rose to 10.33% and 0.67%, respectively, over the same period, hitting ten-year record highs (Chart 1.14). The average capital adequacy ratio rebounded to 12.54% (Chart 1.13), indicating an improvement in banks' risk bearing capabilities.

Chart 1.14 ROE & ROA of domestic banks



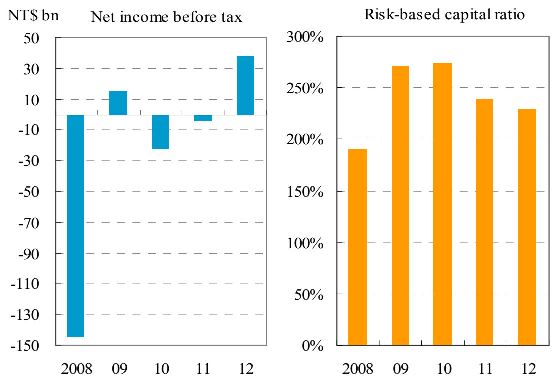
Notes: 1. ROE = net income before tax / average equity.
2. ROA = net income before tax / average total assets.
Source: CBC.

Life insurance companies

Life insurance companies as a whole reported a net profit before tax of NT$38 billion, the highest level during the recent five years (Chart 1.15). This was mainly contributed to by the fact that the expectation of rising premiums, induced by the twice reduction in the interest rate of the reserve requirement for new policies, fueled a sharp increase in premium income. Moreover, this elevated level of profit also benefited from the buoyant domestic stock market as well as the increasing revenues from cash dividends.

The average risk-based capital (RBC) ratio of life insurance companies, excluding Kuo Hua Life Insurance Company,[9] which was taken into receivership by the Financial Supervisory Commission (FSC), declined to 229.32% at the end of 2012 from 238.38% a year earlier (Chart 1.15), yet was still higher than the statutory minimum of 200%. This decline was predominantly caused by the fact that the expansion in domestic and overseas securities

Chart 1.15 Net income before tax and risk-based capital ratio of life insurance companies



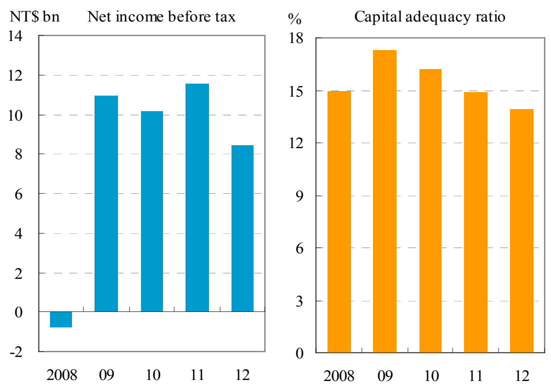
Note: Kuo Hua Life Insurance Company, which was taken into receivership by the Insurance Stabilization Fund on 4 August 2009, is excluded.
Source: FSC.

[8] See Note 55 for the calculation of the estimated VaR for market risk.
[9] Kuo Hua Life Insurance was taken into receivership by the Insurance Stabilization Fund on 4 August 2009 and then sold by tender to TransGlobe Life Insurance Company on 27 November 2012. The settlement of this purchase contract was completed on 30 March 2013.

investments positions, together with the FSC's imposition of a stricter capital requirement for real estate investments by life insurance companies, spurred a rise in total risk capital. The financial health of the few companies with RBC ratios that are still below 200% warrants improving.

Bills finance companies

Chart 1.16 Net income before tax and capital adequacy ratios of bills finance companies



Source: CBC.

In 2012, the total assets of bills finance companies declined slowly. The outstanding balance of the commercial paper guarantees business gradually rebounded with increasing commercial paper issuance, while credit quality remained satisfactory. The liquidity risk of bills finance companies remained high as a maturity mismatch between assets and liabilities still persisted. Nonetheless, overall major liabilities contracted somewhat compared to the previous year, while the average ratio of major liabilities to net worth also descended over the same period. Meanwhile, each firm kept their ratio below the statutory ceiling.

While the operating profits of bills finance companies leveled off in 2012, overall profitability saw a sharp cutback as a result of shrinking non-operating incomes. Despite average capital adequacy ratios continuously descending, each firm kept its ratio above 12% (Chart 1.16).

Financial infrastructure

Payment systems operated in an orderly fashion and the foreign-exchange settlement platform was put in place

In 2012, all three systemically important payment systems[10] in Taiwan operated in an orderly fashion. In addition, the CBC planned out the foreign-exchange settlement platform which was established by the Financial Information Service Co., Ltd. and inaugurated it on 1 March 2013, aiming at reinforcing domestic financial infrastructure and meeting the requirement for cross-strait renminbi settlement. In the initial stage, only the US dollar remittance service was

[10] The three major payment systems include the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) operated by the Financial Information Service Co., Ltd., and the Check Clearing House System (CCHS).

commenced in the platform, but subsequently the payment for renminbi and other currency transactions will be incorporated in a step-by-step manner. This is conducive to facilitating the development of the domestic financial services industry.

Deregulation of financial services

In order to promote cross-strait commercial activity and financial cooperation, on 31 August 2012, the CBC and the PBC jointly signed the Memorandum on Cross-Strait Currency Clearing Cooperation, setting up the Cross-Strait Currency Clearing Mechanism, and successfully paved the way to allow domestic banking units (DBUs) to conduct RMB business.

Furthermore, in order to advocate the establishment of the Money Management Platform for Taiwanese Citizens, the CBC and the FSC jointly drew up a draft for amending the Offshore Banking Act, authorizing securities firms to set up Offshore Securities Units (OSUs) within the territory of Taiwan to commence international securities business. Meanwhile, the amended Act will grant tax preference to the OSUs, with reference to the taxation of Offshore Banking Units (OBUs).

Taiwan’s financial system remained stable

In 2012, the domestic economy grew at a moderate pace and profitability in the corporate sector turned to contract amid the global economic downturn. However, domestic financial markets operated smoothly over the same period in spite of the unfavorable macroeconomic circumstances. Moreover, financial institutions saw a marked rise in profits, while asset quality stayed sound. Most domestic financial institutions, except for a few life insurance companies, registered adequate capital ratios. The three major payment systems operated on an orderly trajectory. By and large, the financial system in Taiwan remained stable.

The upcoming events emanating from the evolution of domestic and international economic and financial conditions that may have impacts on Taiwan’s real economy and financial system necessitates increased vigilance. Above all, the subsequent development of the European sovereign debt crisis, the US fiscal cliff controversy, as well as the recent expansion of monetary easing by the Japanese government and the movement of the depreciating yen deserve special attention. In response, the CBC will pay close attention and take adequate monetary, credit and foreign exchange policies to mitigate the impacts. Meanwhile, the FSC will persist in revamping financial regulations and enhancing financial supervisory measures in the hope of facilitating the soundness of financial institutions and promoting financial stability.

II. Macro environmental factors potentially affecting financial sector

2.1 International economic and financial conditions

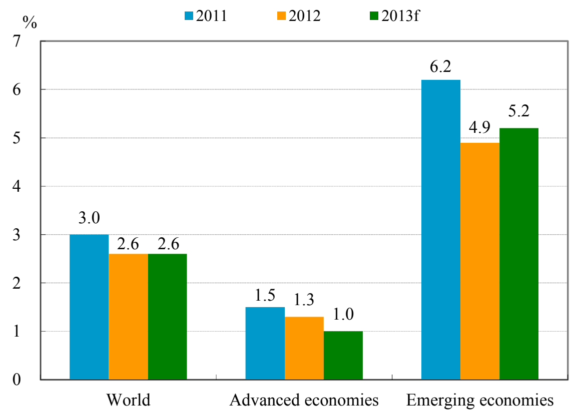
International economic conditions

Global recovery proceeded at a milder pace

The ongoing European sovereign debt crisis in 2012 was mainly reflected in the fact that a deflated property bubble put the Spanish banking industry in financial jeopardy and the road to a Greek bailout remained bumpy. This, coupled with sluggish recovery in the US labor market and fiscal cliff controversy denting market confidence, resulted in subdued global economic performance in the first three quarters of the year. Subsequently, buttressed by a series of policy measures taken by the national governments of major countries, global financial markets showed signs of improving and the global economy also witnessed a gradual upturn. These policy measures included: (1) the FED launching the third round of expanding asset purchases; (2) the ECB adopting OMT to restore market confidence; and (3) Japanese Prime Minister Abe deploying a more aggressive economic renaissance plan.

In 2013, prospects for the US housing market have improved but fiscal retrenchment could dampen economic growth. This, together with a prolonged recession likely facing the euro area, presaged a slow-paced recovery for the global economy. Global Insight predicted world real GDP growth to reach 2.6% in 2013, approximating that achieved in 2012.[11] Real GDP in advanced economies is forecast to drop to 1.0% in 2013, lower than the 1.3% recorded a year earlier, pointing to a very modest recovery. Output in emerging economies is forecast to nudge up to 5.2% from 4.9% in 2012 due to advancing

Chart 2.1 Global economic growth rates



Note: Figures for 2013 are Global Insight estimates.
Source: Global Insight (2013/4/15).

[11] See Note 1.

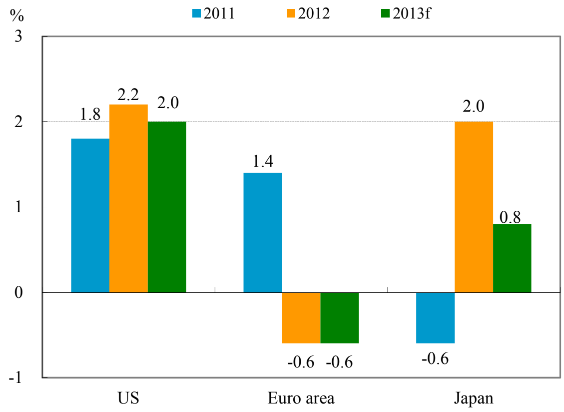
momentum in growth (Chart 2.1).

Problems involving lackluster economic circumstances, high unemployment and strict fiscal conditions posed challenges for advanced economies

The US economy grew moderately alongside an improving labor market

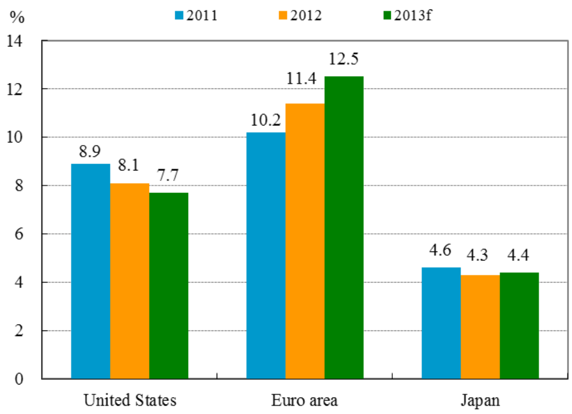
On the back of accelerating growth in private investment and decelerating reductions in government expenditure, US economic growth rebounded from 1.8% a year before to 2.2% in 2012. Despite an improvement in the housing and labor markets in the beginning of 2013, the impacts of automatic spending cuts, which were launched in March, broadly affected employment, private consumption and national defense expenditure. In turn, they will likely jeopardize economic growth for the whole of the year. Global Insight estimated US economic growth to stand at 2.0% in 2013, falling slightly compared to the previous year (Chart 2.2).

Chart 2.2 Economic growth rates in US, Euro area and Japan



Note: Figures for 2013 are Global Insight estimates.
Sources: Official websites of the selected economies and Global Insight (2013/4/15).

Chart 2.3 Unemployment rates in US, Euro area and Japan

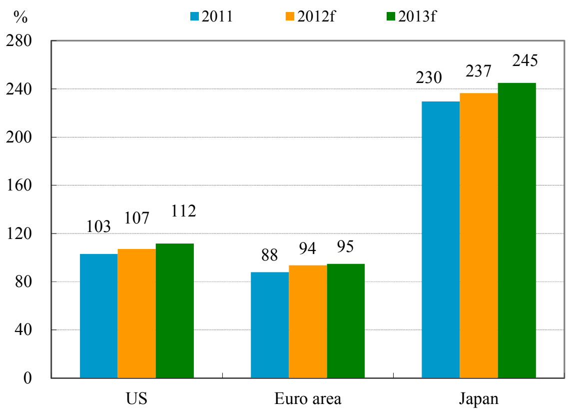


Note: Figures for 2013 are Global Insight estimates.
Sources: Official websites of the selected economies and Global Insight (2013/4/15).

The US unemployment rate dropped to 8.1% in 2012 from 8.9% a year earlier. The rate further descended to a four-year low of 7.6% in March 2013 under the backdrop of a rallying housing market and vigorous development in the energy sector. However, the main reason behind this mainly came from a decline in the labor force participation rate. Global Insight anticipated the US unemployment rate to continue reducing to an annual rate 7.7% in 2013 (Chart 2.3).

Outstanding US government debt relative to annual GDP increased year by year. According to the International Monetary Fund (IMF), the ratio will keep rising to an estimated 112% in 2013 (Chart 2.4). Furthermore, the impact of the fiscal cliff, a combination of expiring tax cuts and automatic spending cuts, has alleviated thanks to the passage of the American Taxpayer Relief Act of 2012 on 2 January 2013. Nevertheless, with the automatic spending cuts going into effect in March, it will not only fuel uncertainty over US economic growth but also cloud the global economic outlook.

Chart 2.4 Government debt-to-GDP ratios in US, Euro area and Japan



Source: IMF (2012), *Fiscal Monitor*, October.

Euro Area GIIPS countries will move to the peak period of repayment on public debt in 2013

In the euro area, economic growth posted a rate of -0.6% in 2012 amid the European sovereign debt crisis. Corporate spending and private consumption remained feeble owing to the implementation of fiscal austerity by national governments. Global Insight estimated that the euro area would remain mired in recession with GDP again down by 0.6% in 2013 (Chart 2.2).

The euro area unemployment rate spiked to a new high of 11.4% in 2012. Among the segments of the population, youth aged 15 to 24, who suffered an unemployment rate of more than 50% in Spain and Greece, had the most serious problem. Global Insight forecast the unemployment rate to keep advancing to 12.5% in 2013 (Chart 2.3).

In the euro area, the ratio of outstanding government debt-to-GDP was soaring but is expected to grow at only 1 percentage point in 2013 against the backdrop of the implementation of harsh fiscal austerity measures, according to IMF projections (Chart 2.4). Nonetheless, GIIPS will progressively enter the peak period of repayment of public debt in 2013 and 2014.

The Abe cabinet proposed the "three-arrows" strategy for realizing economic revitalization

Bolstered by needs for earthquake reconstruction and the resumption of private consumption, Japanese economic growth registered 2.0% throughout 2012. The government debt-to-GDP ratio further uplifted to 237% during the year as the government issued Reconstruction Bonds in response to funding requirements for earthquake recovery (Chart 2.4). At the end of 2012, the new Japanese Prime Minister Abe proposed the "three-arrows" strategy, comprising:

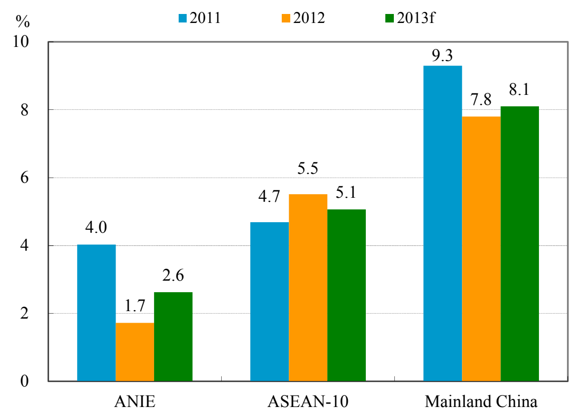
"aggressive monetary policy," "flexible fiscal policy" and "the growth strategy that promotes private investment," with the aim of curbing deflation and promoting economic growth. In this context, it is likely to induce a further deterioration in government debt. According to Global Insight, Japanese economic growth is expected to drop to 0.8% in 2013 (Chart 2.2), while the unemployment rate is forecast to climb to 4.4%, somewhat higher than the figure recorded in 2012 (Chart 2.3).

The recovery of Asian emerging economies is expected to accelerate, while unemployment rates in the ASEAN-10 countries showed improvements

Hit by contracting foreign demand, GDP growth in the major Asian emerging economies experienced a slowdown in 2012, and output growth in Mainland China over the same period also decreased to 7.8% from 9.3% in 2011. Moreover, Thailand and the Philippines both saw a marked surge in their economic growth rates in 2012. The former was underpinned by post-flood construction requirements, while the latter was driven by foreign workers' remittances backstopping private consumption, alongside an expansion in public expenditure. Against this backdrop, output in the 10 member countries of the Association of South East Asian Nations (ASEAN-10) grew by 5.5% in 2012 from 4.7% a year before (Chart 2.5).

Spurred by an expected moderate pick-up in the global economy, Global Insight anticipated that the economic growth rate in the Asian newly industrialized economies would mount to 2.6% in 2013 from 1.7% in 2012. Meanwhile, the ASEAN-10 countries would see steady growth but register a growth rate of 5.1% in 2013, slightly lower than 5.5% a year earlier (Chart 2.5). The unempolyment rate in the Asian newly industrialized economies is projected to stand at 3.6%, higher than 3.4% in 2012, while the figure would continue to drop to 4.5% in the ASEAN-10 countries (Chart 2.6).

Chart 2.5 Economic growth rates in emerging Asian economies

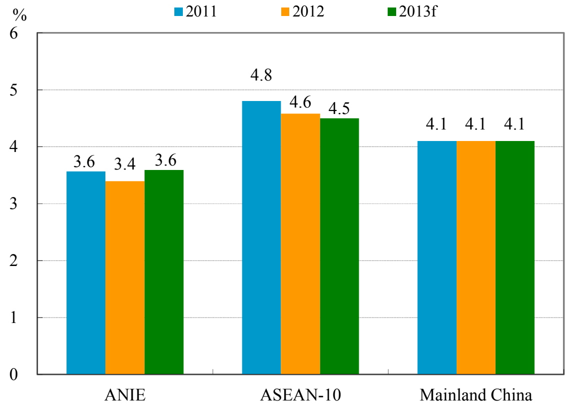


Notes: 1. Figures for 2013 are Global Insight projections. Estimates for ANIE are based on 22 February 2013 data, while for ASEAN-10 are 15 April 2013 data.
2. ANIE refers to Asian Newly Industrialized Economies, including Taiwan, Hong Kong, Singapore and South Korea.
3. ASEAN-10 refers to 10 member countries for the Association of South East Asian Nations, including Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

Sources: Official websites of the selected economies and Global Insight (2013/4/15).

Recently, international hot money flowed into the Asia-Pacific region, emanating from the emerging negative effects of quantitative easing adopted by advanced economies. It not only exerts appreciation pressure on Asian currencies but also fuels the build-up of asset and credit bubbles. Standard and Poor's (S&P) also indicated that rapid movements of hot money are likely to impact Asian economies.[12]

Chart 2.6 Unemployment rates in emerging Asian economies

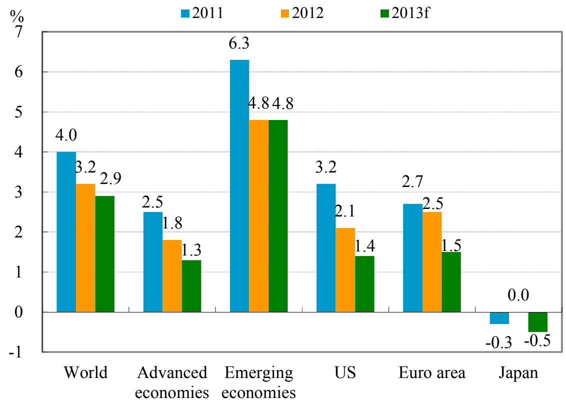


Notes: 1. Figures for 2013 are Global Insight projections. Estimates for ANIE are based on 22 February 2013 data, while for ASEAN-10 are 15 April 2013 data.
2. For ANIE and ASEAN-10, see Notes 2 & 3 in Chart 2.5.
Sources: Official websites of the selected economies and Global Insight.

Global inflationary pressures kept subsiding

Global prices of food and crude oil dramatically surged amid climate and geopolitical uncertainty in the third quarter of 2012. However, with increasing production of cereals due to improvement in the climate in cereal producing regions, alongside a still-sluggish global economy, commodity prices resumed stability. Reflecting this, global inflation moderated in 2012 compared to the previous year, with the CPI inflation rate registering 3.2%, down from 4% in 2011. CPI inflation rates in both advanced and emerging economies were lower than the figures recorded a year earlier (Chart 2.7).

Chart 2.7 Global headline inflation indices



Note: Figures for 2013 are Global Insight estimates.
Sources: Official websites of the selected economies and Global Insight (2013/4/15).

Global crude oil prices trended upward in the beginning of 2013 but turned to decline as a consequence of Mainland China's weak economic performance in the first quarter and a deepening recession in the euro area. In addition, international cereal prices also regained stability due to climate improvement. Reflecting this, global energy prices only showed a modest level of growth. Global Insight predicted the global CPI inflation rate would continue to reduce to 2.9% in 2013 (Chart 2.7).

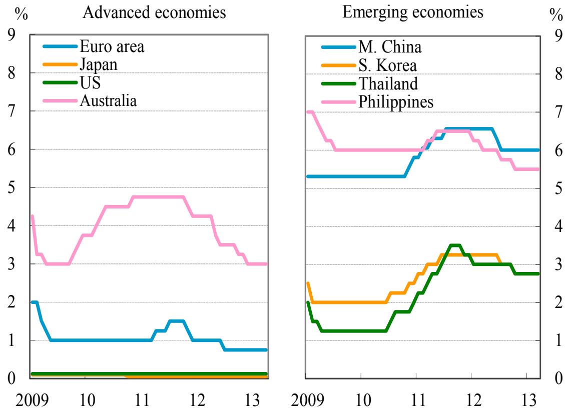
[12] Standard & Poor's (2013), *Economic Research: Global Credit Conditions Underpin Economic Growth Outlook in Asia Pacific*, 13 March.

Monetary policy kept easing in advanced economies along with an expansion in the size of asset purchases

With regard to monetary policy, there is confined room for cutting rates given the already low interest rates in major advanced economies. In the face of the weakening global economy, the ECB cut its policy rate in July 2012,[13] while the Reserve Bank of Australia also lowered their policy rate four times during the year. By contrast, the FED and the Bank of Japan (BOJ) both kept their low-interest-rate policies unchanged (Chart 2.8), and sequentially stepped up the size of asset purchases (Table 2.1).

Emerging Asian economies continued adopting easier monetary stances in response to the impact of the still-moderate underlying pace of global output growth on their domestic economies. Most economies kept reducing policy rates from 2012 onwards (Table 2.1).

Chart 2.8 Policy rates in selected economies



Notes: 1. Figures are as of end-April 2013.
2. Figure for the Euro area is based on the main refinancing operations fixed rate; for Japan, uncollateralized overnight call rate; for US, federal funds rate target; for Australia, cash rate target; for Mainland China, financial institution one-year lending base rate; for South Korea, base rate; for Thailand, 1-day repurchase rate; and for the Philippines, repurchase rate.

Sources: Central banks' websites.

Table 2.1 Recent measures of monetary easing in selected advanced and emerging economies

Economy	Dates	Measures
US	2012/9	The Federal Open Market Committee (FOMC) decided to purchase additional agency mortgage-backed securities at a pace of US$40 billion per month until prospects of the labor market notably improved.
	2012/12	The FOMC decided to take the following measures to sustain monetary easing: 1. Continue purchasing additional agency mortgage-backed securities at a pace of US$40 billion per month. 2. Purchase longer-term Treasury securities after the program to extend the average maturity of the FOMC's holdings of Treasury securities is completed at the end of 2012, initially at a pace of US$45 billion per month.

[13] See Note 2.

		3. Maintain the existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities in agency mortgage-backed securities until prospects of the labor market improved. 4. Keep the target range for the federal funds rate at 0 to 0.25% and maintain this low range for the federal funds rate given that the unemployment rate remains above 6.5%, inflation between one and two years ahead is projected to be no more than 2.5%, and longer-term inflation expectations continue to be well anchored.
Euro area	2012/7	The ECB cut the main refinancing operations fixed rate by 25 basis points to 0.75%.
Japan	2012/2, 4, 9, 10, 12	The BOJ successively expanded the size of its Asset Purchase Program on five occasions during 2012, bringing its total value up to 101 trillion yen.
	2013/1	The BOJ decided to take monetary measures as follows: 1. Raise the price stability target from 1% to 2%. 2. Pledge to purchase financial assets at a rate of 13 trillion yen per month from 2014 onwards without setting any termination date. 3. Keep the target range for the uncollateralized overnight call-loan rate unchanged at 0 to 0.1%.
	2013/4	The BOJ adopted "quantitative and qualitative monetary easing" by means of the following steps: 1. Change the main operating target for money market operations from the uncollateralized overnight call rate to the monetary base. 2. Double the monetary base and the amounts outstanding of Japanese government bonds as well as exchange-traded funds (ETFs) to 270 trillion yen, 190 trillion yen and 3.5 trillion yen, respectively, in two years. 3. Increase the amounts outstanding of Japan real estate investment trusts (J-REITs) by 60 billion yen to 0.17 trillion yen.
Australia	2012/5, 6, 10, 12	The Reserve Bank of Australia lowered the cash rate target four times to 3.0%.
Mainland China	2012/6, 7	The PBC sequentially cut the financial institution one year lending and deposit base rate twice to 6.0% and 3.0%, respectively.
South Korea	2012/7, 10	The Bank of Korea reduced the base rate target twice to 2.75%.
Thailand	2012/1, 10	The Bank of Thailand lowered the 1-day repurchase rates twice to 2.75%.
Indonesia	2012/2	Bank Indonesia cut the Bank Indonesia rate by 25 basis points to 5.75%.
Philippines	2012/1, 3, 7, 10	The Central Bank of the Philippines lowered the repurchase rate four times to 5.50%.

Sources: National official websites.

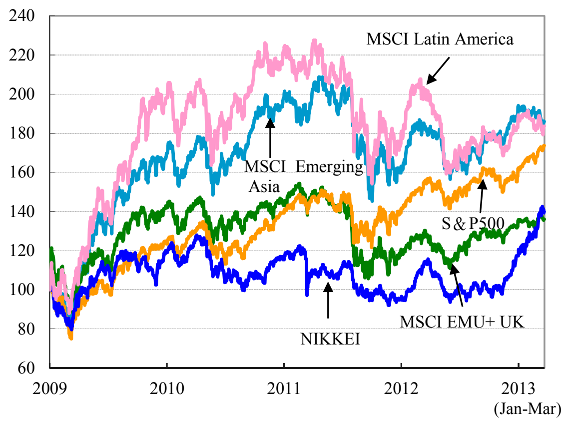
International financial conditions

Improvements in international financial markets

As the European sovereign debt crisis continued to flare up on occasion affecting global financial markets, the ECB launched the three-year LTRO in two phases providing the banking system with a total amount of one trillion euros in low rate loans in December 2011 and February 2012, respectively. This not only contributed to alleviating pressures on funding constraints in markets in the first quarter of 2012, but also promoted asset markets to temporarily stabilize. In turn, major stock markets around the world mostly rebounded amid buoyant sentiment (Chart 2.9).

