



Central Bank of the Republic of China (Taiwan)

Financial Stability Report

May 2014 | Issue No. 8





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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 2014.

Abstract

The global economy proceeded at a benign pace of growth as liquidity expansion was gradually replaced with investment-driven growth, but latent risks lingered with regard to economic development. In 2013, the Taiwanese economy grew moderately along with price stability. Financial markets kept evolving and the health of financial institutions was sound. These, coupled with the payment systems operating in an orderly manner, underpinned a stable financial system. In an attempt to avoid concentrations of credit risk by domestic banks, the CBC and the Financial Supervisory Commission (FSC) successively urged banks to reinforce their risk management of real estate loans, so as to facilitate the soundness of banks' operations.

In 2013, on the back of continuous easy monetary policies in major economies, global recovery proceeded at a mild pace and international financial markets broadly improved. In advanced economies, the US and Japanese stock markets were underscored by marked upward trends, while the pressures on European financial markets alleviated. Conversely, emerging economies saw heightening financial risks due to some countries facing weakening fundamentals, coupled with bouts of turmoil in stock and foreign exchange markets triggered by the Board of Governors of the Federal Reserve System (Fed) signaling steps toward normalizing monetary policy. Global economic growth is expected to proceed at a sustainable pace in 2014. However, the international spillovers of the US exiting from unconventional monetary policy, a slowdown in economic growth along with rising shadow banking risks in China, and escalating geopolitical risks related to Ukraine could pose threats to global financial stability.

Taiwan's economy grew moderately alongside mild inflationary pressures in 2013, bolstered by steady global economic expansion. Current account surpluses persisted and foreign exchange reserves registered US\$416.8 billion at end-December, reflecting a robust capacity to service external debt. However, ongoing reform in strengthening fiscal backstops is needed amid accumulating government debt. With regard to the non-financial sector, the financial health of the corporate sector improved as a result of increasing profitability and declining leverage ratios in listed companies. Household borrowing kept increasing; however, the credit quality remained satisfactory. Real estate market prices stayed high and the mortgage burden

remained heavy, posing challenges for the future.

Against the backdrop of stronger international and domestic economic and financial conditions, the financial system in Taiwan remained stable in 2013. As for financial markets, bill and bond issuance in the primary market expanded, while foreign exchange markets remained dynamically stable and stock indices trended up. With respect to financial institutions, the profitability of financial institutions increased dramatically, hitting a 10-year-peak over the same period. The average non-performing loan (NPL) ratio of domestic banks merely posted 0.39% at the end of 2013 and the NPL coverage ratio reached 311.65%, reflecting sound asset quality and abundant loan loss provisions. The average capital adequacy ratios of domestic banks stood at 11.83%, which was well above the statutory minimum requirement of 8%, and there was abundant liquidity in the financial system. Bills finance companies and life insurance companies both experienced reinforcing business performance and their financial conditions exhibited sound fundamentals. Underpinned by strengthening effectiveness of financial infrastructure, the major payment systems operated in an orderly fashion during 2013. Moreover, in an attempt to create a more competitive financial environment, the foreign currency clearing platform was introduced in March 2013 and its function was gradually expanded.

To pursue the operating objective of promoting financial stability, the CBC successively adopted appropriate monetary policy measures in 2013 in response to the uncertainties surrounding the evolution of global and domestic economic and financial conditions. The underlying measures included maintaining the growth of broad monetary aggregates at appropriate levels and stable policy rates. In addition, the CBC implemented a flexible managed float regime to uphold the dynamic stability of the NT dollar exchange rate. To promote the soundness of bank operations, the CBC also continued to implement risk management policies on real estate loans. Furthermore, the CBC opened up new foreign currency financial instruments and expanded foreign currency call loan and swap markets. Meanwhile, the CBC kept improving financial stability assessment instruments in the hope of strengthening the effectiveness of financial stability assessment.

Correspondingly, the FSC not only facilitated financial deregulation and upheld measures to support the development of the financial industry, but also strengthened the risk management of real estate loans granted by the domestic banking sector and monitored its exposures to Mainland China. To enhance the capacity of firms to absorb losses, the FSC urged financial institutions to increase their capital and provisions levels. In addition to asking the insurance industry to improve its financial structure, the FSC broadened the channels for insurers' uses

of funds and enhanced the exit mechanism for problem insurance companies. Moreover, several measures aimed at boosting the sound development of securities markets were taken by the FSC, for example, an improvement in the surveillance of backdoor listings, the development of the RMB Formosa Bond Market, as well as the introduction of the operation of Go Incubation Board for Startup and Acceleration Firms (GISA). All the aforementioned measures facilitated the maintenance of financial stability objectives.

I. Overview

Macro environmental factors potentially affecting financial sector

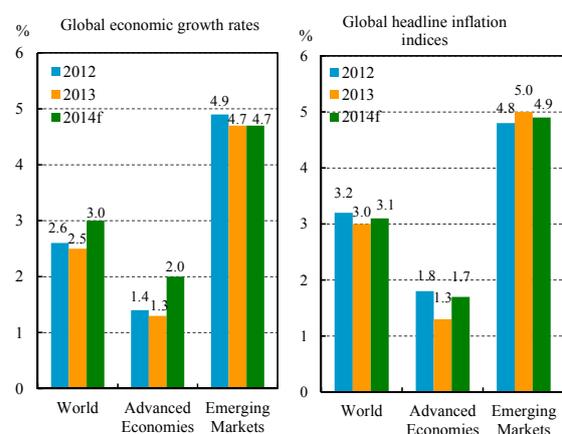
Global economy saw subdued growth, while financial markets showed signs of improvement

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

In 2013, the global economic recovery proceeded at a cautious pace. In the US, despite a warming housing market and an improving labor market, economic growth momentum waned as a result of fiscal retrenchment. The downturn in the euro area mitigated with the subsiding of the sovereign debt crisis and accelerating export growth. Meanwhile, Japan saw an economic growth impetus, underpinned by the stimulus package of the Abenomics program. However, due to concerns over the possible exit of the quantitative easing monetary policy (QE) in the US and the impact of weakening demand in major international commodities markets, economic growth in emerging economies declined.

From 2014 onwards, US domestic consumption momentum picked up, benefiting from continued robust labor market conditions. This, together with the euro area resuming growth, presaged that advanced economies would be major contributors to a sustainable pace of global economic recovery. Global Insight predicts world real gross domestic product (GDP) growth to reach 3.0% in 2014, higher than the 2.5% recorded a year earlier. Real GDP in advanced economies is predicted to nudge up to 2.0%, while output in emerging economies is

Chart 1.1 Global economic growth rates and headline inflation indices

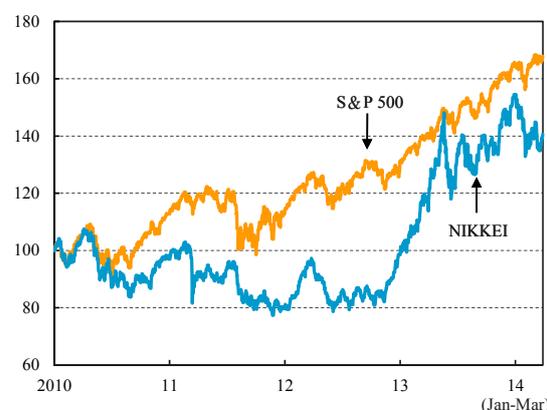


Note: Figures for 2014 are Global Insight estimates.
Source: Global Insight (2014/4/15).

forecast to grow moderately and reach 4.7% in 2014¹ (Chart 1.1).

Regarding consumer prices, thanks to a continued fall in the international prices of cereals, global inflation moderated in 2013 compared to the previous year, with the consumer price index (CPI) inflation rate registering 3.0%, down from 3.2% in 2012. CPI inflation rates in advanced economies declined, while those in the emerging economies increased marginally. From the beginning of 2014, international cereal prices moved up. Global Insight predicts the global CPI inflation rate to slightly rise to 3.1% in 2014 (Chart 1.1).

Chart 1.2 Performance of US and Japan stock indices



Note: 1 January 2010 = 100.

Source: Bloomberg.

International financial markets improved but global financial risk elevated

In the first half of 2013, global financial risks alleviated, underpinned by appropriate monetary policy stances and precautionary measures implemented by numerous countries. From the second half of 2013 onwards, concerted monetary easing by the major economies and improvement in fiscal conditions in the euro area contributed to allaying tensions in financial markets. However, the spillovers emanating from transitions to less accommodative monetary policy expansions in advanced economies led to the build-up of global financial risks.

In 2013, the US stock indices trended up noticeably as the Board of Governors of the Federal Reserve System (Fed) decided to maintain an accommodative policy. In Japan, the announcement of the Quantitative and Qualitative Monetary Easing (QQE) by the Bank of Japan (BOJ) successfully led to yen depreciation and propelled its stock market to rally (Chart 1.2). However, while banks in the euro area periphery economies still faced the challenges of elevated funding costs and deteriorating asset quality, emerging markets were affected by weakening fundamentals and the substantial impacts of monetary policy transitions in advanced economies.

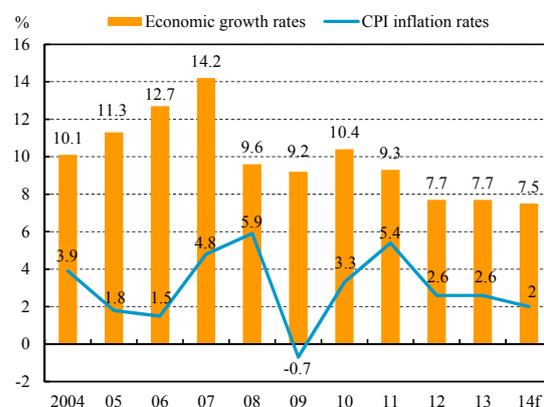
¹ Global Insight Estimate on 15 April 2014.

Mainland China's economic growth momentum waned, but off-balance sheet credits soared

In the first half of 2013, Mainland China's economic growth slowed down due to decreases in both infrastructure investments and excess capacity in some industries.² In Q3, thanks to a series of measures to maintain steady growth taken by the State Council in late July, economic growth rebounded and registered an annual growth of 7.7% for the whole year, the same level as in 2012. Considering that economic transition may dampen economic growth, Global Insight projects Mainland China's economic growth in 2014 to moderate to 7.5% (Chart 1.3).

Consumer prices in Mainland China remained stable with the CPI inflation rate registering 2.6% in 2013 (Chart 1.3), lower than the official goal of 3.5%. The growth of building sales prices in 70 medium-large cities began to decline after the government took a series of measures to curb housing price rises. Meanwhile, aggregate financing to the real economy³ hit a new high as off-balance sheet credits, representing a proportion of the shadow banking system,⁴ increased rapidly (Chart 1.4). Although Mainland China has strengthened supervision on shadow banking, close monitoring of subsequent developments is still needed.

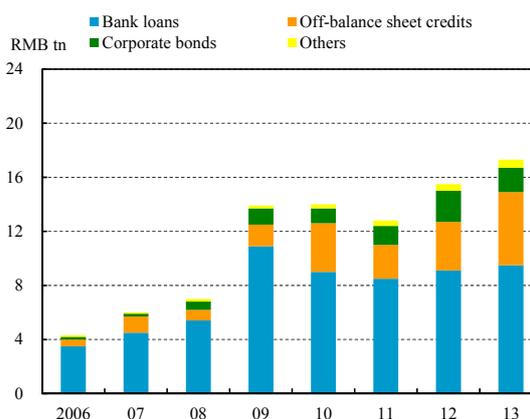
Chart 1.3 Economic growth rates and CPI inflation rates of Mainland China



Note: Figures for 2014 are Global Insight projections.

Sources: National Bureau of Statistics of China and Global Insight (2014/4/15).

Chart 1.4 Aggregate financing to the real economy of Mainland China



Source: PBC.

² Industries with excess capacity include solar energy, iron and steel, cement and aluminum, etc.

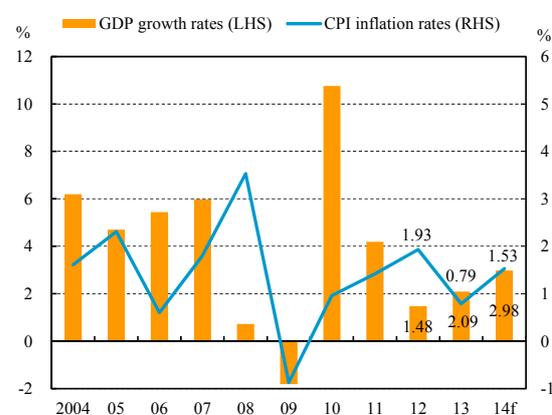
³ Aggregate financing to the real economy refers to the total funding of credits provided by the financial system to the real economy over a period of time. Therefore, it is an incremental amount.

⁴ According to Document No. 107 issued by the State Council of Mainland China in 2013, shadow banks fall into three categories: (1) unlicensed and unregulated credit intermediaries, including online finance companies and third-party wealth management institutions, etc.; (2) unlicensed and lightly regulated credit intermediaries, including credit guarantee companies and micro-finance companies, etc.; and (3) services provided by licensed institutions that lack sufficient regulation or avoid regulation, including money market funds, asset-backed securitization and certain wealth management services, etc.

Domestic economy expanded slightly, while consumer prices rose mildly

Backstopped by growing exports and better performance of investment and private consumption in Q2 and Q4, the annual economic growth rate reached 2.09% in 2013, higher than the 1.48% registered in the previous year. Consumer prices rose mildly. Due to a higher base of 2012 resulting from electricity and gasoline price hikes, the CPI inflation rate for 2013 dipped to 0.79%, lower than the 1.93% of the previous year (Chart 1.5).

Chart 1.5 Economic growth rates and CPI inflation rates of Taiwan



Note: Figures for 2014 are forecast by DGBAS.

Source: DGBAS (2014/5/23).

Looking ahead, on account of anticipated growth in exports, private consumption and investment, the Directorate-General of Budget, Accounting and Statistics (DGBAS) forecasts Taiwan's economic growth rate to improve to 2.98%⁵ in 2014. As for domestic prices, considering that the rising prices of materials exerted upward pressure on food prices, the DGBAS predicts the CPI inflation rate to rise to 1.53%, higher than the level in the previous year (Chart 1.5).

At the end of 2013, the scale of external debt revealed a moderate level while foreign exchange reserves remained at a sufficient level of US\$ 416.8 billion, implying that Taiwan's foreign exchange reserves have a robust capacity to service external debt. Regarding the government's fiscal position, fiscal deficits accounted for 1.95% of annual GDP in 2013, lower than that in the previous year. Outstanding public debt at all levels of government expanded steadily to NT\$6.05 trillion at the end of 2013, well above the figure posted a year earlier. In response, the Ministry of Finance proposed the "Fiscal Health Plan" that seeks to urge related government agencies to improve their fiscal situations in the hope of enhancing a sound fiscal system.

⁵ The figures are based on a DGBAS press release on 23 May 2014.

Non-financial sectors

Corporate sector

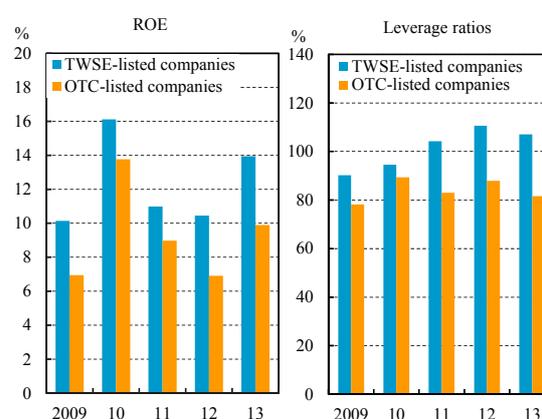
Benefiting from the global recovery and stable economic growth in Mainland China, the profitability of Taiwan Stock Exchange (TWSE) listed and over-the-counter (OTC) listed companies broadly improved in 2013 compared to that of the previous year, especially in the semiconductor and the trading and consumer goods industries which both recorded a marked rise in profits. The leverage ratio for TWSE-listed and OTC-listed companies both declined somewhat due to a substantial increase in equity (Chart 1.6), while short-term debt servicing capacity strengthened as a result of improving profitability.

The credit quality of corporate loans stayed satisfactory as the non-performing loan (NPL) ratio was maintained at a low level of 0.63%. However, global economic recovery is still clouded by uncertainties and the normalization of US accommodative monetary policy may drive interest rates up and increase the debt-servicing burdens of firms. Moreover, the relationship between Taiwan's and Mainland China's TFT-LCD panel and petrochemical industries has shifted from cooperation to competition. These, coupled with Mainland China's economic transition, might affect future profitability of the corporate sector.

Household sector

Total household borrowing saw a continued expansion in 2013 and reached NT\$12.56

Chart 1.6 Return on equity and leverage ratios in corporate sector



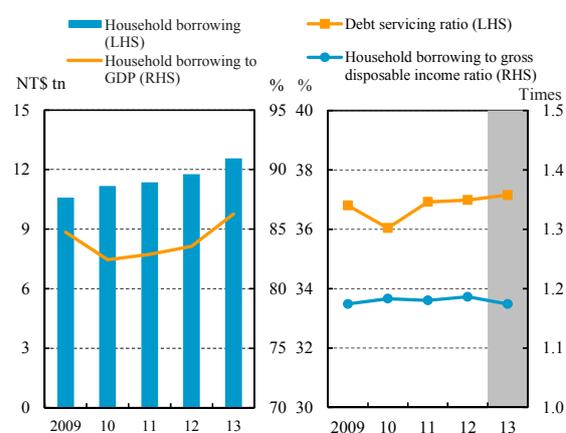
Notes: 1. Figures are from consolidated financial statements, and those from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. Return on equity = net income before interest and tax / average equity.

3. Leverage ratio = total liabilities / total equity.

Sources: JCIC and TEJ.

Chart 1.7 Household indebtedness and debt-servicing capacity



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

Sources: CBC, JCIC and DGBAS.

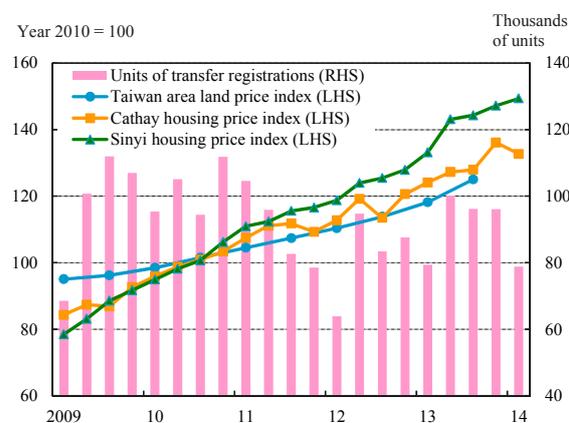
trillion at the end of the year, equivalent to 86.26% of annual GDP. As total household borrowing grew at a slower pace than disposable income in 2013, the ratio of household borrowing to gross disposable income shrank to 1.17 at the end of the year, reflecting that the household debt burden lessened. However, due to the increase in short- and medium-term loans, the debt servicing ratio rose to 37.15% in 2013, slightly higher than the 36.98% recorded in 2012 (Chart 1.7), indicating that short-term household debt servicing pressure increased somewhat.

In 2013, the credit quality of household borrowings from banks remained sound, as the NPL ratio continuously dropped to a fifteen-year low of 0.31% at year-end. This, coupled with a sliding domestic unemployment rate and increasing regular earnings, will be favorable to strengthen household debt-servicing capacity.

Real estate market

In the first half of 2013, trading volume in the real estate market increased in Q2 boosted by issues regarding the Taoyuan Aerotropolis, the upgrading of cities and counties to special municipalities as well as pan-Taipei metropolitan area MRT construction. In the second half of the year, housing market sentiment turned conservative and the trading volume declined slightly owing to concerns over an early exit of US quantitative easing (QE) in addition to the proposed amendment of the *Specifically Selected Goods and Services Tax Act* by the Ministry of Finance.

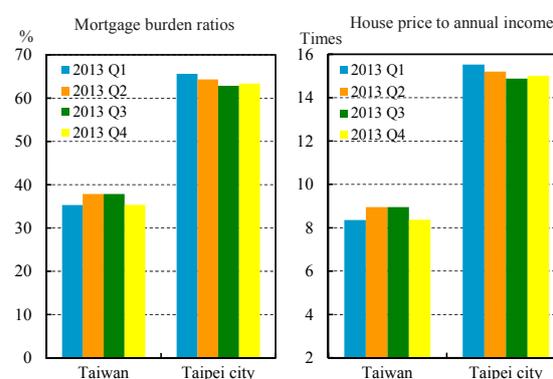
Chart 1.8 Building ownership registrations and land and house price indices



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

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

Chart 1.9 Mortgage burden ratios and house price to income ratios



Notes: 1. Mortgage burden ratio = median of housing loans monthly payments / median of household monthly disposable income.
 2. Housing price was taken from the residential trading price data of property transaction price registration of the Department of Land Administration, MOI.

Source: MOI.

The average growth rates of the Cathay housing price index (for new constructions) and Sinyi housing price index (for existing buildings) for 2013 were 9.61% and 14.43%, respectively, both higher than those in 2012. Meanwhile, the land price index also trended up due to an active market (Chart 1.8).

With rising housing prices, the mortgage burden ratio for Taiwan stayed high in 2013 and registered 35.4% in Q4. The house price to income ratio during the same period was 8.4 (Chart 1.9), demonstrating that the mortgage burden was heavy.

Assessment of the financial sector

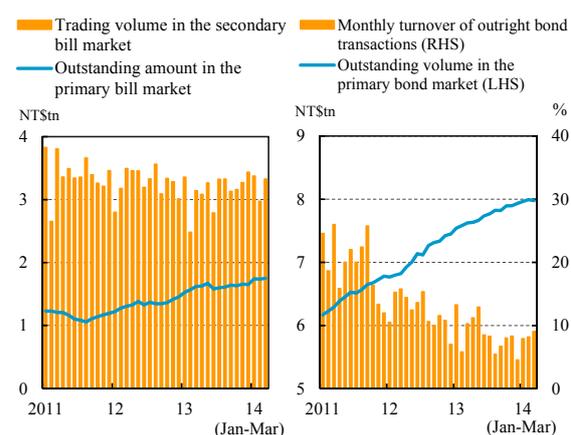
Financial markets

The primary bill and bond markets gained momentum, while the secondary markets remained sluggish

In 2013, the outstanding amount of bills issuance saw a notable increase in the primary bill market, but trading volumes in the secondary market contracted slightly as massive amounts of commercial paper were bought by banks and then held to maturity. A matching trend can also be found in the bond markets (Chart 1.10). In the beginning of 2014, the secondary bill and bond markets remained sluggish.

With regard to short-term market rates, in 2013, 90-day commercial paper rates remained broadly stable in the first three quarters but began to trend slightly downwards from October. As for long-term market rates, from the middle of May onwards, 10-year government bond yields trended upwards amid concerns over the tapering of the Fed's asset purchases, pushing the yield spread to a relative high of 85 basis points at the end of 2013. At the end of March 2014, the yield spread had shrunk somewhat to 77 basis points.

Chart 1.10 Primary and secondary bill and bond markets



Notes: 1. Bonds include government bonds, corporate bonds and financial debentures.
 2. Monthly turnover = trading value in the month / average bonds issued outstanding.
 Average bonds issued outstanding = (outstanding at the end of the month + outstanding at the end of last month) / 2.

Sources: CBC and FSC.

Stock indices trended up, while volatility initially amplified then dampened

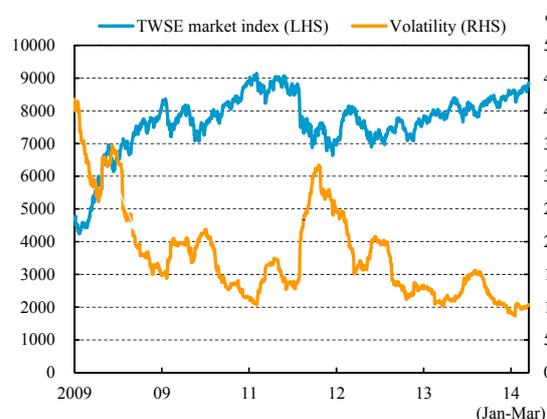
In early 2013, due to the robust performance of global stock markets, the Taiwan Stock Exchange Weighted Index (TAIEX) of the TWSE market kept trending upwards and hit a new high of 8,399 on 22 May. Subsequently, subdued by market concerns over the tapering of the Fed's asset purchases, the index reversed from ascending to descending. From September onwards, while the Financial Supervisory Commission (FSC) announced several stock market support measures and the Fed decided to maintain the pace of its monthly bond purchases, the TAIEX resumed its upward trend and registered 8,612 at year-end, for a rise of 11.86% year on year. In the beginning of 2014, the TAIEX continued on its upward path and reached 8,849 at the end of March, increasing by 2.76% from the end of 2013 (Chart 1.11).