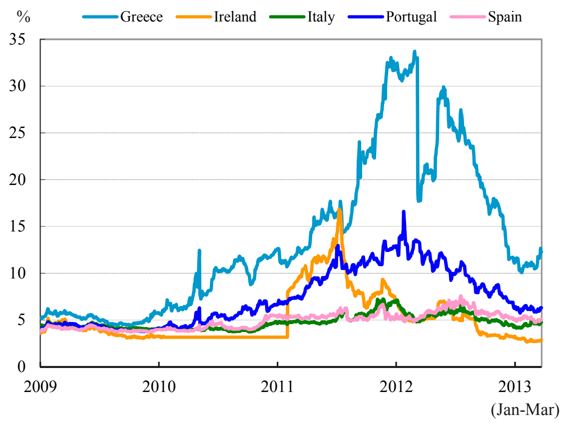
However, the political unrest surrounding the Greek parliamentary election outcome in the beginning of May 2012, coupled with renewed concern over the flagging economy and the health of banks in euro area GIIPS,[14] hit investor confidence. As a consequence, those economies saw capital outflows and experienced a backlash in government bond yields, with Greece especially registering the highest increases (Chart 2.10). Although the three-year LTRO introduced by the ECB has helped to resume the demand for government bonds issued by those economies, its positive effect has receded. Accordingly, risk aversion suffered a sharp upswing alongside capital flight to safe assets, bringing about a precipitous drop in government bond yields in the US, Germany and Switzerland. The safe-haven flows to Japan resulted in Japanese government bond yields hitting historical lows and persistent appreciation in the Japanese yen (Chart 2.11). Investors' confidence towards emerging markets

Chart 2.9 Performance of key international equity indices



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

Chart 2.10 Government bond yields in euro area GIIPS

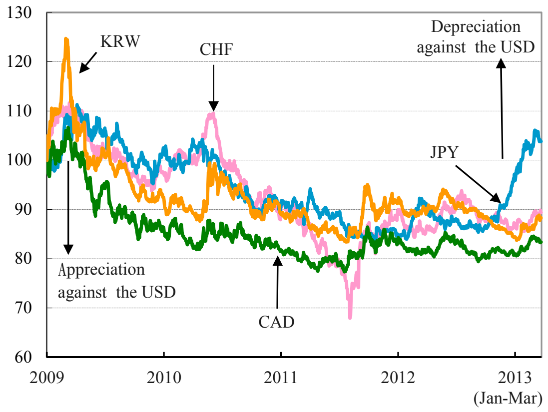


Note: All figures are based on 10-year government bond yields except for Ireland's data which are on a 5-year basis.
Source: Bloomberg.

[14] See Note 3.

declined due to elevated risk aversion. Against this backdrop, markets have seen mounting concerns about whether emerging markets are capable of weathering waning domestic economic conditions, especially in the face of shrinking leeway for monetary policy and an opaque global economic outlook.

Chart 2.11 Movements of various currencies against the US dollar



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

From the third quarter onwards, affected by the protracted Greek sovereign debt crisis, deteriorating fiscal conditions in local governments and a soaring bad debt ratio in the banking industry in Spain, downside risks remained high. In response, the ECB cut the main refinancing operations fixed rate to a record low of 0.75% in July from 1% and reduced the overnight deposit rate from 0.25% to 0% in an attempt to encourage interbank lending. Subsequently, the OMT program announced by the ECB in September pledged unlimited and fully sterilized purchases of euro area government-issued bonds that mature in one to three years in the secondary market[15] aimed at curtailing the risk of a deteriorating European financial crisis. Moreover, in October, thanks to the introduction of the ESM, a permanent bailout mechanism in the euro area, the GIIPS experiencing deep financial distress saw a plunge in their public bond yields (Chart 2.10).

Furthermore, the US faced faltering employment growth and a persistently high unemployment rate in the third quarter of 2012, despite moderate economic growth. In this context, the FOMC decided to maintain the target range for the federal funds rate at 0 to 0.25% in September 2012 and to keep the rate at this exceptionally low level at least through the middle of 2015. In addition, the FOMC announced the additional purchase of agency mortgage-backed securities at a pace of US$40 billion per month (also known as the third round of quantitative easing or QE3) and continued its program to extend the average maturity of its holdings of Treasury securities through the end of 2012.

To prevent Japan from a renewed recession and to overcome deflation, the BOJ successively

[15] All purchases under the OMT are limited to the sovereign bonds issued by the economies that ask for support under the EFSF/ESM, agree on conditionality to adhere to its fiscal austerity and implement the relevant reforms. Meanwhile, the ECB waived its preferred creditor status to reduce the funding costs for the economies that were jeopardized by financial distress.

expanded the size of its Asset Purchases Program[16] on five occasions during 2012, bringing its total value up to 101 trillion yen in the hope of causing longer-term interest rates and credit risk premiums to decrease. In January 2013, the Japanese government and the BOJ announced the launch of an inflation targeting system, raising the inflation target[17] to 2% from 1% with a view to further reinforcing monetary easing policies. As a result, the Japanese yen experienced a radical depreciation, while the stock market soared markedly (Chart 2.11 and Chart 2.9). To some extent, it would impact on exchange rate stability in Asian countries (Box 1).

The major European economies, the US and Japan conducted substantial injections of liquidity into financial markets by means of their unprecedented low rate policies and unconventional measures including asset purchases. Consequently, international financial conditions improved notably alongside rising asset prices and there were strong rebounds in major stock markets around the world in the first quarter of 2013 (Chart 2.9). Nevertheless, some banks in the euro area periphery economies, in which government debt-to-GDP ratios stayed high, still faced significant challenges emanating from elevated funding costs, worsening asset quality and meager profits.

The adoption of monetary easing policies by national governments leading to run-ups of asset prices grew concerns of bubbles forming. Meanwhile, protracted low interest rates over a long period of time have increased financial sector vulnerabilities and sensitivities in the advent of an unexpected rise in interest rates. Central banks should maneuver their exiting mechanisms and take adequate responsive measures as they exit their easy monetary policies so as to minimize the impacts on markets. In addition, the spillover of monetary easing policies taken by advanced economies spurred a rise in the volatility risk of asset prices in emerging economies, putting financial stability at risk. The World Bank suggested that the central banks in East Asia should closely monitor the movement of capital inflows and consider developing capital controls that could play a role in dampening excessive inflows in the short term.[18]

[16] The BOJ first announced the introduction of the Asset Purchase Program amounting to 35 trillion yen in October 2010 and, in turn, successively increased the size of the program on eight occasions, bringing the total value up to about 101 trillion yen. The program is composed of the asset-purchase fund used for a securities line of 76 trillion yen and for a credit lending line of 25 trillion yen. The scope of asset purchases includes Japanese government bonds, treasury bills, commercial paper, corporate bonds, exchange-traded funds (EFTs) and J-REITs.

[17] It refers to the CPI inflation rate.

[18] See Note 4.

Progress has been made in international financial reforms, but there is still a need for ongoing impetus and effective implementation

The unfolding global financial crisis of 2008 and the subsequent European sovereign debt crisis had significant impacts on financial systems and financial markets around the world. In response, national financial authorities and international organizations successively launched a series of financial supervisory reforms in an attempt to heighten the transparency of financial markets and financial institutions and to lessen the complication of financial instruments and activities, as well as to deleverage balance sheets. These measures aimed at eventually lowering risks in financial institutions and enhancing their resilience, so as to reinforce the safety of the financial system.

These international financial reforms mainly focused on: (1) raising regulatory capital levels and liquidity buffers to strengthen the ability of financial institutions to cope with distress; (2) restricting deposit-taking institutions from proprietary trading and investment activities to insulate them from a flare-up of the underlying causes of the subprime crisis; (3) ring-fencing retail banks from investment banking activities and requiring higher capital charges for retail banks; and (4) improving the supervision on shadow banking and OTC derivatives, and averting further risks derived from non-bank financial institutions and OTC markets that may undermine financial stability.

Considerable progress has been made in the regulatory reform agenda at both the national and global levels. Nevertheless, according to an IMF survey,[19] problems with regard to overly complex financial systems, excessive concentration in banking assets, strong domestic interbank linkages and too-important-to-fail issues still lie ahead. With a view to underpinning future financial stability and the development of financial markets, ongoing impetus and effective implementation of reform agendas are necessary for national financial authorities and international organizations.

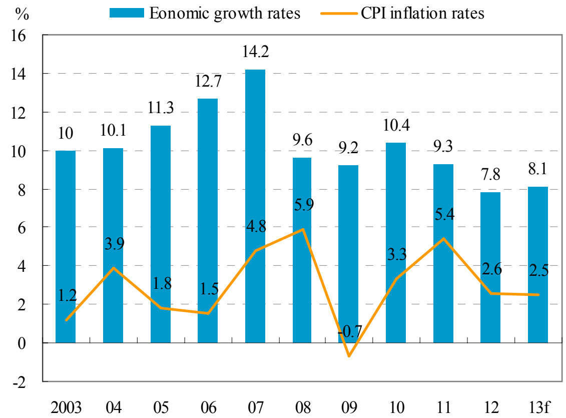
[19] IMF (2012), Global Financial Stability Report-Restoring Confidence and Progressing on Reforms, October.

Mainland China's economic and financial conditions

Economic growth slowly rebounded

After seven consecutive quarters of economic slowdown, Mainland China's economic growth touched a three-year low of 7.4% in 2012 Q3, owing to weak external demand and contracted internal demand driven by a cooling local housing market. In Q4, thanks to policy actions taken by the PBC through lowering benchmark interest rates and reserve requirement ratios, economic growth rebounded to 7.9% and registered 7.8% for the whole year. Though a thirteen-year low, the recorded growth rate was still above the 7.5% official target. However, growth dropped to 7.7% in 2013 Q1, reflecting uncertainty in their economic recovery. Currently, Mainland China is aggressively transforming its growth policies. In the future, it will rely more on expansion of domestic demand and urbanization strategies to support economic growth. Global Insight projected Mainland China's economic growth through 2013 to rebound to 8.1% (Chart 2.12).

Chart 2.12 Economic growth rates and CPI inflation rates of Mainland China

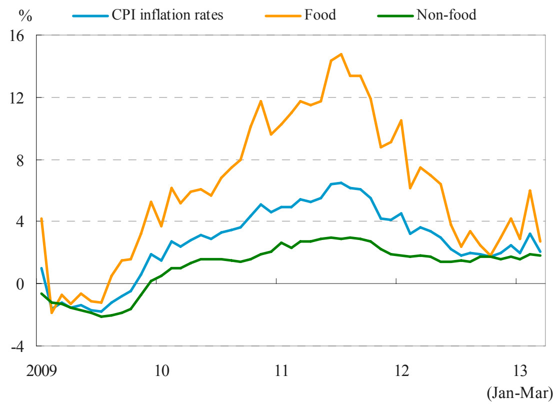


Note: Figures for 2013 are Global Insight projections.
Sources: National Bureau of Statistics of China and Global Insight (2013/4/15).

Softened food prices alleviated inflationary pressure

Regarding consumer prices, thanks to stable international raw materials prices, slowing domestic food price increases and stable domestic non-food prices, the CPI inflation rate decreased from 5.4% in 2011 to 2.6% in 2012. In February 2013, affected by Lunar New Year holidays and a low 2012 base, the CPI inflation rate rose to 3.2%. However, it fell back to 2.1% in March (Chart 2.13). Global Insight projected Mainland China's inflation rate for the whole of 2013 to decrease further to 2.5% (Chart 2.12).

Chart 2.13 Food and non-food CPI inflation rates of Mainland China



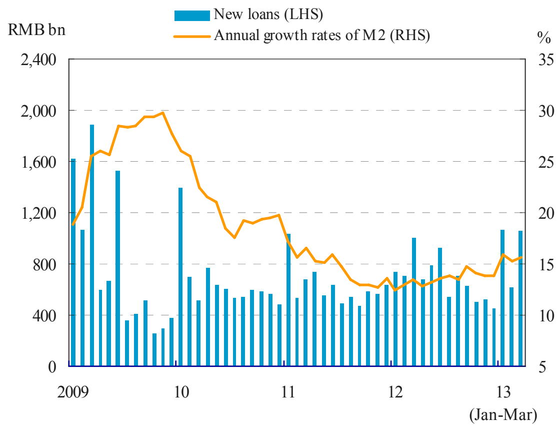
Source: National Bureau of Statistics of China.

Accelerated bank credit expansion led to cautious monetary policy

In response to economic slowdown and eased inflationary pressure, starting from February 2012, the PBC lowered the reserve requirement ratio for depository financial institutions by a total of one percentage point. Furthermore, the rates for 1-year renminbi benchmark deposits and loans of financial institutions were cut twice to 3.0% and 6.0%, respectively. Moreover, after lowering interest rates in July, the PBC shifted to reverse repo operations in order to increase the money supply. The trends of M2 annual growth rates and new renminbi loans remained stable in 2012. In January 2013, the annual growth rate of M2 increased from 13.8% as of the end of 2012 to 15.9%, and total new loans also reached a three-year high of RMB 1.07 trillion, due to ample market liquidity and clear signs of economic recovery.

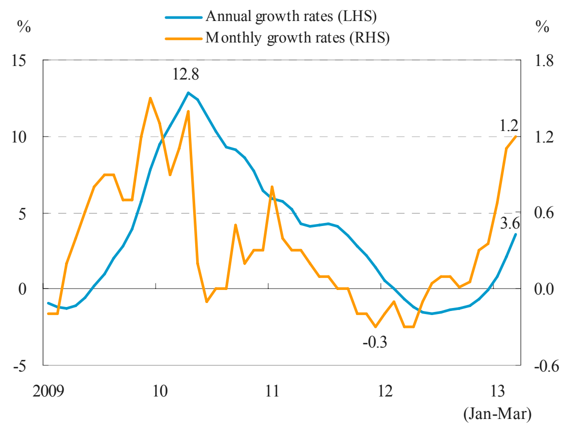
On 19 February 2013, the PBC conducted repo operations for the first time to tighten the money supply. The annual growth rates of M2 and new renminbi loans both decreased in February but rebounded in March. The annual growth rates of M2 for February and March were 15.2% and 15.7%, respectively, both higher than the 2013 target of 13% (Chart 2.14).

Chart 2.14 New loans and annual growth rates of M2 of Mainland China



Source: PBC.

Chart 2.15 Average growth rates of building sales prices in 70 medium-large cities of Mainland China



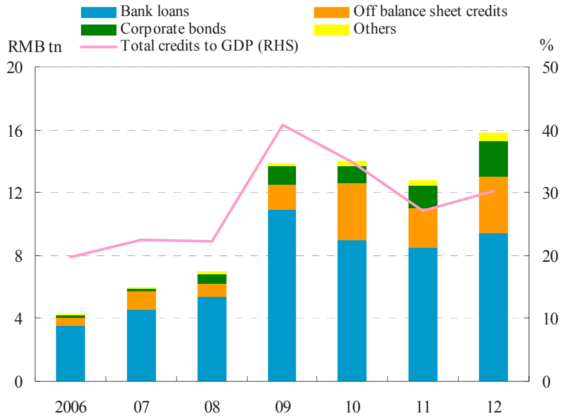
Note: Figures for 2011 onwards are estimated by Thomson Reuters, based on statistics published by the National Bureau of Statistics of China.

Sources: National Bureau of Statistics of China and Thomson Reuters.

Housing market warmed up and shadow banking system surged

In January 2013, the annual growth rate of building sales prices in 70 medium-large cities was 0.8%, turning positive for the first time in ten months, while monthly growth rates stayed positive for seven consecutive months. In response to the inflating housing market, starting from February 2013, Mainland China successively implemented measures to curb housing price rises, including levying 20% individual income tax on residential property sales as well as raising the down payment ratio and interest rate for second house loans. However, such measures only had limited effects in a short time period as the annual growth rate of building sales prices in 70 medium-large cities in February and March continued increasing to 2.1% and 3.6%, respectively (Chart 2.15).

Chart 2.16 Aggregate financing to the real economy of Mainland China



Source: PBC.

Meanwhile, Mainland China has imposed interest rate controls as well as credit rationing for a long time, and its credit markets were oligopolized by large commercial banks. As a result, the financial intermediation function of the banking system has proven to be insufficient, which has given rise to various types of shadow banking.[20] As a proportion of aggregate financing to the real economy, off-balance sheet credits have gradually increased in recent years (Chart 2.16), indicating active shadow banking activities. The Wenzhou private lending crisis bursting in 2011 demonstrated how severe the problem was. The biggest risk posed by shadow banking is excessive leverage. Without a sound supervisory mechanism, such risk will severely jeopardize the financial system once the economy fluctuations occur.

[20] Shadow banking in Mainland China includes: (1) non-bank institutions, such as pawnshops, credit guarantee companies and micro-finance companies; (2) private equity; (3) wealth management products, such as entrusted loans and trust loans; (4) financial innovation products, such as asset securitization and derivatives. This definition draws from IMF (2011), *People's Republic of China: Financial System Stability Assessment*, Country Report No. 11/321, November, and other relevant papers.

Box 1
Depreciation of the Japanese yen and its impacts on Taiwan's economy

Since Shinzo Abe resumed the position as Prime Minister of Japan on 26 December 2012, his administration has actively adopted loose fiscal and monetary policies geared toward jolting the country out of its decades-long deflationary malaise. With the step by step implementation of various revival policies, the value of the Japanese yen dropped. This box will explore the major causes that led to the latest depreciation of the Japanese yen and its economic and financial impacts in Asia and Taiwan.

1. Abe's economic policies and changing domestic and international environments pushed the yen down

After taking office, Prime Minister Abe vigorously advanced new economic policies. Prompted by these policies and other concurrent factors, such as the gradually stabilizing economies of the US and the euro area, lasting merchandise trade deficits in Japan, and massive yen sell-off by international investors, the yen began to weaken.

1.1 Abe's assertion of economic policies is conducive to yen depreciation

Abe's administration launched a three-pronged economic plan, namely an accommodative monetary policy, an expansionary fiscal policy, and a growth strategy that encourages private sector investment, which are collectively dubbed "Abenomics." Major policy measures under implementation are as follows:

1.1.1 Expanding public expenditure

The administration put forth a hefty package of Emergency Economic Stimulus Measures worth 20.2 trillion yen (US$227 billion), of which 10.3 trillion yen will be put in broad categories of government spending with a focus on infrastructure.

1.1.2 Easing monetary policy

The newly appointed BOJ Governor Haruhiko Kuroda, who has been in office since 4 April 2013, announced at his first monetary policy meeting that, in order to achieve the 2% inflation target as early as possible within a two-year timeframe, the BOJ would conduct a quantitative and qualitative monetary easing policy, changing the target of open market operations from the uncollateralized overnight call rate to the monetary base. Within two years the monetary base and holding of long-term Japanese government bonds (JGBs) and ETFs will double from their original amounts to 270 trillion yen, 190 trillion yen and 3.5 trillion yen, respectively. Additionally, the outstanding balance of Japan Real Estate Investment Trust (J-REITs) holdings will increase by the amount of 60 billion yen to 0.17 trillion yen.

Expansionary quantitative easing (QE) pushed down long-term rates and the yield on ten-year JGB hit a new record low of approximately 0.32% on 4 April 2013. International investors successively shorted the yen and, meanwhile, carry trades (i.e. borrowing the yen at a low interest rate in order to invest in another currency that is likely to provide a higher return) resurged, triggering the yen's further depreciation.

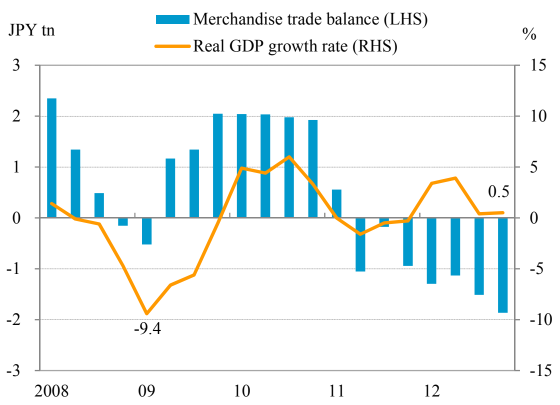
1.2 Gradually stabilizing economies of the US and the euro area precipitated the yen's slide against the US dollar

Positive signs of economic recovery in the US began to appear from September 2012. Many leading indicators, such as property prices and the unemployment rate, continued meliorating. Economic and financial conditions in the euro area also stabilized progressively after the European Central Bank's announcement of the Outright Monetary Transactions (OMT) policy. These factors caused an upsurge in financial markets as investors bought back the US dollar and the euro as investment positions.

1.3 Expanding merchandise trade deficit in Japan exacerbated the yen's depreciation

Japan has posted seven consecutive quarters of merchandise trade deficits since 2011 Q2 (Chart B1.1), representing the longest period since 1985. Combined with its lackluster economic growth, the situation intensified the trend of yen depreciation. The major factors causing the expansion of Japanese trade deficits are as follows:

Chart B1.1 Merchandise trade balances and real GDP growth rates in Japan



Source: Ministry of Finance and Cabinet Office, Japan.

(i) Short-term factors: global economic slowdown and huge fuel imports due to the shut-down of nuclear power plants after the devastating earthquake and tsunami in Fukushima in March 2011.

(ii) Long-term factors: Corporates' offshore production and sliding competitiveness in niche products, such as motor and engineering industries, as well as the structural shift stemming from reducing demand for nuclear power.

2. Yen depreciation would benefit Japanese export competitiveness but could destabilize the exchange rates of emerging Asian economies

2.1 Yen depreciation would be conducive to Japanese export competitiveness

The yen's real effective exchange rate dropped 17.6% between October 2012 and March 2013 (Chart B1.2), which helped raise the relative advantage in its export prices and hence benefited export competitiveness. Owing to its increase in the exportation of organic compounds and motor components, the annual growth rate of overall exports reached 6.4% in January 2013, the first positive growth seen in the most recent consecutive eight months. However, it subsequently decreased to 1.1% in March 2013 as exports to Mainland China and the European Union (EU) slipped.

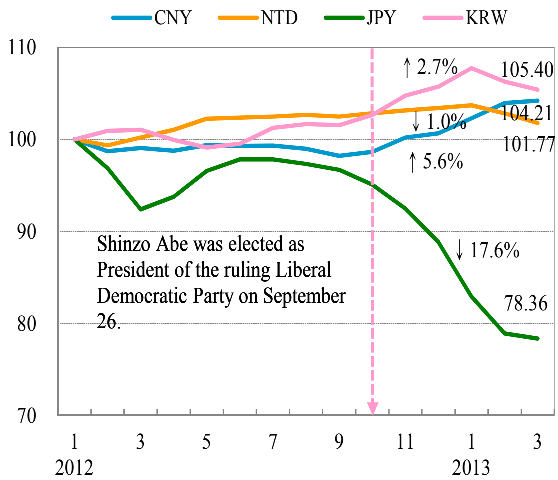
2.2 Yen depreciation could impact the South Korean economy because of their export structure similarities

Among major economies in Asia, Japan and South Korea are most similar in the type of exports. Therefore, South Korea's exports are most likely to be hurt most by the yen's depreciation, particularly in the shipping, steel and motor industries. Thus, competition between Japan and South Korea will be stiffer. After the latest G20 meeting, the Bank of Korea expressed its hope for Japan not to weaken the yen intentionally and that it would keep a close watch on the impacts of Japan's stimulus measures on the South Korean economy.

2.3 Yen depreciation could destabilize the exchange rates of Asian economies

Due to the yen's depreciation, Southeast Asian countries can perhaps benefit from increasing demand for their raw materials and intermediate goods or products driven by the expansion of Japanese

Chart B1.2 The change in real effective exchange rates in Asia



Notes: 1. January 2012 = 100.
2. ↑ and ↓ represent appreciation and depreciation, respectively. % refers to the rate change between October 2012 and March 2013.
Source: BIS effective exchange rate, broad indices.

exports. Among these countries, Thailand's economic outlook, which may benefit from being part of the production supply chain of the Japanese motor industry, could be optimistic. However, Asian countries, taking into account their high degree of export competitiveness, might be prompted to adopt responsive measures to stabilize their exchange rates in the case of excessive fluctuations in the yen-dollar rate.

3. Impacts on the economy and finance in Taiwan

3.1 Massive international hot money flowed in and out of the local foreign exchange market, affecting the stability of the NT dollar exchange rate

With international hot money veering into Asia, the net inflow of foreign capital increased in 2012 Q4, exerting appreciating pressure on the NT dollar.

3.2 Yen depreciation can help decrease Taiwan's trade deficits with Japan and reduce production costs

As Japan is the number one source of imports and the fourth-largest export destination for Taiwan, a huge bilateral trade deficit with Japan has persisted for a long time. In 2012, Taiwan's imports from Japan (about US$47.6 billion) were much higher than its exports to Japan (about US$18.9 billion.) At the same time, the weight of yen-denominated imports was also larger than that of exports. Thus, when the yen's value falls versus the US dollar, the decreased value of imports, converted into US dollars, will be larger than that of exports in the short run. Under this situation, Taiwan's trade deficit with Japan is expected to narrow temporarily. Chemicals and machinery, two major imports from Japan that constitute a hefty portion of Taiwan's trade deficits, will benefit more from the yen's depreciation.

3.3 The purchasing power of Japanese visitors to Taiwan will decrease while that of Taiwanese to Japan will increase

The yen's depreciation will lessen the incentives and consumption ability of Japanese visitors to Taiwan. On the contrary, the number of Taiwanese tourists to Japan will rise because of the increase of their purchasing power.

3.4 Yen depreciation could dampen the investment intentions of Japanese corporations in Taiwan, but will be helpful for Taiwanese enterprises hoping to buy Japanese technology

Japanese corporations, in order to reduce costs and diversify risks, have been actively investing in Taiwan. Coupled with the close network between the two countries in terms of industrial clusters development and the improved cross-strait relationship, Japanese investment in Taiwan rose steadily in recent years. Although the latest yen depreciation could affect their intentions to invest in Taiwan, corporations' long-term investments generally focus on future returns, and the appreciation or depreciation of currencies is not the only reference indicator. Furthermore, the yen's depreciation can raise the relative purchasing power of the NT dollar, which is beneficial for Taiwan's enterprises to engage in direct investment in or purchase technology from Japan.

3.5 The costs of imports from Japan are expected to decline but the impact on consumer prices will be minimal

Even though the yen's depreciation can help reduce the costs of imports, the merchandise imported from Japan largely arises from derived export demand, including key components and capital equipment. Therefore, the impact of the yen's depreciation on domestic consumer prices will be limited. Moreover, price rigidity normally exists in the adjustment process of commodity prices. Following the yen's depreciation, the level of price reduction for consumer goods in the short term probably won't be noticeable. However, in the case where the yen continues depreciating, domestic enterprises would face rising pressures to lower their commodity prices.