In 2013, the volatility in the TAIEX declined after trending up, settling at 9.45% at the end of December. In early 2014, the volatility increased gradually as the TAIEX rebounded and ascended to 10.38% at the end of March (Chart 1.11).

The NT dollar exchange rate continued its depreciating trend but remained relatively stable compared to other currencies

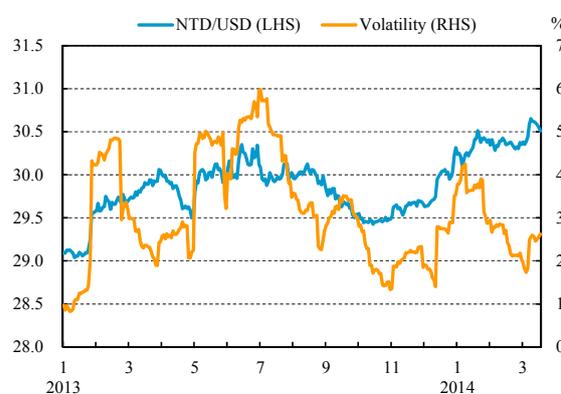
In the first half of 2013, the NT dollar exchange rate against the US dollar depreciated, with concerns over the BOJ deploying additional quantitative monetary easing and the possibility that the Fed may taper its stimulus package. It reached a yearly low of 30.350 on 24 June and then fluctuated within a narrow range. After the Fed announced in September to maintain the pace of its bond-buying program, the NT dollar rebounded. In December, the NT dollar weakened again as markets expected capital

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.

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.

outflows to the US in response to the Fed's decision to scale back its monthly bond-buying program from January 2014 (Chart 1.12).

The volatility in the NTD/USD exchange rate fluctuated between 0.8% and 6% in 2013, and registered a milder annual average of 3.18%. In early 2014, with the effect of international capital outflows from emerging markets caused by tapering bond purchases by the Fed, the volatility in the NTD/USD exchange rate trended upwards, but fell below 3% from the middle of February (Chart 1.12). Still, the NTD/USD exchange rate was relatively stable compared to the volatility in the exchange rates of major currencies (such as the Japanese yen) against the US dollar.

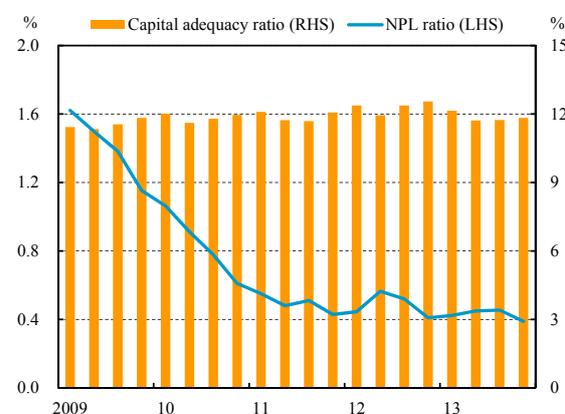
Financial institutions

Domestic banks

In 2013, the growth in loans granted by domestic banks increased moderately, arising from a contraction in loans to government agencies.

The NPL ratio kept touching new lows, implying satisfactory asset quality, along with ample loan loss reserves. The concentration of credit exposure in real estate loans gradually improved. Furthermore, outstanding credit to customers in Mainland China mounted rapidly but merely accounted for a small share of total credit. The average capital adequacy ratio at the end of 2013 was lower than the figure posted a year earlier due to the first adoption of IFRSs and Basel III (Chart 1.13). The estimated Value at Risk (VaR)⁶ for market risk exposures of domestic banks rose, but had limited influence on capital adequacy.

Chart 1.13 NPL and capital adequacy ratios of domestic banks



Note: Figures for the capital adequacy ratio from 2013 are on the Basel III and TIFRSs basis, while prior years are on the Basel II and ROC GAAP basis.

Source: CBC.

⁶ See Note 54 for the calculation of the estimated VaR for market risk.

The combined net income before tax for domestic banks reached a historical high of NT\$258.2 billion in 2013. However, due to a substantial increase in equity, the average return on equity (ROE) decreased slightly to 10.24% from 10.44% a year earlier, while the average return on assets (ROA) remained at 0.67% (Chart 1.14).

Life insurance companies

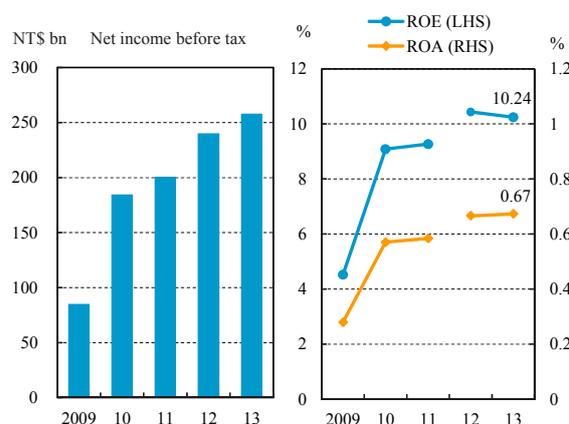
Life insurance companies reported a six-year high net income before tax of NT\$64 billion in 2013, significantly increasing by 91.02% over the previous year (Chart 1.15). This was mainly fueled by huge profits on foreign exchange derived from investment portfolios, as well as an interest income increase and a recovery of special reserves on unrealized property gains.

The average risk-based capital (RBC) ratio rose to 246.22% at year-end 2013 (Chart 1.15) from 228.95% a year earlier (excluding Kuo Hua Life Insurance Company), above the statutory minimum of 200%. However, the financial health of the few companies with RBC ratios below 200% warrants improving.

Bills finance companies

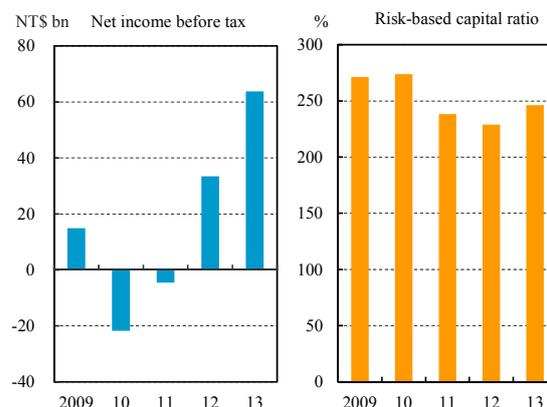
In 2013, the total assets of bills finance companies increased slightly. The outstanding of the commercial paper guarantees business gradually rebounded with increasing commercial paper issuance by private corporations for short-term funding, while credit quality remained satisfactory. The liquidity risk of bills finance companies remained high as a maturity mismatch between assets and liabilities still persisted.

Chart 1.14 Profitability of domestic banks



Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
 2. ROE = net income before tax / average equity.
 3. ROA = net income before tax / average total assets.
 Source: CBC.

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



Notes: 1. Figures for net income before tax from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
 2. Kuo Hua Life Insurance Company, which was taken into receivership by the Insurance Stabilization Fund in August 2009 and merged into Trans Globe Life Insurance Company in March 2013, is excluded.
 Source: FSC.

Nonetheless, the overall net income before tax of bills finance companies in 2013 maintained at a similar level to the previous year. The average capital adequacy ratio at year-end held steady at 13.95% (Chart 1.16), while each firm kept its ratio above 13%.

Financial infrastructure

Payment systems operated smoothly and credit card settlement was incorporated into the CBC's Interbank Funds-Transfer System (CIFS)

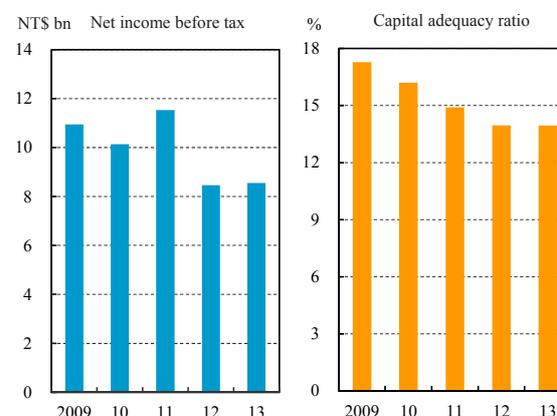
In 2013, all three systemically important payment systems⁷ in Taiwan operated in an orderly fashion. Moreover, to enhance the safety and efficiency of credit card settlements, the National Credit Card Center (NCCC) opened a clearing account in the CIFS to facilitate central settlements of payments between credit card acquirers and issuers from November 2013 onwards.

In addition, to further strengthen the financial infrastructure and to support the operation of the cross-strait renminbi clearing mechanism, the CBC mapped out the foreign currency clearing platform. The platform, established by the Financial Information Service Co., Ltd. (FISC), was inaugurated on 1 March 2013, providing the services of domestic and cross-strait US dollar and renminbi remittances, as well as a payment-verses-payment (PVP) mechanism for NTD/USD transactions, where payments of cross currency transactions were settled simultaneously.

Other reforms for financial supervisory regulations

To strengthen financial institutions' liquidity risk management, Taiwan has drafted local requirements on liquidity risk, based on the Liquidity Coverage Ratio (LCR) standards issued by the Basel Committee on Banking Supervision (BCBS), and is scheduled to follow the

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



Notes: 1. Figures for net income before tax from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. Figure for capital adequacy ratio in 2013 is on the TIFRSs basis, while prior years are on the ROC GAAP basis.

Source: CBC.

⁷ 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) operated by the Taiwan Clearing House.

recommended time frame of implementation set by the BCBS.

Moreover, in order to enhance the quality and transparency of financial reports and facilitate cross-country comparisons of financial statements, Taiwan will switch to the 2013 Traditional Chinese version of the International Financial Reporting Standards edition endorsed by the FSC (TIFRSs) in 2015. The 2013 TIFRSs is significantly different from the 2010 TIFRSs adopted in 2013. Its impacts will not only be on accounting, but also on entities' information systems, funding management and investor relationships.

Taiwan's financial system remained stable

In 2013, the domestic economy expanded slightly and profitability in the corporate sector was strengthened amid subdued global economic growth. Against this backdrop, domestic financial markets operated smoothly and financial institutions saw a marked rise in profits with sound asset quality. Most domestic financial institutions, except for a few life insurance companies, registered adequate capital ratios. The three major payment systems functioned along 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 necessitate increased vigilance. Above all, the spillovers from the gradual normalization of monetary policy in the US, waning economic growth and escalating risks of shadow banking in Mainland China, as well as the potential impacts of house price adjustments on the credit quality of domestic financial institutions' real estate loans deserve special attention. In response, the CBC will pay close attention and formulate 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

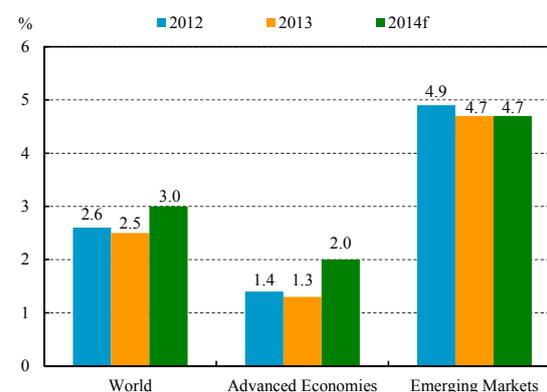
2.1.1 International economic conditions

Global recovery proceeded at a mild pace

In 2013, the global economic recovery proceeded at a cautious pace. In the US, growth momentum waned as a result of fiscal retrenchment, while the downturn in the euro area mitigated with the subsiding of the sovereign debt crisis. Meanwhile, Japan saw an accelerating growth impetus, underpinned by the stimulus package of the Abenomics program. In Mainland China, output growth seems to have leveled off due to structural economic transformation. In particular, declining economic growth in emerging economies reflected concerns about unexpectedly rapid normalization of US monetary policy and the impact of weakening demand in major international commodities markets.

From 2014 onwards, domestic consumption momentum in the US picked up, benefiting from continued robust labor market conditions. This, together with the euro area resuming growth following two consecutive years of downturn, presaged that advanced economies would mainly drive a sustainable pace of global economic recovery. Global Insight predicts world real GDP growth to increase to 3.0% in 2014, higher than the 2.5% recorded a year earlier. Real GDP in advanced economies is projected to nudge up to 2.0% from 1.3% in 2013. Output in emerging economies is forecast to grow moderately and reach 4.7% in 2014, approximating that achieved in 2013⁸ (Chart 2.1).

Chart 2.1 Global economic growth rates



Note: Figures for 2014 are Global Insight estimates.
Source: Global Insight (2014/4/15).

⁸ See Note 1.

Looking ahead, international spillovers from the US exiting its conventional monetary policy, a decelerating economic growth rate in Mainland China, along with mounting concerns about Japan's consumption-tax hike undermining private consumption, all add to uncertainty over global economic growth in 2014.

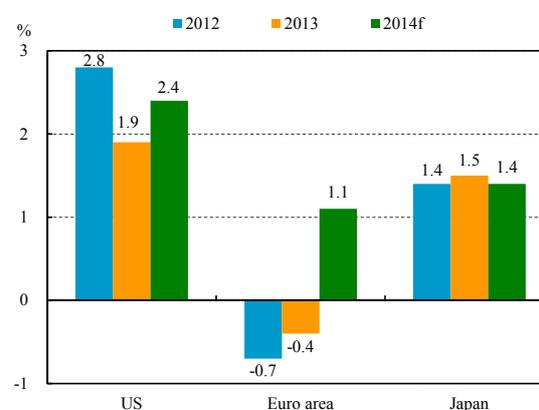
Advanced economies gained steady growth momentum

The US continued its road to recovery but moved toward a more moderate pace of growth owing to fiscal retrenchment

In 2013, the recovery in the US real estate market pushed domestic private consumption up. Meanwhile, US manufacturers returning jobs back to the States from overseas prompted a build-up in private investment. Nevertheless, US economic growth fell to 1.9% from 2.8% a year before, affected by a reduction in government expenditure due to the rolling back of automatic spending cuts. From the beginning of 2014, improving labor market conditions, coupled with the tempering impact of fiscal retrenchment and the warming up of the real estate market, could promote ongoing economic recovery. Reflecting this, Global Insight estimates the US economic growth to stand at 2.4% in 2014, above the level recorded the previous year (Chart 2.2).

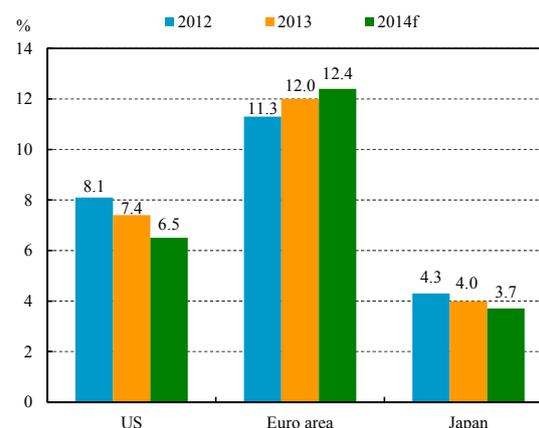
The US unemployment rate dropped to 7.4% in 2013 from 8.1% a year earlier. The rate persistently fell in early 2014 against the backdrop of a rallying housing market and vigorous development in the energy sector. Global Insight anticipates the US unemployment rate to continue reducing to an annual rate of 6.5% in 2014 (Chart 2.3).

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



Note: Figures for 2014 are Global Insight estimates.
Sources: Official websites of the selected economies and Global Insight (2014/4/15).

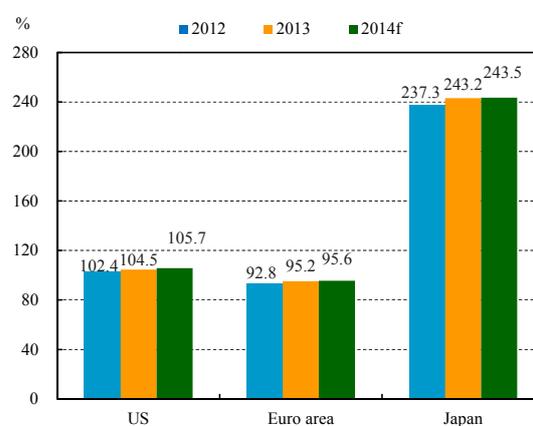
Chart 2.3 Unemployment rates in US, Euro area and Japan



Note: Figures for 2014 are Global Insight estimates.
Sources: Official websites of the selected economies and Global Insight (2014/4/15).

The US deficit shrank to US\$680 billion in fiscal year 2013, but outstanding government debt relative to annual GDP kept expanding in recent years. President Barack Obama signed a bipartisan budget agreement, stipulating the total fiscal expenditure to increase by US\$62 billion for fiscal years 2014 and 2015. While the incremental spending is expected to be offset by deficit-reduction measures, the International Monetary Fund (IMF) forecasts that the ratio of outstanding government debt relative to annual GDP will elevate to an estimated 105.7% in 2014⁹ (Chart 2.4).

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



Note: Figures for 2014 are IMF projections.
Source: IMF (2014), *Fiscal Monitor*, April.

The darkest cloud over the euro area subsided gradually

In the euro area, economic growth posted a rate of -0.4% in 2013 from -0.7% a year earlier thanks to the receding impact of the European sovereign debt crisis, growing exports and rebounding consumption across the area. Furthermore, inflation continued to undershoot projections. This, coupled with the European Central Bank's (ECB's) continuing monetary easing, is likely to underpin private consumption and promote corporate investment. Global Insight estimates that euro area GDP will grow by 1.1% year on year in 2014 (Chart 2.2).

The euro area unemployment rate spiked to a new high of 12.0% in 2013. Severe youth unemployment is an open question across the area, where Spain and Greece suffered youth unemployment rates of more than 50%. Global Insight forecasts the unemployment rate in euro area to continue advancing to 12.4% in 2014 (Chart 2.3).

According to IMF projections, the euro area outstanding government debt-to-GDP ratio is expected to surge to 95.6% in 2014 (Chart 2.4). Greece kept implementing harsh fiscal austerity measures, whereas Ireland exited its international bailout program. Against this backdrop, the ratios for these two countries are forecast to fall for the first time in seven years.¹⁰

⁹ IMF (2014), *Fiscal Monitor*, April.

¹⁰ See Note 9.

The implementation of “Abenomics” revitalized Japanese economic growth

In 2013, the Shinzo Abe cabinet launched the “three-arrows” strategy that comprises “aggressive monetary policy,” “expansionary fiscal policy” and “growth strategy that promotes private investment” with the aim of curbing deflation and promoting economic growth. Reflecting this, Japanese economic growth registered 1.5% throughout the year. In 2014, the government laid out a 5.5 trillion yen economic stimulus package. This, together with a marked improvement in the performance of domestic corporations as well as vigorous machinery and equipment investment, could sustain this growth momentum. According to Global Insight, Japanese economic growth is expected to stand at 1.4% in 2014, somewhat lower than the figure recorded in 2013(Chart 2.2). Meanwhile, the unemployment rate is forecast to further drop to 3.7% over the same period (Chart 2.3), backstopped by a sharp increase in total employment due to steady recovery.

The Japanese government expanded the budget to invest in local public infrastructure construction with a view to the implementation of “expansionary fiscal policy.” As a result, the government debt-to-GDP ratio further uplifted to 243.2% in 2013. Although a consumption tax hike that raises the tax rate to 8% from 5% from April 2014 onwards might help to relieve the government’s debt burden, fiscal risks remained owing to the build-up of policy uncertainties.¹¹ The IMF forecasts the government debt-to-GDP ratio to slightly rise to 243.5% in 2014¹² (Chart 2.4).

In contrast, Taiwan differs from Japan with regard to economic conditions. Furthermore, under the precondition of safeguarding price stability, the CBC has provided monetary easing circumstances favorable to Taiwanese economic development in recent years. Against this background, there is no need for Taiwan to echo the adoption of the recent quantitative and qualitative monetary easing as has taken place in Japan (Box 1).

The economic growth of Asian emerging economies proceeded at a mild pace

Hit by the impact of capital outflows owing to the uncertainty surrounding the Fed’s tapering of its asset purchases, coupled with contracting demand for major international commodities, GDP growth in key Asian emerging economies experienced a slowdown in 2013. The Asian newly industrialized economies saw a slack recovery in exports; however, output growth in these economies rose to 2.8% from 1.8% in 2012, spurred by the economic stimulus

¹¹ Major concerns emanate from whether Japan can successfully carry out the second phase of a consumption tax hike program, raising the tax rate to 10% from 8%, and implement the proposed medium term fiscal policy in 2015 and afterwards.

¹² See Note 9.

measures of local governments.

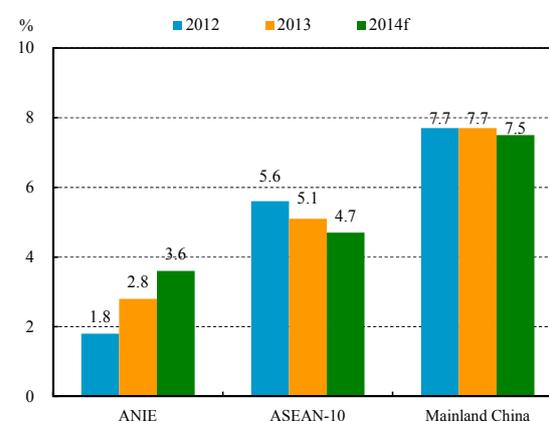
Thailand was mired in political vulnerabilities. Meanwhile, in Indonesia, a slump in major international commodity prices impacted exports, while high interest rates jeopardized domestic investment. As a result, output growth for both of these two countries slowed down. This, in turn, impacted on the overall growth rates of the Association of South East Asian Nations (ASEAN-10) to contract to 5.1% in 2013 from 5.6% a year before. In addition, Mainland China's growth rate of 7.7% was similar to that in 2012 (Chart 2.5).

Global Insight anticipates that the economic growth rate in the Asian newly industrialized economies will mount to 3.6% in 2014, whereas the ASEAN-10 countries and Mainland China would both see more moderate growth rates of 4.7% and 7.5%, respectively (Chart 2.5). Meanwhile, the unemployment rate in the Asian newly industrialized economies is projected to stand at 3.3%, the same figure as in 2013, while the rate will slightly rise to 4.7% from 4.6% a year earlier in the ASEAN-10 countries. In Mainland China, the unemployment rate is forecast to drop to 4.0% from 4.1% in 2013 (Chart 2.6).

Global inflationary pressures kept subsiding

In 2013, global prices of crude oil temporarily surged amid geopolitical uncertainty in the Middle East. Conversely, the international prices of cereals witnessed a continued decline in virtue of increasing production of soy, wheat and corn. Reflecting this, global inflation

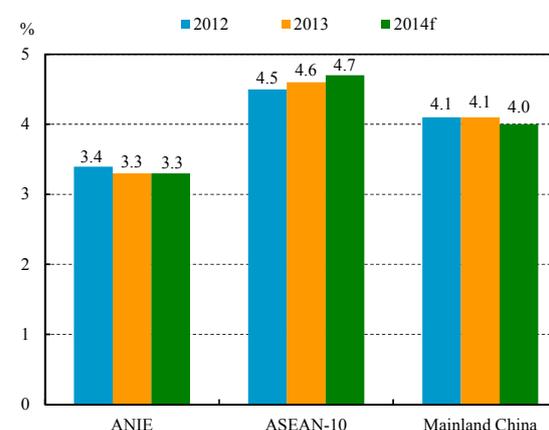
Chart 2.5 Economic growth rates in Asian emerging economies



- Notes:
1. Figures for 2014 are Global Insight projections.
 2. ANIE refers to Asian Newly Industrialized Economies, including Taiwan, Hong Kong, Singapore and South Korea.
 3. ASEAN-10 refers to the 10 member countries of 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 (2014/4/15).

Chart 2.6 Unemployment rates in Asian emerging economies



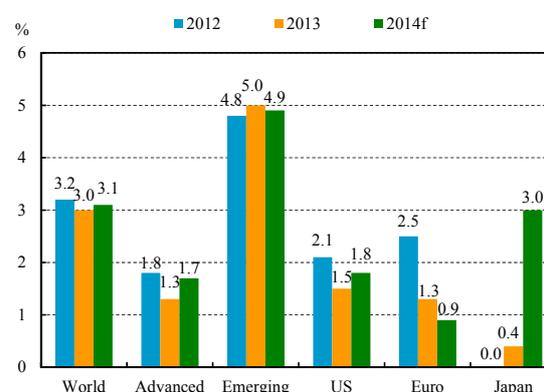
- Notes:
1. Figures for 2014 are Global Insight projections.
 2. For ANIE and ASEAN-10, see Notes 2 & 3 in Chart 2.5.

Sources: Official websites of the selected economies and Global Insight (2014/4/15).

moderated in 2013 compared to the previous year, with the CPI inflation rate registering 3.0%, down from 3.2% in 2012. CPI inflation rates in advanced economies were lower than the figures a year earlier, whereas in the emerging economies they increased marginally (Chart 2.7).