2.2 Domestic economic and financial conditions

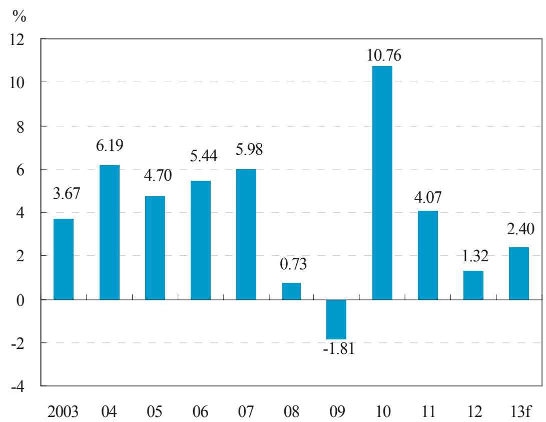
Taiwan's economy grew at a decelerated pace in 2012 compared to the previous year due to weaker foreign demand. Meanwhile, the rise in the price level remained moderate. Short-term external debt servicing ability remained strong on the back of a continued surplus in the current account and ample foreign exchange reserves. Although the scale of external debt continued to expand, overall external debt servicing ability stayed robust. Moreover, the government's fiscal deficit shrank, whereas total government debt continuously mounted.

Domestic economic expansion decelerated

In the first half of 2012, owing to the weakening global economy, exports declined continuously and private investment trended downward. Benefiting from increasing sales of the catering and retail industries, private consumption acted as a key factor underpinning overall growth. However, factors including a dull stock market and shrinking financial wealth somewhat counteracted the growth momentum. The economic growth rate registered merely 0.59% in Q1 and further declined to -0.12% in Q2. As for the second half of the year, in addition to a recovering global economy and a lower base, private consumption and export growth both performed better than expected. All of these favorable conditions led the economic growth rates for Q3 and Q4 to rebound to 0.73% and 3.97%, respectively. Nevertheless, DGBAS statistics stated that the annual economic growth rate dropped to 1.32%[21] in 2012, exhibiting a significant fall from 4.07% a year earlier (Chart 2.17).

In order to cope with global economic turmoil and domestic issues such as an imbalanced industrial structure and maladjustment between labor supply and demand, the Executive Yuan proposed several policies, such as the Economic Power-Up Plan[22] in September 2012, to promote economic growth momentum and to strengthen the country's ability to weather external impacts (Box 2). Taking a glance into 2013, the global economic recovery softened as growth faltered, and Taiwan's export expansion

Chart 2.17 Economic growth rates in Taiwan



Note: Figure for 2013 is forecast by DGBAS.
Source: DGBAS.

[21] See Note 6.
[22] See Executive Yuan press release on 11 September 2012.

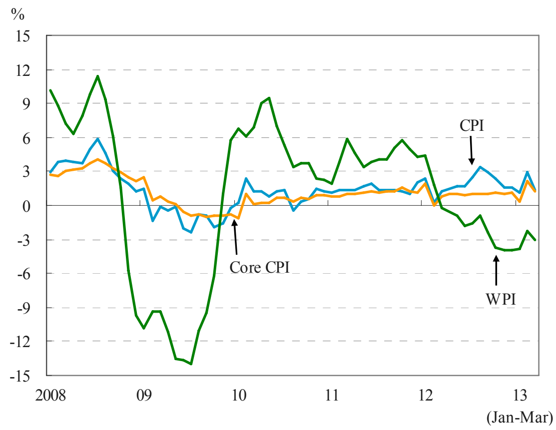
suffered waning momentum due to lackluster international markets and pressure from increasing competition. In addition, as a consequence of falling real wages and a dull stock market, private consumption performed worse than expected. Reflecting this, the DGBAS revised the forecast of Taiwan's economic growth rate down to 2.40%[23] in 2013 (Chart 2.17). Moreover, the U.S. fiscal cliff and the European sovereign debt crisis both raise uncertainties concerning global economic recovery. Therefore, the ongoing impact on Taiwan's economy is worth close attention.

Domestic prices rose mildly

Despite ascending prices of international agricultural products and domestic electricity, prices of crude oil, base metals and plastic raw materials trended downwards. As a result, the average wholesale price index (WPI) inflation rate showed a decreasing trend and registered only 0.46% during the first half of 2012. Afterward, cooling international raw materials markets and relatively low prices of oil, machinery and equipment together brought the WPI inflation rate significantly down to -3.95% in December, hitting a record low since November 2009 (Chart 2.18). The annual WPI inflation rate registered -1.16% in 2012, materially lower than the 4.32% recorded a year earlier, according to the DGBAS.

As for the consumer price level, at the beginning of 2012, the CPI inflation rate rose moderately due to declining raw material prices. However, after April, the electricity and gasoline price hikes pushed inflation expectations upwards. In addition, domestic prices of vegetables and fruits, and international prices of crude oil and crops all moved up, and as a consequence the CPI inflation rate soared to a yearly high of 3.43% in August. Subsequently, a slowdown in vegetables and fruits prices, and relatively low prices of telecom service charges and consumer electronics products collectively offset some of the price increases of fuels, lubricants and household electricity, leading to a descending CPI inflation rate. Overall, the average CPI inflation rate of 2012 was 1.93%, higher than the 1.42% of the previous year, and the core CPI[24] inflation

Chart 2.18 Consumer and wholesale price inflation rates



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

[23] See Note 6.
[24] The term "core CPI" in this report refers to the consumer price index excluding perishable fresh fruits and vegetables, fish and shellfish, and energy.

rate of 2012 was 1.0%, slightly lower than the 1.13% registered a year earlier.

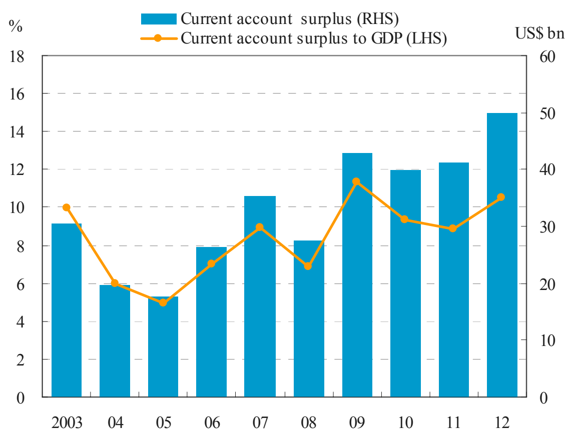
With regard to 2013 Q1, the average WPI inflation rate was -3.08%, and the average CPI and core CPI inflation rates were 1.81% and 1.23%,[25] respectively (Chart 2.18). As the sluggish global economy lowered the demand for crude oil and raw materials production faced a situation of excess capacity, the DGBAS projected the annual WPI inflation rate in 2013 to continuously decline to -1.22%. As for the CPI, because prices of international commodities moved to a lower level, and prices of Japanese imported products gradually reflected the depreciation effects of the Japanese yen against the NT Dollar, the CPI inflation rate was predicted by the DGBAS to drop back to 1.23%.[26]

Current account surpluses persisted and foreign exchange reserves stayed abundant

In 2012, although influenced by tepid growth in Western economies, the decrease in exports was smaller than that in imports, making Taiwan's goods trade surplus trend up. Combined with a larger trade surplus of both services and income, and a narrower current transfers deficit, the annual current account surplus reached US$49.8 billion, or 10.51% of annual GDP,[27] increasing by US$8.6 billion or 20.93% compared to 2011 (Chart 2.19).

As for the financial account, in 2012, direct investments and portfolio investments both saw net outflows, due to the considerable expansion of business activities in Mainland China by Taiwanese companies, insurance companies' greater investments in foreign debt securities and residents' greater investments in foreign funds combined. However, the net inflows from other investments[28] during the same period somewhat offset the effects of the above-mentioned capital outflows. As a result, the annual balance of outflows in the financial account still registered US$31.4 billion,

Chart 2.19 Current account surplus

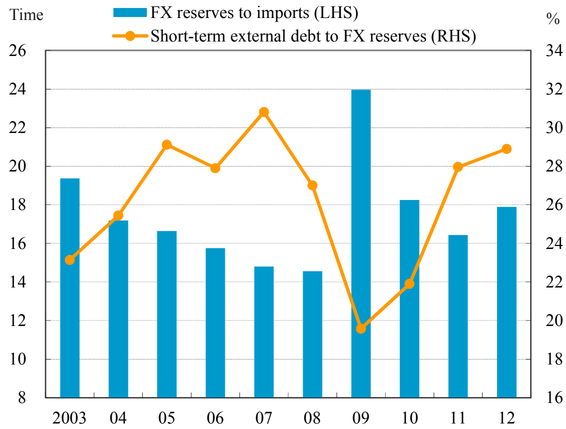


Note: Current account surplus and GDP are annual figures.
Sources: CBC and DGBAS.

[25] See Note 5.
[26] See Note 6.
[27] 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.
[28] Two parts mainly contributed to the net inflows from other investment in 2012. In the banking sector, it included the redemption of foreign short-term loans and inbound remittance of funds from banks' foreign branches. In the private sector, it resulted from the withdrawal of foreign deposits and increases in foreign borrowings.

slightly lower than US$32.0 billion the previous year. With the current account surplus and marginal decline in outflows on the financial account, the balance of payments surplus recorded US$15.5 billion in 2012, a significant growth of 148.18% from a year earlier.

Chart 2.20 Short-term external debt servicing capacity



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

In 2012, the steady balance of payments surplus together with continuously accumulated earnings on investments made with foreign exchange reserves contributed to ascending foreign exchange reserves, which reached US$403.2 billion in December, a 4.57% increase from the previous year. Furthermore, at the end of April 2013, the number had continuously climbed to US$405.1 billion, reflecting ample foreign exchange reserves. At the end of 2012, the ratio of foreign exchange reserves to imports increased to 17.89 months,[29] led by growth in foreign reserves and shrinkage of imports, whereas the ratio of short-term external debt to foreign exchange reserves elevated to 28.90%[30] due to a rise in external debt. These two ratios were both below internationally recognized warning levels, implying that Taiwan's foreign exchange reserves have a robust capacity to meet payment obligations for imports and to service short-term external debt (Chart 2.20).

Scale of external debt was moderate and debt-servicing capacity remained strong

There was a slight decrease in Taiwan's external debt[31] in the first half of 2012, resulting from the reduction in debt owned by foreign institutional investors. However, external debt mounted from 2012 Q3 as a result of the increase of domestic banks' borrowing from overseas. Overall, outstanding external debt rebounded to US$130.8 billion, or 27.58% of annual GDP, at the end of 2012, implying a moderate level of external debt.[32] Moreover,

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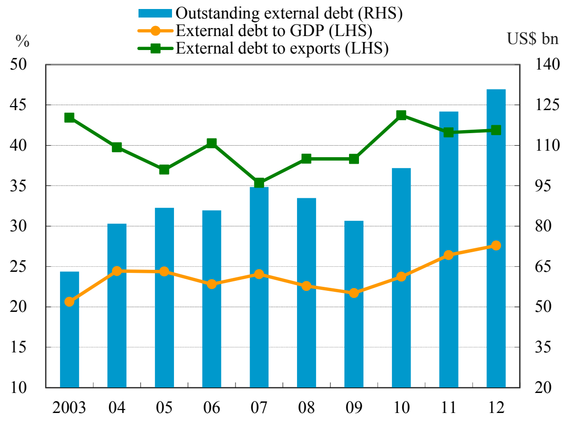
29 A country with a ratio of foreign exchange reserves to imports of more than three months is considered to be at relatively low risk.
30 The general international consensus is that a ratio of short-term external debt to foreign exchange reserves less than 50% indicates relatively low risk.
31 The CBC defines external debt 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.
32 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.

owing to the shrinkage of exports, the ratio of external debt to annual exports jumped to 43.43% as of the end of 2012. Nevertheless, export revenues were still sufficient to cover external debt[33] (Chart 2.21), and there were no signs of servicing pressure on external debt.

Chart 2.21 External debt servicing capacity

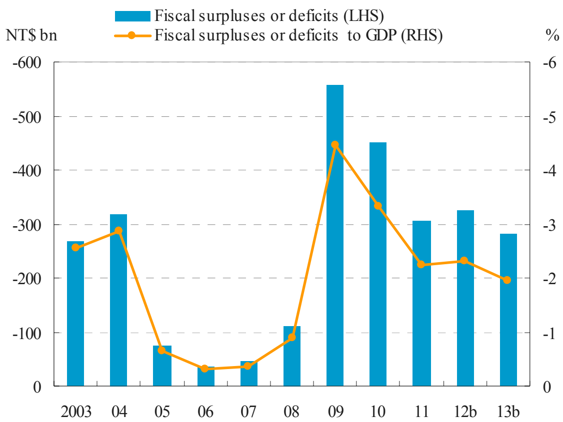


Notes: 1. External debts are end-of-period figures.
2. GDP and exports are annual figures.
Sources: CBC, DGBAS and MOF.

Fiscal deficits slightly rebounded while government debt kept accumulating

Since the times of peak spending on public infrastructure construction and domestic demand expansion plans ended, fiscal deficits at all levels of government have contracted from 2009 onwards. In 2012, the amount of the fiscal deficit, compared to the previous year, marginally rebounded to NT$325.5 billion, and the ratio of fiscal deficits to annual GDP increased to 2.32% over the same period, but it is expected to drop to 1.95% in 2013[34] (Chart 2.22).

Chart 2.22 Fiscal position



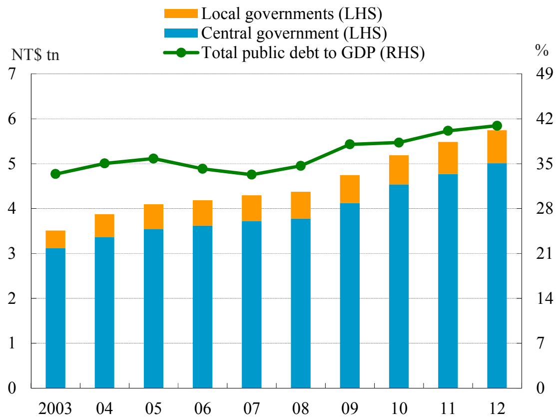
Notes: 1. Fiscal position data include those of central and local governments.
2. Data of fiscal surpluses (deficits) are annual figures. Figures for 2012 and 2013 are budgets.
Sources: MOF and DGBAS.

As fiscal deficits stayed high and both central government and local governments relied on debt issuance to finance debt servicing expenditures, outstanding public debt at all levels of government[35] in 2012 continuously expanded to NT$5.75 trillion,[36] or 40.92% of annual GDP,[37] well above the NT$5.49 trillion recorded in 2011 (Chart 2.23).

[33] The general international consensus is that a ratio of external debt to exports less than 100% indicates relatively low risk.
[34] See Note 7.
[35] 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. The budgeted figures for outstanding one-year-or-longer non-self-liquidating public debt (NT$5.63 trillion) issued by all levels of government during the 2012 fiscal year is equivalent to 41.24% of the average gross national product (GNP) for the preceding three fiscal years (NT$13.65 trillion). This figure is below the ceiling of 48% set out in the Public Debt Act.
[36] The figure is based on final accounts (or preliminary final accounts) of outstanding non-self-liquidating debt at all levels of government with a maturity of one year or longer at the end of 2012. If adding in debt with a maturity of less than one year and self-liquidating debt, outstanding public debt at the end of 2012 stood at NT$6.70 trillion.
[37] As a comparison, outstanding debt in EU member nations is not allowed to exceed 60% of GDP, according to the Maastricht Treaty and the subsequent Stability and Growth Pact.

To promote fiscal health, Taiwan's government will put into practice five medium and long-term strategies that aim to enhance a sound fiscal system, including: (1) diversifying sources of government funds; (2) managing government finance with the entrepreneurial mindset; (3) promoting fair taxation; (4) optimizing local finance; and (5) minimizing public debt. Besides these, the government will also implement measures, including: (1) strictly monitoring debt limits; (2) lowering debt leverage; and (3) increasing mandatory debt principal repayment, to effectively manage outstanding public debt.[38]

Chart 2.23 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. Figures for 2012 are final accounts and preliminary final accounts for the central government and local governments, respectively.
Sources: MOF and DGBAS.

[38] See Ministry of Finance press release on 6 September 2012.

Box 2
Taiwanese government's policy responses to the global economic slowdown

In order to ease the impacts of persisting global uncertainties arising from the euro area sovereign debt crisis and slowdown in Western economies since the second half of 2011, the Taiwanese government unveiled the Economic Climate Response Program in December 2011, putting forward seven strategies and ten focuses to stimulate economic growth. The program, which adopted countercyclical measures such as the augmentation of private participation in public construction and expansion of exports, displayed considerable efficacy. It placed emphasis on shorter-term response measures, even though it was designed to mitigate challenges that typically cannot be solved in a short time. For instance, external challenges include the prolonged Eurozone debt crisis which has caused global economic turmoil, weaker-than-expected growth in industrial countries, decelerating growth momentum in Mainland China and other emerging economies, and the emergence of regional economic integration which has significantly affected Taiwan's exports. On top of that, internal challenges hindering the domestic economy, such as an imbalance in industrial structure and mismatch between labor supply and demand, highlight the need for redress. Thus, the Executive Yuan again issued the Economic Power-up Plan on 11 September 2012 with the aim of improving industrial health, propelling economic impetus, and raising the capability to respond to economic challenges.

The Economic Power-up Plan focuses on the adjustment of Taiwan's economic structure and the relaxation of regulations as its two key pivots, thereby incorporating dimensions of both short-run growth and medium- to long-term development. Through joint deliberation and periodical reviews by concerned Cabinet agencies, this plan has been mapped out into five dimensions – industry, exports, human resources, investment, and government efficacy – according to the required elements of economic growth. The government set forth five policy directions and 25 concrete focal undertakings and responding action plans. Each of the policy actions has been set a time line for completion, with an overall time frame spanning from 2012 to 2030. The total expenditure is estimated to be about NT$389.4 billion. Summarized in Table B2.1 below are the plan's initiatives and targets.

Table B2.1 The Economic Power-up Plan : Initiatives and targets

Initiatives	Targets
Promote innovative and diverse industries	1. Implement the Three Industries, Four Reforms Program, namely: a service-oriented manufacturing industry, an internationalized and high-tech services industry, and a specialty-oriented traditional industry. 2. Turn small and medium enterprises (SMEs) into backbone enterprises. 3. Accelerate the application of R&D results. 4. Lift the quality and quantity of tourism. 5. Spark sustainable growth in the financial sector. 6. Develop top-quality, eco-friendly and sustainable energy. 7. Create a "golden agricultural corridor" featuring modern agriculture practices with the special characteristic of Lifestyles of Health and Sustainability (LOHAS).
Develop new export markets	1. Increase value-added exports and explore emerging markets. 2. Raise the competitiveness of service exports. 3. Strive to participate in regional economic integration. 4. Strengthen intellectual property rights strategies.
Cultivate industry talents	1. Improve technical and vocational education to meet industry needs. 2. Develop industries with value-added human resources to enhance industry-academia training convergence. 3. Promote strategic distribution of human resources and nurture talents specialized in emerging markets. 4. Adjust labor laws and regulations according to industrial and social trends.
Spur investment and public construction	1. Attract private-sector investment. 2. Finance public works with innovative financial strategies. 3. Facilitate more medium and long-term investment for public works. 4. Adjust investment regulations in time with industrial trends. 5. Design free economic pilot zones.
Enhance government efficacy	1. Improve government procurement mechanisms. 2. Implement government budget review mechanisms. 3. Strengthen regulatory reviews and revise laws to meet changing needs. 4. Effectively utilize public land and assets. 5. Push state-owned enterprises to launch major investment projects.

Source: Executive Yuan.

The Executive Yuan has urged concerned ministries/agencies to earnestly implement the plan so as to lift Taiwan's competitiveness in the medium and long term. Among the initiatives, attracting overseas Taiwanese businessmen to invest back in Taiwan and enlivening sustainable growth in the financial sector have achieved the desired effects rather well. Moreover, the free economic pilot zones currently under programming should be able to effectively raise national competitiveness. Illustrated below are these three major undertakings.

Strengthen efforts to encourage overseas Taiwanese firms to invest back in Taiwan

Owing to the fact that the phenomenon of "order-taking in Taiwan followed by offshore production" has been increasing over the years making domestic employment opportunities decline gradually, the Executive Yuan ratified the “Program of Promoting the Investment of Overseas Taiwanese Businessmen Back to Taiwan” on 26 October 2012 in order to attract inbound investment from overseas Taiwanese firms, increase job opportunities, and power up the engine for economic growth. Based on the program, the government will actively help businessmen solve attendant problems concerning their investment with regard to issues such as access to land and labor, optimizing the investment environment to boost domestic investment and employment, and embarking on upgrading industrial structure. Within four months after the program was initiated in the beginning of November 2012, the Ministry of Economic Affairs, jointly with other concerned agencies, approved 22 cases of applications for inbound investment by overseas Taiwanese businessmen, with total amounts estimated to be about NT$168.4 billion and jobs to be generated for twenty-three thousand workers. Therefore, the performance of this program was notable.

Ignite sustainable development in the financial sector

In order to develop financial services with cross-strait characteristics, three major policy measures have been initiated. First, the CBC and the People’s Bank of China jointly signed the Memorandum on Cross-Strait Currency Clearing Cooperation and designated NTD and renminbi (RMB) clearing banks, respectively. A bilateral mechanism for the clearing and settlement of cross-strait currencies was officially inaugurated. Thereafter, the CBC opened up RMB deposits, loans and remittances to be conducted by authorized banks. Second, the FSC repealed the restriction that foreign corporations with more than 30% of their capital held by mainland investors should not list on Taiwan’s stock exchange and over-the-counter (OTC) market. Listing on the stock exchange and the OTC market was also opened up as an option for well-performing overseas Taiwanese corporations. Third, the FSC, through the platform of cross-strait supervisory cooperation, loosened the criteria for banks in Taiwan to enter the mainland market and lifted the ceiling of shareholding of domestic banks and financial holding companies by a single bank registered in the mainland.

In order to promote a Taiwan-centric wealth management platform, the FSC and the CBC revised the Directions for Banks Conducting Financial Derivatives Businesses and the Regulations Governing Foreign Exchange Business of Banking Enterprises, respectively, opening up derivatives that are allowed to link to RMB-denominated indicators, such as exchange rates, interest rates and stock prices, and relaxed the rules on foreign currency-denominated securities investment trust funds to use NT dollars as a payment vehicle.

Move forward free economic pilot zones

The detailed programming of the free economic pilot zones is expected to be completed by the end of June 2013. Its design mainly lies in the core philosophy of liberalization, internationalization, and being forward-looking in nature. The program will greatly loosen the restrictions on the flows of merchandise, people, funds, information, and knowledge, and earnestly put into effect the policy of opening markets. The promotion strategies will be focused on breaking through regulatory limitations and innovating administration mechanisms, with a view to holistically building a superior liberalized and internationalized business environment. For example, policy measures include, among others, easing restrictions on foreign white-collar professionals to work in Taiwan, allowing free import and export of agricultural and industrial raw materials and merchandise without taxes, opening markets and loosening investment constraints, facilitating access to land and granting of preferential rents, as well as setting up a highly efficient single window providing government services. These measures will be able to effectively raise the national competitiveness of Taiwan, achieving the expected effectiveness of attracting investment and increasing output value.

2.3 Non-financial sectors

2.3.1 Corporate sector

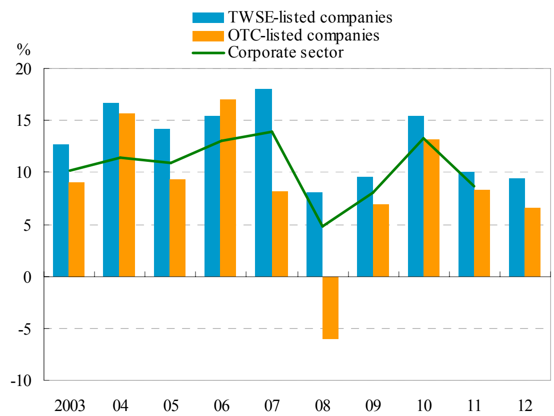
The profitability of listed companies weakened in 2012 due to a considerable slowdown in the domestic and global economies. Corporate leverage ratios rose slightly, while short-term debt servicing capacity weakened as a result of a slide in profitability but still remained at acceptable levels. The credit quality of corporate loans remained sound, as NPL ratios fell back by the end of 2012 after increasing earlier in the year. However, some TFT-LCD panel and DRAM manufacturers reported operating losses again in 2012 which might negetively impact the asset quality of their creditor banks.

Profitability of listed companies was disappointing in 2012

In 2012, decelerating global growth weakened exports and industrial production. This, together with weak private consumption hampered the profitability of TWSE-listed and OTC-listed companies, as their ROEs fell to 9.39% and 6.60%, respectively (Chart 2.24).

Except for the electronics and the shipping and transportation industries, all major industries for TWSE-listed companies reported decreasing ROEs, especially the plastics and the iron and steel industries. For OTC-listed companies, except for increased profitability in the building material and construction industry, all other industries experienced deteriorating performance (Chart 2.25).

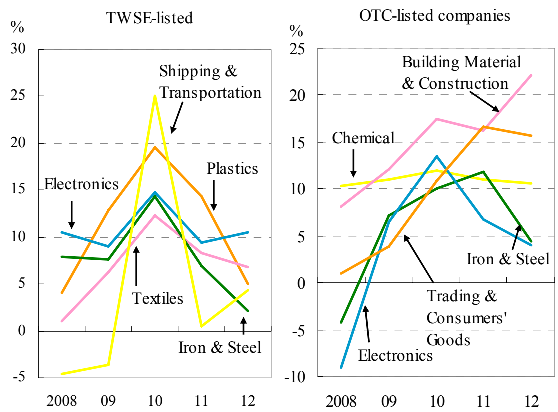
Chart 2.24 ROE in corporate sector



Notes: 1. ROE = net income before interest and tax / average equity.
2. Latest data for the corporate sector is as of 2011, while those for TWSE-listed and OTC-listed companies are as of 2012.

Sources: JCIC and TEJ.

Chart 2.25 ROE of TWSE-listed and OTC-listed companies by major industries



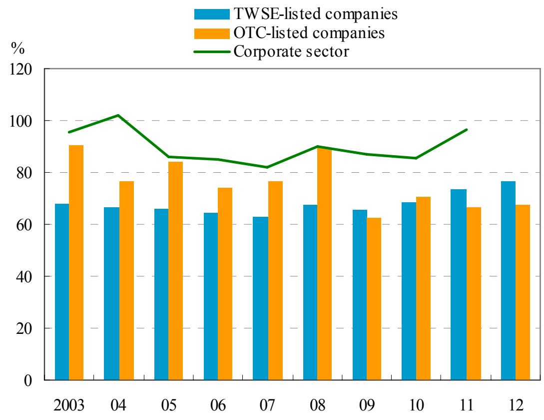
Note: ROE = net income before interest and tax / average equity.

Source: TEJ.

Leverage ratio rose slightly for listed companies

At the end of 2012, the average leverage ratio for TWSE-listed companies rose to 76.72% from 73.53% at the end of the previous year. In addition, the average leverage ratio for OTC-listed companies increased to 67.75% from 66.25% a year earlier (Chart 2.26). The main reason for the rise in the leverage ratio was that the gradual recovery of the domestic economy in the second half of 2012 encouraged the listed companies to increase their borrowings to meet their investment and operation demands.