From the beginning of 2014 onwards, cereal production suffered poor yields due to severe cold weather in Northern America and drought in Brazil. This, coupled with mounting concerns about political tension in Ukraine, which is likely to impact its cereal exports, resulted in a rise in international prices. Meanwhile, global crude oil prices fluctuated within a narrow range, affected by an upswing in crude oil supply from Iran and the rising geopolitical risks related to Ukraine. Global Insight predicts the global CPI inflation rate will rise to 3.1% in 2014, slightly higher than that of 3.0% in 2013. However, the figure for Japan will upsurge to 3.0% from 0.4% a year earlier due to its consumption tax hike (Chart 2.7).

Chart 2.7 Global headline inflation indices



Note: Figures for 2014 are Global Insight estimates.

Sources: Official websites of the selected economies and Global Insight (2014/4/15).

Monetary policy kept easing in advanced economies, whereas the US was tapering the size of bond purchases

From May 2013 onwards, the major advanced economies preserved their easy monetary stances. The Reserve Bank of Australia lowered the policy rate by 25 basis points in May. Thereafter, the ECB sequentially cut the main refinancing operations fixed rate by 25 basis points in May and November, separately, hitting a record low of 0.25%. This reflected a raising concern about recovery stalling in the euro area. Additionally, the Fed maintained the target range for the federal funds rate at 0 to 0.25%. Likewise, the Bank of England, the BOJ and the Bank of Canada all kept their low-interest-rate policies unchanged.

In emerging Asian economies, the Bank of Thailand lowered the 1-day repurchase rate twice to 2.25% in November 2013 in hope of invigorating the economy. Bank Indonesia raised the Bank Indonesia rate five times in an attempt to appreciate Rupiah and dampen inflationary pressure. The Reserve Bank of India consecutively raised the repurchase rate to 8% from September onwards following three rate cuts in the first half of the year. The People's Bank of China (PBC) held the financial institution one year lending base rate unchanged (Chart 2.8).

2.1.2 International financial conditions

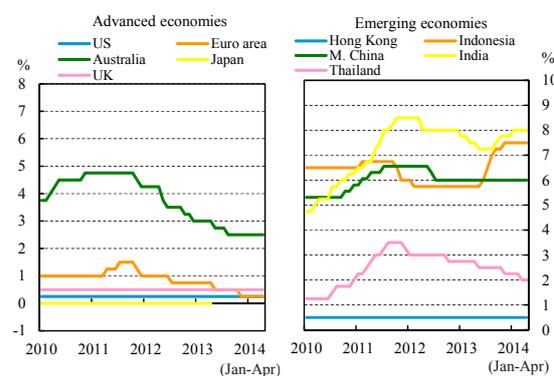
International financial markets improved but global financial risks elevated

In the first half of 2013, global financial risks alleviated, underpinned by the appropriate monetary policy stances and precautionary measures implemented by numerous countries. Over this period, global stock markets initially fluctuated against the backdrop of increasing political tensions on the Korean peninsula, the further spread of avian influenza in China, and the sluggish economy in the US. However, the markets resumed stable growth subsequently. From the second half of 2013 onwards, concerted monetary easing by the major economies and improvement in fiscal conditions in the euro area contributed to allaying tensions in financial markets. However, the spillovers emanating from the advanced economies' transitions to less accommodative monetary policy stances led to the build-up of global financial risks.

Financial market conditions in the advanced economies saw a notable improvement but risks lingered

In 2013, the prolonged period of accommodative policy and low interest rates in the US led to a search for higher yield, which sent massive flows of funds into high risk assets, and lifted

Chart 2.8 Policy rates in selected economies



- Notes: 1. Advanced economies: figure for the US is based on the federal funds rate target; for Australia, cash rate target; for the UK, official bank rate; for the euro area, the main refinancing operations fixed rate; for Japan, uncollateralized overnight call rate.
2. Emerging Asia: figure for Hong Kong is based on discount window base rate; for Mainland China, financial institution one-year lending base rate; for Thailand, 1-day repurchase rate; for Indonesia, Bank Indonesia rate; for Reserve Bank of India, repurchase rate.
3. The BOJ changed the main operating target for money market operations to the monetary base from 4 April 2013 onwards.
4. Figures are as of 3 April 2014.

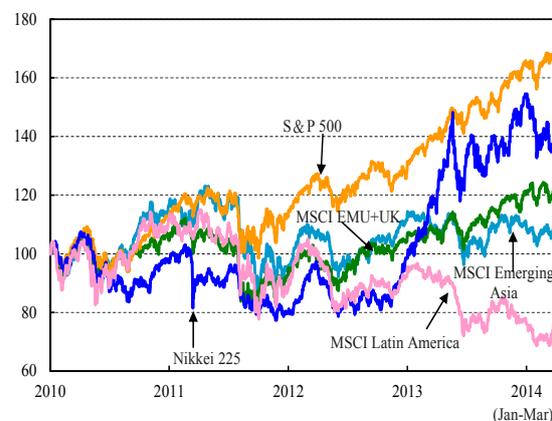
Sources: Central banks' websites.

asset prices. As a result, major US stock indices, in particular, trended up noticeably (Chart 2.9). However, against the backdrop of prolonged periods of monetary expansion, speculative transactions searching for high yields increased. Coupled with rising corporate leverage and loosening corporate lending standards in the US credit markets, this, in turn, may become a latent risk to financial stability.

In April 2013, the announcement of QQE aiming at implementing “Abenomics” by the BOJ was largely successful in advancing yen depreciation and resetting deflationary expectations. Accordingly, the main Japanese stock index moved up (Chart 2.9). Nevertheless, from May onwards, the Fed signaled steps toward normalizing monetary policy, coupled with mounting concerns about Japanese government fiscal vulnerabilities, led to bouts of turmoil in bond and stock markets. Reflecting this, the Japanese Nikkei 225 stock index at one point tumbled over 7% in one day, followed by fluctuations within a narrow range. Moreover, to some extent, the spillovers resulting from domestic capital outflows spurred by lasting yen depreciation would impact both emerging economies and advanced economies.

In 2013, in the euro area, market pressure temporarily relieved thanks to continued monetary easing along with various structural reforms launched by member states. Meanwhile, the credit conditions of bond markets for governments, banks and corporate largely improved. However, banks in periphery economies still faced the combined challenges of elevated funding costs, deteriorating asset quality and slender profits that could hinder banks’ lending capabilities. The firms in these economies also confronted considerable debt pressures due to overly high leverage ratios.

Chart 2.9 Performance of key international equity indices



Note: 1 January 2010 = 100.
Source: Bloomberg.

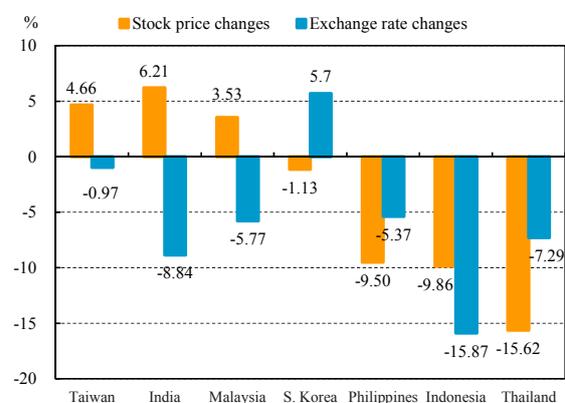
Emerging economies' weakening economic fundamentals spurred the run-up of financial fragilities and risks

In the wake of the global financial crisis, the nonconventional monetary policies and policy rate cuts pursued in advanced economies provoked large capital inflows to emerging markets. As of 2013, growing capital inflows stirred declining risk premiums and contracting funding costs. As a consequence, credit expanded dramatically, particularly with regard to corporate bond issuance, which exhibited a notable upsurge.

However, some large emerging economies (such as Brazil, Mainland China, India and Russia) observed deteriorating asset quality, ascending leverage and asset prices reaching bubble levels as economic growth moderated and credit expansion lost momentum. This phenomenon, in turn, posed several challenges to emerging market economies, including: (1) governments and corporations with greater debt would be vulnerable to the reversal of interest rate rises, a shrinkage in earnings, and a depreciating currency; (2) debt-laden economies would find it more difficult to re-finance as risk premiums reversed to move upwards; and (3) increased foreign capital inflows exposed some economies to an additional source of capital outflow pressure which may cause renewed bouts of market turmoil in the event of a reversal to a massive outflow. Moreover, geopolitical risks related to Ukraine could also pose a new threat to financial stability.

Monetary policy transitions in advanced economies have substantial impacts on the financial markets in emerging economies. For example, massive international capital flowed back to the US around the Fed tapering announcement and investors showed concerns about political turbulence and unstable financial circumstances in emerging economies. These brought about greater fluctuations in global stock markets, particularly in Latin America, which saw the most significant drop (Chart 2.9). In Asian emerging economies, Indonesia and Thailand suffered considerable impacts on their stock markets and foreign exchange markets. Conversely, Taiwanese financial markets, buttressed by relatively robust economic fundamentals, were affected to a limited extent as they were more resilient to the shocks (Chart 2.10).

Chart 2.10 Changes in equity indices and exchange rates among Asian emerging economies



Note: The comparison is based on the difference between the figures of end-May 2013 and of end-February 2014.
Source: Bloomberg.

International organizations urged national governments to take further measures to foster global financial stability

The prolonged period of monetary easing witnessed in recent years could possibly pose a threat to global financial stability, while the US exiting from unconventional monetary policies could give rise to subsequent spillovers. In response, international organizations (such as the IMF¹³ and the Asian Development Bank¹⁴) have advocated national governments to take preemptive measures, and provided the major policy suggestions as follows:

- In the US, as the Fed intends to gradually taper its asset purchases, reductions in liquidity could amplify market volatilities. In this regard, the financial supervisors must remain vigilant and preventative plans need to be put in place, such as enhancing oversight of mutual fund, real estate investment trust and exchange-traded fund liquidity terms for investors and management practices. Besides, it is also suggested to develop a contingency leverage unwinding facility for markets that heavily use repo transactions to manage liquidity.
- In the euro area, with a view to entrenching the European Monetary Union and reducing debt levels, the improvement in the structure of bank balance sheets is a prerequisite to restoring investor confidence. Meanwhile, the euro area should address financial fragmentation¹⁵ through promptly carrying out the Single Supervisory Mechanism and the Single Resolution Mechanism with a commitment of cross-border deposit insurance.
- The emerging economies are likely to face the challenge of capital flow reversals. Policy makers should ensure orderly financial market operations and prudential surveillance of risks deriving from soaring corporate leverage and bank exposure to currency mismatch.
- Asian emerging economies confronting global and regional threats are expected to prevent themselves from suffering various external financial shocks by sustaining price stability and deploying prudential fiscal policies. Mainland China, among others, should gradually liberalize deposit rates and address moral hazard concerns to rein in credit growth mainly arising from the shadow banking system. Furthermore, an improvement of monitoring and disclosure in the nonbanking system, such as insurance companies and trust funds, is needed.

¹³ IMF (2013), Global Financial Stability Report, October.

¹⁴ Asian Development Bank (2014), Asian Development Outlook 2014: Fiscal Policy for Inclusive Growth.

¹⁵ The ECB adopted monetary easing which kept the policy rate at historical lows to increase credits to corporations in core euro area with low interest rates. However, corporations in periphery economies were still exposed to funding risks.

Internationally increased focus on Bitcoin online virtual currency scheme

In the beginning of 2013, the Bitcoin exchange rate against the US dollar was about 20 but subsequently skyrocketed to 1200 or so in November as a result of media exaggeration and manipulation by interested parties. This, in turn, has drawn the attention of national central banks and financial authorities to address a number of issues, particularly about: (1) whether Bitcoin should be supervised; (2) how to supervise Bitcoin; (3) whether Bitcoin undermines financial stability; and (4) whether Bitcoin can be exploited as a tool for criminals. Currently the interconnection between Bitcoin, the real economy, and financial markets is still low, indicating that it is not likely to compromise the economy and financial stability as a whole.

Due to lack of a transaction protection scheme which is subject to exclusive regulation, along with inherent risks coming from the high volatility in price, hacker attacks and collapse of the exchange platform, some economies consecutively employed regulatory measures or provided statements in the hope of protecting consumer rights as well as safeguarding payment systems and financial stability. There are broadly four types of regulatory tendency among the above-mentioned measures, including: (1) excluding Bitcoin as a legal tender; (2) regarding Bitcoin as a virtual commodity; (3) alerting consumers and investors to be cautious about the related risks; and (4) preventing Bitcoin from becoming an alternative currency for money laundering.

2.1.3 Mainland China's economic and financial conditions

Economic growth momentum waned

In the first half of 2013, Mainland China decelerated infrastructure investments and reduced excess capacity in some industries,¹⁶ bringing economic growth rates down to 7.7% and 7.5% in Q1 and Q2, respectively. In Q3, thanks to a series of measures to maintain steady growth taken by the State Council in the second half of July,¹⁷ economic growth rebounded to 7.8% and registered an annual growth of 7.7% for the whole year, the same as in 2012 (Chart 2.11).

¹⁶ See Note 2.

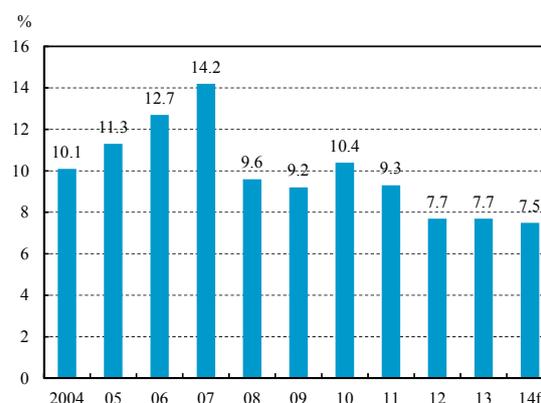
¹⁷ Such measures include temporarily exempting the value-added tax and business tax for micro- and small-sized firms, facilitating trade to stabilize import and export business, and accelerating railway and infrastructure facilities constructions in the Midwest, etc.

Although Mainland China’s economic transition, aiming to shift toward a domestic demand-led growth model through structural reforms, might cause economic slowdown, measures to maintain steady growth and the increase in social security expenditures are expected to boost private consumption (Box 2). In March 2014, the National People's Congress (NPC) and Chinese People's Political Consultative Conference (CPPCC) set the economic growth target for 2014 at 7.5%, the same level as Global Insight’s economic growth projection for Mainland China in 2014 (Chart 2.11).

Prices stabilized and housing prices grew at a slower pace

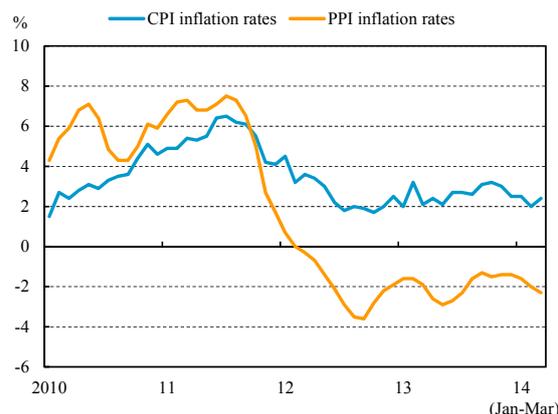
Due to stable international raw materials prices and domestic food prices, the CPI inflation rate of Mainland China was 2.6% in 2013, lower than the official goal of 3.5%. In 2014, after the CPI inflation rate continued decreasing to a thirteen-month low of 2.0% in February, it slightly rebounded to 2.4% in March. Global Insight projects the CPI inflation rate for the whole year of 2014 to decrease further to 2.0%. Moreover, in March 2014, the producer price index (PPI) inflation rate stood at -2.3%, the 25th consecutive month in negative territory, also indicating a waning growth momentum (Chart 2.12).

Chart 2.11 Economic growth rates of Mainland China



Note: Figure for 2014 is a Global Insight projection.
Sources: National Bureau of Statistics of China and Global Insight (2014/4/15).

Chart 2.12 Inflation rates of Mainland China



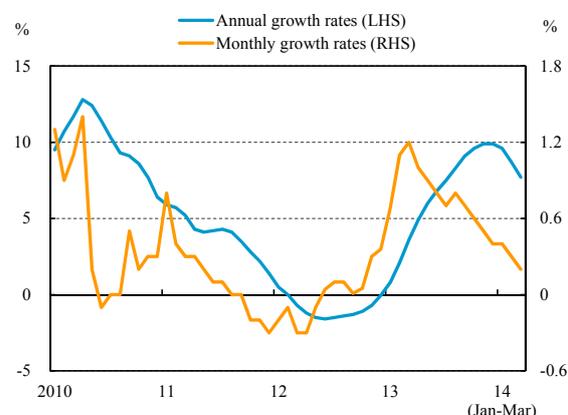
Source: National Bureau of Statistics of China.

The annual growth rate of building sales prices in 70 medium-large cities was 7.7% in March 2014. This marked the fifteenth consecutive month of positive annual increases, although the rate of increase began to decline. The monthly growth rates were positive for the 22nd consecutive month, but also followed a downward trend (Chart 2.13). In response to rising house prices, Mainland China has taken a series of measures to curb house prices since February 2013.¹⁸ However, considering that excessively constrained housing markets may decelerate growth momentum and increase downside economic risks,¹⁹ no stricter measures to curb house prices have been introduced since then. In November 2013, the Third Plenary Session of the Eighteenth Central Committee of the Communist Party of China decided to give priority to fiscal and land reforms in order to increase supplies of land and residential property.

Aggregate financing to the real economy hit a new high as off-balance sheet credits increased

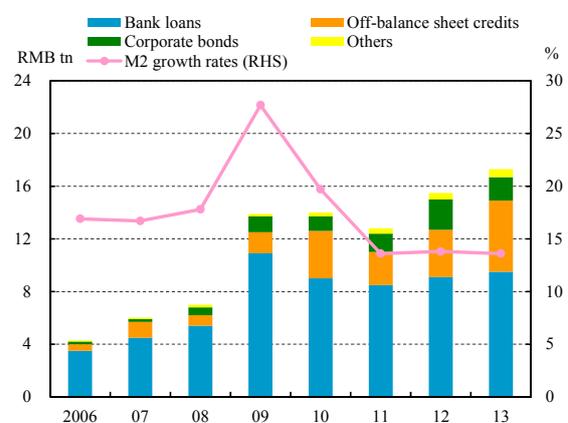
Although the annual growth rate of broad money supply M2 in 2013 decreased from 15.9% at the beginning of the year to 13.6% at the end of the year, it stayed higher than the official annual target of 13%. Meanwhile, aggregate financing to the real economy²⁰ hit a new high as off-balance sheet credits, representing a proportion of the shadow banking system,²¹ increased rapidly. In 2013, new off-balance sheet credit accounted for 31.2% of

Chart 2.13 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.

Chart 2.14 Aggregate financing to the real economy and annual growth rates of M2 of Mainland China



Source: PBC.

¹⁸ Measures aimed at curbing property prices include levying a 20% individual income tax rate on residential property sales and raising the down payment ratio and lending rate for second house buyers.

¹⁹ Real estate investment accounted for about 20% of fixed investment, while fixed investment accounted for nearly a 50% share of GDP.

²⁰ See Note 3.

²¹ See Note 4.

new aggregate financing to the real economy (RMB 17.3 trillion), which was well above the 2012 level of 23.2%, indicating a rapid rise in the scale of shadow banking (Chart 2.14).

In order to contain the risk in shadow banking and to gear it toward sound development, Document No. 107, issued by the State Council of Mainland China in 2013, identified the types of shadow banking²² and urged relevant authorities accordingly to ensure segregation of duties, develop a sound supervisory mechanism, strengthen risk management and formulate complementary measures. As Mainland China's financial authorities continue strengthening supervision on shadow banking, including wealth management products, trust business, credit guarantee companies and micro-finance companies, close monitoring of subsequent developments is needed.

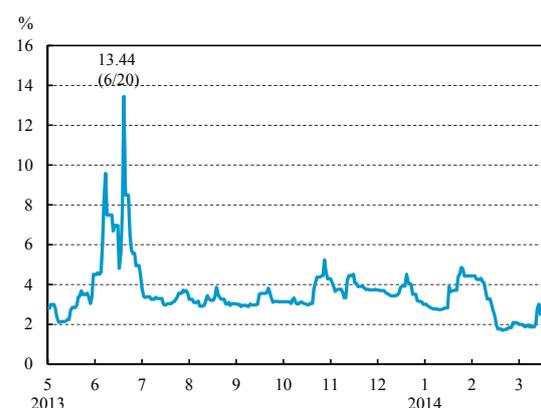
Measures launched successively to curb ballooning local government debts

The National Office of Audit of Mainland China published the audit findings of public debts at all levels of government in December 2013. Based on the report, local government debts swelled from RMB 15.9 trillion at the end of 2012 to RMB 17.9 trillion at the end of June 2013, which equaled more than 30% of GDP, showing a marked increase in local government debts. In order to curb debt risks to the banking industry, in January 2014, financial authorities approved local governments to issue bonds for fundraising. Moreover, the government, aiming to effectively monitor debt risks, vowed to strictly control the use of local government funds deriving from debt, launch an early warning system of local government debts and adopt a differentiated supervisory mechanism on different types of debts.

With policies promoted to reduce leverage and production capacity, expectation of cautious monetary policy remains

In the second half of June 2013, Mainland China's interbank market experienced a serious liquidity shortage, causing a surge of the Shanghai Interbank Offered Rate (SHIBOR). After the PBC injected funds into

Chart 2.15 Shanghai Interbank Offered Rates



Source: China Foreign Exchange Trading System & National Interbank Funding Center.

²² See Note 4.

markets through repo operations and short-term liquidity operations (SLO), the SHIBOR dropped back gradually (Chart 2.15). Considering the government's determination to deleverage and reduce production capacity, lessen property bubble risk, trim swelling shadow banking activities and curb local government debts, the PBC is expected to maintain a cautious monetary policy stance in the near future.

Box 1

Taiwan has no need to follow Japan's monetary policy of quantitative and qualitative easing

In the early 2000s, the Bank of Japan (BOJ) started implementing a quantitative easing (QE) monetary policy. As a result of this policy, until 2004, Japan's economy appeared to revive after years of recession. The year-on-year growth rate of the consumer price index (CPI) also saw a modest improvement. Nevertheless, the BOJ put an end to the QE policy too early in 2006. On top of that, the global financial crisis erupted in 2008, throwing Japan's economy into a deflationary dilemma again from 2009 onwards. The BOJ hence re-started its QE policy in October 2010. Furthermore, after Shinzo Abe assumed the premiership in December 2012, the BOJ Governor Haruhiko Kuroda, who took office in April 2013, announced at his first monetary policy meeting that, in order to achieve its price stability target of a 2% inflation rate at the earliest possible time within two years, the BOJ would introduce a policy of quantitative and qualitative monetary easing (QQE). This box will explore the contents of QQE and the reasons Taiwan need not follow Japan's monetary policy.

1. The contents of QQE

The objective of QQE is, via strong commitment to the target of 2% annual growth rate in core CPI within a time horizon of two years, to significantly change market inflation expectations, reduce long-term interest rates, support asset prices, and facilitate consumption as well as investment. The major contents of the policy are summarized below.

1.1 Switching to control the monetary base while nominal interest rates are near zero bound

The expansion of the monetary base at an annual pace of about 60-70 trillion yen will be set as the new target of money market operations. The monetary base will double from its original amount within two years and is projected to reach 270 trillion yen by the end of 2014.

1.2 Increasing JGB purchases to push down long-term interest rates

The BOJ will increase their holding of long-term Japanese government bonds (JGBs) by an annual growth of about 50 trillion yen. The holdings are expected to expand to twice the current balance within two years. In addition, JGBs with maturities of 40 years will be eligible for purchase; therefore, the average remaining maturity of the JGB purchases

will be extended from slightly less than three years to about seven years.

1.3 Increasing ETF and J-REIT purchases to affect risk premia of asset prices

The BOJ will purchase exchange-traded funds (ETFs) and Japan real estate investment trusts (J-REITs) with annual increases of 1 trillion yen and 30 billion yen, respectively. By way of expanding purchases of financial instruments to ignite the stock market and real estate market, it will help push asset prices upwards and, in turn, elevate domestic demand and prices.

2. Taiwan's moderately accommodative monetary situation was no less suitable than Japan's QE

Taiwan's economy varied from that of Japan's because Taiwan's nominal interest rate didn't approach the zero bound like Japan's. Moreover, under the precondition of maintaining price stability and in the context of actual output below full capacity, the CBC provided loose monetary circumstances in recent years, which was conducive to macroeconomic development in Taiwan. Thus, there is no need for Taiwan to echo Japan on its latest execution of QQE.