Chart 2.26 Leverage ratio in corporate sector

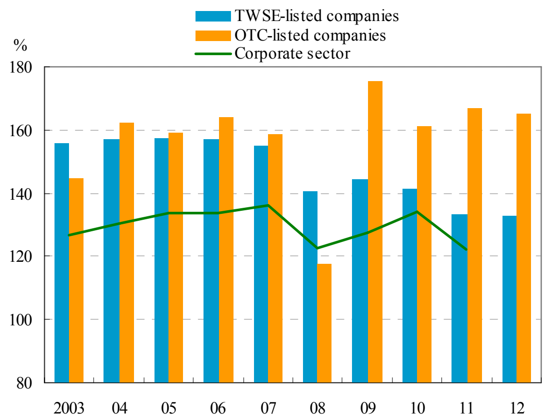


Notes: 1. Leverage ratio = total liabilities / equity.
2. Latest figure for the corporate sector is as of the end of 2011, while those for TWSE-listed and OTC-listed companies are as of the end of 2012.
Sources: JCIC and TEJ.

Short-term debt servicing capacity for listed companies remained acceptable though weakened

The current ratio for TWSE-listed companies decreased to 132.70% at the end of 2012 due to increases in current liabilities, while their interest coverage ratio fell to 16.16 as a result of deteriorating profitability. The current ratio for OTC-listed companies also declined and registered 165.19%, while their interest coverage ratio fell to 11.23 (Chart 2.27 and 2.28). Nevertheless, short-term debt servicing capacity for listed companies as a whole remained acceptable though weakened.

Chart 2.27 Current ratio in corporate sector



Notes: 1. Current ratio = current assets / current liabilities.
2. Latest figure for the corporate sector is as of the end of 2011, while those for TWSE-listed and OTC-listed companies are as of the end of 2012.
Sources: JCIC and TEJ.

Credit quality of corporate loans remained sound

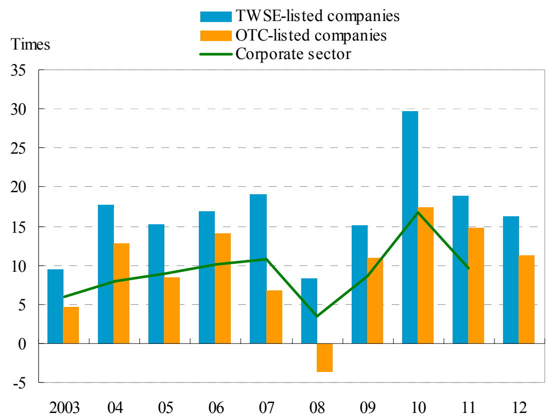
In the first half of 2012, the NPL ratio for corporate loans granted by financial institutions increased significantly, owing to the reclassification of impaired loans of large corporations, such as ProMOS Technologies, as NPLs. However, the ratio declined to 0.64% at the end of the year, higher than the ratio of 0.60% posted the year before. Nevertheless, it remained at a low level and reflected sound credit quality for the corporate sector (Chart 2.29).

Though listed companies showed weakened operating performances, the pickup in domestic economic growth in the fourth quarter of 2012, along with low interest rates and plentiful liquidity, helped to improve the operating performance and financial conditions of the corporate sector. However, some TFT-LCD panel and DRAM manufacturers suffered large losses in 2012 despite the improvements compared to the previous year. The development of these industries and the impact on the loan quality of their creditor banks, therefore, warrant close attention.

2.3.2 Household sector

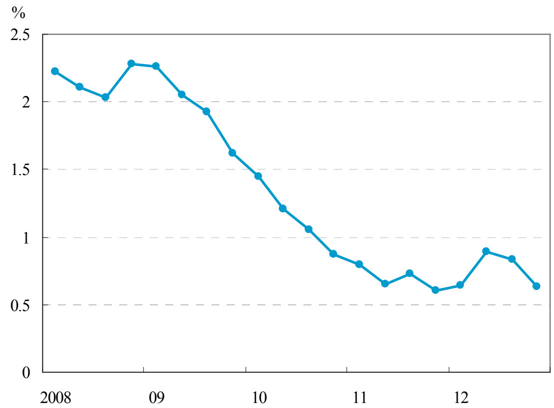
As the balance of total household borrowing increased and expanded faster than disposable income, the household debt burden rose. Short-term debt servicing capacity of the household sector slightly deteriorated; however, the overall credit quality of household borrowing remained satisfactory. Moreover, the gradual easing of the unemployment rate and the continuous growth of regular earnings should help to enhance the debt servicing capacity of households.

Chart 2.28 Interest coverage ratio in corporate sector



Notes: 1. Interest coverage ratio = income before interest and tax / interest expenses.
2. Latest figure for the corporate sector is as of 2011, while those for TWSE-listed and OTC-listed companies are as of 2012.
Sources: JCIC and TEJ.

Chart 2.29 NPL ratio of corporate loans

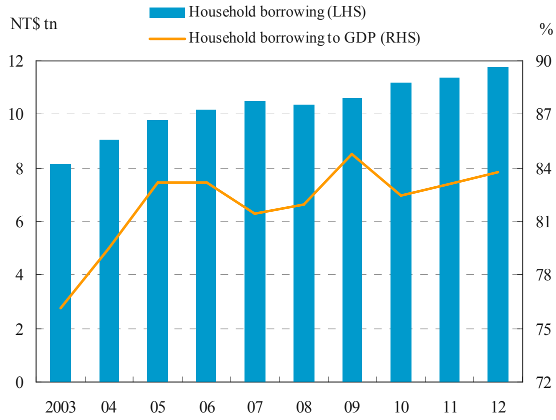


Note: End-of-period figures.
Source: JCIC.

Household borrowing increased continuously

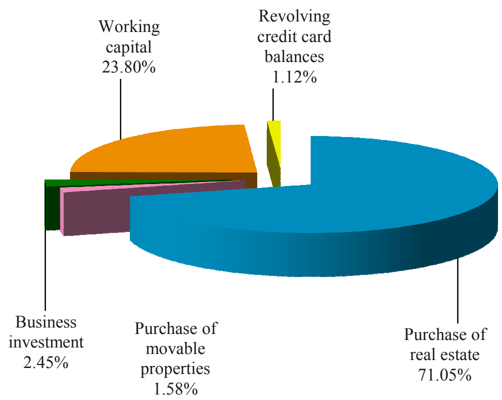
Total household borrowing[39] increased continuously in 2012 and reached NT$11.76 trillion at the end of the year, equivalent to 83.77% of annual GDP (Chart 2.30). The year-on-year growth rate of household borrowing, which was mainly contributed to by an increase in working capital loans, rose to 3.54% at the end of 2012 from 1.71% a year earlier. The largest share of household borrowing went for the purchase of real estate (71.05%), with an annual growth rate of 1.84%, followed by working capital loans[40] (23.80%), with a significantly increased annual growth rate of 10.89%. Business investment loans, mainly for margin purchases of securities, and revolving balances on credit cards took only minor percentages (Chart 2.31), and experienced negative annual growth rates of 7.6% and 6.84%, respectively, owing to weakened stock market and domestic economic conditions.

Chart 2.30 Household borrowing to GDP



Sources: CBC, JCIC and DGBAS.

Chart 2.31 Household borrowing by purpose



Note: Figures are as of the end of 2012.
Sources: CBC and JCIC.

Compared to other selected countries, the growth of total household borrowing in Taiwan remained positive but was lower than that in Australia and South Korea. As a percentage of GDP, the household borrowing in Taiwan was lower than that in Australia, approximating that in South Korea, but higher than that in the US and Japan (Chart 2.32).

[39] 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.

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

Household debt burden rose

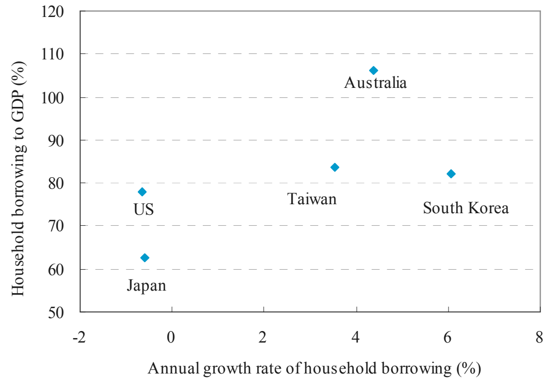
As total household borrowing grew at a faster pace than disposable income in 2012, the ratio of household borrowing to gross disposable income[41] increased to 1.22 at the end of the year, reflecting a heavier debt burden.

Accordingly, the debt servicing ratio rose to 37.98% in 2012 from the previous year's 36.93% (Chart 2.33), due to the increase in working capital loans, showing that household short-term debt servicing pressure slightly increased. However, the fact that the domestic unemployment rate decreased gradually and regular earnings grew continuously (Chart 2.34) should help to improve the debt servicing capacity of the household sector.

NPL ratio of household borrowing dropped to a record low

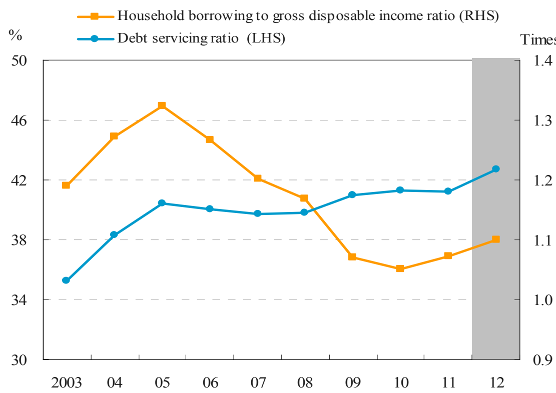
The NPL ratio of household borrowing declined continuously to 0.40 % at the end of 2012, the lowest level in fifteen years (Chart 2.35). The main reason behind this was that NPLs for real estate purchases and working capital loans, the largest shares of household borrowing, contracted during the year. This indicated that household credit quality remained satisfactory.

Chart 2.32 Household indebtedness in selected countries



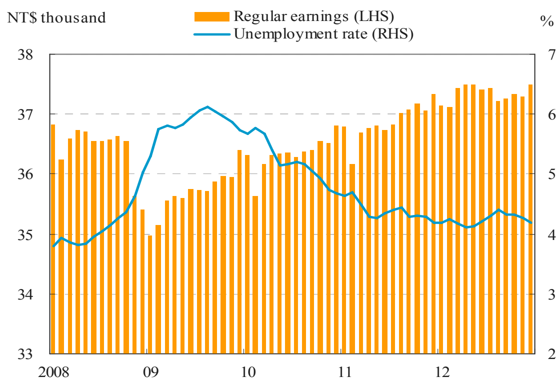
Note: Figures for Taiwan and the US are as of the end of 2012. The others are as of the end-September 2012.
Sources: Fed, BOJ, BOK, ABS, IMF, DGBAS, CBC and JCIC.

Chart 2.33 Household debt servicing ratio



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

Chart 2.34 Unemployment rate and regular earnings



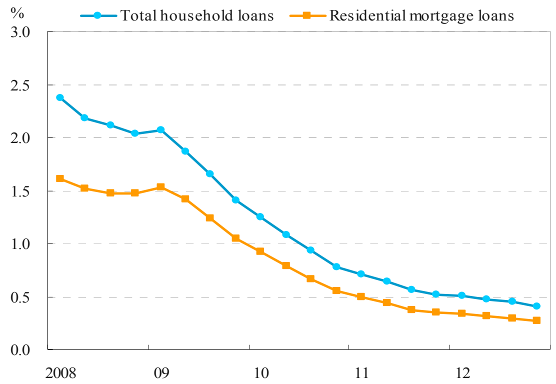
Source: DGBAS.

41 Gross disposable income = disposable income + rental expenses + interest expenses.

2.3.3 Real estate market

In 2012, trading volume in the real estate market contracted, while housing prices remained high. Real estate-related loans grew at a slower pace as mortgage interest rates gradually rebounded. As massive construction projects introduced over the last few years were continuously completed, some areas with high volumes of construction projects continued to face increasing downward pressure on housing prices.

Chart 2.35 NPL ratio of household borrowing

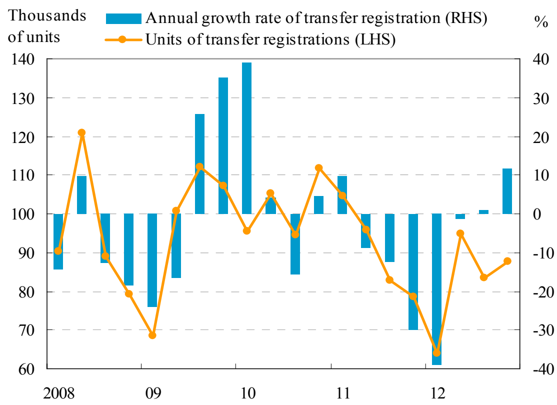


Note: Figures are as of the end of each quarter.
Source: JCIC.

Trading volume in the housing market was volatile

Starting 2012, trading volume in the housing market contracted continuously due to economic slowdown and the implementation of the Specifically Selected Goods and Services Tax. In Q3, the total number of building ownership transfers for transaction further decreased by 11.92% quarter on quarter owing to the launch of a property transaction price registration system in August. However, in Q4, as quantitative easing measures in Japan and the US boosted market expectations, trading volume in the housing market rebounded (Chart 2.36). The number of building ownership transfers for transaction in 2012 reached a ten-year low of 330 thousand units, with an annual growth rate of -8.84%. Analyzed by metropolitan areas, Taipei City and New Taipei City registered the greatest year-on-year decreases of 22.73% and 17.65%, respectively, while Taichung City as well as Tainan City saw slower decreases, and Taoyuan County and Kaohsiung City returned to positive growth rates.

Chart 2.36 Building ownership registrations for transaction



Source: Monthly Bulletin of Interior Statistics, MOI.

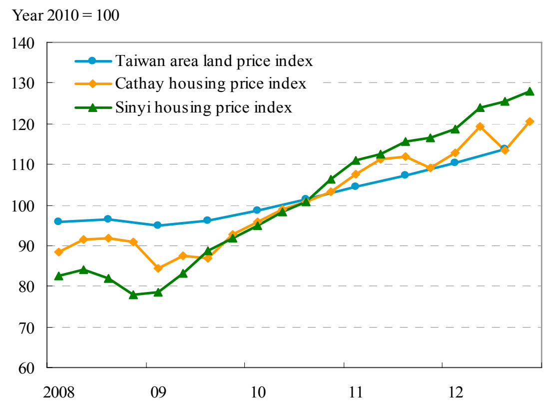
Real estate prices stayed high

In line with a cooling real estate market, real estate prices declined slightly in 2012 Q3. However, due to economic recovery, a stock market rally and housing demand increase, real estate prices rebounded in Q4. The Taiwan area land price index stood at 118.78 in September 2012, recording an annual growth rate of 6.01% (Chart 2.37).

In 2012, the Cathay housing price index (for new construction) experienced fluctuating movements. It registered a year-on-year increase of 10.39% in Q4 owing to rising house prices in the Taoyuan and Hsinchu areas as well as the central and southern parts of Taiwan, while house price growth in Taipei City slowed. The annual growth rate of the Cathay housing price index for the whole of 2012 was 7.48%, decreasing by 2.64 percentage points compared to 10.12% a year earlier.

The Sinyi housing price index (for existing buildings) increased gradually and registered an annual growth rate of 9.7% in Q4 2012. The average growth rate of the index was 8.89% in 2012, decreasing by 5.08 percentage points compared to 13.97% a year earlier. House prices in Taoyuan County, Taichung City and Kaohsiung City saw significant growth, while those in Taipei City and New Taipei City reported slower growth rates but remained at high levels.

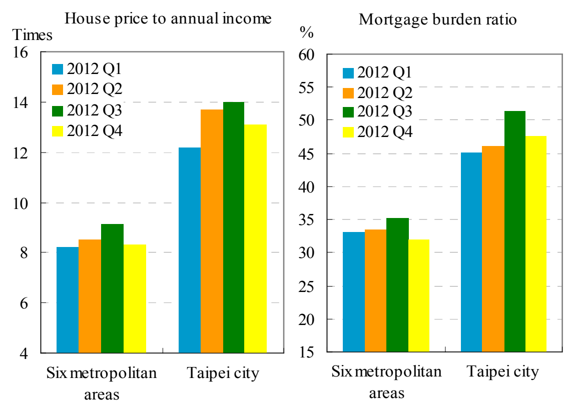
Chart 2.37 Land and house price indices



Notes: 1. Taiwan area land price index is released semiannually (i.e. in March and September).
2. The sample and compilation methods employed to generate the Cathay housing price index were changed in 2012 Q4 and applied retroactively to historical data.
3. For comparison purposes, all the three indices use the same base year of 2010.

Sources: MOI, Cathay Real Estate and Sinyi Real Estate Inc.

Chart 2.38 House price to income ratios and mortgage burden ratios



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.

Mortgage burden remained heavy

Following climbing housing prices, the average house price to income ratio for the six metropolitan areas increased and reached 8.3[42] in 2012 Q4. The average mortgage burden

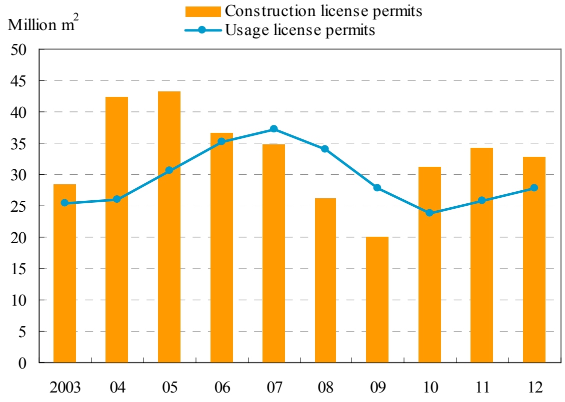
[42] Housing prices increased in 2012 Q4 but the average house price to income ratio in Q4 was lower than that in Q3. The main reason was that the average house price to income ratio released in *Taiwan Housing Demand Survey Report* was estimated according to the total house price paid and total household annual income of a sample of house buyers. In Q4, due to increasing purchases of low-priced houses, the total house price paid decreased, resulting in the drop of the average house price to income ratio.

ratio during the same period was 32.0%, demonstrating that the mortgage burden remained heavy. Among the metropolitan areas, the house price to income and mortgage burden ratios in Taipei City were the heaviest, reaching 13.1 and 47.6%, respectively (Chart 2.38).

Newly introduced construction projects contracted, while residential property vacancies remained high

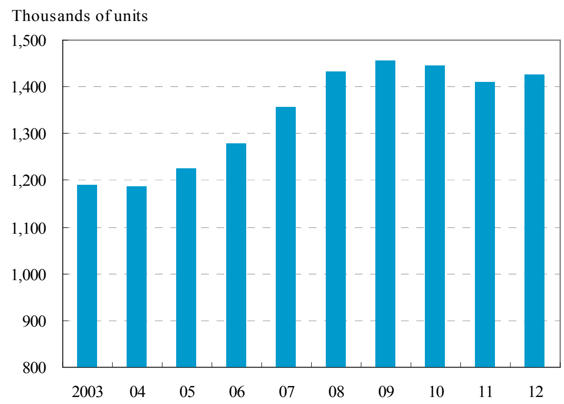
Due to decreasing construction projects introduced to the market, the total floor space of construction license permits decreased 3.71% year on year in 2012. Total floor space of usage permits increased by 7.25% year on year, with commercial properties posting the highest growth of 45.31% and residential properties increasing by 18.79% (Chart 2.39). Moreover, the average number of vacant residential properties in 2012, estimated by the number of units consuming less electricity than the minimum service charge from the Taiwan Power Company, still stood at a high level of 1.426 million units, increasing by 16 thousand units or 1.13 % year on year (Chart 2.40). The movements in housing inventory levels in areas with high vacancy rates and numerous construction projects are worth close monitoring.

Chart 2.39 Floor space of construction license permits and usage license permits



Source: Monthly Bulletin of Interior Statistics, MOI.

Chart 2.40 Estimated units of vacant houses



Source: Taiwan Power Company.

Real estate-related loans grew at a slower pace as mortgage interest rates gradually increased

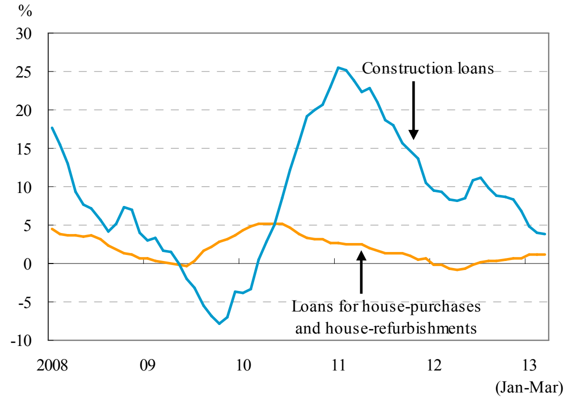
Due to the effect of the CBC and the FSC's measures to strengthen risk management regarding the real estate-related loans of banks, the outstanding balance for house purchases and house refurbishments granted by banks[43] rose at a decelerating annual growth rate of

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

0.76% to NT$5.80 trillion at the end of 2012. Outstanding construction loans continued to climb in 2012, albeit at a much slower pace of 7.33% year on year, and reached NT$1.47 trillion at the end of 2012 (Chart 2.41).

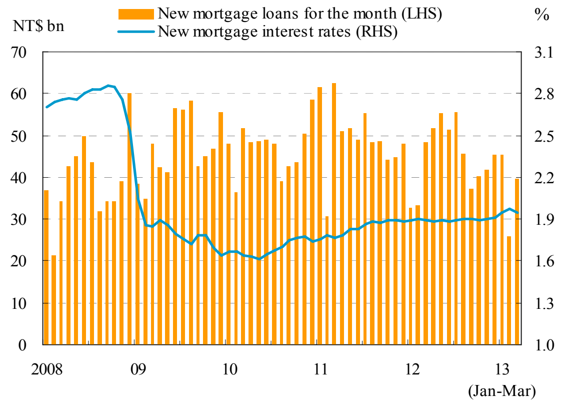
In line with property market trends, new loans for house purchases granted by the five large banks[44] decreased by 5.74% year on year to NT$ 45.4 billion in December 2012. The accumulated amount of such new loans for the whole of 2012 also registered a 9.49% year-on-year decrease. The interest rate for new mortgages rose to 1.948% (Chart 2.42) in March 2013 and slightly decreased to 1.946% in April.

Chart 2.41 Annual growth rates of real estate-related loans



Source: CBC.

Chart 2.42 New mortgages – amounts and interest rates



Source: CBC.

Concentration of real estate-related loans decreased after the CBC and the FSC undertook targeted prudential measures

The CBC continuously deployed measures to supervise the credit risk of land collateralized loans and housing loans in specific areas in 2012 and introduced regulations governing high-value housing loans in June. Meanwhile, the FSC strengthened supervision on banks with high concentrations of real estate-related loans and raised risk weights of non-self-use residential mortgage loans. Those measures proved to be effective, as the concentration of real estate-related loans continuously decreased and loan-to-value ratios also fell significantly. Such measures, together with the implementation of the Specifically Selected Goods and Services Tax and the property transaction price registration system, helped promote sound development of the real estate market (Box 3).

[44] The five large banks refer to Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, and Chang Hwa Commercial Bank before October 2008. Starting November 2008, they refer to Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, and Land Bank of Taiwan.

Box 3
Plan to enhance the soundness of the housing market: progress and effectiveness

The housing market plays an important role in a country's economic development, since it possesses industrial relevance and has a locomotive effect on the economy. In order to ensure the soundness of the housing market and maintain justice and fairness within society, the government formulated the Plan to Enhance the Soundness of the Housing Market in April 2010, in accordance with the four principles of "tailoring measures to the needs of localities and populations," "acting moderately but effectively," "stressing soundness and stability," and "pursuing social equity." Targeting the six issues of "balancing the supply and demand of housing in the Taipei metropolitan region," "helping low- and mid-income earners and salaried employees increase their ability to purchase (or rent) a house," "improving housing information transparency," "enhancing risk management for real estate loans," "enhancing social fairness," and "taking relevant complementary measures," the government has offered 21 principles for dealing with the problems encompassed, and suggested other practical measures for relevant authorities and local governments to actively implement.

1. Progress of the Plan

The plan has now been implemented for 3 years, and part of the mechanisms prescribed have been implemented or promoted, thus leading to a gradual stabilization of the housing market. Below is a table succinctly describing the methods outlined in the plan and the progress made (Table B3.1).

Table B3.1: Progress of the Plan to Enhance the Soundness of the Housing Market

Issues	Contents and progress of implementation
Balancing the supply and demand of housing in the Taipei metropolitan area	1. Planning the development of affordable houses in the areas of Airport Linkou A7 Station and Banqiao, where 3,960 and 4,455 housing units, respectively, will be constructed. 2. Selecting 5 bases around metropolitan areas including Wanhua and Songshan Districts in Taipei City, Sanchong and Zhonghe in New Taipei City, etc., and constructing 1,661 units of social housing.
Helping low- and mid-income earners and salaried employees increase their ability to purchase (or rent) a home	1. Implementing the "Plan for the Consolidation of Resources for Housing Subsidy" for mid- and low-income households. From its initiation in 2007 to the end of 2012, a total of 226,000 households received rental subsidies, house purchase assistance and mortgage interest subsidies for the purpose of home refurbishment. 2. Implementing the "Plan for Government Housing Subsidies for the Youth." From its initiation in 2009 to 22 February 2013, rental subsidies were offered to around 33,000 households, and interest subsidies were allocated to around 67,000 households, in total aiding 100,000 households.

Improving housing information transparency	1. Setting up the Real Estate Information Platform to collect and consolidate real estate information for the public. 2. Requiring the Joint Credit Information Center to provide seasonal reports including information such as contract value of house transactions, etc. for the Ministry of the Interior to make public on its housing Net website. 3. Modifying the law to set up a property transaction price registration system and establishing a data warehouse that allows the public to inquire about the related information via the Internet. 4. Releasing different templates of real estate contracts for public reference, and announcing the application of standard form contracts for pre-sale real estate transactions.
Enhancing risk management for real estate loans	1. From June 2010 onwards, the CBC has gradually taken targeted macroprudential measures on land collateralized loans and housing loans in specific areas and high-value housing loans. 2. The FSC introduced several measures to supervise the real estate lending risks of banks, including raising the risk weight from 45% to 100% for new loans collateralized by non-owner-occupied houses. 3. The two authorities reinforced the inspection of real estate-related loans in accordance with the above mechanisms.
Enhancing social fairness	1. Reviewing the suitability of house taxes and land taxes, such as verifying the current value of the house, limiting the applicability of land value tax exemption, and abolishing the regulation of temporary exemption for vacant lot tax. 2. Implementing the Specifically Selected Goods and Services Tax from 1 June 2011 onwards to cool down the overheating housing market.
Taking relevant complementary measures	1. Stipulating the regulations regarding superficies on state-owned and non-public-use land to strengthen the development of the land. 2. Temporarily ceasing the auction of state-owned land in prime areas of Taipei City. 3. Enacting the Housing Act, which was implemented from 30 December 2012. 4. Raising the incentive for private investment to promote the private sector to participate in the construction of public infrastructure, the six emerging industries and budding ICT industries. This would not only help improve industrial development and provide job opportunities in areas surrounding these industrial hubs, but could also galvanize the soundness of the housing market in neighboring districts.

Sources: Council for Economic Planning and Development and Control Yuan.

2. *Effects of Implementation*

Since the enactment of the Plan to Enhance the Soundness of the Housing Market, part of the mechanisms have already shown promising results, for example:

(1) Since the CBC and the FSC undertook the measures to control the risk of real estate loans, the ratio of new loans, with collateral located in specific areas (Taipei City and 13 districts in New Taipei City), to total new loans has dropped from 64.37% pre-regulation in June 2010 to 48.02% in March 2013. The loan-to-value (LTV) ratio also dropped from 63.97% pre-regulation in July 2010 to 56.82% in April 2013.

(2) After the Ministry of Finance implemented the Specifically Selected Goods and Services Tax from June 2011, the number of building ownership transfers for transaction during June 2011 to May 2012 dropped 22.12% relative to the previous counterpart period (from June 2010 to May 2011). Of them, the number of transfers in Taipei City and New Taipei City significantly dropped 33.34% and 34.96%, respectively. It illustrated that the policy has effectively tempered speculation in the housing market.

(3) From October 2012 onwards, transaction prices of real estate should be registered in a data warehouse run by the government and disclosed to the public. This has increased the transparency of real estate transaction information, thus decreasing the differentiation of anticipated prices between buyers and sellers and, in turn, increased the effectiveness of the real estate market.

III. Financial sector assessment

3.1 Financial markets

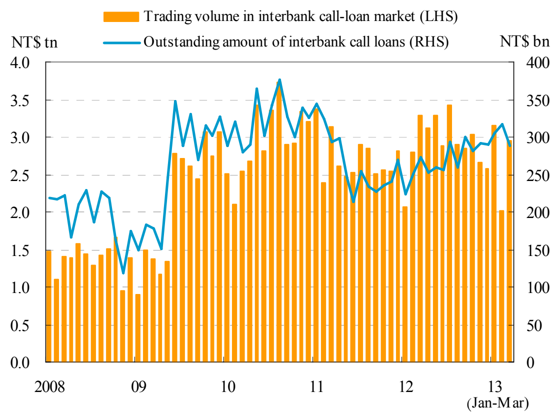
In 2012, the trading volume in interbank call loans expanded, the outstanding amount of bills and bond issuance in the primary markets significantly rose, while the trading volume in the secondary markets remained contracted. The yield spread between long-term and short-term rates still remained at a low level. As for the domestic stock markets, stock indices trended up, while volatility gained stability after trending down, and the annual turnover ratio hit a 10-year low. In the foreign exchange market, the NT dollar exchange rate against the US dollar reversed from appreciation to depreciation but remained relatively stable compared to the exchange rates of other major currencies; moreover, trading volume decreased slightly.

3.1.1 Money and bond markets

Trading volume of interbank call loans slightly expanded

In 2012, the average daily outstanding amount of interbank call loans and the average monthly trading volume increased by 1.62% and 6.68% year on year, respectively. The rise in the average monthly trading volume was larger than that in the average daily outstanding amount, primarily because financial institutions relied more on interbank overnight call loans to reduce their funding costs and roll over loans more frequently. In 2013 Q1, the trading volume of interbank call loans remained at a high level, although it descended markedly in February owing to the Chinese Lunar New Year holidays (Chart 3.1).

Chart 3.1 Interbank call-loan market



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

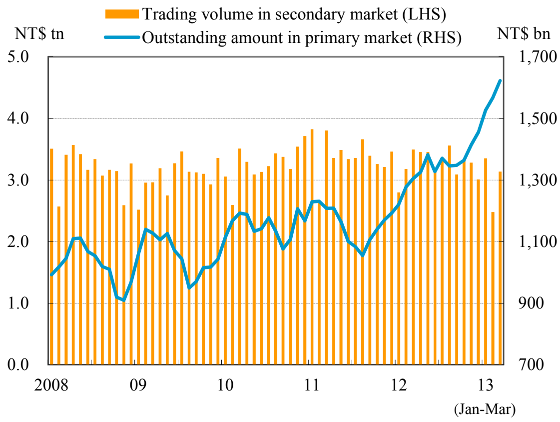
Bills issuance in the primary market significantly rose, but trading volume in the secondary market remained contracted

In 2012, the outstanding amount of bills issuance significantly expanded in the primary bills market. At the end of 2012, the outstanding amount of bills issuance rose by 21.92% year on year, with commercial paper posting the highest increase of NT$288.4 billion or 39.23%. The main reason behind this was that interest rates of commercial paper issuance remained at low levels as large private enterprises and state-owned enterprises raised funds through commercial paper issuance.

Although bills issuance in the primary market rose, trading volume in the secondary market contracted by 4.02% year on year in 2012 (Chart 3.2). The reason was primarily because banks actively employed a buy and hold strategy toward investing in commercial paper, along with a reduction of the rollover frequency of commercial papers issued by state-owned enterprises as they extended the maturity of commercial paper issued.

In 2013 Q1, the outstanding amount of bills issuance trended up in the primary market, while the trading volume of bills in the secondary market descended markedly in February owing to the Chinese Lunar New Year holidays, before it soared in March.

Chart 3.2 Primary and secondary bills markets

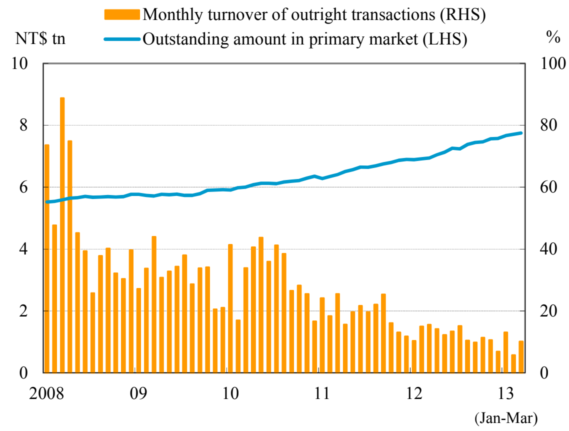


Sources: CBC and FSC.

Bond issuance in the primary market significantly rose, but the turnover of outright transactions in the secondary market further decreased

At the end of 2012, the outstanding amount of bond issuance ascended by 9.87% year on year (Chart 3.3), with corporate bonds and financial debentures posting the highest growth of 17.33%. The main reason behind

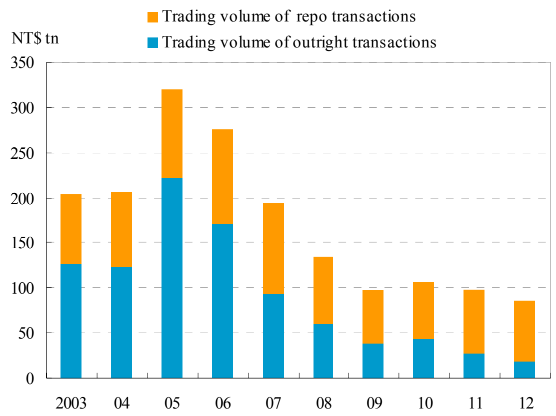
Chart 3.3 Primary and secondary bond market



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

this was the cost of bond issuance remained at a low level, the government relaxed regulatory restrictions on the terms of corporate bond issuance for state-owned enterprises, and domestic banks issued debentures in an effort to promote their capital adequacy ratios. In addition, government bonds registered a year-on-year increase of 6.25% in 2012, affected by treasury funds management and regular and moderate issuance of government bonds.

Chart 3.4 Outright and repo transactions in the bond market



Source: CBC.

In 2012, the bond market was still sluggish, and trading volume declined by 11.51% year on year. Of the components, outright transactions dropped significantly by 31.36%, while repo transactions slightly decreased by 4.00% (Chart 3.4). Outright transactions were sluggish owing to ample liquidity and less bonds being traded in the market, primarily because banks actively employed a buy and hold strategy toward investing in government bonds.[45] Meanwhile, inactive corporate bonds and financial debentures issuance constituted a major portion of the growth in the outstanding amount of bond issuance,[46] leading to the average monthly bond turnover ratio in 2012 being significantly lower than the previous year's level. Moreover, because of bond traders' lack of willingness to trade by the end of the year, outright transactions dropped significantly and the monthly turnover ratio fell to a trough of 6.86% in December 2012. In 2013 Q1, the outstanding amount of bonds that have been issued trended up in the primary bond market. Nevertheless, the outright turnover ratio descended to a ten-year low of 5.7% in February owing to the Chinese Lunar New Year holidays, but reversed to increase slightly in March (Chart 3.3).

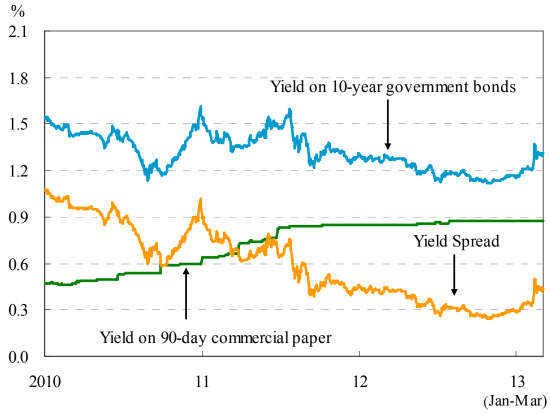
Yield spread remained at a low level

At the beginning of April 2012, the Ministry of Economic Affairs announced a policy to scrap restrictions on fuel and electricity price increases. In response, the CBC strengthened its open market operations to absorb market liquidity in an attempt to prevent fuel and electricity price rises from pushing inflation expectations upwards, leading to a significant rise in the

[45] Based on CBC data, the average share of central government bonds held by banks accounted for 45.60% in 2012, increasing by 2.23 percentage points over the previous year.
[46] Based on FSC data, the outstanding market share of corporate bonds and debentures issued, excluding international bonds, registered 33.56% at the end of 2012, but the market share of outright transactions of corporate bonds and debentures merely reached 14.17%.

overnight interbank call-loan rate. In the second half of 2012, affected by continued slowdown in the domestic economy, and low private funding demand, the overnight interbank call-loan rate regained stability from August onwards after trending down. However, due to ample market liquidity, the yield on 90-day commercial paper in the secondary market was affected less by the CBC's open market operations and remained relatively stable.

Chart 3.5 Yield spread



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

Long-term market rates were affected mainly by international financial conditions and domestic stock market performance. In the first half of 2012, the expansion of the European sovereign debt crisis, slowdown in Mainland China's economic growth and faltering US economic recovery weakened domestic economy. As a result, trading value in the stock market significantly contracted and capital flowed into the bond markets, leading to a downward trend in the yield on 10-year government bonds. From the second half of the year, the yield on 10-year government bonds reversed to trend upward in response to rises in US government bond yields and domestic stock prices. However, it declined from September onwards following a drop in the stock market and dipped to an annual low of 1.1153% in November, with the yield spread between short-term and long-term rates moving down to 25 basis points. Afterwards, the yield on 10-year government bonds reversed to trend up, affected by the rebound of the stock market. In 2013 Q1, the yield on 10-year government bonds kept rising, and the yield spread expanded to 44 basis points (Chart 3.5).

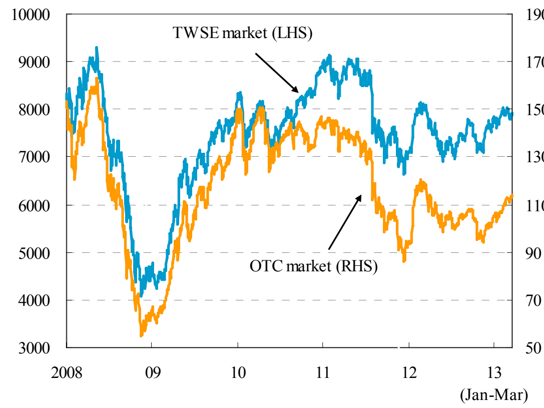
3.1.2 Equity markets

Stock indices trended up, while volatility stabilized after trending down

Spurred by the robust performance of global stock markets and massive net buying by foreign investors, the TAIEX of the TWSE market hit an annual high of 8,144 on 2 March after beginning the year at 6,952. However, dampened by lower-than-expected economic performance in Europe and the US, the reintroduction of a stock trading income tax, and rising oil and electricity prices, the TAIEX dipped to an annual low of 6,895 on 4 June. In 2012 Q3, due to the strengthening of global stock markets, the TAIEX climbed and reached a new high of 7,782 on 19

September. Afterwards, owing to a case of fraud regarding the commissioned management of government pension funds and additional dividends charged for the Supplementary Insurance Premium of National Health Insurance, the TAIEX dropped but subsequently rebounded to 7,699 at the end of December, increasing by 8.87% year on year. During 2013 Q1, the TAIEX continued on its upward path, and reached 7,919, an increase of 2.85% from the end of 2012 (Chart 3.6).

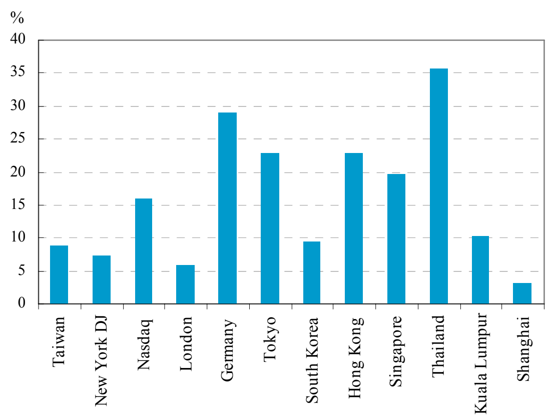
Chart 3.6 Taiwan stock market indices



Sources: TWSE and GTSM.

Taiwan's GreTai Securities Market (GTSM) Index of the OTC market closely tracked the movements of the TAIEX, sliding down after hitting an annual high of 120 in March, but regained its upward tendency in late November and reached 103 at year-end 2012, with an annual rise of 10.01%. Similarly, the figure climbed to 114 at the end of March 2013, an increase of 10.65% from the end of 2012 (Chart 3.6).

Chart 3.7 Comparison of major stock market performances



Notes: 1. Figures are for 2012.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

All major stock markets showed positive performances in 2012, though the Thai Index outperformed others with a rise of 35.76%. Compared to major stock markets around the world, the TAIEX climbed by a solid 8.87%, approximately equal to that of South Korea (Chart 3.7).

Broken down by sector, most sector indices in the TWSE market entered bullish territory in 2012, except the Plastics, Oil, Gas and Electricity, Communications and Internet, and Electronic Products Distribution Industry indices, which were all negative performers. The indices for Automobiles and Building Materials and Construction performed the best, increasing by 32.39% and 24.42%, respectively.

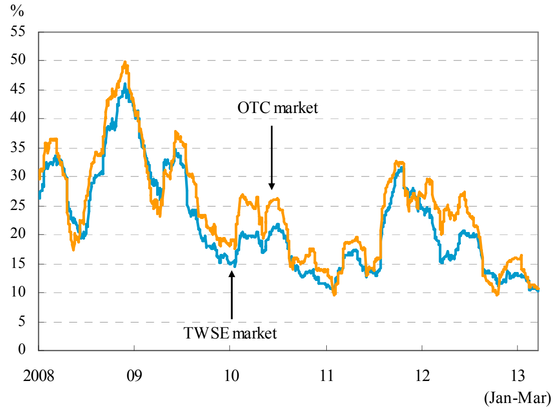
In 2012, the volatility in the TWSE and OTC markets stabilized after trending down, standing at 13.21% and 15.98%, respectively, at the end of December. At the beginning of 2013, the volatility in the TWSE and OTC markets kept trending downward as the local stock indices continued to gain stability, standing at 10.18% and 10.78%, respectively, at the end of March (Chart 3.8).

Annual turnover ratio hit a new low

The TWSE and OTC markets both experienced sluggish conditions in 2012, with the average monthly trading value on the TWSE market registering NT$1.69 trillion, a dramatic contraction of 22.75% year on year, while its turnover ratio in terms of trading value in the same year declined to 97.33%, touching a 10-year low. The transaction volume in the OTC market performed even more lethargically. The average monthly trading value was only NT$246 billion in 2012, a decrease of 26.07% year on year. Reflecting this, the annual turnover ratio of the OTC market fell to 174.80% from 223.36% a year earlier, registering a 10-year record low (Chart 3.9). In February 2013, affected by the Chinese Lunar New Year holidays, the turnover ratios and monthly trading values in the TWSE and OTC markets continued their downward direction.

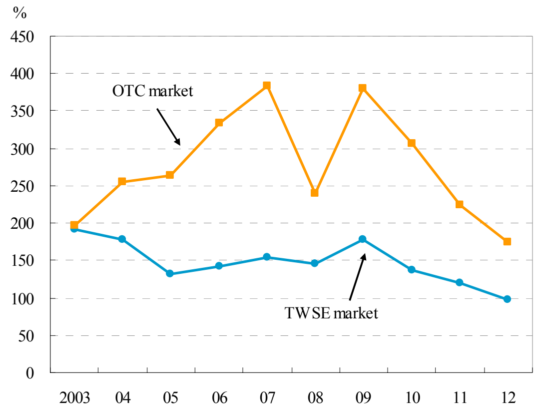
Compared to major stock markets around the world, the annual turnover ratio in the TWSE market in 2012 was approximately equal to the stock markets in New York, Germany and Tokyo, but higher than those in London, Hong Kong, Singapore and Kuala Lumpur (Chart 3.10).

Chart 3.8 Stock price volatility



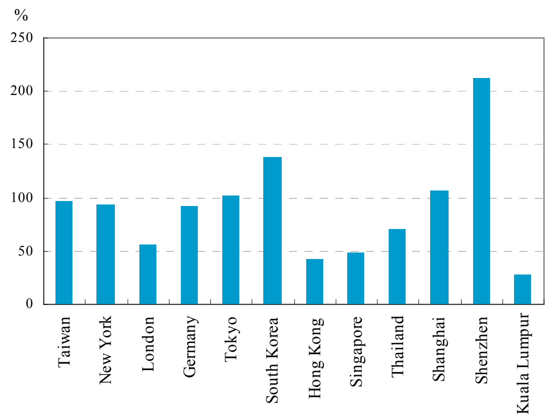
Note: Volatility refers to the annualized standard deviation of 60-day daily index returns.
Sources: TWSE, GTSM, and CBC.

Chart 3.9 Annual turnover ratios in Taiwan's stock markets



Sources: TWSE and GTSM.

Chart 3.10 Comparison of turnover ratios in major stock markets



Notes: 1. Figures refer to accumulated turnover ratios in 2012.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

3.1.3 Foreign exchange market

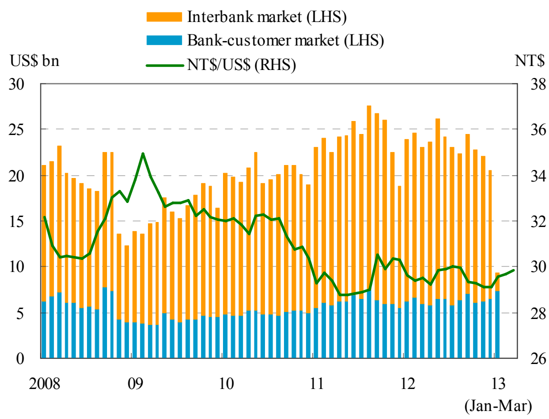
The NT dollar exchange rate reversed from appreciation to depreciation and the trading volume decreased slightly

In 2012 Q1, the NT dollar exchange rate kept appreciating, reaching 29.232 against the US dollar on 30 April. Afterwards, it turned to a period of depreciation and fell to 30.206 against the US dollar in late July, mainly owing to global political and economic turmoil and foreign capital outflows. However, the NT dollar exchange rate reversed to appreciate and reached an annual high of 29.090 in early November in virtue of foreign capital inflows to Asian emerging markets arising from a third round of quantitative easing in the US in September 2012, but then turned to depreciation and stood at 29.136 against the US dollar at the end of December, increasing by 3.96% year on year (Chart 3.11).

In early 2013, the NT dollar exchange rate fluctuated within a narrow range. However, due to the quantitative monetary easing introduced by the BOJ in late January, the value of the yen went down significantly, which caused the Korean won, the Singapore dollar and other currencies in Asia to depreciate against the US dollar. Furthermore, as a result of purchases of US dollars by firms and increasing capital outflows by foreign investors, the NT dollar exchange rate turned to a period of depreciation, reaching 29.875[47] against the US dollar at the end of March.

Compared to other major currencies in Asia, the appreciation of the NT dollar against the US dollar was 3.96%, lower than the Korean won's 7.58% and the Singapore dollar's 6.17%, but slightly higher than the Malaysian ringgit's 3.72% in 2012, while the only currency to depreciate was the Japanese yen, sliding by 10.14%. In 2013 Q1, the Japanese yen continued to depreciate, falling by 8.23%. Moreover, the NT dollar depreciated by 2.47%, lower than the drop of 3.65% in the Korean won (Chart 3.12).

Chart 3.11 NTD/USD exchange rate and foreign exchange market trading volume



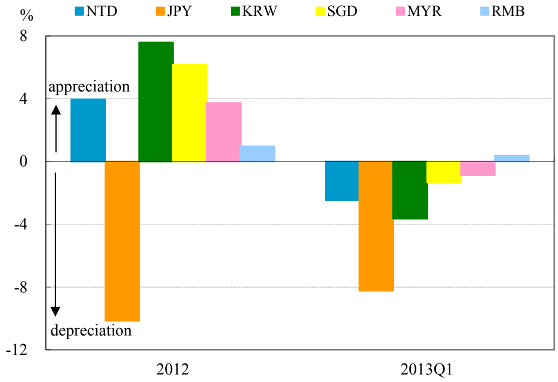
Notes: 1.Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
2. Latest data for trading volume is as of January 2013.
Source: CBC.

[47] In early April 2013, owing to the quantitative and qualitative monetary easing introduced by the BOJ and greater concerns over tension on the Korean Peninsula, the NTD/USD exchange rate kept depreciating, reaching 30.060 on 8 April. As a result of the large depreciation and the ensuing sales of US dollars by firms, the NT dollar exchange rate turned to appreciate, reaching 29.616 against the US dollar on 30 April.

As for the NT dollar against other key international currencies, as a result of the significant depreciation of the yen, the NT dollar appreciated against the yen by 15.69% in 2012; in addition, it appreciated by 1.53% against the euro. Conversely, the NT dollar depreciated by 0.48% and 3.37% against the British pound and the Korean won, respectively, over the same period (Chart 3.13).

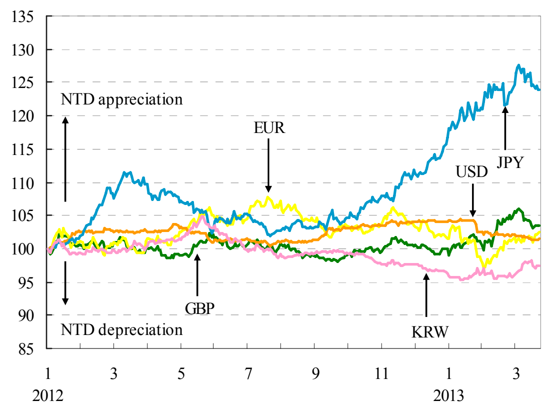
Owing to relatively large domestic and international capital movements, the average daily trading volume of the foreign exchange market reached US$23.4 billion in 2012. Nevertheless, this represented a slight decrease of 3.15% compared to US$24.2 billion a year earlier, primarily because of a decline in the trading volume of the interbank market (Chart 3.11). A breakdown by counterparty shows that the average daily trading volume in the interbank market accounted for 73.11% of the total in 2012, while the retail bank-customer market made up a 26.89% share. As for types of transactions, foreign exchange swaps accounted for 43.41% of the total, followed by spot trading with 38.17%.

Chart 3.12 Appreciation and depreciation percentages of major Asian currencies against the US dollar



Note: Positive figures refer to exchange rate appreciation, and negatives to depreciation.
Source: CBC.

Chart 3.13 Movements of NT dollar exchange rate against key international currencies



Note: 2 January 2012 = 100.
Source: CBC.

NT dollar exchange rate volatility remained relatively stable

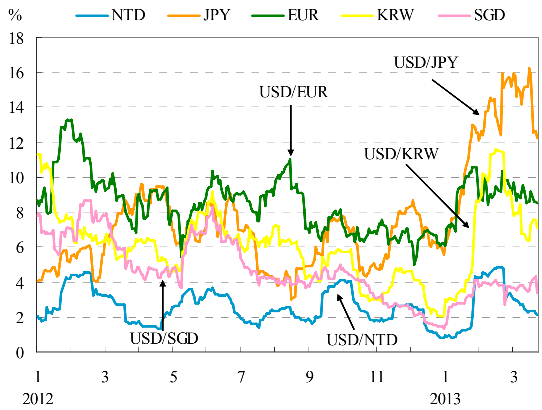
The volatility in the NT dollar exchange rate against the US dollar fluctuated between 1% and 5% in 2012, and registered an annual average of 2.57%. In early 2013, with the quantitative monetary easing introduced by the BOJ, the volatility in the NT dollar exchange rate against the US dollar trended upwards, but fell below 3% from the middle of March. 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 3.14).

3.2 Financial institutions

3.2.1 Domestic banks

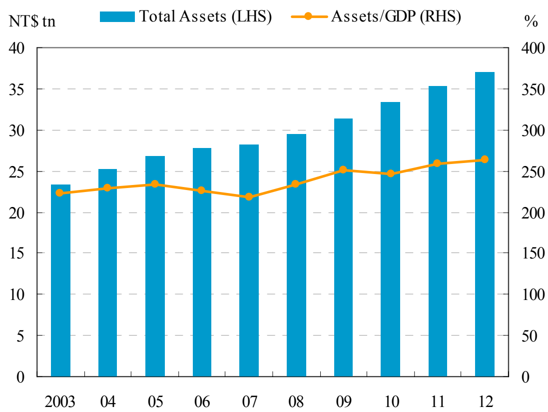
In 2012, the total assets of domestic banks accumulated at a slower pace due to the moderate growth rate in loans. Asset quality remained satisfactory and the credit concentration of corporate loans declined continuously; nevertheless, credit exposure in the real estate loans remained high. The estimated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

Chart 3.14 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.

Chart 3.15 Total assets of domestic banks



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

Total assets increased continually, while growth slowed

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

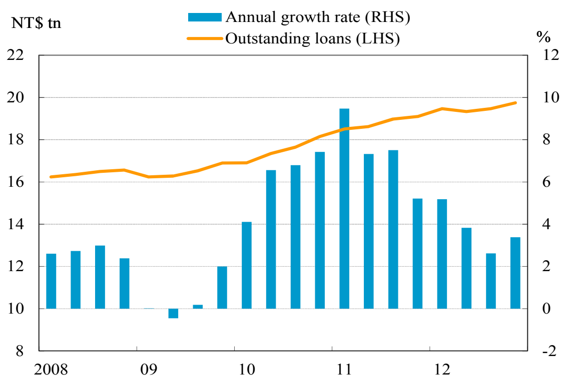
Credit risk

Customer loan growth slowed

Customer loans were the major source of credit risk for domestic banks. Outstanding loans of the local business units of domestic banks[48] at the end of 2012 stood at NT$19.74 trillion (Chart 3.16) and accounted for 53.32% of total assets.