2.1 Taiwan already implemented its own version of QE during the global financial crisis

In order to promote financial stability and boost the domestic economy, the CBC lowered its discount rate seven times during the period of the financial crisis from 3.625% on 25 September 2008 to 1.25% on 19 February 2009, slashing it by a total of 2.375 percentage points. The interbank call loan rate subsequently dropped to 0.10% or so. Meanwhile, the CBC maintained excess reserves in the banking system with a peak close to NT\$160 billion. These moderately accommodative measures can be regarded as Taiwan's version of QE.

2.2 Taiwan has never experienced deflation nor a credit crunch

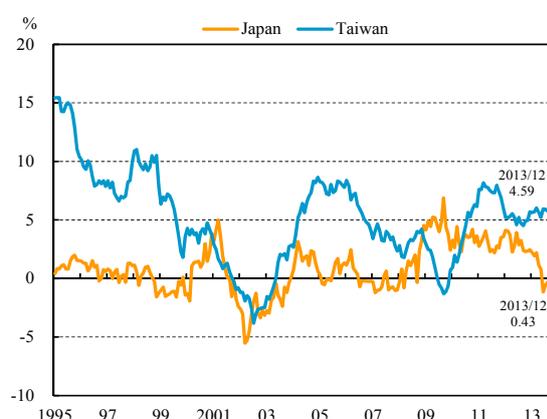
- (1) Japan's deflationary malaise had existed for nearly 15 years since 1998, with the average year-on-year change of CPI being -0.2%. On the other hand, prices in Taiwan remained stable, with the average annual growth rate of CPI stabilizing at around 1% in the same period.
- (2) With abundant capital, the average annual growth rate of bank credit in Taiwan posted 5.2% since 1995 while in Japan it registered merely 0.9% (Chart B1.1).

- (3) Taiwan actively promoted lending to small- and medium-sized enterprises (SMEs), with the average annual growth rate recording 8.2% from 2009 to 2013, while Japan’s SME loans shrank by 1.3% per year on average.

2.3 Taiwan's M2 money supply grew steadily and sufficiently to sustain domestic economic activity

- (1) The CBC set a target zone for M2 growth according to economic growth rates and annual change of the CPI. In recent years, M2 growth rates approximated the sum of GDP growth rates and annual change of the CPI (Table B1.1).
- (2) In recent years, M2 annual growth rates have fallen within the target zone, showing that M2 money supply has maintained proper growth, sufficient to meet the demands of economic activity.

Chart B1.1 Annual growth rates of bank credit in Taiwan and Japan



Note: During the global financial crisis in 2009, the BOJ bought up massive amounts of Japanese government bonds, thereby lifting the annual growth rates of bank credit.
Sources: CBC and BOJ.

Table B1.1 Annual change in M2 ≈ Real GDP growth rates + Annual change of CPI

Annual average	GDP growth rates (a)	Annual change of CPI (b)	GDP growth rates+ Annual change of CPI (a) + (b)	Annual change in M2
1995-2013	4.19	1.28	5.47	6.28
2001-2013	3.62	1.05	4.67	5.09
2003-2013	3.95	1.25	5.20	5.18
2008-2013	2.91	1.29	4.20	4.91

Source: DGBAS.

2.4 QE was only beneficial to major economies as it contributed to depreciation of their currencies

- (1) Japan is the world’s third largest economy, and the yen is one of the major currencies in terms of international trade and FX trading. Its adoption of large-scale QE was expected to drive the yen’s depreciation; however, such a policy would not work in Taiwan's favor, as Taiwan didn’t warrant the conditions.

- (2) In spite of the implementation of QE to push down the yen's value, the intended effect of depreciation might be partly offset by the spillover effects triggered by QE in the US.

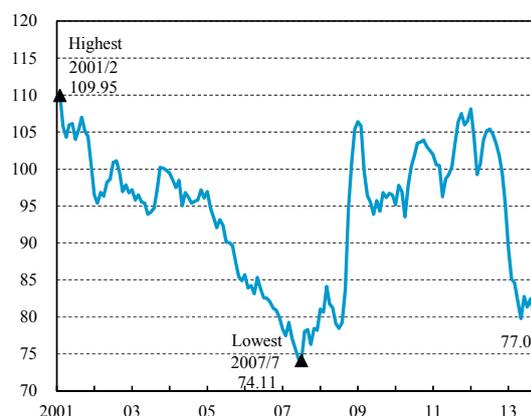
2.5 The yen's depreciation was to rectify its previous over-valuation resulting from investors' hedging demands

- (1) The yen's real effective exchange rate (REER) indices were still higher than the lowest point pegged before the financial crisis (Chart B1.2).
- (2) After the earthquake hit northeast Japan on 11 March 2011, massive imports of energy resulted in the trade deficit progressively hitting record highs and in turn speeding up the yen's depreciation.
- (3) The NTD's REER is still lower than those of South Korea's won (KRW) and Mainland China's RMB. As such, it still gives Taiwan an edge on export prices (Chart B1.3).

3. Conclusion

In the past twenty years, Japan experienced a period of two "lost decades" with an average economic growth rate of just 0.89%, while Taiwan's economy saw stable growth, maintaining an average annual growth rate of at least 4% and relatively stable prices. Moreover, Taiwan adopted without delay its own version of QE during the global financial crisis. Current monetary circumstances are moderately accommodative, which is beneficial to its macroeconomic development. Therefore, there is no need for Taiwan to follow Japan to introduce a policy of QQE.

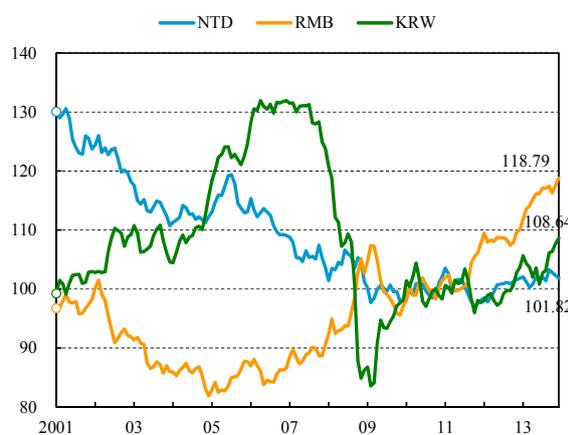
Chart B1.2 JPY REER indices



Notes: 1. The REER, which is compiled by the BIS and based on currency data comprising 27 economies, is the weighted average of a country's currency relative to a basket of other major currencies adjusted for the effects of inflation.
2. Year 2010 = 100.

Source: BIS.

Chart B1.3 REER indices for NTD, KRW and RMB



Notes: 1. The compilation of REER refers to the footnote of Chart B1.2.
2. Year 2010=100.

Source: BIS.

Box 2

Economic transformation of Mainland China and its impacts on Taiwan's exports

From 2009 onwards, with rising production costs and the appreciation of the RMB, the major driving force of Mainland China's economic growth gradually shifted from exports to investment and consumption. However, excessive investment from 2009 to 2012 caused production gluts in several industries. Thus, the government had to adopt measures to restrain investment growth and lift private consumption, so as to enable the transformation of the nation's economic structure and achieve economic balance and sustainable growth. Because Mainland China is Taiwan's largest investment destination and export market, its economic transformation has severely impacted Taiwan's exports.

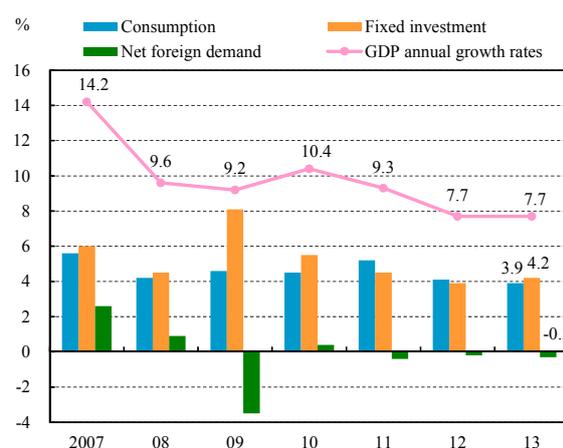
1. Development of service industries and promotion of industrial upgrading

On the contributions to Mainland China's economic growth from 2011 to 2013, average net foreign demand made a negative contribution of 0.3 percent, while the contribution of average consumption surpassed that of fixed investment,¹ becoming the major source of economic growth (Chart B2.1). During the Twelfth Five-Year Plan (2011-2015), Mainland China set the development of production-oriented service industries as its primary task in a bid to prop up private consumption.

In terms of the breakdown of various industrial sectors, the growth rates of the tertiary industry (service industry) have been steadily higher than the primary industry (agriculture, forestry, fishing and animal husbandry) and the secondary industry (mining, manufacturing and construction) since 2012 Q2 (Chart B2.2), becoming a key driving force of GDP growth.

The third Plenary Session of the Eighteenth Central Committee of Mainland China held in November 2013 also announced many reforms to the economy. For example, it will allow the market to determine prices in some areas such as finance, land, telecommunications, and energy, engage in fiscal reforms, promote urbanization, and

Chart B2.1 Contributions to economic growth in Mainland China



Source: National Bureau of Statistics of China.

open-up certain service industries including healthcare, old-age care, telecommunications and logistics services. All of these measures are conducive to the growth of consumption.

Moreover, the manufacturing sector has been experiencing a period of adjustment. For example, industry supply chains are increasingly geared toward localization and investment patterns are moving from downstream to mid- and up-stream industries, resulting in less imports of intermediary goods, parts and components than before. Besides, reducing low efficiency industries via

import substitution, replacing domestic production with foreign imports allows factors of production to move to higher efficiency industries with the aim of promoting industrial upgrading.

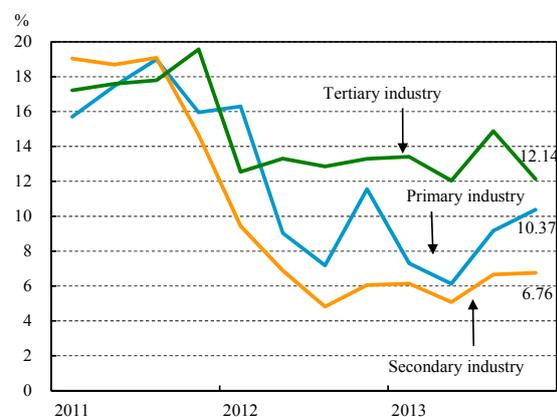
2. Economic transformation of Mainland China is likely to slow down its economic growth in the short run, but could help raise per capita GDP in the long run

In the wake of the global financial crisis that erupted in 2008, Mainland China put forward a RMB 4-trillion Economic Stimulus Package. Although the package supported its economy and helped it rebound, there emerged a problem of a production glut in the real sector, coupled with excess liquidity washing around in the financial system. To reduce the economy-wide risks, the government adopted measures to tighten credit growth, facilitate investment rationalization, and weed out over-capacity of production. These measures caused GDP growth to slip.

With the transformation of economic structure and increasing expansion of economic scale, Mainland China's economic policy in recent years no longer gave top priority to raising economic growth. Instead, it stressed the importance to strike a balance between "stabilizing growth " and "restructuring the economy." The IMF forecasts that, if the proposed reforms are implemented, Mainland China's economy will grow 6% per annum from 2013-2030.²

It is worth noting that, Mainland China's economy is facing a number of challenges, such

Chart B2.2 Growth rates of production value in three classes of industries in Mainland China



Note: Primary industry covers agriculture, forestry, fishing and animal husbandry. Secondary industry comprises mining, manufacturing and construction, among others. Tertiary industry consists of various types of service sectors.

Source: National Bureau of Statistics of China.

as rising labor costs, imbalances in economic development, resource constraints, and environmental pollution. The IMF indicated that, if Mainland China does not continue proceeding with structural transformation, it may risk falling into a “middle income trap,” and its per capita GDP would still be merely a fourth of America's by 2030. However, in the case where the proposed reforms are successfully implemented, its per capita GDP is projected to achieve 40% of the US level in 2030.

3. The impacts of Mainland China's economic transformation on Taiwan's exports

Much of the decline in the growth of Taiwan's exports can be attributed to the downswing in the global economy and the slowdown of Mainland China's economic growth. In recent years, the transformation of Mainland China's economic structure leading to the reduction of its imports from Taiwan has also been an important factor.

3.1 Economic transformation with a decline in the proportion of processing trade is unfavorable to the growth of Taiwan's exports of intermediary goods

Mainland China is Taiwan's largest investment destination and export market. Under international fragmentation of production, Taiwan exported a lot of intermediary goods to Mainland China for subsequent processing, and then re-exported the final products to various destinations all over the world. Nevertheless, the contribution of net exports to Mainland China's economic growth turned from positive to negative. The proportion of processing exports to total exports slipped from 50.7% in 2007 to 39.0% in 2013, while the proportion of processing imports to total imports dropped from 38.5% to 25.5% in the same period (Table B2.1). Under this policy of restructuring the economy and expanding domestic demand, a reduction of processing trade has impacted the growth of Taiwan's exports of intermediary goods to Mainland China.

3.2 The downturn of Taiwan's export growth is attributed to the slowdown of the growth in exports to Mainland China, particularly for the panel industry

Table B2.1 Mainland China's imports and exports

Unit: US\$ bn; %

Year	Export			Import		
	Total amount	Processing trade		Total amount	Processing trade	
		Amount	%		Amount	%
2007	1,218.0	617.7	50.7	955.8	368.4	38.5
2008	1,428.5	675.2	47.3	1,133.1	378.4	33.4
2009	1,201.7	587.0	48.8	1,005.6	322.3	32.1
2010	1,577.9	740.3	46.9	1,394.8	417.4	29.9
2011	1,898.6	835.4	44.0	1,743.5	469.8	26.9
2012	2,048.9	862.7	42.1	1,817.8	481.1	26.5
2013	2,210.0	860.8	39.0	1,950.3	497.0	25.5

Source: General Administration of Customs of the People's Republic of China.

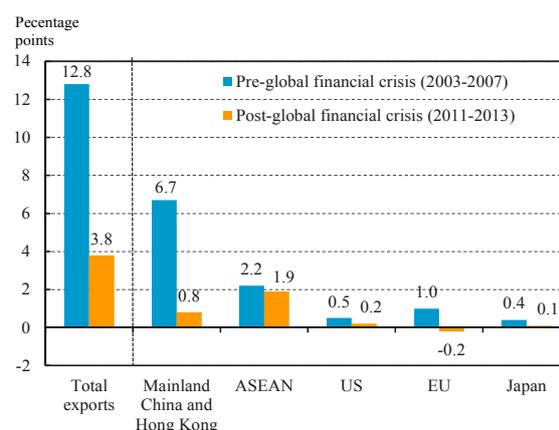
Over recent years, Mainland China has adopted the policy of import substitution which has actively helped develop local strategic industries, such as the flat-panel and semiconductor industries. This made the trade pattern of vertical specialization wane, led to cross-strait industries moving toward competition with one another, and thereby impacted Taiwan's exports.

3.2.1 The downturn of Taiwan's exports to Mainland China is the main cause of the slowdown of export growth

(1) Before the global financial crisis (2003-2007), the average annual growth rates of Taiwan's exports reached 12.8%. However, the growth rates after the crisis (2011-2013) sharply plunged by 9 percentage points to 3.8% (Chart B2.3).

(2) Taiwan's exports to Mainland China accounted for about 40% of Taiwan's total exports. After the crisis, the export contribution of the Mainland China market fell by 5.9 percentage points compared to that before the crisis (Chart B2.3). The degree of reduction was larger than that in other areas, pointing to the slowdown of Taiwan's export growth being mainly attributable to the drop in exports to Mainland China.

Chart B2.3 Contributions to Taiwan's exports by region



Source: The Customs Administration, Ministry of Finance.

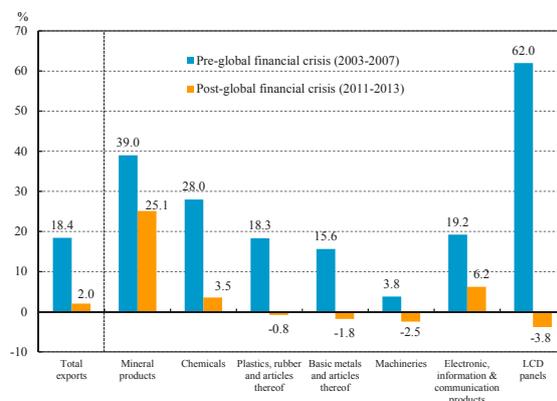
3.2.2 Taiwan's main export products were impacted by the policy of industrial upgrading and import substitution promoted in Mainland China

(1) Before the crisis, the average annual growth rate of Taiwan's exports to Mainland China reached 18.4%. Nevertheless, the growth rate touched just 2.0% after the crisis (Chart B2.4).

(2) Mineral products, chemicals, plastics & rubber and articles thereof, basic metals and articles thereof, machineries, electronics, information & communication products, and flat panels are key commodities exported from Taiwan to Mainland China. The total amount of these exports accounted for 90% of all exports to Mainland China. Compared to those before the crisis, the pace of their yearly growth rates showed signs of slowing down.

(3) Among the above-mentioned products, the average annual growth rate of flat-panel exports declined substantially to -3.8% from 62.0%, signaling the largest degree of reduction, and constituting a severe challenge to the domestic flat-panel industry. Consequently, as the balances of domestic banks' loans to local major flat-panel companies are still high, banks are suggested to pay close attention to flat-panel industry developments and related credit risks.

Chart B2.4 Annual growth rates of major products exported from Taiwan to Mainland China



Note: Including the data of exports to Hong Kong.
Source: The Customs Administration, Ministry of Finance.

- Notes: 1. In 2013, owing to the increase in the investment of railway construction and other civil infrastructure, the contribution from fixed investment was somewhat greater than that from consumption.
2. Referring to Barnett, Steven (2013), *China's Growth: Why Less is More*, IMF direct, Oct. 29.

2.2 Domestic economic and financial conditions

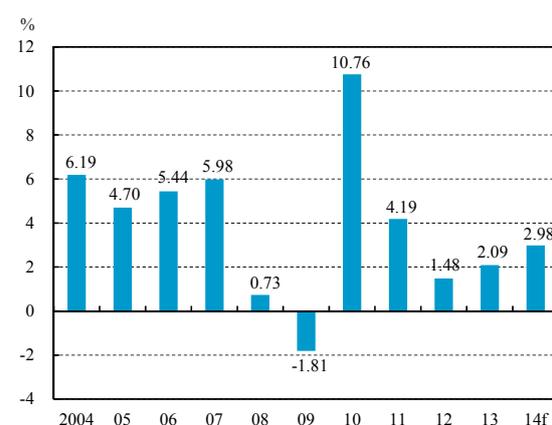
Taiwan's economic growth was moderate in the first three quarters of 2013 due to weaker foreign demand. Nevertheless, thanks to the sustained expansion of the global economy, the real growth rate regained its upward momentum in Q4. Meanwhile, the rise in the general price level remained moderate. Short-term 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.

2.2.1 Domestic economy expanded slightly

At the beginning of 2013, affected by the sluggish global economy, as well as a tepid domestic stock market and falling real wages, export demand and domestic private consumption posted worse figures than expected, resulting in the economic growth rate registering merely 1.44% in Q1. However, it rose to 2.69% in Q2 owing to temporarily recovering private consumption and growing exports, but then fell to 1.31% in Q3 on account of export shrinkage as well as lackluster consumption and investment. After that, under the green shoots of a global recovery began to emerge, exports and domestic demand performed better than expected in Q4, leading the quarterly growth rate to rebound to 2.88%. As a result, the annual economic growth rate rose to 2.09%²³ for 2013, higher than the 1.48% of the previous year (Chart 2.16).

Taking a glance into 2014, the pickup of economic growth in advanced countries is expected to boost exports, while raising salaries by domestic companies and steadily rising stock prices could help to improve private consumption. Moreover, accelerating 4G network construction and increasing aircraft purchases by the airline industry also could enhance private investment. In line with these improvements in the economic environment, the DGBAS forecasts Taiwan's

Chart 2.16 Economic growth rates in Taiwan



Note: Figure for 2014 is forecast by DGBAS.

Source: DGBAS.

²³ See Note 5.

economic growth rate to improve to 2.98%²⁴ in 2014 (Chart 2.16).

2.2.2 Domestic prices rose mildly

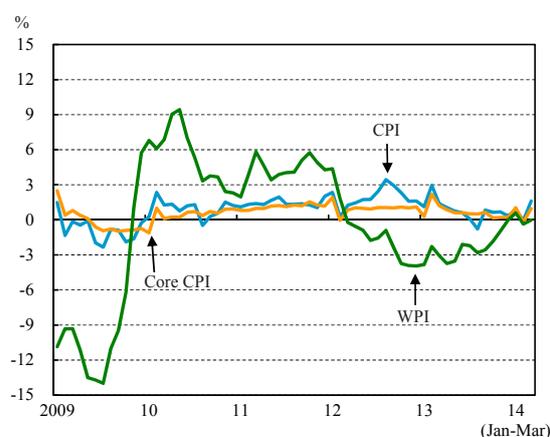
In 2013, owing to the descending prices of crude oil and raw materials, the wholesale price index (WPI) inflation rates in the first three quarters showed a significant fall compared to the same periods of the previous year. However, the WPI inflation rate turned to decline at a diminished pace in Q4, registering -0.01% in December as a result of depreciation of the NT dollar (Chart 2.17).

The annual WPI inflation rate stood at -2.43% in 2013, lower than the -1.16% recorded a year earlier, according to the DGBAS.

At the beginning of 2013, the average CPI inflation rate registered 2.04% during January and February due to rising prices of gasoline, fruits, and travel fares. However, after March, the CPI inflation rate fell successively and hit a yearly low of -0.78% in August, primarily because of a higher 2012 base. Subsequently, domestic prices of vegetables and fruits surged significantly owing to typhoons, and, combined with an electricity price hike, pushed consumer prices upwards and led to the rebound of the CPI inflation rate. Overall, domestic prices rose mildly in 2013 as the average CPI inflation rate was 0.79%, lower than the 1.93% of the previous year, whereas the core CPI²⁵ inflation rate was 0.66%, lower than the 1.00% recorded a year earlier.

In 2014, while the prices of international agricultural products and raw materials went up due to abnormal climate events, the DGBAS projects the annual WPI inflation rate to rebound to 0.93%. Regarding the CPI, as the rising prices of raw materials exert upward pressure on food prices, the CPI inflation rate is predicted by the DGBAS to rise to 1.53%²⁶ in the same year.

Chart 2.17 Consumer and wholesale price inflation rates



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

²⁴ See Note 5.

²⁵ The term "core CPI" in this report refers to the consumer price index excluding fruits, vegetables and energy.

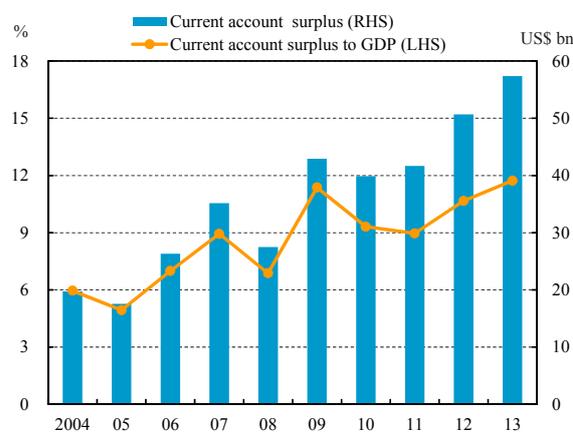
²⁶ See Note 5.

2.2.3 Current account surplus persisted and foreign exchange reserves stayed abundant

On account of slightly increasing exports supported by gradual global economic recovery and contracting imports, the goods surplus trended up in 2013. This, combined with a larger services surplus, caused the annual current account surplus to reach US\$57.4 billion, or 11.73% of annual GDP,²⁷ increasing by US\$6.7 billion or 13.24% compared to 2012 (Chart 2.18).

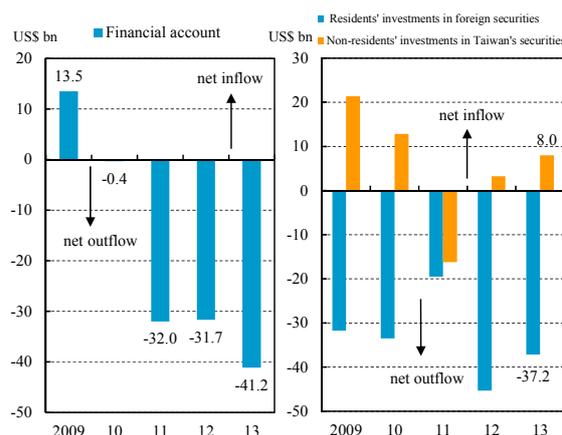
As for the financial account, in 2013, the annual balance of outflows registered a record high of US\$41.2 billion, primarily because net outflows of residents' direct investment and debt securities investments, as well as due from foreign banks in the banking sector, registered record highs. Analyzing the components of financial account, the net outflows of residents' investment in foreign securities in 2013 recorded US\$37.2 billion, mainly due to more investments in foreign debt securities by insurance companies seeking higher revenues. During the same period, the net inflows of non-residents' investment in Taiwan's securities registered US\$8 billion because of greater investments by foreign institutional investors in the domestic stock market (Chart 2.19). In addition, the outflows of other investments saw an expansion led by domestic banks increasing re-deposits at foreign banks due to a sharp growth in RMB deposit balances. Although the funds of foreign institutional investors primarily flowed into the stock market and, in turn, helped to promote stock market momentum, this may have a negative impact on the domestic stock market if capital flows reverse.