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

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

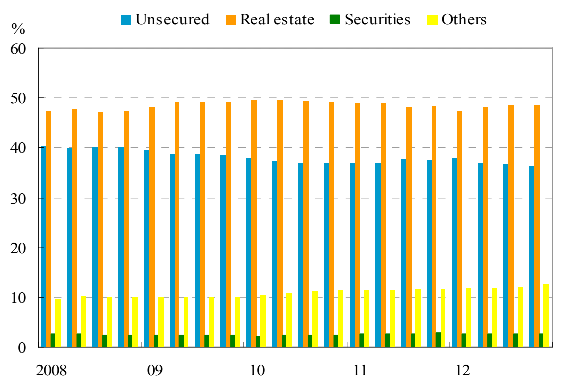


Note: Outstanding loans are end-of-period figures.
Source: CBC.

Concentration of credit exposure in real estate-related loans improved

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

Chart 3.17 Credit by type of collateral in domestic banks



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

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

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

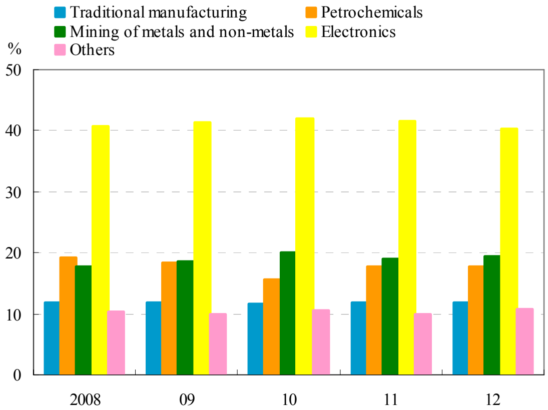
of total credit,[50] at the end of 2012. The ratio increased by 0.40 percentage points over the previous year (Chart 3.17). However, the growth of real estate-secured credit moderated and the annual growth rate declined to 4.95%. Among individual banks, nine had ratios of real estate-secured credit to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

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

Credit concentration of corporate loans gradually declined

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

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



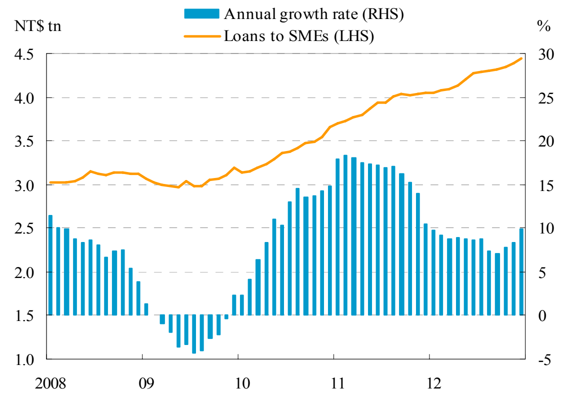
Notes: 1. End-of-period figures.
2. Weight of each sector = loans to each sector / loans to the whole manufacturing sector.
Source: CBC.

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

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

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

Chart 3.19 Loans to SMEs by domestic banks



Source: FSC.

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

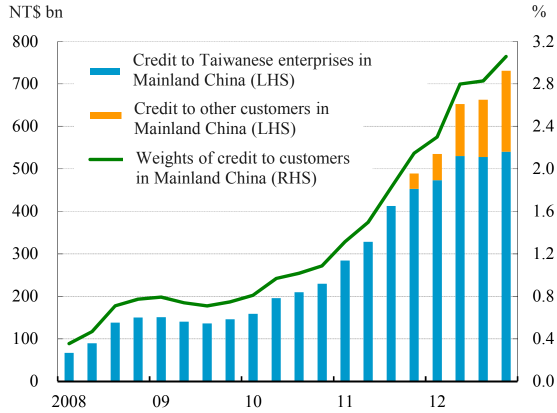
Credit to customers in Mainland China continuously increased but only accounted for a small share of total credit

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

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

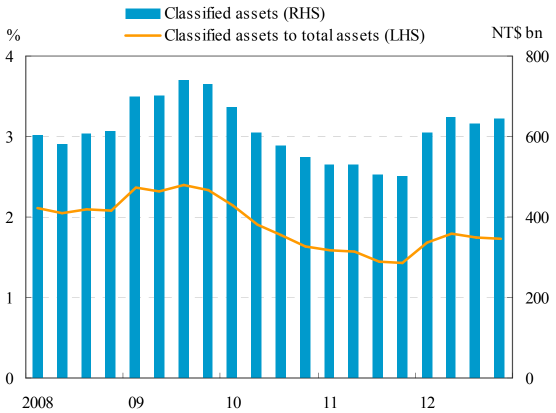
Along with the establishment of the cross strait currency clearing mechanism, financial interactions between the two sides of the Strait have become more extensive, contributing to rapid growth in credit to customers in Mainland China by domestic banks. However, in Mainland China, labor

Chart 3.20 Credit to customers in Mainland China by domestic banks



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

Chart 3.21 Classified assets of domestic banks



Note: Excludes interbank loans.
Source: CBC.

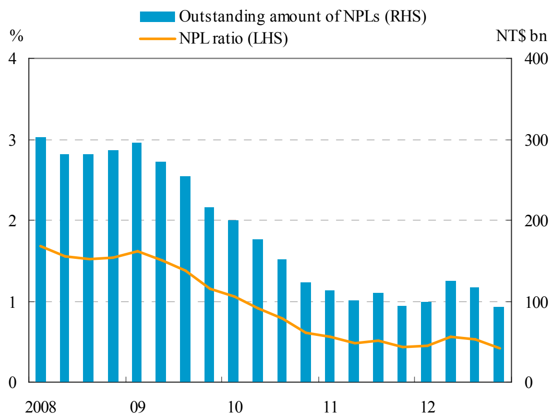
costs have increased steadily and profits of many industries have been hit by overcapacity, which might increase the risks of enterprises operating there and negatively impact the asset quality of their related creditor banks. Accordingly, domestic banks should cautiously monitor the credit risks of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

NPL ratio registered a record low

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

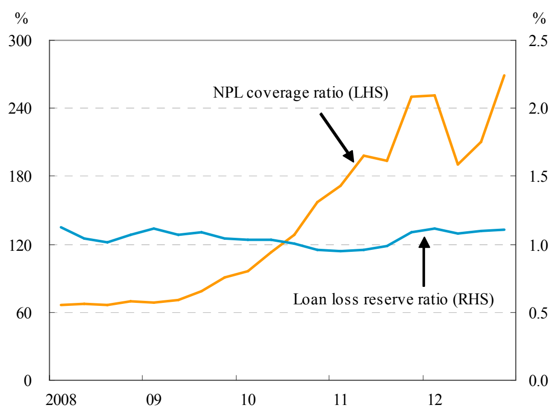
The outstanding NPLs of domestic banks stood at NT$92.9 billion at the end of 2012, contracting by 1.31% year on year. Meanwhile, the average NPL ratio fell to a record low of 0.41% (Chart 3.22). With the decrease in NPLs, the NPL coverage ratio at the end of 2012 rose to 269.07%. The loan loss reserve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

Chart 3.22 NPL ratio of domestic banks



Note: Excludes interbank loans.
Source: CBC.

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



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

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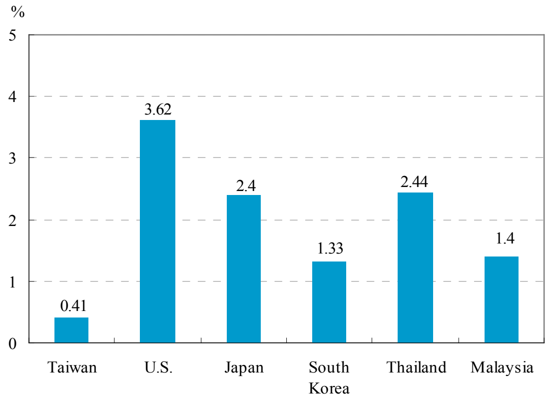
53 The Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans break down all assets into five different categories, including: category one – normal credit assets; category two – credit assets requiring special mention; category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

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

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

Chart 3.24 NPL ratios of banks in selected countries



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

Market risk

Estimated Value-at-Risk for market risk exposures decreased

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

The effects of market risk on capital adequacy ratios were limited

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

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

Table 3.1 Market risks in domestic banks

Unit: NT$ bn

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

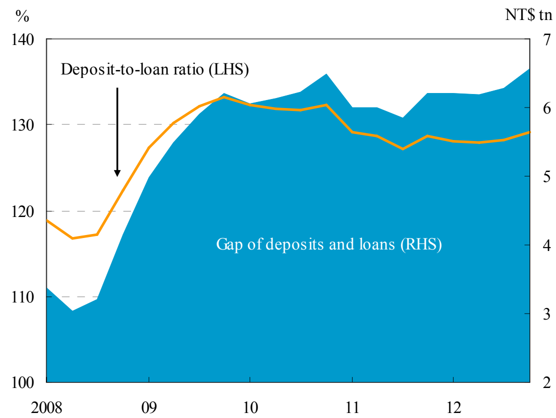
Note: The total VaR is not equal to the sum of the VaRs of the three types of risks since it has taken the correlation among the three risk categories into consideration.
Source: CBC.

Liquidity risk

Liquidity in the banking system remained ample

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

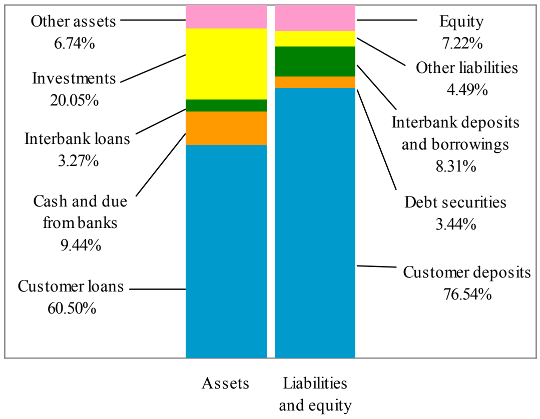
Chart 3.25 Deposit-to-loan ratio of domestic banks



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

As for the sources of funds on the liability and equity side, relatively stable customer deposits accounted for the largest share of 76.54% of the total, slightly lower than 77.11% a year earlier, followed by interbank deposits and borrowings at 8.31%, while debt securities issues contributed a mere 3.44% at the end of 2012. Regarding the uses of funds on the asset side, customer loans accounted for the biggest share of 60.50% with a year-on-year fall of 0.21 percentage points, and cash and due from banks slightly declined to a share of 9.44%, while securities investments slightly rose from 19.19% to 20.05% at the end of 2012 (Chart 3.26).

Chart 3.26 Asset/liability structure of domestic banks

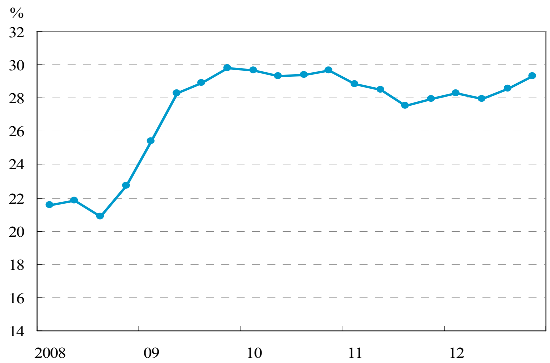


Notes: 1. Figures are as of end-December 2012.
2. Interbank deposits include deposits with the CBC.
Source: CBC.

Overall liquidity risk was moderate

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

Chart 3.27 Liquid reserve ratio of domestic banks



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

Profitability

Profits rose to a historical high

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

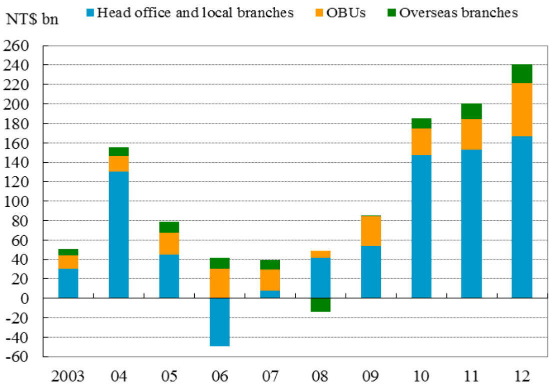
[56] Tier 1 liquid reserves include excess reserves, net due from banks in the call-loan market, re-deposits at designated banks with terms to maturity of no more than one year, certificates of deposit issued by the CBC, government bonds and treasury bills. Tier 2 liquid reserves include NT dollar-denominated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

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

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

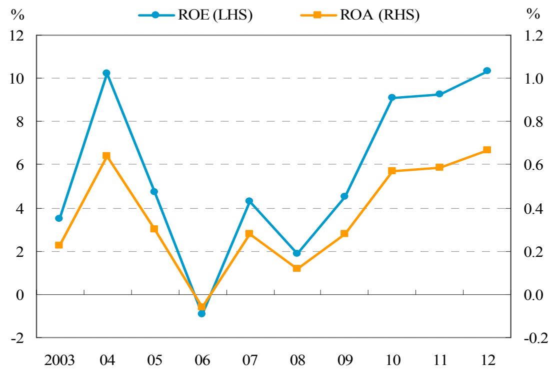
All 39 domestic banks posted profits in 2012. Among them, two banks reported profits of more than NT$20 billion, but some banks registered lower profits than the previous year due to reductions in net fee income or increases of provisions for loan losses. Moreover, eight banks achieved profitable ROEs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

Chart 3.28 Net income before tax of domestic banks



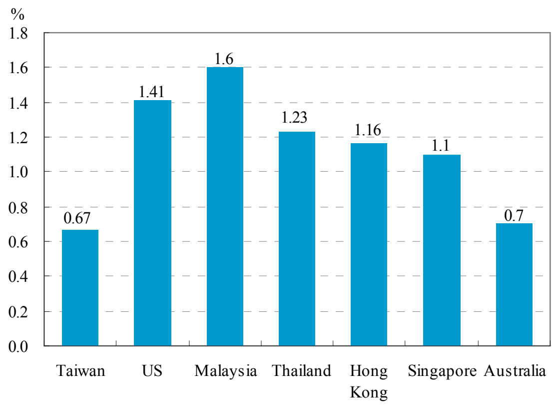
Source: CBC.

Chart 3.29 ROE & ROA of domestic banks



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

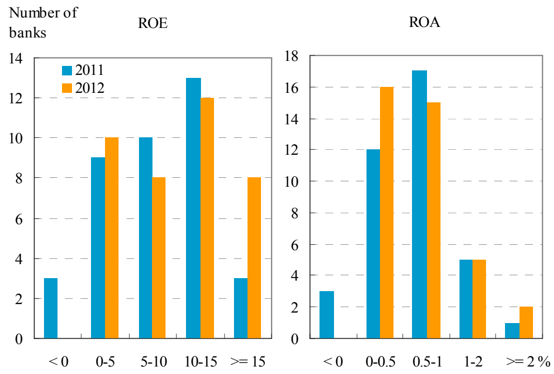
Chart 3.30 Comparison of ROAs of banks in selected countries



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

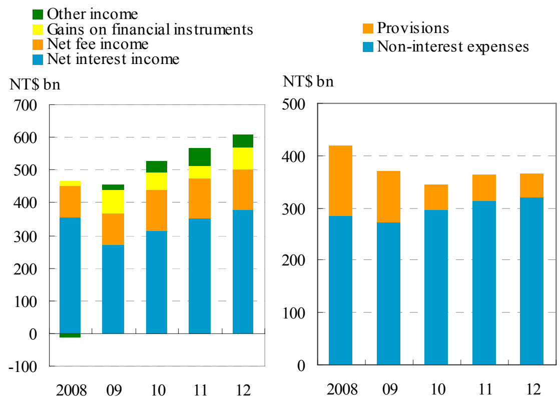
Total net operating income of domestic banks rose by NT$42.5 billion or 7.53% in 2012. Of which, net interest income continually grew, increasing by NT$24.7 billion or 6.98% compared to the previous year, and accounted for 62% of the total. Contributed to by a boost in fee incomes from the sale of insurance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

Chart 3.31 Distribution of ROEs and ROAs of domestic banks



Source: CBC.

Chart 3.32 Composition of incomes and costs of domestic banks



Source: CBC.

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

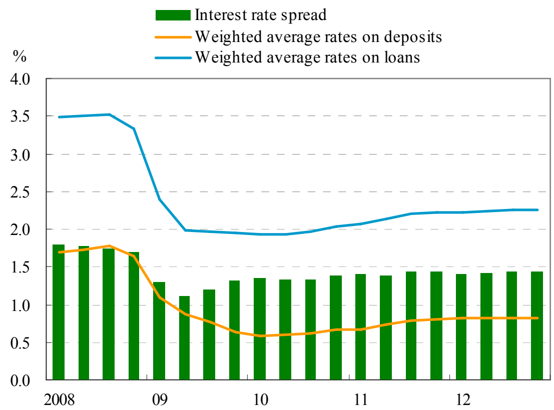
Factors that might affect future profitability

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

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

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

Chart 3.33 Interest rate spread between deposits and loans



Notes: 1. Interest rate spread = weighted average interest rates on loans - weighted average interest rates on deposits.
2. The weighted average interest rates on deposits and loans exclude preferred deposits of retired government employees and central government loans.
Source: CBC.

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

Capital adequacy

Capital adequacy ratios[58] ascended

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

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

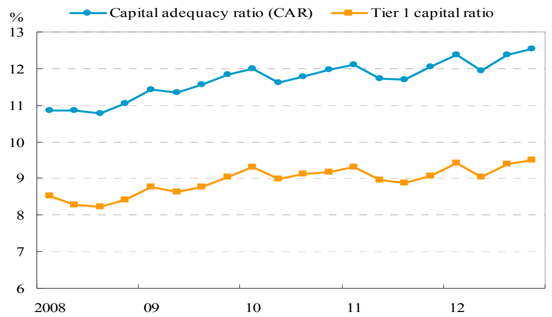
Further breaking down the components of regulatory capital, Tier 1 capital, which features the best risk-bearing capacity, accounted for 75.64% of eligible capital, while Tier 2 capital registered 24.36%, and Tier 3 capital was zero at the end of 2012. Compared to the end of the previous year, there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

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

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

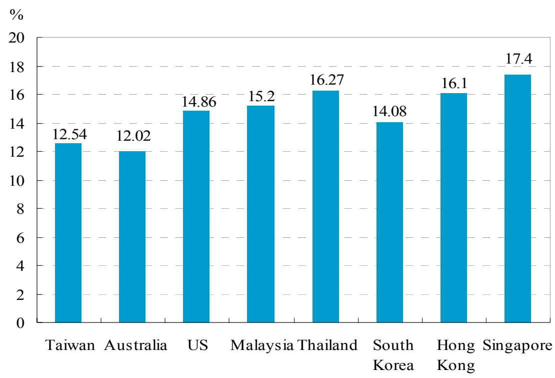
Since the Basel III standards will be phased in gradually beginning 2013, the FSC, referring to Basel III requirements, revised the Regulations Governing the Capital Adequacy and Capital Category of Banks and related calculation methods in November 2012. The Regulations set out the minimum capital requirements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

Chart 3.34 Capital adequacy ratio of domestic banks



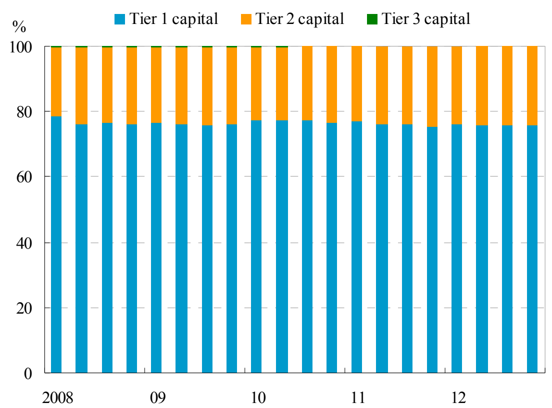
Notes: 1. End-of-period figures.
2. Capital adequacy ratio = eligible capital / risk-weighted assets.
3. Tier 1 capital ratio = tier 1 capital / risk-weighted assets.
Source: CBC.

Chart 3.35 Comparison of capital adequacy ratios in selected countries



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

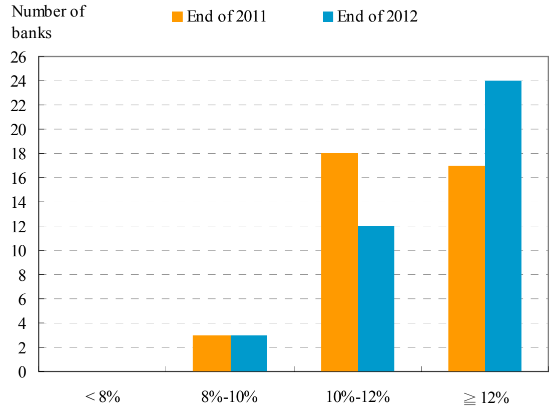
Chart 3.36 Domestics banks' eligible capital



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

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

Chart 3.37 Number of domestic banks classified by capital adequacy ratios



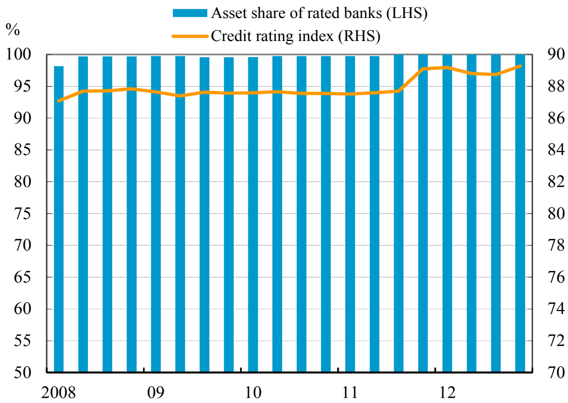
Source: CBC.

Credit ratings

Average credit rating level slightly improved

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

Chart 3.38 Credit rating indices of rated domestic banks



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

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

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

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

[61] The credit rating index is an asset-weighted average rating score of rated domestic banks, measuring the overall creditworthiness of those banks on a scale from 1 (weakest) to 100 (strongest). The rating score for banks is determined according to their long-term issuer ratings from Taiwan Ratings or national long-term ratings from Fitch Ratings. The higher the index is, the better the bank's overall solvency.

[62] The analytical dimensions of Standard & Poor's BICRA include economic risk and industry risk. The economic risk of a banking sector is determined by factors including economic resilience, economic imbalances, and credit risk in the economy, while industry risk is determined by institutional framework, competitive dynamics and system-wide funding. The overall assessments of those factors will lead to the classification of a country's banking system into BICRA groups, ranging from group 1 (lowest risk) to group 10 (highest risk), in order to indicate the relative country risk and banking sector credit quality.

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

Table 3.2 Systemic risk indicators for the banking system

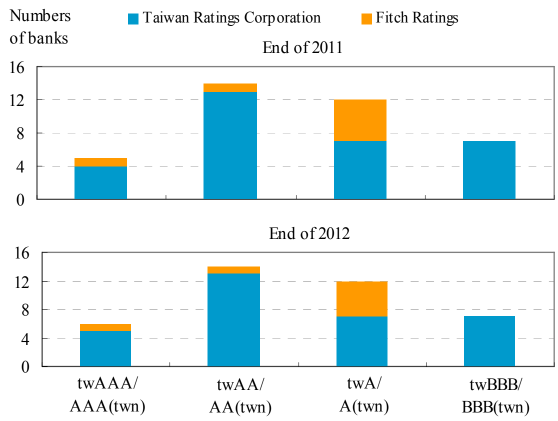
Banking System	Standard and Poor's		Fitch	
	BICRA		BSI/MPI	
	2012/2	2013/2	2012/2	2013/2
Hong Kong	2	2	B/3	a/3
Singapore	2	2	B/2	aa/2
Japan	2	2	C/1	bbb/1
South Korea	3	3	C/1	bbb/1
Taiwan	**4**	**4**	**C/1**	**bbb/1**
Malaysia	4	4	C/1	bbb/1
Thailand	5	5	C/1	bbb/1
Mainland China	5	5	D/3	bb/3
Indonesia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

Sources: Standard and Poor's and Fitch Ratings.

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

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

Chart 3.39 Number of domestic banks classified by credit ratings



Sources: Taiwan Ratings Corporation and Fitch Ratings.

[63] Fitch Ratings has devised two complementary measures, the BSI and MPI, to assess banking system vulnerability. The two indicators are brought together in a Systemic Risk Matrix that emphasizes the complementary nature of both indicators. The BSI, based on the synthetic assessment results composed of individual ratings and systematic risks in the banking system, measures intrinsic banking system quality or strength on a scale from A (very high quality) to E (very low quality). In August 2012, Fitch Ratings introduced new BSI methodology, which rules out potential support from shareholders or governments and generates a standalone measure of banking system strength with an aim to highlight systemic weakness that may trigger the need for such support. The new BSI ranges from aa, a, bbb, bb, b, ccc, cc and c. There is no precise mapping between old and new BSI. However, as a rule of thumb, the old BSI A is roughly equivalent to the new BSI aa; the old BSI B to new BSI a; the old BSI C to new BSI bbb and the old BSI D to new BSI bb-/b. On the other hand, the MPI indicates the vulnerability to stress on above-trend levels of private sector credit, a bubble in real asset prices, and/or major currency appreciation, measuring the vulnerability of the macro environment on a scale from 1 (low) to 3 (high) in terms of banking system vulnerability.

3.2.2 Life insurance companies

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

Assets grew healthily, reaching a historically high level

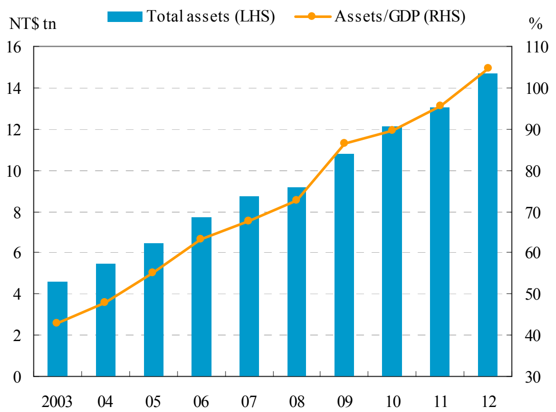
The total assets of life insurance companies continually grew and reached a historically high level of NT$14.71 trillion at the end of 2012, equivalent to 104.78% of annual GDP (Chart 3.40). Meanwhile, the annual growth rate of total assets significantly rose to 12.64% at the end of 2012, compared to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

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

Domestic and foreign securities investments had higher growth rates

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

Chart 3.40 Total assets of life insurance companies



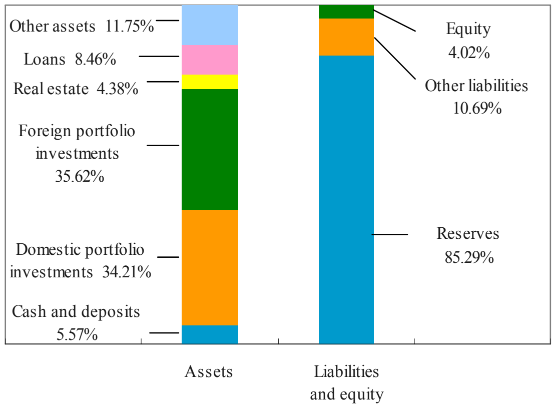
Sources: FSC and DGBAS.

[64] Foreign affiliates included.

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

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

Chart 3.41 Asset/liability structure of life insurance companies

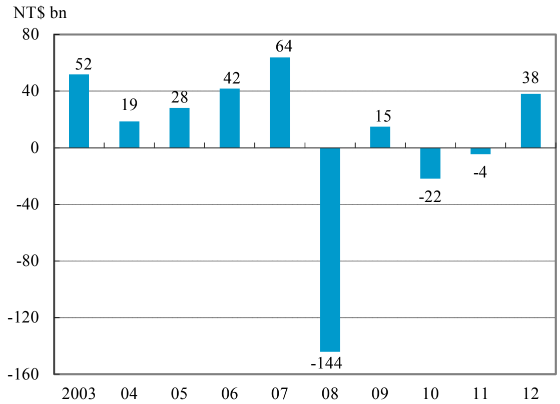


Note: Figures are end-December 2012 data.
Source: FSC.

Net profits rebounded to a five-year high

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

Chart 3.42 Net income before tax of life insurance companies



Source: FSC.

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

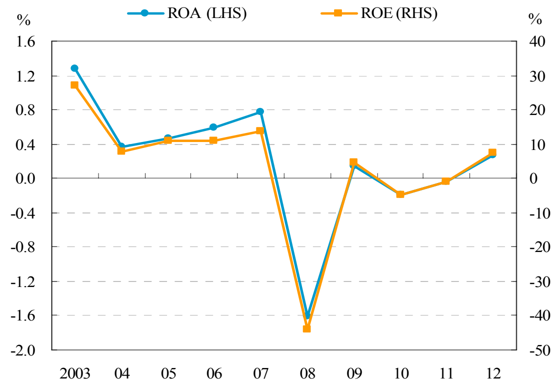
65 The FSC announced 2 reductions in the interest rate on reserves for new insurance policies in 2012, which induced public expectations of rising premiums.

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

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

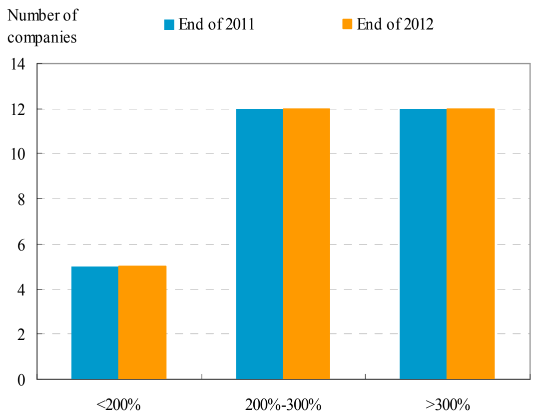
Owing to the increase of unrealized profits from financial products, the regulatory capital of life insurance companies as a whole rose during 2012. However, the average RBC ratio[67] of life insurance companies, excluding Kuo Hua Life Insurance Company, declined to 229.32% at the end of 2012, from 238.38%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

Chart 3.43 ROE & ROA of life insurance companies



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

Chart 3.44 Number of life insurance companies classified by RBC ratios



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

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

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

[67] Risk-based capital ratio = regulatory capital / risk-based capital. According to Article 143-4 of the Insurance Act, the risk-based capital ratio of the insurance industry cannot be below 200%.

[68] According to the explanation of RBC ratio calculation for 2012 by the FSC on 22 November 2012, the risk weight of real estate was raised from 0.0744 to 0.0781. However, as for vacant land or real estate not in accordance with the criterion of instant application with yield, the mark-up on capital set aside was raised from 30% to 40%.

[69] Cathay Life Insurance Company, though not having its credit rating adjusted by Taiwan Ratings or Fitch Ratings, was downgraded by Moody’s from Baa1 to Baa2.

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

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

The challenges faced by life insurance companies

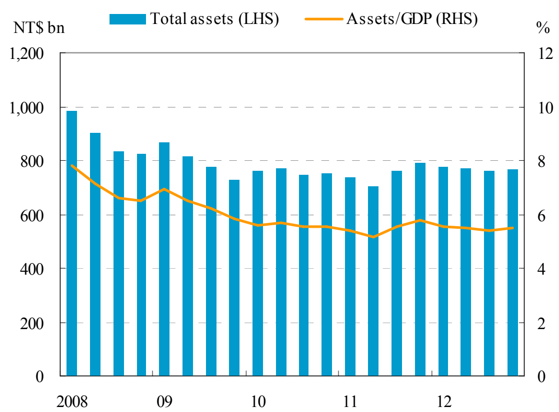
In general, the overall operations and financial health of life insurance companies improved in 2012. However, the problem of capital inadequacy faced by a few life insurance companies showed that, apart from capital injection and stricter supervision of those companies, replenishing the Insurance Stabilization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

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

3.2.3 Bills finance companies

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

Chart 3.45 Total assets of bills finance companies



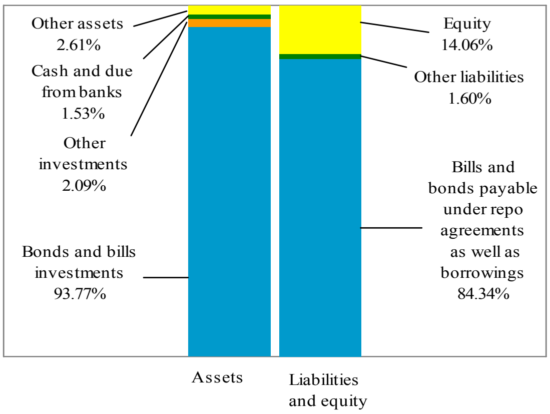
Note: Total assets are end-of-period figures.
Sources: CBC and DGBAS.

Total assets lingered at a low level

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

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

Chart 3.46 Asset/liability structure of bills finance companies



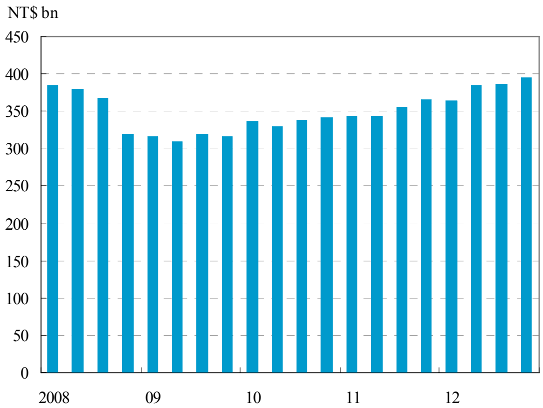
Note: Figures are end-December 2012 data.
Sources: CBC and FSC.

Credit risks

Outstanding balance of guarantees rebounded gradually

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

Chart 3.47 Outstanding commercial paper guarantees of bills finance companies



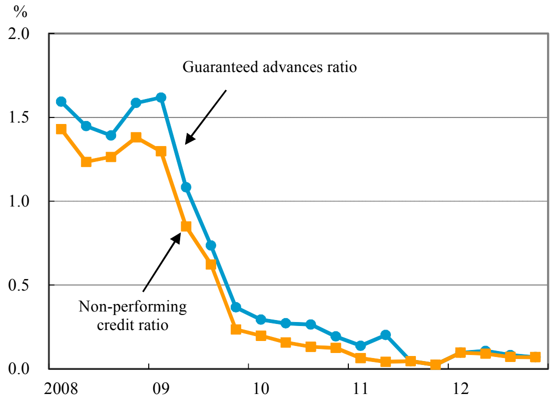
Note: End-of-period figures.
Source: CBC.

to the regulatory ceiling of five times.[70]

Credit quality remained sound

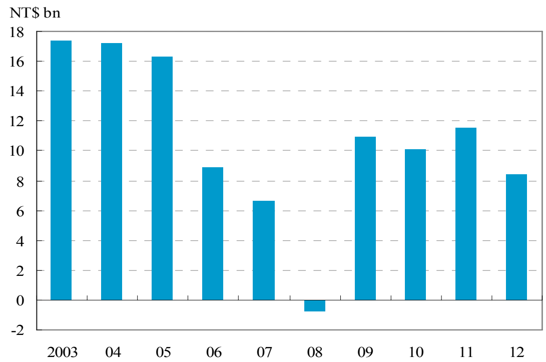
The average guaranteed advances ratio and the non-performing credit ratio of bills finance companies both stayed at the low level of 0.07% at the end of 2012, though rising slightly year on year, reflecting sound credit quality (Chart 3.48). At the same time, the ratios of credit loss reserves to non-performing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

Chart 3.48 Guaranteed advances ratio of bills finance companies



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

Chart 3.49 Net income before tax of bills finance companies



Source: CBC.

Liquidity risk improved, yet remained high

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

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

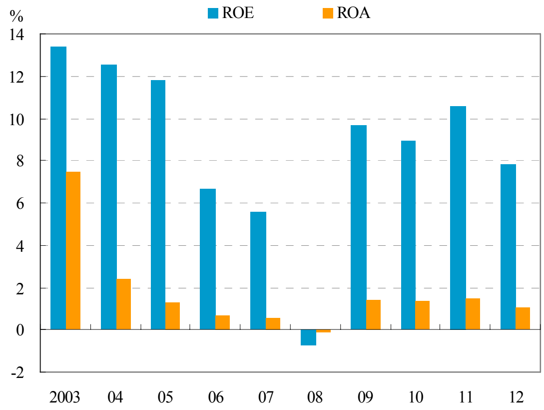
[71] In order to reduce the operating and liquidity risk of bills finance companies, the FSC amended Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses on 9 April 2010, contracting the major liabilities of bills finance companies.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

liquidity risk situation was gradually improving.

Operating profitability remained stable

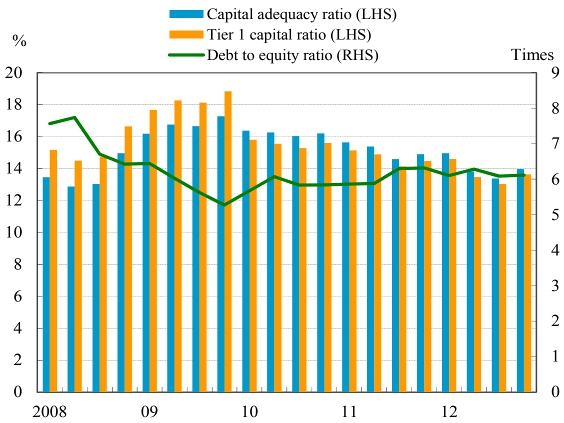
Bills finance companies posted a net income before tax of NT$8.44 billion in 2012, a year-on-year decrease of NT$3.09 billion or 26.82% (Chart 3.49). This was mainly driven by a decrease of NT$4.7 billion from capital gains on property transactions over the previous year. Nevertheless, if the above capital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

Chart 3.50 ROE & ROA of bills finance companies



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

Chart 3.51 Capital adequacy and leverage of bills finance companies



Source: CBC.

Average capital adequacy ratio declined gradually

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

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

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

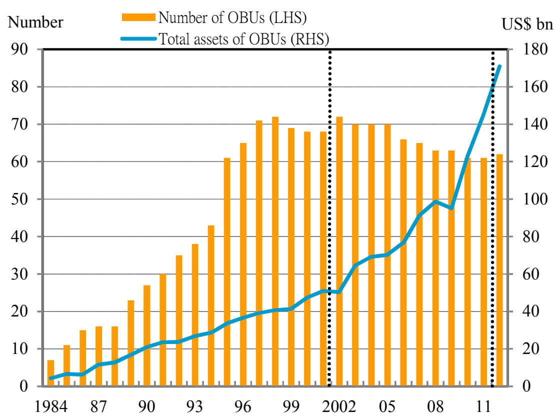
With a view to establishing a regional financial center, the government promulgated the Offshore Banking Act in December 1983, authorizing banks to set up offshore banking units (OBUs) within the territory of the Republic of China (Taiwan) and engage in offshore financial activities. OBUs were granted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

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

1.1 Opening up of offshore banking activities in December 1983

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

Chart B4.1 Number and total assets of OBUs



Source: CBC.

businesses approved by the relevant authorities.

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

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

1.3 Opening up of RMB business in July 2011

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

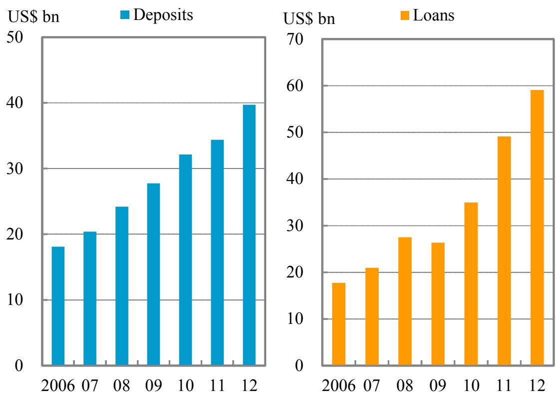
2. The current condition and performance of domestic banks' OBUs

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

2.1 The balances of deposits and loans grew rapidly

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

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

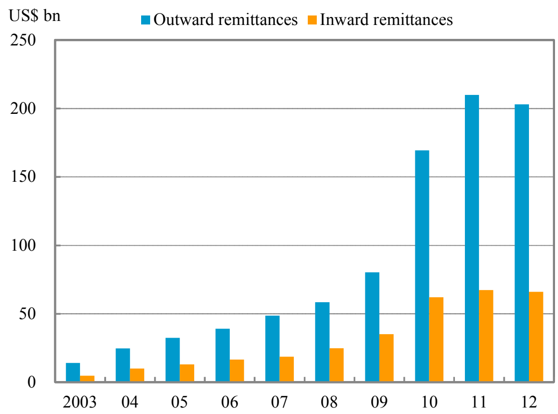


Source: CBC.

2.2 Cross-strait remittance business expanded noticeably

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

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



Source: CBC.

2.3 RMB deposit balances continued hitting fresh record highs

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

2.4 Profits ascended to a new record

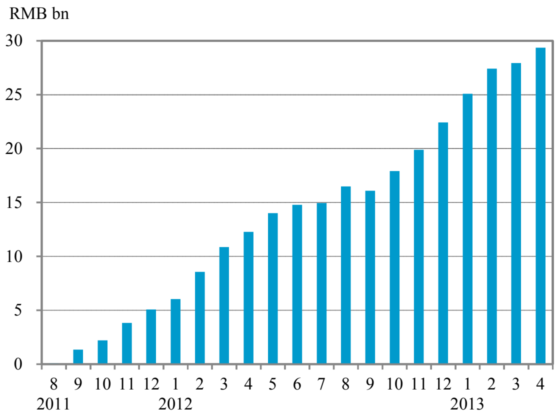
Benefitting from the fast-growing RMB business, the net income before tax earned by domestic banks' OBUs reached US$1.9 billion (NT$55.4 billion) in 2012, a record high. Furthermore, the return on assets (ROA) rose to 1.48% (Chart B4.5).

3. The future development of offshore banking activities

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

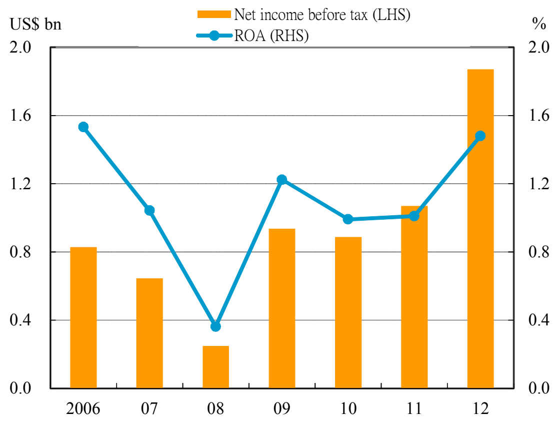
Going forward, when securities firms conduct offshore securities business, banks can help deal with the flow of funds to meet the firms' demands for foreign currency funding. For banking institutions and securities firms, both can complement each other in their business functions. This not only broadens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

Chart B4.4 RMB deposits with domestic banks' OBUs



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

Chart B4.5 Profitability of domestic banks' OBUs



Source: CBC.

Box 5
Implementation of Basel III in domestic banks in Taiwan

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

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

1. Contents of the capital adequacy regulations in Taiwan

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

1.1 Raising capital quality

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

1.2 Lifting capital levels

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

1.3 Introducing a leverage ratio

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

1.4 Introducing a countercyclical capital buffer

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

Table B5.1 Minimum capital requirements and transition period

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

Source: CBC.

2. Future work to be further promoted

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

2.1 Considering the operational mechanisms of a countercyclical capital buffer

Article 5 of the Regulations Governing the Capital Adequacy and Capital Category of Banks provides the legal basis for implementing countercyclical capital buffers. However, the relevant guidelines and operational mechanisms of a capital buffer have not been stipulated. In view of the fact that a countercyclical capital buffer is within the scope of macroprudential supervision and highly pertinent to the CBC's credit policy, the CBC will promote relevant study and cooperate with the FSC in the stipulation of provisioning criteria and regulations that are applicable to the domestic banking system.

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

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

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

2.3 Deliberating on the liquidity ratio regulations

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

Notes: 1. The bail-in provision means that the priority order for the distribution of the earnings and assets of the holder of non-common equity Tier 1 and Tier 2 capital instruments is the same as that of a common stock holder when the relevant authority assigns officials to take conservatorship over the issuing bank, orders such a bank to suspend and wind up business, or liquidates the bank.
2. The FSB published an initial list of 29 banking groups identified as G-SIBs in November 2011. It updated the list in November 2012, indicating the number of G-SIBs was reduced to 28. See FSB (2012), *Update of group of global systemically important banks*, November 1.
3. BCBS (2012), *A Framework for dealing with domestic systemically important banks,* October.
4. The BCBS introduced standards on LCR and NSFR in December 2010. Subsequently, taking into account their latent impacts on financial markets, credit supply and economic growth, it revised the calculation of LCR in January 2013. The revised standards will adopt a phase-in

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

3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of systemically important payment systems in 2012

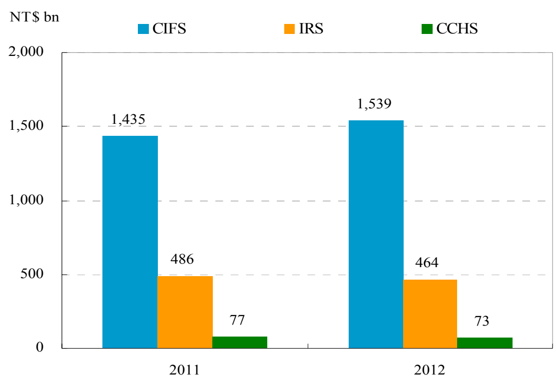
The three systemically important payment systems (SIPSs), which process domestic interbank payments, operated soundly in 2012. Compared to the previous year, the average daily transaction value of the CBC Interbank Funds-Transfer System (CIFS) increased while those of the others declined slightly (Chart 3.52). In addition, the CIFS, which handles large payments and the final settlement of interbank fund transfers, continued to be the most important one, with average daily transaction value reaching NT$1.54 trillion and accounting for 74% of the total.

Reinforcing the risk management of check clearing

When institutions participating in the check clearing system are unable to fulfill their clearing and settlement obligations, it will bring unexpected liquidity and credit risks to other participating institutions and, in turn, might cause systemic risks. To control check clearing and settlement risks, the CBC urged the Taiwan Clearing House (TCH) to establish a risk control mechanism in order to ensure the completion of intraday clearing when any of the participating institutions is unable to make their payments.

To induce the TCH to fulfill its responsibilities of check clearing and settlement based on the above-mentioned risk control mechanism, the CBC allowed the TCH to open a transitional settlement account with the CBC so as to settle the net amounts of check settlements and monitor operations simultaneously. Accordingly, the TCH applied to the CBC for settlement accounts in January 2013 and has settled the net amounts of check clearing and settlement through the designated accounts since 25 February of the same year.

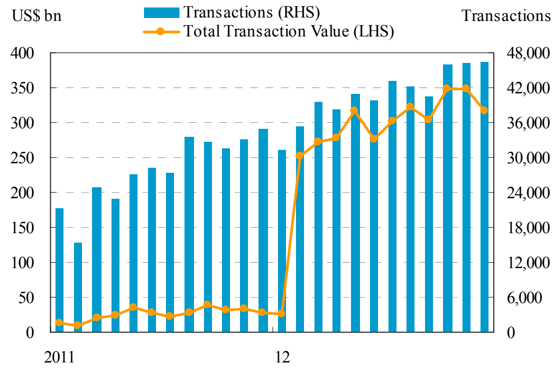
Chart 3.52 Average daily transaction value of the three SIPSs



Source: CBC.

Establishment of the foreign currency payment system

Chart 3.53 Average daily transaction value of the three SIPSs



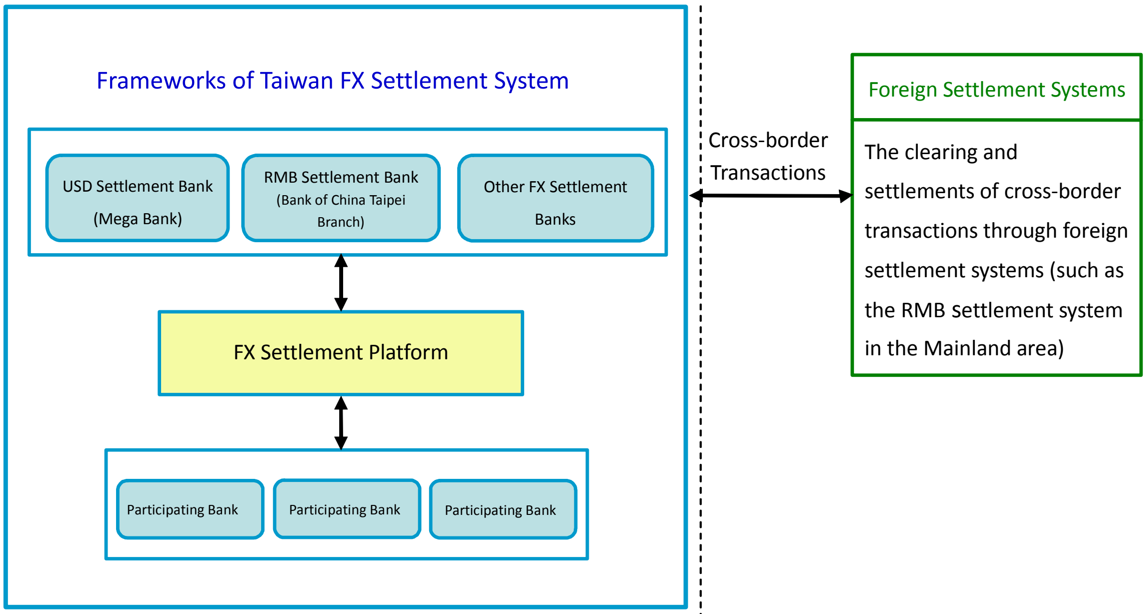
Source: CBC.

To assist the establishment of a domestic US dollar bills market and protect customer interests, the CBC promoted the setting up of a domestic US dollar settlement system in September 2008. Mega International Commercial Bank (Mega Bank) was designated by the Bankers Association as the sole domestic US dollar settlement bank. The new US dollar settlement system officially started in December 2010, with the benefits of effectively shortening the time of remittance and reducing remittance fees when local US dollar remittance would no longer need to be processed by foreign correspondent banks. In 2012, the US dollar settlement system processed 490 thousand transactions with a total value of US$3.36 trillion, significantly increasing by 47.24% and ten times, respectively, over the previous year. It was mainly contributed to by the inclusion of NTD/USD currency swaps between the CBC and commercial banks since February 2012 (Chart 3.53).

In addition, to reinforce domestic financial infrastructure, the CBC planned to encourage the Financial Information Service Co., Ltd. to establish a foreign exchange (FX) settlement platform that would meet international standards (Chart 3.54). The new platform was launched on 1 March 2013 and only US dollar remittance was included in the platform in the initial stage. However, domestic and cross-border RMB remittance services would be provided by the end of July, and the settlement of other FX transactions will be put into consideration in the next stage. The contributions of the platform are as follows:

- Effectively using financial resources and achieving economies of scale as the settlements of US dollar, RMB and other FX transactions are processed on one platform.
- Maintaining competition fairness by preventing the settlement banks from accessing the client information of participating banks, as the FX transactions of participating banks are handled by the FX settlement platform which acts as an intermediary.
- Meeting international standards and dealing with both domestic and foreign FX payment transactions (including cross-border RMB remittance) at the same time, so as to help the development of the domestic financial services industry.

Chart 3.54 Framework of FX Settlement Systems



Source: CBC.

3.3.2 Cross-Strait Currency Clearing Mechanism inaugurated and designated foreign exchange banks allowed to begin renminbi business

Taiwan's Straits Exchange Foundation and Mainland China's Association for Relations across the Taiwan Straits jointly signed the Cross-Strait Financial Cooperation Agreement on 26 April 2009. In terms of monetary management under the agreement, the monetary supervision authorities on both sides made efforts regarding several cooperative issues such as cash notes exchange and supply, and also took steps to develop a cross-strait currency clearing mechanism in order to strengthen mutual cooperation in monetary management. To promote cross-strait business activities and financial cooperation, the CBC and the PBC together signed the Memorandum on Cross-Strait Currency Clearing Cooperation on 31 August 2012, and officially established the Cross-Strait Currency Clearing Mechanism.

Main contents of Cross-Strait Currency Clearing Mechanism

- Establishing a framework of cross-strait currency clearing and settlement whereby the two central banks separately designate one currency clearing institution to provide corresponding currency settlement and clearing services in accordance with the relevant laws and regulations of both sides.

- Building up a supervisory cooperation mechanism between the two central banks, including information exchange, protection of confidentiality, business examination, crisis management, and communication mechanisms, etc.

History of development

After the signing of the Memorandum on Cross-Strait Currency Clearing Cooperation, the CBC and the PBC actively moved on to the designation of each side's clearing bank and the signing of a currency clearing agreement (Table 3.3 and 3.4). Finally, DBUs in Taiwan officially launched their onshore renminbi business centers on 6 February 2013, and the Shanghai branch of the Bank of Taiwan (BOT), the NTD settlement bank in the mainland area, commenced the business of exchanging NT dollar banknotes on 2 April 2013.

As of 30 April 2013, 58 local banks had inaugurated renminbi business, taking in deposits totaling RMB 24.7 billion and processing 12,888 remittances amounting to RMB 6.4 billion through the Bank of China's (BOC) Taipei branch.

Expected benefits and future prospects

The establishment of the Cross-Strait Currency Clearing Mechanism is an epoch-making action, bringing great advantages for domestic financial institutions, enterprises, individuals and the development of the whole financial industry. The benefits are summarized as follows:

- Increasing the options of currencies used in cross-strait trade and raising the flexibility of fund management for corporations.

- Helping the government to promote the Program to Develop Financial Services with Cross-Strait Characteristics and meeting the growing needs for wealth management, including the provision of renminbi business, the issue of renminbi bonds and other renminbi-denominated products by financial institutions.

- Allowing overseas financial institutions to participate in the mechanism, which is beneficial for Taiwan to become an offshore center for renminbi transactions.