Chart 2.18 Current account surplus



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

Chart 2.19 Financial account and net inflow of investments in securities



Source: CBC.

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.

With a rising current account surplus but a greater increase in outflows on the financial account, the balance of payments surplus declined to US\$11.3 billion in 2013, contracting by 26.91% from a year earlier. Over the same period, the steady balance of payments surplus together with continuously ascending investment earnings of reserve assets contributed to accumulating foreign exchange reserves, which reached US\$416.8 billion at the end of December, a 3.38% increase from the previous year. Furthermore, at the end of March 2014, this total amount had continuously climbed to US\$419.2 billion, reflecting ample foreign exchange reserves. At the end of 2013, the ratio of foreign exchange reserves to imports increased to 18.53 months,²⁸ led by growth in foreign reserves and shrinkage of import values, whereas the ratio of foreign exchange reserves to short-term external debt decreased to 2.67 times²⁹ due to a greater rise in external debt. These two ratios were both higher than internationally recognized minimum 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).

Chart 2.20 Short-term external debt servicing capacity

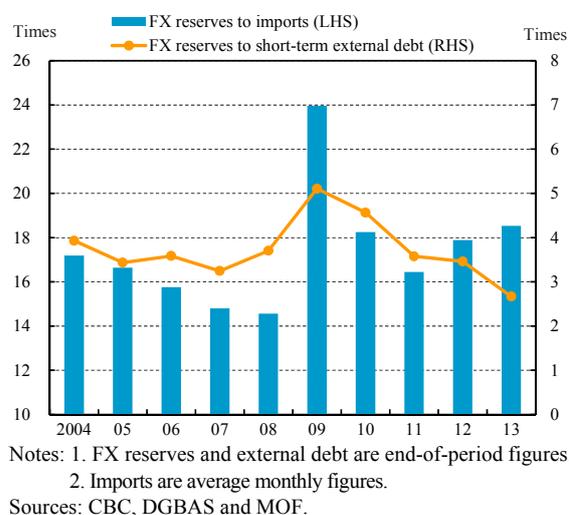
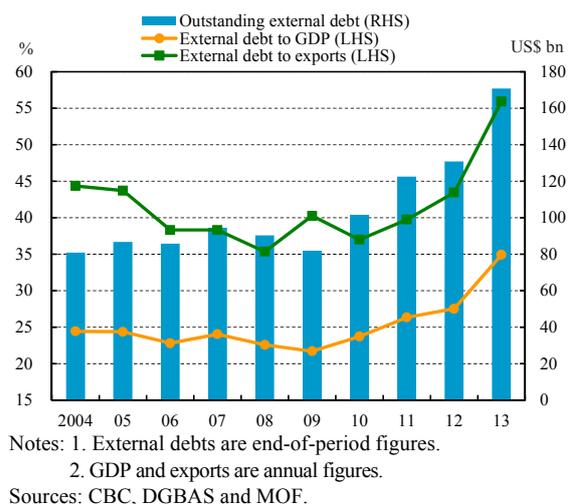


Chart 2.21 External debt servicing capacity



²⁸ A country with a ratio of foreign exchange reserves to imports of more than three months is considered to be at relatively low risk.

²⁹ The general international consensus is that a ratio of foreign exchange reserves to short-term external debt higher than 100% indicates relatively low risk.

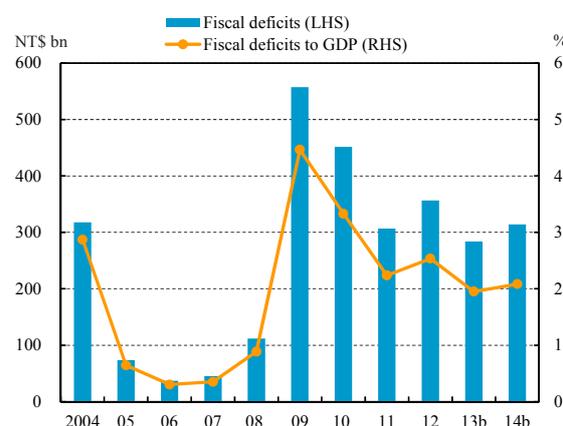
2.2.4 Scale of external debt expanded and debt servicing capacity remained strong

Taiwan's external debt³⁰ increased continuously in 2013 and registered US\$170.8 billion, or 34.92% of annual GDP, at the end of the year, indicating that the capacity to service external debt remained robust.³¹ In recent years, the scale of external debt expanded constantly owing to the increases of foreign institutional investors' NTD deposit balances and domestic banks' due from foreign banks. Owing to the greater rise of external debt than that of exports in 2013, the ratio of external debt to annual exports rose to 55.91% as of the year end (Chart 2.21). Nevertheless, export revenues were still sufficient to cover external debt,³² and there were no signs of servicing pressure on external debt.

2.2.5 Fiscal deficits slightly contracted 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 notably contracted from 2009 onwards. In 2013, the amount of the fiscal deficits declined to NT\$284.1 billion, or 1.95 % of annual GDP, following a marginal rebound in 2012. It is

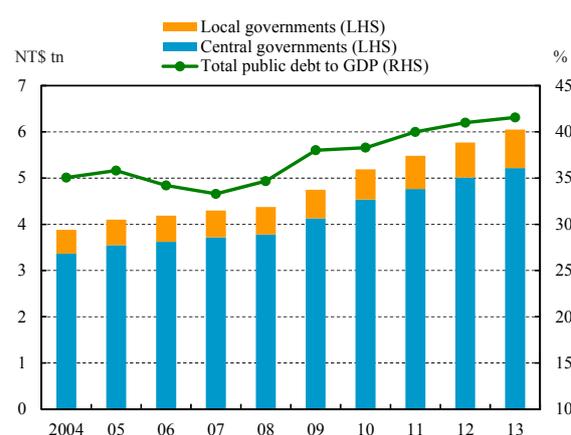
Chart 2.22 Fiscal deficits position



Notes: 1. Fiscal position data include those of central and local governments.
2. Data of fiscal deficits are annual figures. Figures for 2013 and 2014 are budgets.

Sources: MOF and DGBAS.

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 2013 are preliminary final accounts and budgets for the central government and local governments, respectively.

Sources: MOF and DGBAS.

³⁰ 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.

³¹ 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.

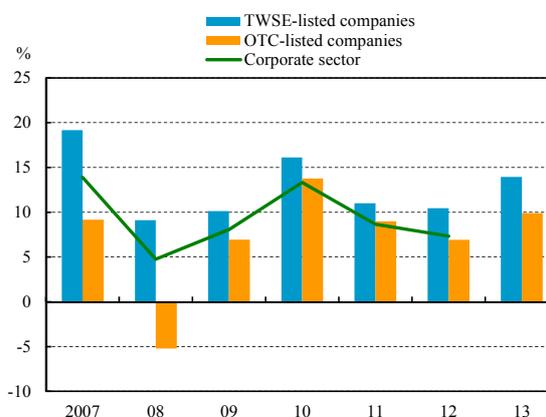
³² The general international consensus is that a ratio of external debt to exports less than 100% indicates relatively low risk.

expected that fiscal deficits will increase to NT\$313.9 billion alongside a slight rise in the ratio of fiscal deficits to annual GDP to 2.08%³³ in 2014 (Chart 2.22).

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 government³⁴ in 2013 expanded steadily to NT\$6.05 trillion,³⁵ or 41.55% of annual GDP,³⁶ well above the NT\$5.77 trillion recorded in 2012 (Chart 2.23).

To promote fiscal health, the Ministry of Finance proposed the “Fiscal Health Plan” that seeks to enhance a sound fiscal system through urging related government agencies to take action. The key aspects of the policy direction include: controlling the scale of debt; adjusting the structure of expenditure; coordinating all the resources; diversifying sources of finance; and timely modifying taxation.³⁷

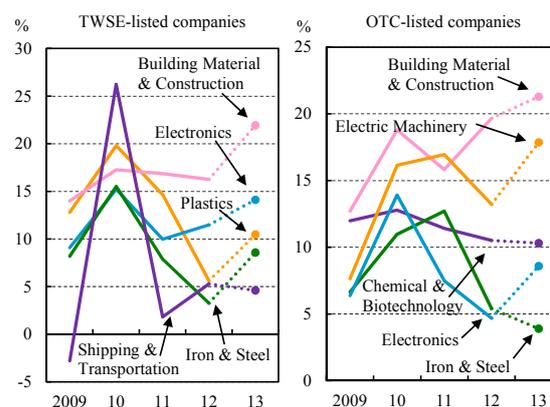
Chart 2.24 Return on equity in corporate sector



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

Sources: JCIC and TEJ.

Chart 2.25 Return on equity of TWSE-listed and OTC-listed companies by major industries



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

Source: TEJ.

³³ As a comparison, fiscal deficits in EU member nations are not allowed to exceed 3% of GDP, according to the *Maastricht Treaty* and the subsequent *Stability and Growth Pact*.

³⁴ 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. As of February 2014, the outstanding one-year-or-longer non-self-liquidating public debts are NT\$5.30 trillion, NT\$0.54 trillion, NT\$0.16 trillion, and NT\$1.2 billion for central government, municipalities, counties, and townships, respectively. The figures account for 37.52%, 3.86%, 1.16%, and 0.009% of the average GDP for the preceding three fiscal years, which are below the ceilings of 40.6%, 7.65%, 1.63%, and 0.12% for central government, municipalities, counties, and townships, separately, set out in the *Public Debt Act*.

³⁵ The figure is based on preliminary final accounts and budgets for central government and local governments, respectively. Outstanding non-self-liquidating debt at all levels of government with a maturity of one year or longer stood at NT\$6.01 trillion as of the end of February 2014. If debt with a maturity of less than one year and self-liquidating debt are added in, outstanding public debt stood at NT\$6.82 trillion.

³⁶ 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*.

³⁷ Taiwan’s legislature has passed the amendment of *Income Tax Act* and *Value-added and Non-value-added Business Tax Act* on 16 May 2014. It will help to promote fiscal health and to improve income allocation.

2.3 Non-financial sectors

2.3.1 Corporate sector³⁸

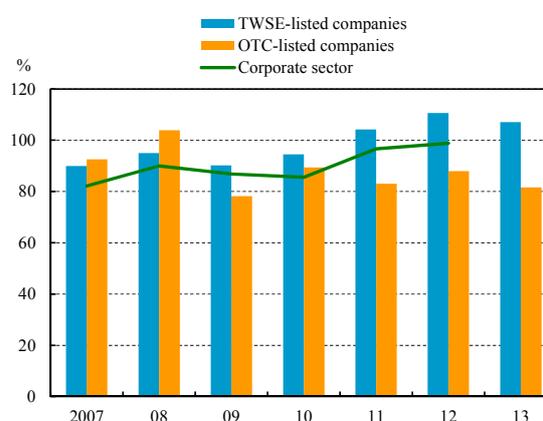
The profitability of listed companies increased in 2013. Meanwhile, their financial structure was stable and short-term debt servicing capacity enhanced. The credit quality of corporate loans stayed sound, as NPL ratios were still at low levels. Owing to the uncertainties surrounding the prospects for global economic recovery, coupled with economic restructuring in Mainland China and a possible elevation of global interest rates, the corporate sector's operations and future profits are likely to face challenges.

Profitability of listed companies grew in 2013

In 2013, benefiting from the global recovery and stable economic growth in Mainland China, average ROEs of TWSE-listed and OTC-listed companies rose to 13.95% and 9.90%, respectively, compared to 10.45% and 6.91% in 2012 (Chart 2.24). Profitability broadly improved, mainly because the semiconductor and the trading and consumer goods industries reported profit growth, and the optoelectronic industry saw a return to profitability after a period of great losses.

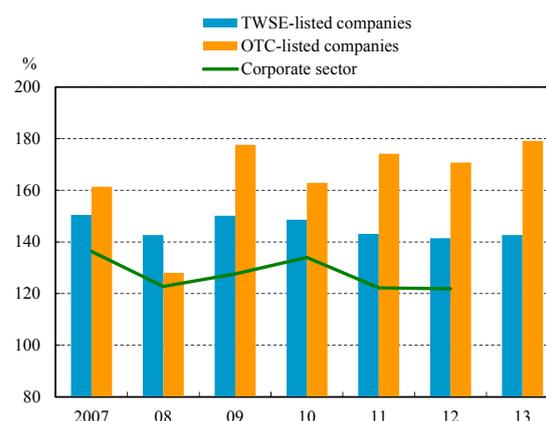
Except for the shipping and transportation industry, all major industries for TWSE-listed companies reported increasing ROEs in 2013, especially the building material and construction industry. For OTC-listed companies, except for decreased profitability in the chemical and biotechnology and the iron and steel industries, all other industries registered

Chart 2.26 Leverage ratios in corporate sector



Note: Leverage ratio = total liabilities / equity.
Sources: JCIC and TEJ.

Chart 2.27 Current ratios in corporate sector



Note: Current ratio = current assets / current liabilities.
Sources: JCIC and TEJ.

³⁸ Throughout this section, figures for the corporate sector are entity financial data as of 2012 in accordance with ROC GAAP. Listed companies prepare consolidated financial data as of 2013; prior to 2011 are under ROC GAAP, while 2012 and 2013 are under the TIFRSs. In light of changes in accounting treatment and presentation, readers should interpret these figures prudently when comparing statistics before and after IFRSs adoption.

better performance (Chart 2.25).

Leverage ratio decreased slightly for listed companies

At the end of 2013, the average leverage ratio for TWSE-listed companies slightly fell to 107.07% from 110.61% at the end of the previous year, but remained at a high level. In addition, the average leverage ratio for OTC-listed companies decreased to 81.65% from 87.95% a year earlier (Chart 2.26). Over the same period, outstanding commercial paper and corporate bonds issued by listed companies in view of raising short-term and mid- to long-term funds were much higher than a year earlier, resulting in the run-up of total liabilities. However, leverage ratios declined somewhat due to a greater increase in equity.

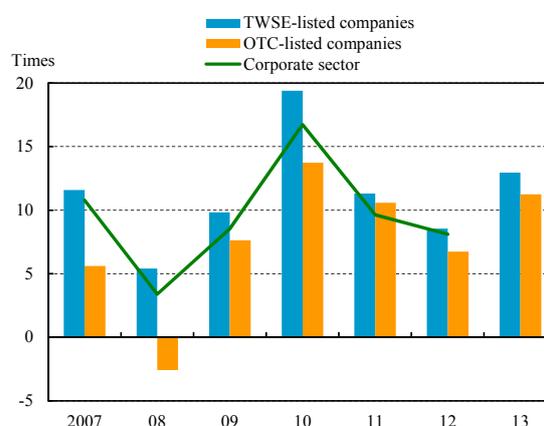
Short-term debt servicing capacity for listed companies enhanced

The current ratio for TWSE-listed companies remained stable at 143% at the end of 2013, while the interest coverage ratio rose to 12.96 as a result of increasing profitability. Moreover, the current ratio and interest coverage ratio for OTC-listed companies rebounded to 179% and 11.24, respectively, both higher than the average levels of recent years (Chart 2.27 and 2.28). For listed companies as a whole, short-term debt servicing capacity slightly enhanced.

Credit quality of corporate loans remained sound

In 2013, the NPL ratio for corporate loans granted by financial institutions was maintained at a relatively low level. Furthermore, the ratio rose in the first three quarters of 2013, owing to the reclassification of impaired loans of a few large corporations as NPLs. However, the ratio declined to 0.63% at the end of the year, lower than the ratio of 0.64% posted the year before,

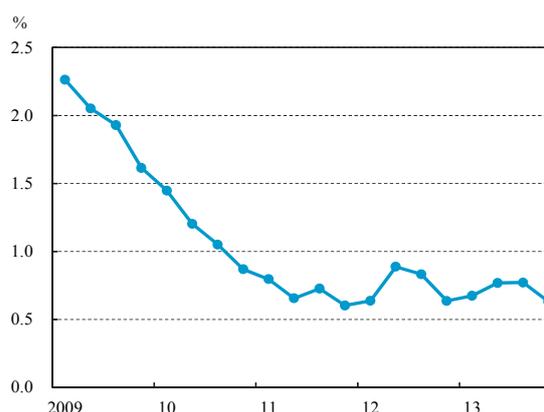
Chart 2.28 Interest coverage ratios in corporate sector



Note: Interest coverage ratio = income before interest and tax / interest expenses.

Sources: JCIC and TEJ.

Chart 2.29 NPL ratios of corporate loans



Note: End-of-period figures.

Source: JCIC.

reflecting sound credit quality for the corporate sector (Chart 2.29).

Corporate sector's profit outlook still faces challenges

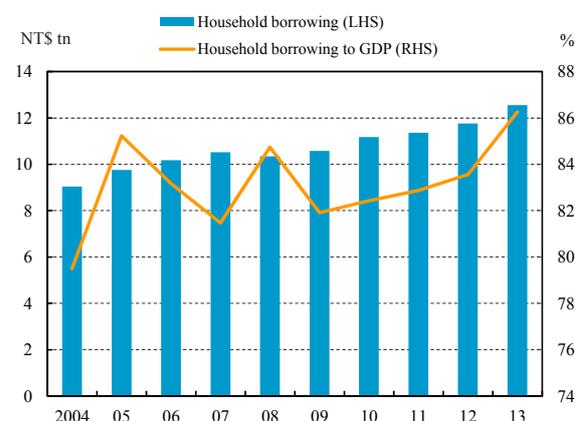
The international economy has gradually improved and the domestic economy has grown moderately, which has aided to underpin corporate profits. However, the prospects for global economic recovery remain uncertain. This, coupled with concerns about the pace of the US reducing the size of quantitative easing and the expected rises in interest rates, will affect the global economy and capital market performance. Should interest rates go up, it could leave firms, especially highly leveraged firms, exposed to heavier debt servicing burdens.

In addition, Mainland China's economic restructuring is also an important factor impacting on Taiwan's export industries (Box 2), especially those in which revenue and assets are mainly concentrated in the automobile, chemical and infrastructure-related industries in Mainland China. Moreover, as Mainland China's TFT-LCD panel and petrochemical industries localize their supply chains, which will transfer the relationship with Taiwanese firms from being complementary and cooperative to being competitive and alternative, coupled with overcapacity and price competition, a situation which is unfavorable for the profitability of Taiwan's export industries might arise.

2.3.2 Household sector

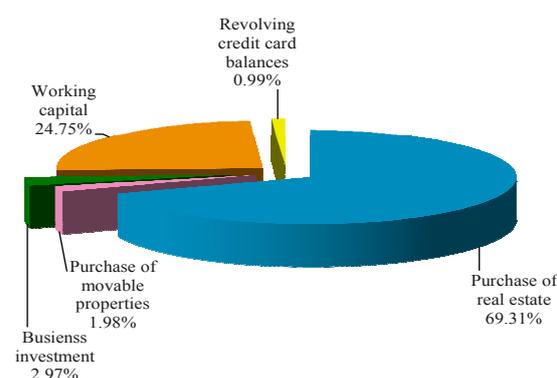
The household debt burden relieved slightly as the balance of total household borrowing expanded more slowly than that of disposable income. However, short-term debt servicing capacity of the household sector marginally deteriorated, driven by the build-up of

Chart 2.30 Household borrowing to GDP



Sources: CBC, JCIC and DGBAS.

Chart 2.31 Household borrowing by purpose



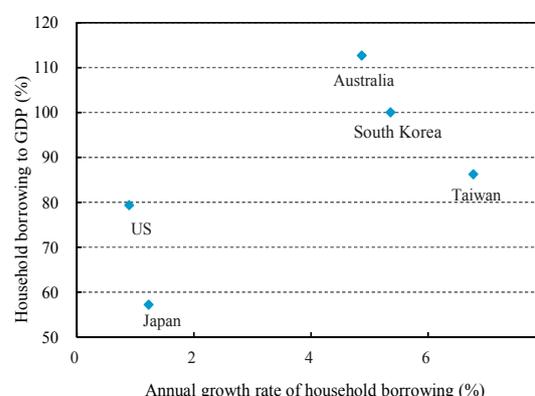
Note: Figures are as of the end of 2013.
Sources: CBC and JCIC.

medium-and short- term borrowing. The overall credit quality of household borrowing remained satisfactory. Furthermore, the gradual easing of the unemployment rate and the continuous growth of regular earnings should help to underpin the debt servicing capacity of households.

Household borrowing increased continuously

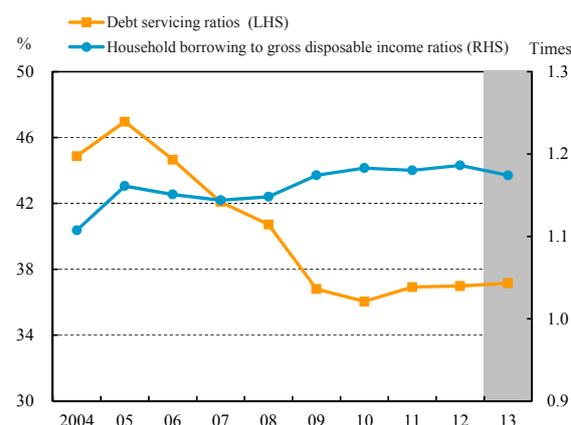
Total household borrowing³⁹ saw a continued expansion in 2013 and reached NT\$12.56 trillion at the end of the year, equivalent to 86.26% of annual GDP (Chart 2.30). The year-on-year growth rate of household borrowing, mainly contributed to by an increase in the purchase of real estate and working capital loans, uplifted to 6.77% at the end of 2013. The largest share of household borrowing went for the purchase of real estate (69.31%), with an annual growth rate of 4.84%, followed by working capital loans⁴⁰ (24.75%), with a considerably increased annual growth rate of 12.21%. The rest of the household borrowing categories took only minor percentages, including loans to movable property purchases largely consisting of vehicle loans, business investment loans mainly for margin purchases of securities, and revolving balances on credit cards (Chart 2.31). Among these three types of household borrowing, the first two loans exhibited year-on-year growth rates above 13%, whereas revolving balances on credit cards posted a negative annual growth rate.

Chart 2.32 Household indebtedness in selected countries



Note: Figures for Taiwan and the US are as of the end of 2013. The others are as of the end-September 2013. Sources: Fed, BOJ, BOK, ABS, IMF, DGBAS, CBC and JCIC.

Chart 2.33 Household indebtedness and debt servicing ratios



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

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, 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.

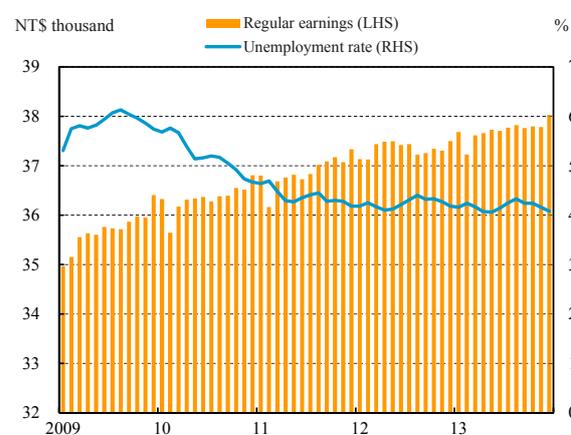
⁴⁰ The term “working capital loans” includes outstanding cash card loans.

Compared to other selected countries, the growth of total household borrowing in Taiwan was relatively high. As a percentage of GDP, household borrowing in Taiwan was lower than that in Australia and South Korea (Chart 2.32).

Household debt burden alleviated somewhat

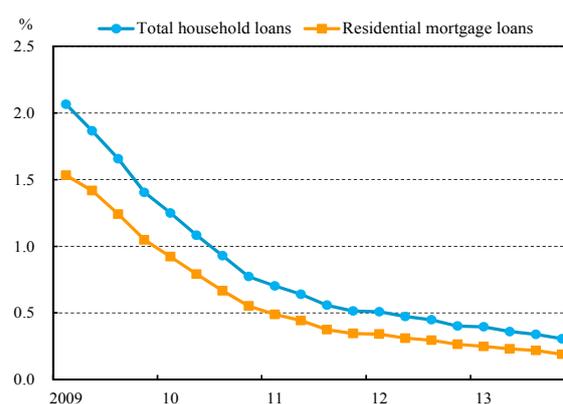
As total household borrowing grew at a slower pace than disposable income in 2013, the ratio of household borrowing to gross disposable income⁴¹ shrank to 1.17 at the end of the year, reflecting that the household debt burden lessened. However, the debt servicing ratio kept rising to 37.15% in 2013, higher than that of 36.98% a year earlier (Chart 2.33), mainly driven by mounting household short-term debt servicing pressure due to the increase in loans to movable property purchases and working capital loans. Nevertheless, the decreasing domestic unemployment rate along with steadily growing regular earnings (Chart 2.34) should help to improve the debt servicing capacity of the household sector.