In addition, to provide adequate renminbi liquidity, the CBC has begun preliminary discussions with the PBC on the establishment of a reciprocal currency swap agreement which is scheduled for further cooperation.

Table 3.3 Development history of renminbi business in Taiwan

Date	Development History
2012.12.11	The PBC designated the Taipei branch of the BOC as the renminbi clearing bank in Taiwan.
2013.1.25	The PBC and the BOC Taipei branch signed the renminbi clearing agreement.
2013.1.28	The CBC approved the application of the BOC Taipei branch to be the renminbi clearing bank in Taiwan.
2013.1.30	The CBC and the BOC Taipei branch jointly held a seminar on the regulations governing renminbi business and renminbi clearing.
2013.2.6	Authorized foreign exchange banks (DBUs) in Taiwan started offering renminbi-related business services, in line with public expectations of business commencement before the Lunar New Year holidays.
2013.2.8	The CBC approved Chinatrust Commercial Bank to issue renminbi-denominated bonds (Formosa bonds) in Taiwan, with a total amount of RMB 1 billion, a term of three years, and a coupon rate of 2.9%.
2013.3.11	The CBC approved Deutsche Bank AG to issue renminbi-denominated bonds (Formosa bonds) in Taiwan, with a total amount of no more than RMB 2 billion, the coupon rates ranged from 1.5% to 2.5% for three-year bonds and from 1.6% to 2.7% for five-year bonds, respectively.

Source: CBC.

Table 3.4 Development history of NT dollar business in the mainland area

Date	Development History
2012.9.17	The CBC selected the BOT Shanghai branch as the NT dollar clearing bank in the mainland area.
2013.1.4	The CBC approved the designation of the BOT Shanghai branch as the NT dollar clearing bank in the mainland area.
2013.1.9	The CBC approved the export and import of NT dollar banknotes.
2013.2.4	Mainland China's State Administration of Foreign Exchange approved the import and export of NT dollar banknotes.
2013.4.2	The BOT Shanghai branch commenced the business of exchanging NT dollar banknotes.

Source: CBC.

3.3.3 Securities firms permitted to set up OSUs

In order to attract Taiwanese overseas funds to flow back to Taiwan, as well as effectively utilizing the capital and credibility of parent securities firms to broaden the participation of the international financial business in Taiwan, the government proposed a project termed the Money Management Platform for Taiwanese Citizens, permitting securities firms to conduct offshore securities business. Accordingly, the FSC, jointly with the CBC, drew up the draft of the amended Offshore Banking Act to authorize securities firms to establish OSUs to conduct offshore securities business. The amended Act will grant tax preference to the OSUs, with reference to the taxation of OBUs, and formulate relevant supervisory regulations to be comparable to existing relevant laws governing securities-related activities. The key amendments to the Offshore Banking Act are summarized in Table 3.5.

The Legislative Yuan has been reviewing the above-mentioned draft of the Offshore Banking Act since March 2013, after receiving it from the Executive Yuan on 29 January that year. It is expected that the legislation of the amended Offshore Banking Act will contribute to promoting Taiwan as a regional financial center, and fulfill the goal of Money Management Platform for Taiwanese Citizens simultaneously. In addition, it will be conducive to bolstering economic growth and increasing employment opportunities, as well as cultivating and attracting international financial professionals.

Table 3.5 Key points of the amended Offshore Banking Act

Key amendments	Contents
1.Securities firm qualifications	A securities firm that is a securities underwriter, securities dealer and securities broker at the same time, according to Article 16 of the Securities and Exchange Act, may, through their head office, apply to the competent authorities to obtain approval for the establishment of an OSU with a separate set of accounts to conduct offshore securities business within the territory of the R.O.C.
2. Scope of offshore securities business	1. Selling foreign currency corporate bonds or other certificates of debt issued by head offices to natural persons, juridical persons, government agencies and financial institutions within or outside the territory of the R.O.C; 2. Undertaking brokerage, intermediation and agency activities of foreign currency securities or other foreign currency financial products approved by the competent authorities for natural persons, juridical persons, government agencies and financial institutions within or outside the territory of the R.O.C; 3. Borrowing or lending, and buying or selling foreign currency securities or other foreign currency financial products approved by the competent authorities, by virtue of securities activities, between the mentioned OSU and other financial institutions, or between the mentioned OSU and natural persons, juridical persons, government agencies and financial institutions outside the territory of the R.O.C; 4. Underwriting securities issued outside the territory of the R.O.C; 5. Conducting account custody, agency and consultation business related to the above-mentioned business for natural persons, juridical persons, government agencies and financial institutions within or outside the territory of the R.O.C; 6. Conducting consultation business of asset allocation or financial planning as well as sales services of foreign currency securities or other foreign currency financial products approved by the competent authorities, commissioned by natural persons, juridical persons, government agencies and financial institutions within or outside the territory of the R.O.C; 7. Other foreign exchange business related to securities activities, approved by the competent authorities.
3. Authorizing a branch office to handle the OSU's business	1. The OSU may authorize a branch office of its parent firm, which has been approved by the CBC to undertake foreign exchange business related to securities activities, to handle the above-mentioned business. Such business handled by the branch office should be booked in the OSU.

	2. The business authorized to be handled by the branch office includes cross-straits securities activities approved by the competent authorities. The OSU should handle the control and supervision of such activities in accordance with the regulations related to cross-strait securities activities, and should coordinate as well as be responsible for such control and supervision.
4. Authorizing the competent authorities to draft the relevant regulations	1. The restrictions prescribed in the Foreign Exchange Control Act and the Securities and Exchange Act, except those stipulated specially in the Offshore Banking Act, do not apply to the above-mentioned business undertaken by OSUs. 2. The finance, business, funding, risk management and the terms as well as aggregate outstanding of call loans or borrowing from other financial institutions of the OSU, and the regulations governing the selling or buying of foreign currency and other items between the foreign exchange business designated bank, offshore banking unit or offshore financial institution, shall be drafted by the FSC jointly with the CBC.
5. Tax exemption	1. The business of the OSU shall be exempt from business income tax, business tax and stamp duties; however, income, revenues and certificates derived from transactions with natural persons, juridical persons, government agencies and financial institutions within the territory of the R.O.C. shall be subject to taxation or exemption stipulated in the relevant tax laws. 2. Interest paid by the OSU to financial institutions, natural persons, juridical persons or government agencies outside the territory of the R.O.C and income derived from the transactions of structured products, shall be exempt from withholding tax. 3. The above-mentioned tax exemption period will be fifteen years from the time the amended articles of the Offshore Banking Act become effective.

Source: CBC.

3.3.4 Major financial institutions and listed companies started to compile financial reports in accordance with the IFRSs from 2013

The FSC announced the International Financial Reporting Standards (IFRSs) adoption roadmap on 14 May 2009, containing a two-phase mandatory adoption[72] of IFRSs and early use of IFRSs. Listed companies and major financial institutions supervised by the FSC, which are the first-phase adopters, should prepare financial statements in accordance with IFRSs from 1 January 2013. The final adoption version of IFRSs would follow the Traditional Chinese version of the 2010 edition issued by the FSC.

While financial statements under the IFRSs have the following characteristics, those who might read such financial reports should pay close attention to the following:

[72] First-phase adopters, including the companies listed in the stock exchange, OTC market or emerging stock markets and financial institutions supervised by the FSC (except for credit cooperatives, credit card companies, insurance brokers and insurance agents), will be required to prepare IFRSs financial statements from 2013. As for second-phase adopters, including unlisted public companies, credit cooperatives and credit card companies, they should apply IFRSs from 2015.

- Consolidated financial reports will be the main focus of disclosure requirements as they display integrated operating results of group enterprises more completely.

- The IFRSs adopt fair value measurement principles, which could better present enterprises' operating performances and enhance financial transparency, but might result in more volatile revenues in the reports.

- The IFRSs are principle-based rather than rule-based accounting standards. Report readers should be aware of the relevant notes disclosed in financial statements, such as the selection of significant accounting policies, crucial accounting estimates and valuation methods, in order to improve their understanding of enterprise value.

IV. Measures to maintain financial stability

In 2012, due to slowing global and domestic economies, the industrial sector saw profits shrink and a few companies suffered insolvencies caused by huge losses. However, in spite of the disadvantageous macroeconomic conditions, financial markets in Taiwan continued to function well in 2012. Financial institutions enjoyed considerably increasing profits and good asset quality, while the capital level of all financial institutions, except for a few insurance companies, remained satisfactory. The three main payment systems functioned smoothly as well. Therefore, on the whole, Taiwan's financial system remained stable.

In face of the dramatic changes in economic and financial conditions both domestically and globally, especially the evolving European sovereign debt crisis, the US fiscal cliff and the Japanese yen's sharp depreciation caused by the BOJ's easing monetary policies, the CBC continually monitored the above impacts on the domestic economy and financial system and implemented corresponding monetary and foreign exchange policies. The FSC also reviewed and amended several laws and regulations and took efforts to strengthen financial supervision, all aimed at maintaining the soundness of financial institutions and stability of the financial system.

4.1 Measures taken by the CBC to promote financial stability

Adopting sound monetary policies to address the economic environment and maintain price stability

Policy rates remained unchanged in 2012

Owing to global economic uncertainties, moderate domestic economic recovery and the alleviation of inflation pressures, the CBC kept policy rates unchanged[73] in 2012 to maintain price and financial stability and promote economic growth.

[73] From 1 July 2011, the CBC has kept the discount rate, the rate on accommodations with collateral, and the rate on accommodations without collateral unchanged at 1.875%, 2.25%, and 4.125%, respectively.

Monetary growth was adequately controlled to support economic activity

To address slowing economic recovery, the CBC adopted open market operations to maintain reserve money at appropriate levels. In 2012, under the watchful management of the CBC, excess reserves of banks were maintained at a suitable level, and the total loans and investments of all banks grew at 5.08%, while M2 grew by 4.17% year on year, both of which were higher than the GDP growth of 1.26% in the same year. This illustrates that market liquidity was sufficient to support economic activity.

Inflation rate maintained at low and stable levels

Relative to other countries, Taiwan's inflation rate remained low and stable. From 1998 to 2012, the average annual growth rate of inflation stood at only 1.06%, with a low volatility of 1.17%. This benefits the purchasing power of citizens and helps people to make reasonable economic decisions. The prudential monetary policies conducted by the CBC have been positively recognized by credit rating agencies.[74]

The CBC will continue with timely implementation of appropriate monetary policies

Mindful of current domestic and foreign economic conditions, especially the aftermath of the European sovereign debt crisis and the US debt ceiling and fiscal cliff problems, as well as the impacts of Japanese yen depreciation on domestic economic and financial conditions, the CBC will closely monitor new developments and implement corresponding monetary policies in a timely manner.

Continually implementing risk management policies for real estate loans to ensure the soundness and financial stability of banks

To urge banks to strengthen their risk management of real estate loans, the CBC has implemented targeted prudential measures against land collateralized loans and housing loans in specific areas since June 2010. The effort has been come to fruition. Furthermore, in view of banks having granted high-value housing loans with overly high loan-to-value (LTV) ratios, which went against sound principles of credit risk management and undermined banks' soundness, the CBC announced an additional macroprudential measure targeting high-value

[74] Standard & Poor's indicated in its 2012 Taiwan Sovereign Rating Report that Taiwan's Central Bank has been flexible in its monetary policy while pursuing a low and stable inflation environment. Another credit rating agency, Moody's, also pointed out in its 2012 report that a prudential monetary policy has contributed to Taiwan's low and stable inflation, superior to other countries with Aa and Aaa ratings.

housing loans in June 2012. The key points of the new measure include:

- High-value housing loans refer to the loans for purchasing any one of the properties listed below that are registered as housing:
    - Properties located in Taipei City or New Taipei City with the appraisal value or trading value exceeding NT$80 million.
    - Properties located in the area outside of Taipei City or New Taipei City with the appraisal value or trading value exceeding NT$50 million.
- The restrictions on loan terms include: (1) no grace period; (2) the maximum of loans granted should not exceed 60% of the appraisal value or the trading value of the collateral, whichever is the lower; (3) no additional loans against the same collateral for purposes of home refurbishments, current operation or others.

After the implementation of the above measures, the average LTV ratio of high-value housing loans dropped from 80%-90% pre-restriction to 56.74% in April 2013.

Implementing a managed float regime to stabilize the exchange rate of the NT dollar

Considering that Taiwan is a small highly open economy with large amounts of short-term capital frequently flowing in and out, the CBC implements a flexible managed floating exchange rate regime to ensure the stability of the domestic economy and financial markets. The exchange rate of the NT dollar is in principle guided by the market mechanism. Only when there are aberrations - such as an abnormally large influx or outflow of short-term capital and seasonal changes causing the exchange rate to over-fluctuate with adverse implications - that could destabilize the domestic economy and financial markets, does the CBC step in to maintain an orderly foreign exchange market.

In addition, the CBC will continue to monitor the impacts from the recent monetary easing policy in Japan and Japanese yen depreciation on the NTD exchange rate. Should there be an inordinate inflow or outflow of capital, the CBC will take actions to maintain an orderly exchange market, as its duty requires.

Continuing to open the market for new foreign currency derivatives and expand foreign currency call loan and swap markets

In order to expand the services provided by financial institutions and satisfy customer demand for portfolio management and risk hedging, the CBC has continually granted licenses to investment trusts, investment consulting firms, securities firms and bills houses to provide onshore and offshore financial services and products. To date, 24 foreign currency derivative products and 5 NTD-linked derivative products have been approved. The total transaction volume of these products totaled US$3.76 trillion in 2012.

Furthermore, the CBC continued to finance banks through foreign currency call-loans and currency swaps in order to meet the funding needs of industry and maintain sufficient foreign currency liquidity in the domestic banking system. In 2012, the turnover amounts of the Taipei call-loan and interbank USD/NTD currency swaps markets were US$1.81 trillion and US$1.13 trillion, respectively, and the outstanding of both markets at the end of the year stood at US$22.3 billion and US$145 billion, respectively.

4.2 Measures undertaken by the FSC to maintain financial stability

From 2012 onwards, the FSC continually amended financial laws and regulations, and undertook several supervisory reforms in order to ensure financial stability.

Strengthening risk management of financial institutions

- Amending the Regulations Governing the Capital Adequacy and Capital Category of Banks and related regulations to raise the quality and level of capital in accordance with the international capital standards stated in Basel III (Box 5).

- Setting the minimum loan coverage ratio[75] of 1% as an important criterion when reviewing the applications submitted by banks, and gradually raising the ratio of loan loss provisions to performing credit assets to above 1%.

- Revising bank soundness criteria to require a bank intending to distribute cash dividends that exceed 15% of its total capital to meet the following conditions: (1) the post-distribution legal reserves of the bank must be higher than 75% of paid-in capital; and

[75] When calculating the loan coverage ratio (allowance for bad debts to total loans), loans to the government have been deducted from the denominator.

(2) the post-distribution capital adequacy ratio and Tier 1 capital ratio must be at least 12.5% and 10.5%, respectively.

- Establishing a mechanism for regulating the aggregate credit risk exposures of domestic banks to Mainland China for the purpose of strengthening banks' management of concentration risk.

Urging financial institutions to reinforce risk management of real estate-related loans and investments

- Urging financial institutions to strengthen risk management of real estate loans, such as introducing new supervisory measures and conducting target examinations on banks with highly concentrated real estate lending.

- Requiring insurance companies to comply with the instructed criteria of immediate use and reasonable benefit when acquiring usable real estate, and to strengthen internal controls regarding real estate investments.

Enhancing corporate governance

- Issuing regulations requiring listed companies to adopt electronic voting systems for shareholder meetings in order to encourage shareholders to actively participate in company operations. According to the statistics, of the 113 listed companies that are subject to the requirements, 83 had already adopted electronic voting systems for shareholder meetings in 2012.

- Revising related regulations to strengthen the internal governance and transparency of publicly offered companies, such as (1) establishing asset acquisition and disposal procedures, managing and publicly disclosing interested party transactions, and setting up remuneration committees, etc.; and (2) strengthening board of directors meetings procedures for public companies, such as disclosing the exercise of recusal of directors.

- Promulgating a set of rules to define the range of companies that are required to establish an auditing committee for the purposes of strengthening internal control mechanisms, protecting shareholders' interests and ensuring the sound operation of companies.

Promoting risk-oriented supervision and differential examinations to strengthen financial examination effectiveness

- Periodically disclosing the key focal points of examinations and main examination findings so as to remind financial institutions to take heed; and editing financial inspection educational materials for public and financial industry use.

- Adopting risk-focused supervision and implementing differentiation in the frequency and scope of on-site examinations for seven categories of financial institutions including banks; and conducting target examinations with a supervisory focus and drawing public attention to important issues.

Strengthening the financial soundness and solvency of the insurance industry

- Adopting measures to improve the effective usage of funds and financial soundness of the insurance industry, including (1) requiring that the special reserves set aside by non-life insurance companies on or before 31 December 2012 will continue to be listed as liabilities and will be transferred to special reserves against natural disasters; (2) allowing life insurance companies to establish foreign exchange valuation reserve mechanisms to more flexibly manage exchange rate risk and lower hedging costs; and (3) raising the maximum amount that an insurance company can invest in a company for the purpose of participating in a public infrastructure project from 25% of the investee's paid-in capital to 35%, in order to raise the investment willingness and capabilities of insurance companies.

- Urging life insurance companies to plan out a schedule for enhancing policy reserves for in-force contracts, and requiring those who wish to distribute earnings to submit a policy reserves consolidation proposal first; and modifying the RBC rules to allow life insurance companies to use the arithmetic mean of stock prices for each day during the half year preceding the valuation day, instead of year-end closing prices, when factoring in unrealized gains and losses on stocks, in order to alleviate the impacts of short term stock market fluctuations on the stability of capital adequacy ratios.

Reinforcing the disclosure of market information

- Supervising the TWSE and related institutions to set up warrant information disclosure platforms from July 2012 onwards in order to increase transparency and mitigate information asymmetry in the warrant market.

- Entrusting Taiwan's GTSM to set up an OTC derivatives trade repository (TR) aimed at strengthening supervision and raising market transparency. The database will be completed at the end of June 2013.

- Amending requirements governing public tender offerings to protect shareholder interests and reinforce the disclosure and price reasonability of the offerings; and amending relevant regulations to reinforce the management of capital raising activities and public disclosures of foreign issuers.

Actively promoting companies to adopt the IFRSs

The FSC required Taiwan's companies to fully adopt the IFRSs via a two-phase process. In the first phase, adopters, including listed companies and primary financial institutions, have started to compile financial reports in accordance with IFRSs from 2013 onwards. Moreover, the FSC has completed the revision of related laws and regulations and has provided reference materials to the public and training for employees from applicable companies.

Appendix: Financial soundness indicators

Table 1: Domestic Banks

Unit: %

Items \ Year (end of year)	2007	2008	2009	2010	2011	2012
Earnings and profitability						
Return on assets (ROA)	0.28	0.12	0.28	0.57	0.58	0.67
Return on equity (ROE)	4.32	1.86	4.52	9.08	9.27	10.33
Net interest income to gross income	66.38	78.53	59.54	59.52	62.61	62.29
Non interest expenses to gross income	54.07	62.97	59.81	55.99	55.44	52.93
Gains and losses on financial instruments to gross income	9.08	3.91	16.43	9.93	6.92	11.63
Personnel expenses to non-interest expenses	55.93	54.80	57.56	57.67	57.71	58.61
Spread between lending and deposit rates (basis points)	1.82	1.75	1.22	1.36	1.41	1.42
Asset quality						
Non-performing loans to total loans	1.83	1.54	1.15	0.61	0.43	0.41
Provision coverage ratio	64.07	69.48	90.35	157.32	250.08	269.07
Capital adequacy						
Regulatory capital to risk-weighted assets	10.80	11.04	11.83	11.96	12.06	12.54
Tier 1 capital to risk-weighted assets	8.50	8.42	9.03	9.18	9.08	9.49
Capital to total assets	6.42	6.12	6.25	6.31	6.29	6.59
Non-performing loans net of provisions to capital	12.24	10.33	6.41	2.91	R -0.38	-0.82
Liquidity						
Customer deposits to total loans	117.98	122.34	133.13	132.28	128.66	129.06
Liquid assets to total assets	10.58	12.69	15.20	10.46	11.05	9.77
Liquid assets to short-term liabilities	15.66	18.39	20.98	14.65	15.67	14.00

Table 1 : Domestic Banks (cont.)

Unit: %

Items \ Year (end of year)	2007	2008	2009	2010	2011	2012
Credit risk concentration						
Household loans to total loans	46.59	45.48	46.41	46.67	46.06	46.36
Corporate loans to total loans	43.90	45.27	43.26	43.66	44.91	44.82
Large exposures to capital	136.85	142.38	142.48	141.36	141.16	125.50
Gross asset positions in financial derivatives to capital	10.35	21.92	8.17	8.54	7.57	5.84
Gross liability positions in financial derivatives to capital	5.44	16.48	8.44	10.02	7.05	6.11
Sensitivity to market risk						
Net open position in foreign exchange to capital	5.02	2.41	2.43	2.72	2.71	2.91
Foreign-currency-denominated loans to total loans	15.57	16.54	16.22	16.28	18.14	19.04
Net open position in equities to capital	30.88	24.99	25.69	24.48	24.15	22.13
Foreign-currency-denominated liabilities to total liabilities	22.20	20.41	19.48	20.31	21.65	21.84

Notes: 1. The data of earnings and profitability in 2006 and 2007 exclude Chinese Bank and Bowa Bank.
2. The figuers for "Spread between lending and deposit rates"exclude the data of preferred deposits rates of retired government empolyees and central government lending rates.
3. Figures with "R" are revised data.

Table 2: Non-financial Corporate Sector

Units: %, times

Items \ Year (end of year)	2007	2008	2009	2010	2011	2012
Total liabilities to equity						
Corporate sector	82.20	90.02	86.88	85.59	96.66	-
TWSE-listed companies	63.28	67.54	65.43	68.45	73.53	76.72
OTC-listed companies	78.21	89.56	62.75	70.57	66.25	67.75
Return on equity						
Corporate sector	13.90	4.76	8.07	13.32	8.66	-
TWSE-listed companies	18.04	8.08	9.58	15.36	10.07	9.39
OTC-listed companies	8.20	-5.98	6.91	13.20	8.32	6.60
Net income before interest and tax / interest expenses (times)						
Corporate sector	10.78	3.39	8.54	16.73	9.64	-
TWSE-listed companies	19.07	8.26	15.03	29.75	18.89	16.16
OTC-listed companies	6.79	-	10.85	17.34	14.82	11.23

Notes: 1. The data of all corporates are from JCIC, and those of TWSE-listed and OTC-listed corporates are from TEJ.
2. 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.

Table 3: Household Sector

Unit: %

Items \ Year (end of year)	2007	2008	2009	2010	2011	2012
Household borrowing to GDP	81.47	81.92	84.74	R 82.42	R 83.08	83.77
Borrowing service and principal payments to gross disposable income	42.09	40.72	36.80	R 36.04	R 36.93	37.98

Notes: 1. The figures of disposable income for 2012 are CBC estimates.
2. Figures with "R" are revised data.

Table 4: Real Estate Market

Unit: %

Items \ Year (end of year)	2007	2008	2009	2010	2011	2012
Land price index	98.92	100.51	100.38	105.93	112.05	118.78
Residential real estate loans to total loans	30.14	29.16	30.57	29.99	28.64	28.21
Commercial real estate loans to total loans	11.84	12.14	12.47	13.25	13.70	14.14

Note: Figures of Land price index are on a end-September basis (March 2008 = 100).

Table 5: Market Liquidity

Unit: %

Items \ Year (end of year)	2007	2008	2009	2010	2011	2012
The turnover ratio of trading value in stock market	153.28	145.45	178.28	136.74	119.87	97.33
The monthly average turnover ratio in bond market	74.65	47.93	31.56	32.40	19.39	12.06

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 2012 include Bank of Taiwan, Land Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, Chang Hwa Commercial Bank, 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, Citibank 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, DBS Bank (Taiwan) Ltd., 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 39 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 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 banking 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 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 surpluses, 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

ABS	Australian Bureau of Statistics
ANIE	Asian Newly Industrialized Economies
APRA	Australian Prudential Regulation Authority
ASEAN	Association of South East Asian Nations
BCBS	Basel Committee on Banking Supervision
BICRA	Banking Industry Country Risk Assessment
BNM	Bank Negara Malaysia
BOC	Bank of China
BOJ	Bank of Japan
BOK	Bank of Korea
BOT	Bank of Thailand; Bank of Taiwan
BSI	Banking System Indicator
CAD	Canadian dollar
CBC	Central Bank of the Republic of China (Taiwan)
CCHS	Check Clearing House System
CHF	Swiss Franc
CIFS	CBC Interbank Funds-Transfer System
CPI	Consumer price index
DBUs	Domestic banking units
DGBAS	Directorate-General of Budget, Accounting and Statistics of the Executive Yuan
D-SIBs	Domestic Systemically Important Banks
DRAM	Dynamic random access memory
ECB	European Central Bank
ESM	European Stability Mechanism
ETFs	Exchange-traded funds
EU	European Union

EUR	Euro
FED	Federal Reserve System
FDIC	Federal Deposit Insurance Corporation
FOMC	Federal Open Market Committee
FSA	Financial Services Agency, Japan
FSB	Financial Stability Board
FSC	Financial Supervisory Commission
FSIs	Financial soundness indicators
FSS	Financial Supervisory Service, South Korea
FX	Foreign exchange
G20	Group of Twenty
GBP	British Pound
GDP	Gross domestic product
GIIPS	Greece, Ireland, Italy, Portugal, and Spain
GNP	Gross national product
GPD	Generalized Pareto distribution
G-SIBs	Global Systemically Important Banks
GTSM	Gretai securities market
HKMA	Hong Kong Monetary Authority
IMF	International Monetary Fund
IFRSs	International Financial Reporting Standards
IRS	Interbank Remittance System
JCIC	Joint Credit Information Center
JGBs	Japanese government bonds
JPY	Japanese Yen
J-REITs	Japan Real Estate Investment Trust
KRW	Korean Won
LCR	Liquidity coverage ratio
LOHAS	Lifestyles of Health and Sustainability
LTRO	Longer-term Refinancing Operation
LTV	Loan to value
MAS	Monetary Authority of Singapore
MOF	Ministry of Finance

MOI	Ministry of Interior
MPI	Macro-prudential indicator
MYR	Malaysian Ringgit
NPL	Non-performing loan
NSFR	Net stable funding ratio
NTD	New Taiwan dollar
OBUs	Offshore banking units
OMT	Outright Monetary Transactions
OSUs	Offshore securities units
OTC	Over-the-counter
PBC	People's Bank of China
QE	Quantitative easing
RBC	Risk-based capital
RMB	Renminbi
ROA	Return on assets
ROE	Return on equity
S&P	Standard and Poor's
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
TCH	Taiwan clearing house
TEJ	Taiwan Economic Journal Co., Ltd
TFT-LCD	Thin film transistor-liquid crystal display
TR	Trade repository
TWSE	Taiwan Stock Exchange
USD	US dollar
VaR	Value at Risk
WPI	Wholesale price index

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