Chart 2.34 Unemployment rate and regular earnings



Source: DGBAS.

Chart 2.35 NPL ratios of household borrowing



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

Source: JCIC.

NPL ratio of household borrowing declined to a historical low

The NPL ratio of household borrowing continuously dropped to 0.31% at the end of 2013, 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, steadily contracted during the year. This indicated that household credit quality remained satisfactory.

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

2.3.3 Real estate market

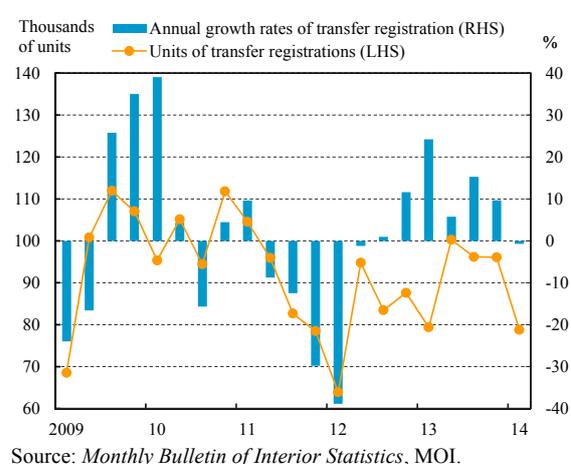
In the first half of 2013, transactions in the real estate market increased significantly, but resumed a stable level in the second half of the year. While housing prices continuously trended upwards in 2013, it stayed at high levels with fluctuating movements in 2014 Q1. In addition, real estate loans grew moderately as mortgage interest rates rose slightly.

Trading volume in the real estate market expanded before resuming a stable level

In the first half of 2013, trading volume in the real estate market increased in Q2 boosted by issues regarding the Taoyuan Aerotropolis, the upgrading of cities and counties to special municipalities as well as pan-Taipei metropolitan area mass rapid transit construction. In the second half of the year, housing market sentiment turned conservative and the trading volume declined slightly owing to concerns over an early exit from QE in the US in addition to the proposed amendment of the *Specifically Selected Goods and Services Tax Act* by the Ministry of Finance. In Q3, the total number of building ownership transfers for transaction increased by more than 15% year on year owing to a lower base in the previous year as a result of the launch of a property transaction price registration system that led to contracting trading volume. In Q4, the number of building ownership transfers for transaction remained at the same level quarter on quarter due to an increase in trading volume before adjusting for current land value and massive construction projects entering the completion phase. Starting 2014, transactions in the real estate market contracted gradually, and the number of building ownership transfers for transaction declined to 79 thousand units in Q1, with an annual growth rate of -0.73% (Chart 2.36).

In 2013, the accumulated number of building ownership transfers for transaction rebounded to 370 thousand units, with an annual growth rate of 12.78%. Analyzed by the six metropolitan areas, Taipei City registered slight growth of 2%, while the other special municipalities and Taoyuan County saw annual growth rates of above 10%. Taichung City and New Taipei City, among others, reported greater increases.

Chart 2.36 Building ownership registrations for transaction



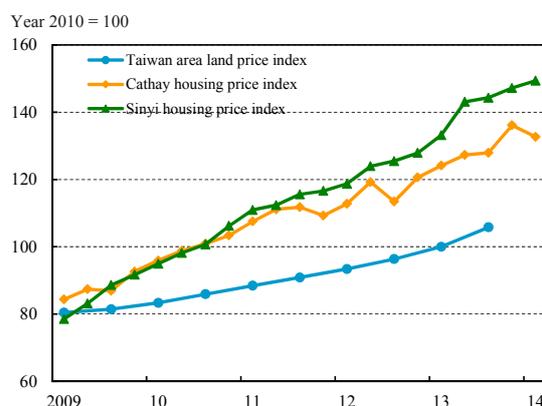
Real estate prices trended upwards

Driven by a buoyant housing market, housing prices rose in 2013. Land prices also continuously trended up due to an active market, as the land price index recorded an annual growth rate of 9.83% in September 2013⁴² (Chart 2.37).

The Cathay housing price index (for new constructions) fluctuated with an upward trend. The average growth rate for the whole of 2013 was 9.61%, higher than 7.48% a year earlier. Among the major metropolitan areas, there was greater growth in Taoyuan and Hsinchu City and County as well as Kaohsiung City. In 2014 Q1, the Cathay housing price index decreased, but still increased 6.91% year on year. House prices in the major metropolitan areas mostly elevated, but New Taipei City reversed to trend downwards.

The Sinyi housing price index (for existing buildings) also saw a rise. The average growth rate of the index was 14.43% in 2013, higher than 8.89% a year earlier. Among the major metropolitan areas, there were significant increases in Kaohsiung City and Taoyuan County. In 2014 Q1, the Sinyi housing price index continued an upward trend, with the annual growth rate registering 12.16%, although Taipei City saw a narrower upturn.

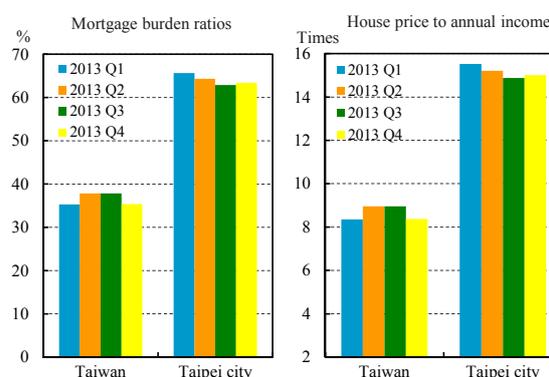
Chart 2.37 Land and house price indices



- Notes: 1. Taiwan area land price index is released semiannually.
 2. The sample and compilation methods employed to generate the Sinyi 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 Mortgage burden ratios and house price to income ratios



- Notes: 1. Mortgage burden ratio = median of housing loans monthly payments / median of household monthly disposable income.
 2. Housing price was taken from the residential trading price data recorded in the property transaction price registration system of the Department of Land Administration, MOI.

Source: *Housing price affordability indicator statistics*, Construction and Planning Agency of the MOI.

⁴² The land price index was 105.8 as the Ministry of Interior re-designated 31 March 2013 as the base period (index=100).

Mortgage burden was heavy

Starting 2013, with rising housing prices, the mortgage burden ratio for Taiwan stayed high and registered 35.4% in 2013 Q4. The house price to income ratio during the same period was 8.4 (Chart 2.38), demonstrating that the mortgage burden was heavy. Among the metropolitan areas, the mortgage burden and house price to income ratios in Taipei City were the highest, reaching 63.4% and 15.0, respectively.

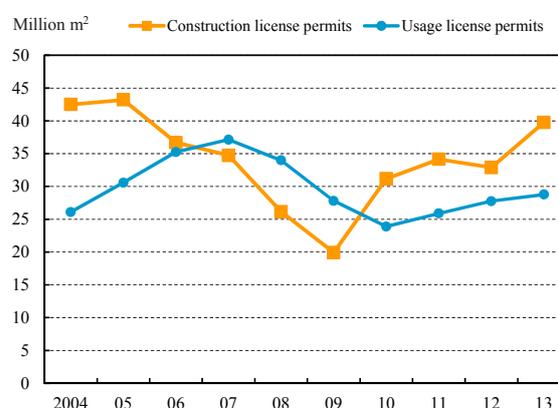
Construction license permits increased significantly and vacant houses expanded

Due to significantly increasing construction projects introduced to the market, the total floor space of construction license permits sharply increased by 20.92% year on year in 2013, with residential properties increasing by 31.56%. Starting 2014, owing to the lower-than-expected sale of new construction projects as well as a higher base in the previous year, the annual growth rate of residential properties decreased to 1.55% in 2014 Q1 in terms of the total floor space of construction license permits.

Additionally, total floor space of usage permits increased by 3.64% year on year in 2013, with residential properties increasing by 7.27% (Chart 2.39). In 2014 Q1, the annual growth rate of residential properties registered 6.50% in 2014 Q1 in terms of the total floor space of usage permits.

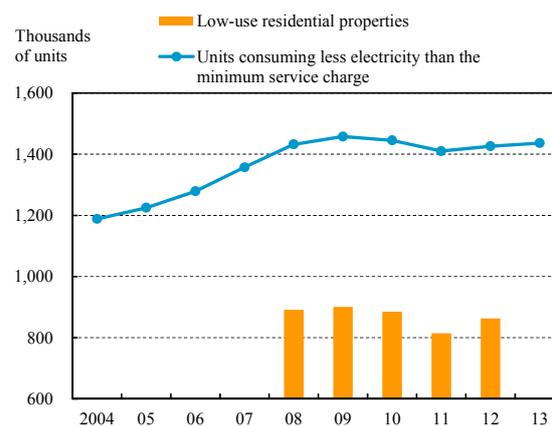
The total number of low-use residential properties was about 863 thousand units at the end of 2012, estimated by the Construction and Planning Agency of the Ministry of Interior. And the ratio of low-use residential properties to housing inventory was about 10.63%. In addition,

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



Sources: Construction and Planning Agency of the MOI and Taiwan Power Company.

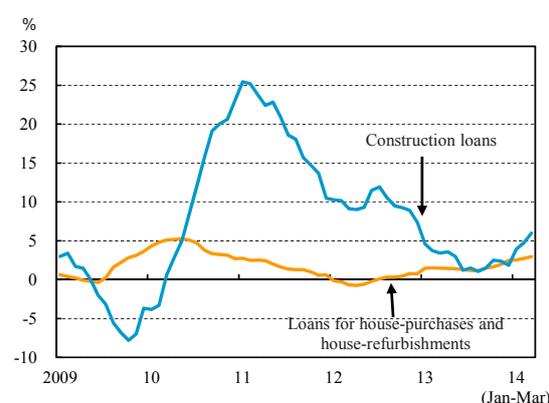
total new construction housing inventory (for sale)⁴³ registered 31 thousand units at the end of same year. Moreover, the number of vacant residential properties was 1.44 million units in 2013, estimated by the number of units consuming less electricity than the minimum service charge from the Taiwan Power Company (Chart 2.40). Due to massive construction projects introduced over the last few years and lower-than-expected sales, the units of vacant houses remained high.

Real estate loans grew modestly as mortgage interest rates gradually increased

Affected by the CBC's and the FSC's measures to strengthen risk management regarding the real estate loans of banks, the outstanding loans for house purchases and house refurbishments granted by banks⁴⁴ reached NT\$5.94 trillion at the end of 2013, with an annual growth rate of 2.48%. Outstanding construction loans reached NT\$1.49 trillion and the annual growth rate decreased to 1.83%. At the end of March 2014, the annual growth rate of the two types of loans increased compared to the end of 2013 (Chart 2.41).

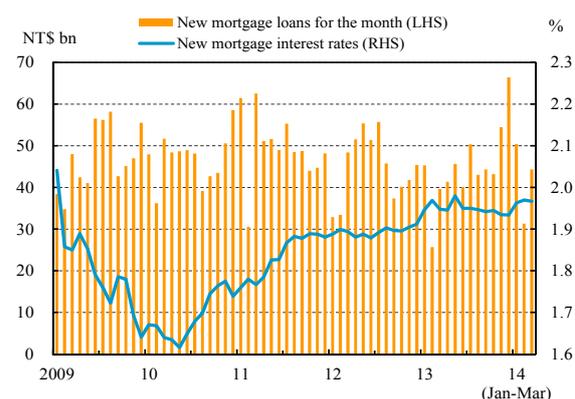
The new loans for house purchases granted by the five large banks⁴⁵ increased slightly by 0.04% year on year to NT\$ 539.5 billion in 2013. In 2014 Q1, they continued to increase, posting a growth rate of 13.93% year on year. As for the interest rate for new mortgages, it gradually increased but remained at a low level in 2013, and then rose slightly to 1.967% in March 2014 (Chart 2.42).

Chart 2.41 Annual growth rates of real estate loans



Source: CBC.

Chart 2.42 New mortgages – amounts and interest rates



Source: CBC.

⁴³ According to the Construction and Planning Agency of the Ministry of Interior, new construction housing inventory (for sale) includes: residential properties with house tax registration, built within the last 5 years, still maintaining the first registration and having the possibility of being for sale.

⁴⁴ Refers to domestic banks and the local branches of foreign banks.

⁴⁵ The five large banks refer to Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, and Land Bank of Taiwan.

CBC continuously implemented targeted prudential measures and reminded borrowers to pay attention to the risk of interest rate fluctuations

The CBC continuously deployed measures to enhance risk management regarding the real estate loans of banks in 2013, and in March urged banks to take self-disciplined prudential measures for housing loans in the areas that have seen dramatic increases in housing prices. Subsequently, in December, the CBC suggested that banks cautiously conduct the business of land collateralized loans in industrial areas for the purpose of ensuring banking soundness and financial stability. In addition, it is noted that domestic banks mostly adopted floating-rate mortgage loans. Meanwhile, the ratio of mortgage expenditure to household income exceeded 30% in Taiwan. As a consequence, it would not only increase borrowers' mortgage payment burdens but also heighten the credit exposures of financial institutions given the possibility of future interest rate hikes. The CBC, in turn, continuously alerted borrowers to pay attention to the risk of interest rate fluctuations in the future and to prepare a well-developed financial plan in advance.

Those measures proved to be effective, as both the concentration of real estate loans and loan-to-value ratios fell. Such measures, together with the continuous promotion of real estate tax reform, strengthening of tax audits on real estate transactions and improving the property transaction price registration system, helped promote sound development of the real estate market.

III. Financial sector assessment

3.1 Financial markets

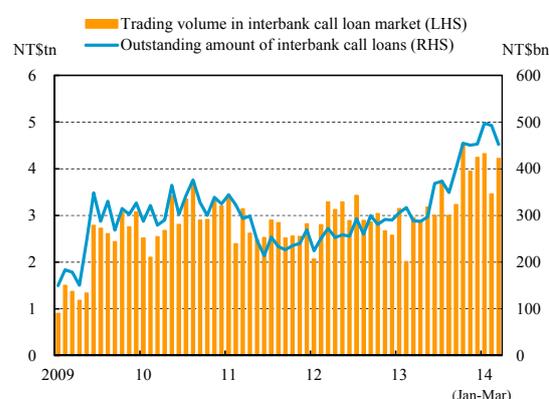
As for the money and bond markets, the trading volume in interbank call loans expanded in 2013. The outstanding amount of bill and bond issuance in the primary markets also rose significantly, although the trading volume in the secondary markets remained contracted. However, the yield spread between long-term and short-term market rates saw a rebound. With regard to the stock markets, stock indices trended up, while volatility regained stability after ascending and the annual turnover ratio continued to hit a new low. In the foreign exchange market, the NT dollar exchange rate against the US dollar turned to depreciation but remained relatively stable compared to the exchange rates of other major currencies, while trading volume continued to increase.

3.1.1 Money and bond markets

Trading volume of interbank call loans expanded remarkably

In 2013, the average daily outstanding amount of interbank call loans increased remarkably by 34.55% year on year. It was primarily because a continued funding surplus in the interbank call-loan market led to increasing interbank call loans provided by domestic banks, and a gradual increase in inward remittances by foreign portfolio investors after September onwards resulted in more funds being parked in the market by foreign banks that serve as custodian banks for foreign portfolio investors. Meanwhile, the trading volume of interbank call loans also expanded with an annual increase of 14.24% in the same period. In 2014 Q1, the trading volume and outstanding amount of interbank call loans mostly remained at a recent high level (Chart

Chart 3.1 Interbank call loan market



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

3.1).

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

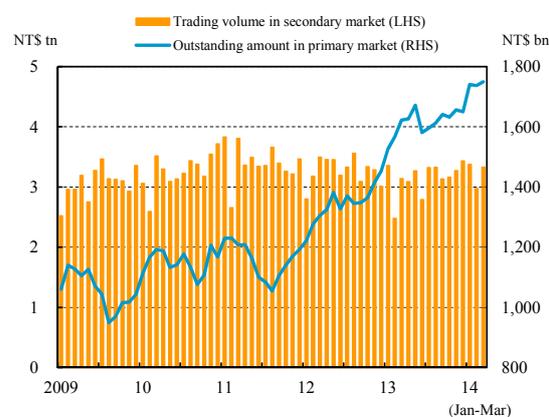
The outstanding amount of bill issuance at the end of 2013 remarkably rose by 13.50% year on year in 2013, with commercial paper posting the highest increase of NT\$175.6 billion or 17.15%. The main reason behind this was that interest rates of commercial paper issuance remained at low levels which attracted large private and state-owned enterprises to raise funds through commercial paper issuance. In March 2014, the outstanding amount of bill issuance remained at a high level (Chart 3.2).

Although bill issuance in the primary market rose, trading volume in the secondary market contracted by 3.65% year on year in 2013. The reason was primarily because bills finance companies replaced repurchase transactions with outright transactions to avoid interest rate risk, and most banks actively employed a buy and hold strategy toward investing in commercial paper.⁴⁶ In 2014 Q1, the trading volume of bills in the secondary bill market remained at a low level (Chart 3.2).

Bond issuance in the primary market expanded, but the turnover of outright transactions in the secondary market further shrank

In 2013, the outstanding amount of bond issuance ascended by 6.85% year on year, with corporate bonds posting the highest growth of 13.67% due to additional issuance by some large high-tech corporations to meet their funding requirements for capacity expansion. Government bonds also registered a year-on-year increase of 5.58% in 2013, affected by treasury funds management and the implementation of the policy to a regular and moderate issuance of government bonds. Nevertheless, the outstanding amount of financial debentures kept at a similar level compared with the previous year, while that of beneficiary securities, foreign bonds and foreign currency-denominated international bonds remained low (Chart

Chart 3.2 Primary and secondary bill markets



Sources: CBC and FSC.

⁴⁶ At the end of 2013, bank-held commercial paper accounted for 44.34% of total outstanding of issuance, rising by 2.59 percentage points over the previous year.

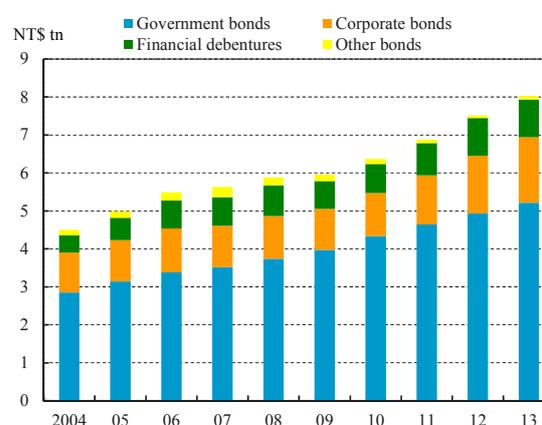
3.3). Although the transactions of RMB-denominated international bonds (Formosa Bonds), among others, were small, it is expected that their market scale will gradually amplify in the future on the back of active development of the offshore RMB market in Taiwan (Box 3).

In 2013, the bond market was still sluggish, and trading volume declined by 20.02% year on year (Chart 3.4). Of the components, outright transactions dropped significantly by 25.71% owing to less bonds being traded in the market as banks actively employed a buy and hold strategy toward investing in government bonds.⁴⁷ This, together with a significant rise in bond yields from May 2013, resulted in a further shrinkage in the trading volume in the bond market and lowered the average monthly bond turnover in 2013. Especially due to bond traders' lack of willingness to trade by the end of the year, outright transactions dropped sharply and the monthly turnover ratio descended to a 10-year low of 4.52% in December 2013. In 2014 Q1, the monthly turnover ratio remained flat (Chart 3.5).

Short-term market rates stabilized, long-term market rates slightly dropped after trending up

As for short-term market rates, in 2013, the CBC's decision to keep policy rates unchanged, coupled with market liquidity standing at an appropriate level, resulted in the yield on 90-day commercial paper remaining broadly stable at around 0.86% in the first three quarters. From October onwards, owing to the increase of inward remittances by foreign portfolio investors

Chart 3.3 Outstanding amount of bond issuance in the primary market

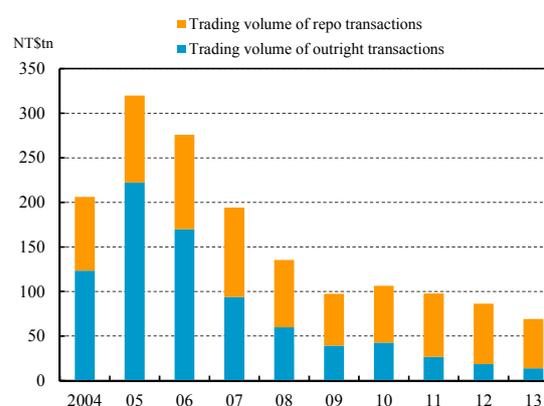


Notes: 1. Other bonds include beneficiary securities, foreign bonds and foreign currency-denominated international bonds.

2. The ratio of other bonds to total outstanding volume was only 1.2% at the end of 2013.

Source: FSC.

Chart 3.4 Outright and repo transactions in the bond market



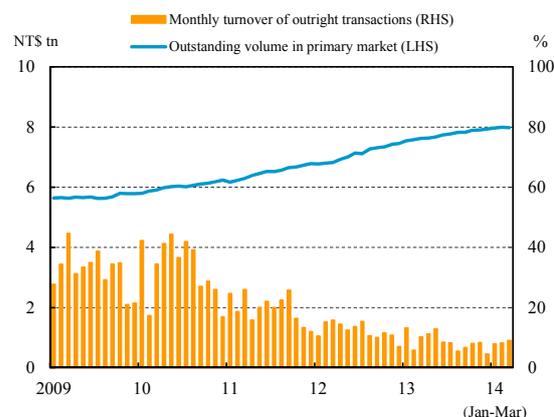
Source: CBC.

⁴⁷ Based on the CBC data, the average share of central government bonds held by banks accounted for 47.25% in 2013, increasing by 1.65 percentage points over the previous year.

and the lack of short-bills sources, short-term market rates slightly declined. In 2014 Q1, the short-term market rates remained relatively stable at a low range.

As for long-term market rates, spurred by brisk trading in the domestic stock markets and a marked hike in US government bond (US bonds) yields, the yield on 10-year government bonds (Taiwan bonds) followed an upward trend in 2013 Q1. However, the yield on Taiwan bonds reversed to trend downwards in response to a drop in US bond yields following the US and Japan both adopting further quantitative easing in April. It dipped to an annual low of 1.17% in early May, with the yield spread between short-term and long-term rates down to 29 basis points. From the middle of May onwards, owing to concerns about the Fed's tapering of asset purchases, the yield on Taiwan bonds reversed to trend up and reached an annual high of 1.79% in September. Afterwards, contrary to market expectations, the Fed decided to leave their monthly asset purchases unchanged. As a result, the yield on Taiwan bonds reversed to trend down, and the yield spread reached 85 basis points at the end of 2013, posting a relative high for the year. In early 2014, the yield on Taiwan bonds fluctuated following the movement of US bonds, and the yield spread slightly dropped to 77 basis points in March (Chart 3.6).

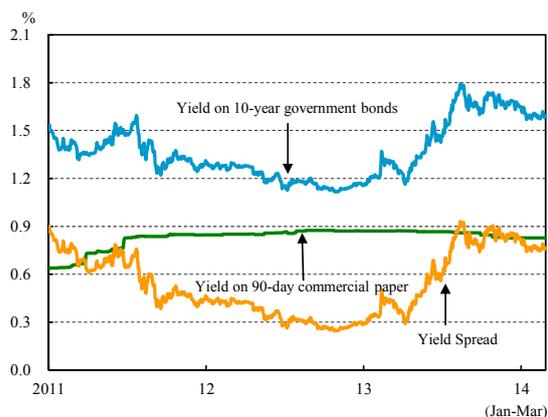
Chart 3.5 Primary bond market and turnover



Notes: 1. Primary bonds include government bonds, corporate bonds and financial debentures.
2. Monthly turnover = trading value in the month / average bonds issued outstanding.
Average bonds issued outstanding = (outstanding at the end of the month + outstanding at the end of last month) / 2.

Source: FSC.

Chart 3.6 Yield spread



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

Source: Bloomberg.

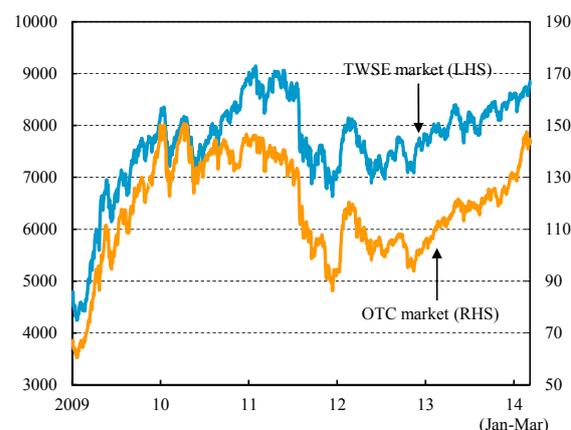
3.1.2 Equity markets

Stock indices trended up, while volatility initially amplified then dampened

Due to massive net buying by foreign portfolio investors in early 2013 spurred by the robust performance of global stock markets, smooth progress of cross-strait financial cooperation and the release of the revised capital gains tax on securities transactions, the TAIEX of the TWSE market kept tracking on an upward path and hit a new high of 8,399 on 22 May. However, subdued by market fear over the downsizing of the Fed's QE program, political turmoil in the Middle East and the repatriation of foreign capital from emerging markets, the TAIEX dipped to 7,814 on 22 August. From September onwards, the FSC announced several stock market support measures, including allowing securities dealers to purchase or sell securities at the limit-up or limit-down price, loosening restrictions on short selling at a price lower than the previous trading day's closing price, and allowing investors to execute day trades where the purchase precedes the sale, etc. Furthermore, the Fed decided to maintain the pace of its monthly bond purchases. All these propelled the TAIEX to soar up to an annual high of 8,623 on 30 December and register 8,612 at year-end 2013, an increase of 11.86% year on year. During 2014 Q1, the TAIEX continued on its upward path and reached 8,849 at end-March, increasing by 2.76% from the end of 2013 (Chart 3.7).

Taiwan's GreTai Securities Market (GTSM) Index of the OTC market trended up from 104 posted in early 2013 and closed at a year high of 130 at end-December, for an annual rise of 25.44%. The index climbed further and reached 145 at the end of March 2014, rising by 11.52% compared to the end of the previous year. The rise was higher than that of the TAIEX (Chart 3.7).

Chart 3.7 Taiwan's stock market indices



Sources: TWSE and GTSM.

Comparing major stock markets around the world, most markets showed positive performances in 2013 except for the Thai Index and the Shanghai Composite Index, though the stock index of Tokyo outperformed others with a rise of 56.72%. The TAIEX climbed by 11.86% year on year, slightly higher than Kuala Lumpur's Composite Index (Chart 3.8).

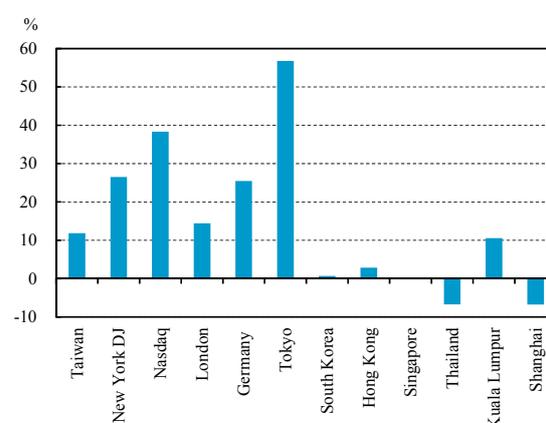
Broken down by sector, most sector indices in the TWSE market entered bullish territory in 2013, except the Shipping and Transportation, Oil, Gas and Electricity, Optoelectronic, Communications and Internet, and Electronic Products Distribution Industry indices, which were all negative performers. The indices for Automobiles and Electric Machinery performed the best, increasing by 48.25% and 42.93%, respectively.

In 2013, the volatility in the TWSE and OTC markets declined after trending up, standing at 9.45% and 10.37%, respectively, at the end of December. At the beginning of 2014, the volatility in the TWSE and OTC markets reversed to increase gradually as the local stock indices rebounded, standing at 10.38% and 12.66%, respectively, at the end of March (Chart 3.9).

Annual turnover ratio kept hitting new lows in the TWSE market but rose slightly in the OTC market

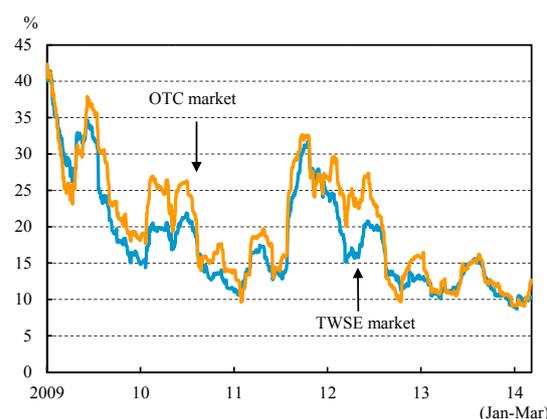
The TWSE market experienced sluggish trading in 2013, with the average monthly trading value registering NT\$1.58 trillion, a contraction of 6.41% year on year, while its turnover ratio in terms of trading value in the same year continuously declined to 82.64%, touching a 10-year low. However, the transaction volume in the OTC market showed a better

Chart 3.8 Comparison of major stock market performances



Notes: 1. Figures are for 2013.
2. Taiwan's data is for the TWSE market.
Source: TWSE.

Chart 3.9 Stock price volatility



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

performance. Its average monthly trading value was NT\$336 billion in 2013, an increase of 36.55% year on year. Reflecting this, the annual turnover ratio of the OTC market rose to 198.87% from 174.80% a year earlier, but still remained at a low level (Chart 3.10).

Comparing major stock markets around the world, the annual turnover ratios in Shenzhen, Tokyo and Shanghai ranked the highest in 2013, while the TWSE market ranked in the middle, approximately equal to the stock market in New York, but higher than those in London, Germany, Hong Kong, Singapore and Kuala Lumpur (Chart 3.11).

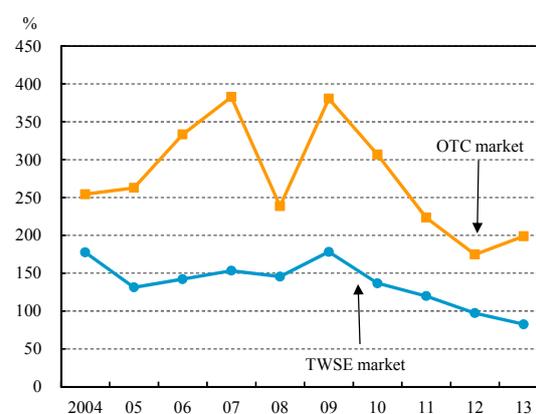
3.1.3 Foreign exchange market

The NT dollar exchange rate followed a depreciating trend and the trading volume increased

In the first half of 2013, the NT dollar exchange rate turned to depreciation, reaching 30.350 against the US dollar on 24 June, owing to an increase in purchases of US dollars by firms and capital outflows by foreign investors caused by the BOJ implementing additional quantitative monetary easing, the worsening European debt crisis, political confrontations on the Korean peninsula, and the possible shocks from an exit from quantitative easing announced by the US. Afterwards, it fluctuated within a narrow range (Chart 3.12).

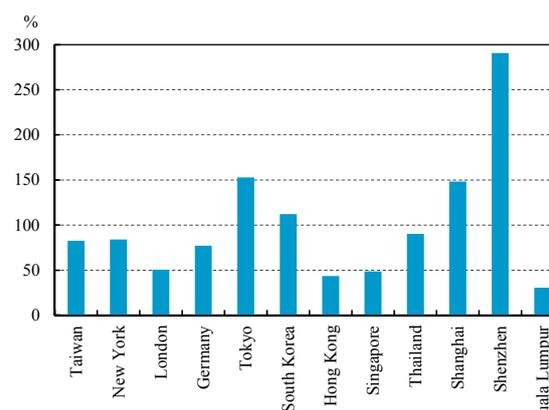
The NT dollar exchange rate reversed to appreciate and reached 29.425 on 23 October in virtue of foreign capital inflows arising from the weakening of the US dollar caused by the fact that the Fed decided to keep the size of its bond purchases unchanged in September 2013. Afterwards, the market expected capital to flow back to the US, and in turn, the US dollar

Chart 3.10 Annual turnover ratios in Taiwan's stock markets



Sources: TWSE and GTSM.

Chart 3.11 Comparison of turnover ratios in major stock markets



Notes: 1. Figures refer to accumulated turnover ratios in 2013.
2. Taiwan's data is for the TWSE market.

Source: TWSE.

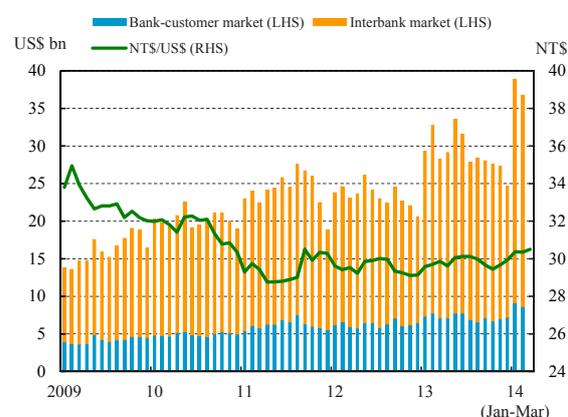
turned to strengthen again as the ECB cut its policy rate, and the Fed announced a gradual tapering of its monthly bond purchases from January 2014. As a result, the NT dollar exchange rate reversed to depreciate and stood at 29.950 against the US dollar at the end of December, with an annual depreciation of 2.72%. In early 2014, the US dollar stayed stronger, whereas the NT dollar exchange rate continued to depreciate and fell to 30.510 against the US dollar at the end of March (Chart 3.12).

Compared to other major currencies in Asia, the depreciation of the NT dollar against the US dollar at 2.72% was lower than the Japanese yen's 17.77%, the Malaysian ringgit's 6.54% and the Singapore dollar's 3.33%, while only the renminbi and the Korean won appreciated, rising by 2.91% and 1.44%, respectively, in 2013. In 2014 Q1, the NT dollar continued to depreciate, falling by 1.84% from the end of 2013, less than the drop of the renminbi but more than that of Korean won, while the Japanese yen appreciated by 1.95% (Chart 3.13).

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 18.31% in 2013. Conversely, the NT dollar depreciated by 6.49%, 5.11% and 4.10% against the euro, the British pound and the Korean won, respectively, over the same period (Chart 3.14).

In 2013, owing to export growth and relatively large domestic and international capital movements, the transactions in the foreign exchange market became more active than a year earlier. The average daily trading volume of the foreign exchange market reached US\$29 billion, increasing by 24.10% compared to US\$23.4 billion a year earlier, primarily because

Chart 3.12 NTD/USD exchange rate and foreign exchange market trading volume

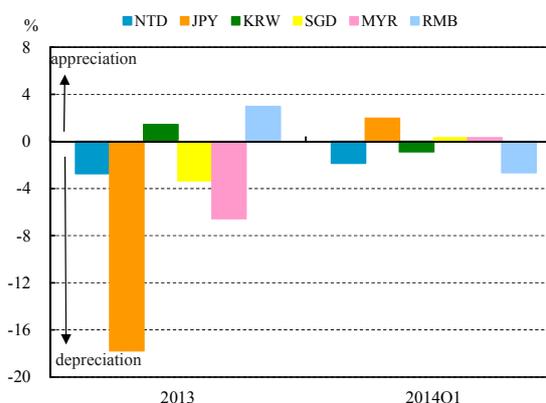


Notes: 1. Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.

2. Latest data for trading volume is as of February 2014.

Source: CBC.

Chart 3.13 Appreciation and depreciation percentages of major Asian currencies against the US dollar



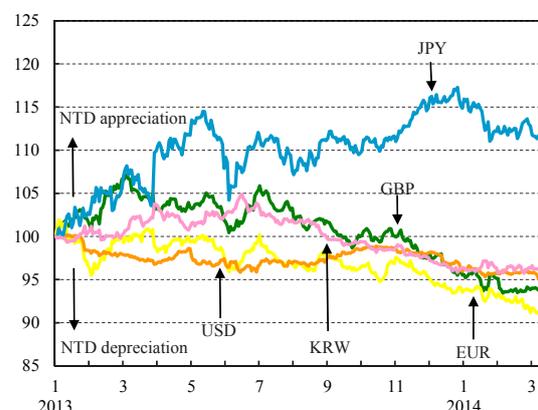
Source: CBC.

of an increase in the trading volume of the interbank market (Chart 3.12). A breakdown by counterparty showed that the average daily trading volume in the interbank market accounted for 75.23% of the total in 2013, while the retail bank-customer market made up a 24.77% share. As for types of transactions, foreign exchange swaps accounted for 41.62% of the total, followed by spot trading with 37.47%. Taiwan's active development of the offshore RMB market is likely to be beneficial to expanding the foreign exchange market (Box 3).

NT dollar exchange rate volatility remained relatively stable

The volatility in the NT dollar exchange rate against the US dollar fluctuated between 0.8% and 6% in 2013, and registered an annual average of 3.18%. In early 2014, with the effect of international capital outflows from emerging markets caused by declining bond purchases by the Fed, the volatility in the NT dollar exchange rate against the US dollar trended upwards, but fell below 3% from the middle of February. From 2013, 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 3.15).

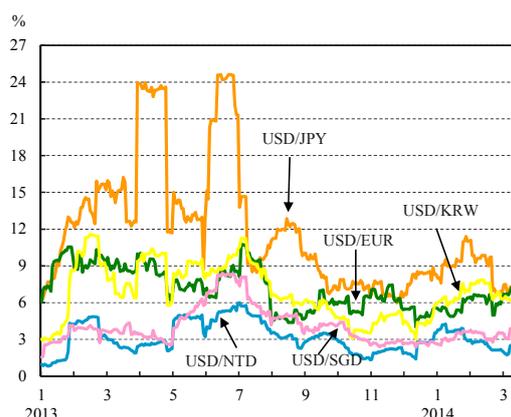
Chart 3.14 Movements of NT dollar exchange rate against key international currencies



Note: 2 January 2013 = 100.

Source: CBC.

Chart 3.15 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.

Box 3

Taiwan offshore RMB market– developments and future prospects

1. Background of the offshore RMB market

With the expansion of Mainland China's economy, its influence in Asia and even the world has grown day by day. Consequently, with consideration to its own benefit, the Chinese government started to actively promote policies that encourage the internationalization of the RMB in 2009, which garnered international attention. Among them, cross-border RMB trade settlement was one of the policies most actively promoted in the earlier stages. Following this were the introduction of the RMB foreign direct investment (RFDI) mechanism, allowing RMB qualified foreign institutional investors (RQFIIs) to invest in Mainland China's capital markets, and the signing of currency swap agreements with other central banks.

The share of RMB's usage in trade settlement grew to 18% of Mainland China's global trade volume in 2013, from 2.5% in 2010. With its close trade ties to Mainland China, how Taiwan will develop its offshore RMB market has drawn worldwide attention.

2. The development of the offshore RMB market in Taiwan

The development of Taiwan's offshore RMB market can be separated into two stages:

(1) First stage: from June 2008 to August 2012

There were two notable measures in this stage: (i) in response to flourishing tourism across the Strait, the CBC authorized financial institutions in Taiwan to exchange RMB banknotes in 2008; (ii) to facilitate cross-border trade settlements for Taiwanese companies operating in Mainland China, in July 2011, the CBC, along with the Financial Supervisory Commission, gave the green light to the OBUs and overseas branches of Taiwanese banks to conduct RMB business.

(2) Second stage: After the signing of the *Memorandum on Cross-Strait Currency Clearing Cooperation* on 31 August 2012

After the signing of the *Memorandum on Cross-Strait Currency Clearing Cooperation between Taiwan and Mainland China*, the main policies promoted include: (i) the Taipei Branch of the Bank of China was designated as the RMB clearing bank in Taiwan in December 2012; (ii) the CBC amended the *Regulations Governing Foreign Exchange Business of Banking Enterprises* in January 2013, allowing DBUs to conduct RMB business, and formally implemented the regulation

on 6th February 2013. This opened a new chapter for the development of the RMB market in Taiwan.

3. Current market development

Financial institutions in Taiwan are allowed to offer a variety of RMB services and products, including deposits and loans, remittances, cross-border trade settlements, currency exchange, derivatives, insurance, and mutual funds. As of the end of March 2014, there were 66 DBUs and 57 OBUs that conducted RMB business, the overview of which is in Table B3-1.

Table B3-1: Overview of RMB business conducted in Taiwan

Unit: RMB bn	
Type of Business	Amount
Outstanding of RMB deposits (2014/3)	268.4
RMB remittances volume (2013/2 - 2014/3)	739.6
Total amount of 15 issues of RMB-denominated bonds (2014/3)	12.1
RMB settlement through the Taipei Branch of the Bank of China (2013/2 - 2014/3)	2,495.7

Source: CBC.

4. Measures already in place and under preparation by the CBC

To develop Taiwan's offshore RMB market, the CBC has undertaken and will undertake the following measures:

4.1 Including RMB into the foreign currency clearing platform

RMB settlement has been integrated into the new foreign currency clearing platform mapped out by the CBC. Beginning 30 September 2013, the platform started to process RMB clearing and settlement of domestic and cross border remittances and funds transfers, including transactions with Mainland China, Hong Kong and other foreign markets. It helps to raise the processing efficiency of the flow of RMB funds.

4.2 Expanding RMB transaction volume and offering liquidity support

4.2.1 Encouraging participation by foreign banks

- (1) Encouraging Taiwan's RMB clearing bank to actively introduce Taiwan's financial environment and the RMB clearing mechanism to other countries in order to attract foreign financial institutions to become participating banks.
- (2) Encouraging Taiwan's leading banks to leverage the OBU tax concessions to attract

more foreign banks to open RMB interbank accounts in Taiwan, as well as encouraging overseas branches of Taiwanese banks to cooperate actively with local financial institutions abroad to grow their RMB business.

4.2.2 Encouraging cooperation between domestic and foreign currency brokerages to enlarge RMB liquidity and transaction volume

The CBC encourages cooperation between Taiwanese FX brokerage houses and their counterparts from other offshore RMB markets such as Hong Kong, Singapore, and London. This will not only expand the size of the global offshore RMB market, but also stimulate the growth of Taiwan's RMB transactions and bolster market liquidity.

4.2.3 Establishing RMB foreign exchange and interest rate fixing mechanisms to facilitate the offering of RMB financial products

The CBC is considering to establish fixing mechanisms for the CNT exchange rate and CNT Taibor (Taipei Interbank Offered Rate) as a benchmark for RMB financial products offered in Taiwan.

4.2.4 Closely cooperating with other offshore markets

The CBC will actively cooperate with other offshore RMB markets, such as Hong Kong, London, and Singapore. In the meantime, the CBC will exchange views and seek opportunities for collaboration with other countries interested in developing their own offshore RMB markets, such as France and Australia.

4.3 Actively negotiating with Mainland China to expand the channels for Taiwan's RMB funds to flow back to Mainland China

4.3.1 Allowing Taiwanese financial institutions to make loans to firms in Mainland China directly

In September 2013, the CBC issued a circular, allowing banks to grant RMB loans to Taiwanese corporate subsidiaries in Kunshan, China, based on lending contracts between the parent companies and their Kunshan subsidiaries. As a result, it not only expands the channels for Taiwan's RMB funds to flow back to Mainland China, but also can lower Taiwanese companies' funding costs. Moreover, in future talks with the Chinese authorities, the CBC will try to gain support to allow onshore RMB lending by Taiwanese banks directly to Taiwanese firms in Kunshan, and to those in Shanghai,

Shenzhen, Xiamen, etc. in the longer term.

4.3.2 Investing in Mainland China's stock and bond markets through RQFII

If Taiwan's legislature passes the cross-strait service trade agreement, the RQFII scheme will also apply to Taiwanese financial institutions wishing to invest their offshore RMB funds in Mainland China's stock and bond markets. The CBC will also express its desire during cross-strait talks to obtain a larger quota for RQFII investment.

4.3.3 Encouraging both domestic and foreign companies to issue RMB bonds in Taiwan

The CBC also encourages both domestic and foreign businesses to issue RMB-denominated bonds in Taiwan, and hopes that in the future the issuers will be more diversified so as to retain RMB financial services in Taiwan and further increase RMB flows back to Mainland China.

5. Outlook and prospects

Taiwan's offshore RMB market has several advantages that would be beneficial to future development, including:

- (1) Huge cross-strait trade and remittances bring banks tremendous RMB business opportunities to provide companies with better and more RMB-related services such as trade settlements, funds management, etc. It also helps build up a larger pool of RMB liquidity.
- (2) The appointed RMB clearing bank here in Taiwan certainly helps to handle RMB clearing even more efficiently.
- (3) Taiwan is also equipped with advanced financial infrastructure, for example the foreign currency clearing platform. It has streamlined clearing procedures and helps to expand RMB liquidity in Taiwan. Moreover, it can be linked with the China National Advanced Payment System (CNAPS) and the Bank of China's international information system through relayed connections. RMB remittance is thus more convenient time-wise and, in turn, facilitates RMB fund allocation in Mainland China and around the world.
- (4) The tax concessions for Taiwan's OBUs have created a niche access to Taiwan's offshore RMB market.

(5) Taiwan has an established role as an offshore USD market, supported by a well-developed trading mechanism and regulatory environment, as well as years of experience. Such a strong foundation certainly helps consolidate Taiwan's position as an important offshore RMB market.

Taiwan's development of the offshore RMB market needs the joint efforts of all parties in the financial industry. The CBC will continue to monitor capital account liberalization after the launch of the Shanghai Free Trade Zone, as well as the process of RMB internationalization and the development of the China International Payment System (CIPS). In addition, the CBC hopes the two sides of the Strait will sign a currency swap agreement as soon as possible in order to build a safety net in Taiwan for RMB liquidity.

3.2 Financial institutions

3.2.1 Domestic banks

In 2013, the total assets of domestic banks accumulated at a faster pace mainly because of the increase in loans. Asset quality improved and the credit concentration of corporate loans declined continuously; nevertheless, credit exposure to real estate remained high. The estimated Value at Risk (VaR) for all market risk exposures of domestic banks rose but had limited influence on their capital adequacy. Moreover, liquidity risk was moderate due to ample funds in the banking system. The profitability of domestic banks reached a record high in 2013, while the average ratio of capital adequacy was higher than the requested level of Basel III. This revealed that the capacity of domestic banks to bear losses was satisfactory.

Total assets increased continually and the growth rate expanded

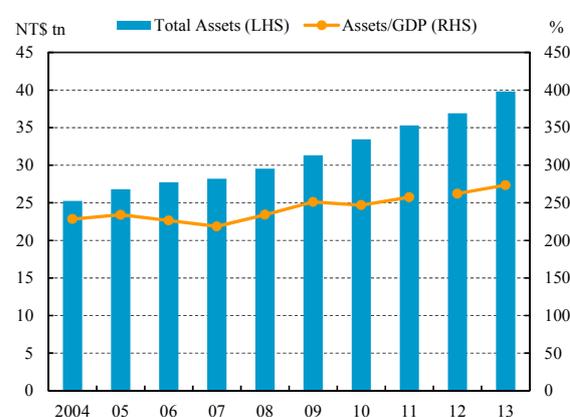
The total assets of domestic banks kept growing and reached NT\$39.83 trillion at the end of 2013, equivalent to 273.54% of annual GDP (Chart 3.16). The annual growth rate of total assets also increased to 7.95% from 4.53% a year earlier, mainly driven by a dramatic increase in the loans granted by offshore banking units (OBUs) and overseas branches.

Credit risk

Customer loan growth slowed

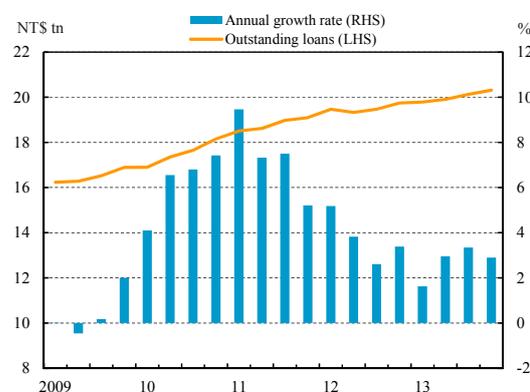
In 2013, customer loans were the major source of credit risk for domestic banks. Outstanding loans of the local business units

Chart 3.16 Total assets of domestic banks



Note: Figures for total assets from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis
Sources: DGBAS and CBC.

Chart 3.17 Outstanding loans and annual loan growth rate in domestic banks



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

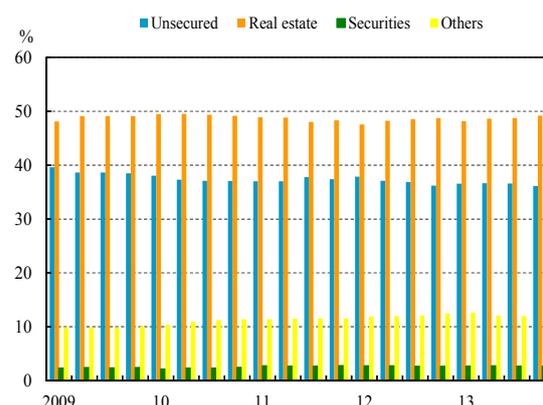
of domestic banks⁴⁸ at the end of 2013 stood at NT\$20.32 trillion, accounting for 51.01% of total assets, with the annual growth rate at the end of 2013 reducing to 2.90% from 3.39% a year earlier (Chart 3.17).

In 2013, outstanding loans of the local business units of domestic banks accumulated at a slower pace. The growth rate of loans to government agencies notably declined to -10.57% at the end of 2013 from 5.00% a year earlier, because an increase in the outstandings of government bond issuance and the government's collection of a total franchise fee of NT\$118.65 billion for 4th generation broadband wireless (4G) licenses in Q4 caused a decrease in demand for bank borrowing. Meanwhile, the annual growth rate of corporate loans descended slightly to 2.51% from 3.18% a year earlier, and the annual growth rate of individual loans ascended from 4.07% to 5.93%, higher than a year earlier, due to stable growth in individual demand for buying houses.

Concentration of credit exposure in real estate loans descended slightly, but the ratio of real estate-secured credit ascended

Outstanding real estate loans⁴⁹ granted by the local business units of domestic banks amounted to NT\$7.43 trillion, accounting for 36.57% of total loans as of the end of 2013. The ratio continuously declined over the past two years and dropped by 0.07 percentage points over the previous year. This reflected that under the CBC's and the FSC's measures to strengthen risk management regarding the real estate loans of banks, the concentration of credit exposure in real estate loans improved gradually throughout 2013. However, the ratio of real estate-secured credit granted by domestic banks was still high, reaching 49.20% of total credit⁵⁰ at the end of 2013 and increasing by 0.48 percentage points over the previous year (Chart 3.18). Meanwhile, outstanding real estate-secured credit, which stood at NT\$12.32 trillion as of the end of

Chart 3.18 Credit by type of collateral in domestic banks



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

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 loans" herein refers to house-purchase loans, house-refurbishment loans and construction loans.

⁵⁰ The term "credit" herein includes loans, guarantee payments receivable and acceptances receivable.

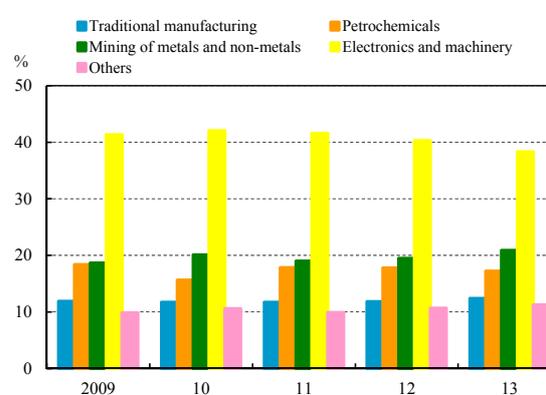
2013, also climbed by an annual growth rate of 6.71%, higher than 4.95% a year earlier.

Although the trading volume of the real estate market recovered steadily, and the housing price stood at a high level in the second half of 2013, potential house buyers gradually opted for a wait-and-see approach. Furthermore, with the Fed reducing the size of bond purchases, the interest rate on loans may rebound in the future and the burdens of home buyers will increase. In order to assess the vulnerability of domestic banks when such shocks are encountered, the FSC required domestic banks in April 2014 to undertake stress tests with respect to housing loans and construction credit, based on the scenarios of housing price declines and interest rate rises. Although the expected losses of banks were within a bearable sphere under the stress scenarios, banks should closely monitor the influence of downward adjustments on housing prices as well as rising interest rates, which both may pose credit risks to housing loans, and develop appropriate strategies to cope with such impacts.

Credit concentration of corporate loans gradually declined

Outstanding corporate loans of the local business units of domestic banks stood at NT\$9.07 trillion at the end of 2013, while loans to the manufacturing sector registered NT\$3.92 trillion and accounted for the largest share of 43.18% of the total. Within the manufacturing sector,⁵¹ the largest proportion of loans was for the electronics industry, which stood at NT\$1.50 trillion and accounted for 38.30% of the total loans to the whole manufacturing sector. The ratio was lower than 40.29% a year earlier and has continuously declined over the past three years (Chart 3.19).

Chart 3.19 Exposure to the manufacturing sector by domestic banks



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

Source: CBC.

⁵¹ Loans to the manufacturing sector are divided into five categories by industry, including: (1) electronics, (2) mining of metals and non-metals, (3) petrochemicals and (4) traditional manufacturing, and (5) others.

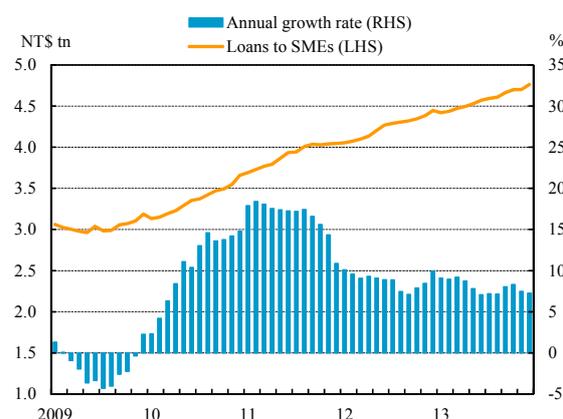
Outstanding corporate loans to SMEs by domestic banks steadily expanded to NT\$4.78 trillion at the end of 2013, increasing by NT\$322.6 billion or 7.23% over the previous year (Chart 3.20). The ratio of these loans to outstanding corporate loans also ascended gradually and reached a ten-year high of 52.72%, in line with the Program to Encourage Lending by Domestic Banks to Small and Medium Enterprises launched by the FSC. Following the pace of SME loan growth, the outstanding amount of loan guarantees applied for by SMEs through the Small and Medium Enterprise Credit Guarantee Fund of Taiwan (SMEG) also kept rising and increased 11.14% from year-end 2012 to reach NT\$832.2 billion at the end of 2013, and the guarantee coverage percentage also increased to 79.94%. These statistics all point to the favorable conditions for SMEs to acquire necessary funds.

Credit to customers in Mainland China increased rapidly

As the offshore banking units of domestic banks continuously expanded credit to customers in Mainland China, outstanding credit to such customers dramatically increased by NT\$624.1 billion or 85.36% year on year and reached NT\$136 trillion at the end of 2013.

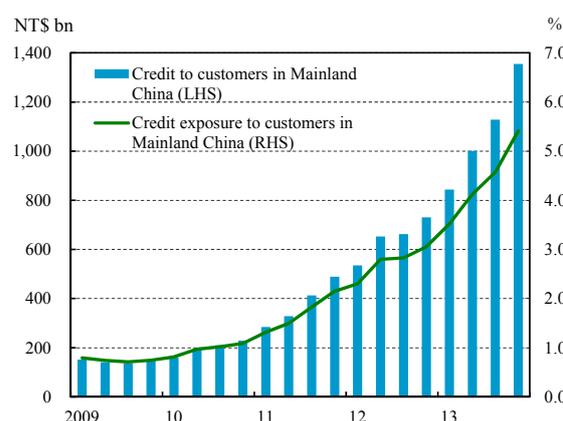
According to Article 12-1 of the *Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area*, the aggregate amount of credit, investment, interbank loans and interbank deposits extended by a domestic bank to customers in Mainland China should not exceed 100% of the bank's net worth at the end of the preceding fiscal year. As of the end of 2013, the aggregate amount of such exposures of all domestic banks as a percentage of their total net worth at the previous year-end was 58%, still within the statutory limit. No domestic bank exceeded the limit.

Chart 3.20 Loans to SMEs by domestic banks



Sources: FSC and CBC.

Chart 3.21 Credit to customers in Mainland China by domestic banks



Source: FSC.

Outstanding credit to customers in Mainland China by domestic banks accounted for 5.41% of total credit at the end of 2013, higher than that of the previous year (Chart 3.21). However, the non-performing credit ratio of such credit was lower than 0.01%, representing satisfactory asset quality. In recent years, domestic banks have actively developed business in Mainland China. While such action offered them more business opportunities, it also gave rise to greater risk (Box 4), especially recently as Mainland China has faced a slowdown in economic growth and elevated financial risk. Accordingly, domestic banks should cautiously monitor economic and financial conditions in Mainland China as well as prudently control their exposures to customers in Mainland China.

Asset quality improved continuously

Outstanding classified assets⁵² and the average classified asset ratio of domestic banks stood at NT\$608.4 billion and 1.53% at the end of 2013, decreasing by 5.40% and 0.21 percentage points, respectively, over the previous year (Chart 3.22). Meanwhile, expected losses of classified assets⁵³ also decreased by NT\$3.5 billion or 4.15% year on year to NT\$80.3 billion, while the ratio of expected losses to loan loss provisions was only 24.60%, indicating sufficient provisions to cover expected losses.

Although the outstanding NPLs of domestic banks slightly increased by 0.16% year on year and registered NT\$93.0 billion at the end of 2013, the average NPL ratio fell to a record low of 0.39% owing to a greater increase in loan balances (Chart 3.23). With the increase in provisions, the NPL coverage ratio and the loan coverage ratio at the end of 2013 rose to

Chart 3.22 Classified assets of domestic banks

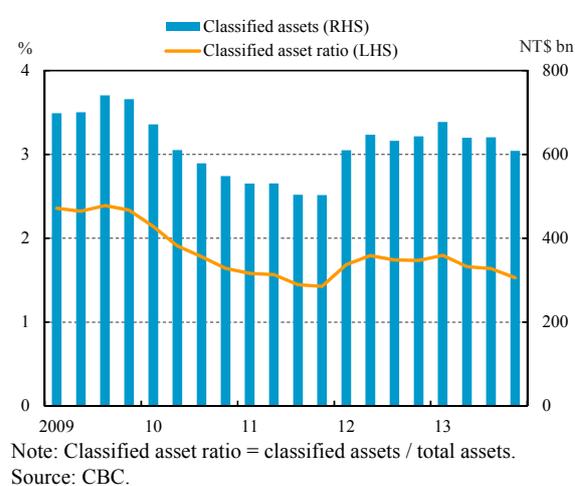
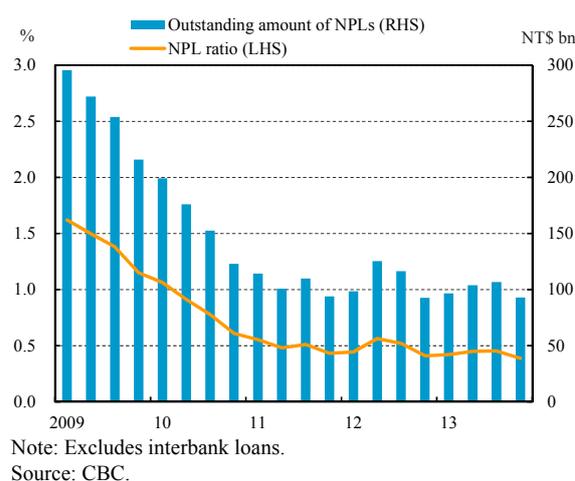


Chart 3.23 NPL ratio of domestic banks



⁵² 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.

⁵³ Loss herein refers to the losses from loans, acceptances, guarantees, credit cards, and factoring without recourse.

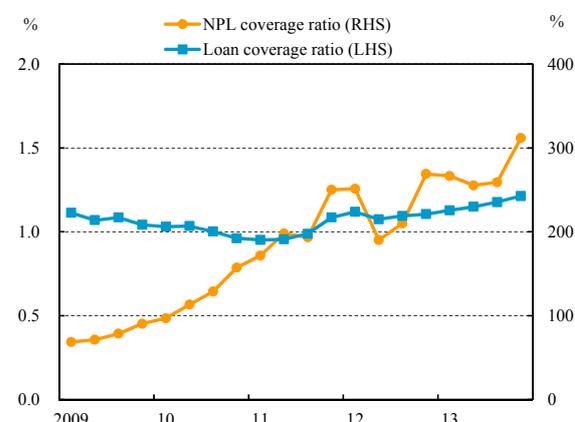
311.65% and 1.21%, respectively (Chart 3.24). Among 40 domestic banks, all had NPL ratios of less than 1%, except for two with ratios between 1% and 1.5% at the end of 2013. Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was much lower (Chart 3.25).

Market risk

Estimated Value-at-Risk for market risk exposures rose

The net position of debt securities accounted for the largest share of total market risk exposures of domestic banks, followed by the net positions of equity securities and of foreign exchange at the end of 2013. Using market data as of February 2014, the estimated total VaR calculated by the CBC's market risk model⁵⁴ for foreign exchange, interest rate and equity exposures of domestic banks at the end of 2013 stood at NT\$249.8 billion, significantly ascending by NT\$130.2 billion or 108.86% compared to the figure a year earlier. Among market risks, interest rate VaR showed a significant rise of 109.91% as the yield of Taiwan government bonds trended upward in response to a rise in US government bond yields owing to the anticipated scaling back in Fed asset purchases. Equity and foreign exchange VaRs diminished owing to a reduction in the volatility of the stock market and NTD/USD exchange rate, respectively (Table 3.1).

Chart 3.24 NPL coverage ratio and loan coverage ratio of domestic banks



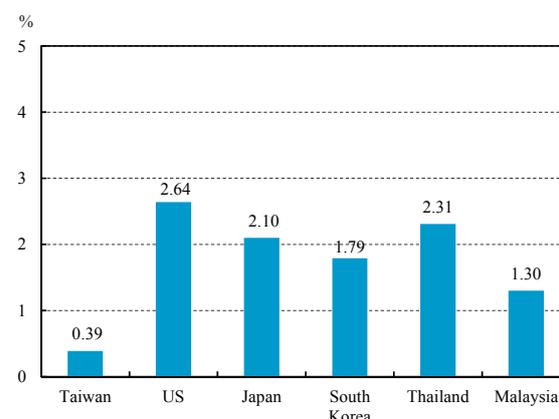
Notes: 1. NPL coverage ratio = total provisions / non-performing loans.

2. Loan coverage ratio = total provisions / total loans.

3. Excludes interbank loans.

Source: CBC.

Chart 3.25 NPL ratios of banks in selected countries



Note: Figures for Japan and South Korea are end-September 2013 data, while the others are end-December 2013.

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

⁵⁴ 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 (Data as of 21 February 2014).

Table 3.1 Market risks of domestic banks

Unit: NTS bn

Types of risk	Items	End-Dec. 2012	End-Dec. 2013	Changes	
				Amount	%
Foreign exchange	Net position	71.0	79.9	8.9	12.54
	VaR	1.8	1.6	-0.2	-11.11
	VaR / net position (%)	2.54	2.00		-0.54
Interest rate	Net position	6,314.6	6,723.7	409.1	6.48
	VaR	113.0	237.2	124.2	109.91
	VaR / net position (%)	1.79	3.53		1.74
Equities	Net position	539.3	597.4	58.1	10.77
	VaR	31.1	24.9	-6.2	-19.94
	VaR / net position (%)	5.77	4.17		-1.60
Total VaR		119.6	249.8	130.2	108.86

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.

The effects of market risk on capital adequacy ratios reached about 1 percentage point

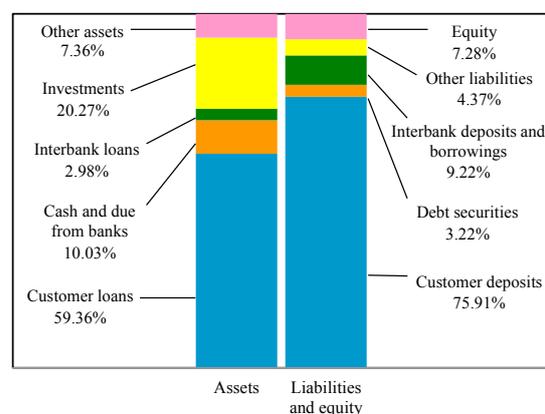
According to the estimated results mentioned above, the total VaR would cause a decrease of 1.05 percentage points in the average capital adequacy ratio of domestic banks and induce the ratio to drop from the current 11.83% to 10.78%. Nevertheless, it would still be higher than the statutory minimum of 8%.

Liquidity risk

Liquidity in the banking system remained ample

The structure of assets and liabilities for domestic banks roughly remained unchanged in 2013. As for the sources of funds, relatively stable customer deposits still accounted for the largest share of 75.91% of the total, followed by interbank deposits and borrowings at 9.22%, while debt securities

Chart 3.26 Asset/liability structure of domestic banks



Notes: 1. Figures are as of end-December 2013.

2. Equity includes loss provisions. Interbank deposits include deposits with the CBC.

Source: CBC.

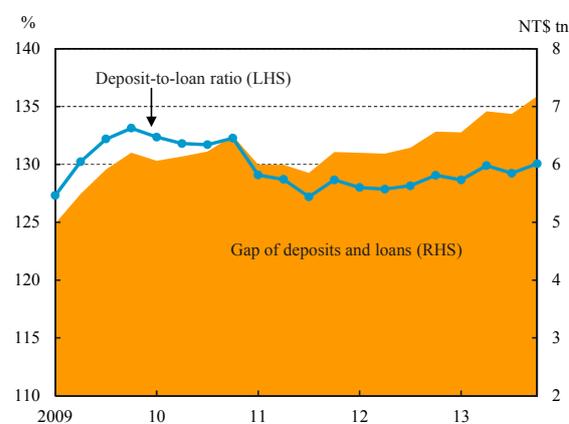
issues contributed a mere 3.22%. Regarding the uses of funds, customer loans accounted for the biggest share of 59.36%, followed by securities investments at 20.27%, while cash and due from banks accounted for 10.03% (Chart 3.26).

Given that the increase in deposits slightly exceeded that in loans in 2013, the average deposit-to-loan ratio of domestic banks rose to 130.06% at the end of December. The funding surplus (i.e., deposits exceeding loans) also expanded to NT\$7.18 trillion, indicating that the overall liquidity in domestic banks remained abundant (Chart 3.27).

Overall liquidity risk was moderate

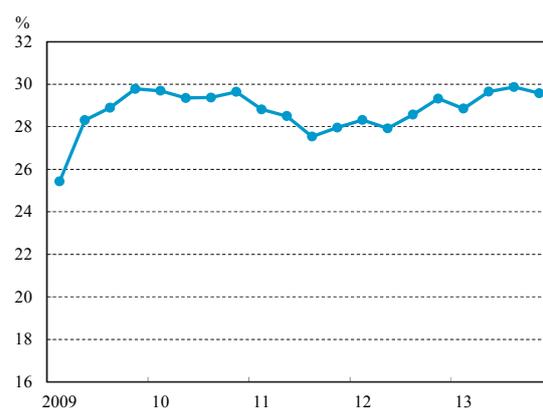
The average NT dollar liquid reserve ratio of domestic banks was well above the statutory minimum of 10% in each month of 2013 and stood at 29.58% in December, an increase of 0.25 percentage points year on year (Chart 3.28), while the ratio of each domestic bank was higher than 15%. Looking at the components of liquid reserves in December 2013, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the CBC, accounted for 88.30% of total, while Tier 2 and other reserves accounted for a total of 11.70%. This revealed that the quality of liquid assets held by domestic banks remained satisfactory and overall liquidity risk was moderate.

Chart 3.27 Deposit-to-loan ratio of domestic banks



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

Chart 3.28 Liquid reserve ratio of domestic banks



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

Profitability

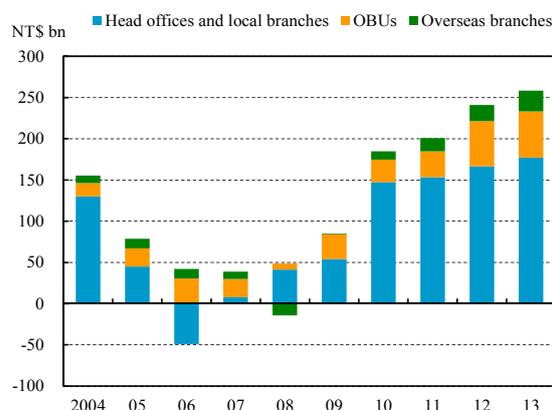
Profits recorded a historical high, of which more than 30% was contributed to by OBUs and overseas branches

The aggregate net income before tax of domestic banks reached NT\$258.2 billion in 2013, increasing by NT\$17.8 billion or 7.41% year on year (Chart 3.29). The amount recorded a historical high for the fourth consecutive year, mainly due to a rise in net fee income and gains on financial instruments. Since the opening up of the RMB business to OBUs and overseas branches, as well as the continual setting up of more branches in Mainland China and Southeast Asia by domestic banks, OBUs and overseas branches have contributed to more than 30% of total profits in the recent two years, and the proportion has increased each year.

Although the profitability of domestic banks grew significantly, the average ROE decreased from 10.44% a year earlier to 10.24% due to a substantial increase of equity as a result of injections of capital and earnings, while the average ROA remained at 0.67% (Chart 3.30). Compared to selected Asia-Pacific neighboring economies, the ROAs of domestic banks still lagged behind other economies (Chart 3.31).

In 2013, four domestic banks achieved profitable ROEs of 15% or more, decreasing from eight banks in 2012, but fifteen banks reported better performance than the previous

Chart 3.29 Net income before tax of domestic banks

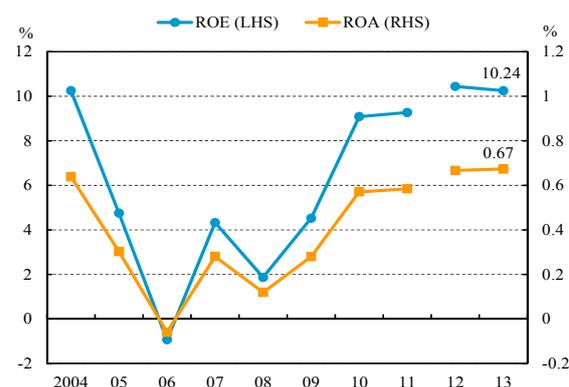


Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. Overseas branches include branches in Mainland China.

Source: CBC.

Chart 3.30 ROE & ROA of domestic banks



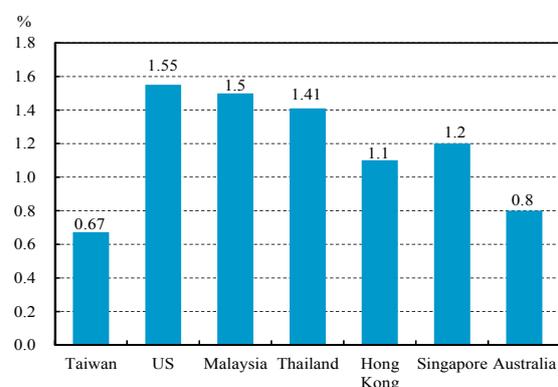
Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. ROE = net income before tax / average equity.

3. ROA = net income before tax / average total assets.

Source: CBC.

Chart 3.31 Comparison of ROAs of banks in selected economies



Note: Figures are as of 2013.

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

year. In addition, the number of domestic banks whose ROAs reached the international standard of 1% increased to eight (Chart 3.32), and the ROAs of 23 banks increased compared to those in 2012.

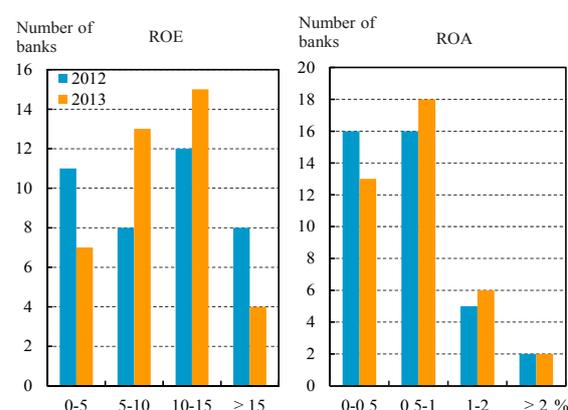
Net operating income grew steadily

Total net operating income of domestic banks registered NT\$642.3 billion in 2013, increasing by NT\$45.2 billion or 7.57% year on year, mainly due to growth in non-interest income, such as net fee income and gains on financial instruments. Analyzed by income component, net interest income rose, albeit at a slower pace, by NT\$13.2 billion or 3.49% and accounting for a slightly decreasing share of 61% of the total compared to the previous year, because of the growth in loans. Net fee income also increased by NT\$15.2 billion or 12.63% year on year and accounted for an increasing share of 21% of the total, benefiting from the notable growth of the asset management business. Moreover, net gains on financial instruments markedly increased by NT\$23.9 billion or 34.02%, driven by an increase in valuation or disposal gains resulting from a substantial growth of the financial instruments marketing business, and pushed up their share of total net operating income to 15% (Chart 3.33).

Operating costs increased remarkably due to a rise in loan loss provisions

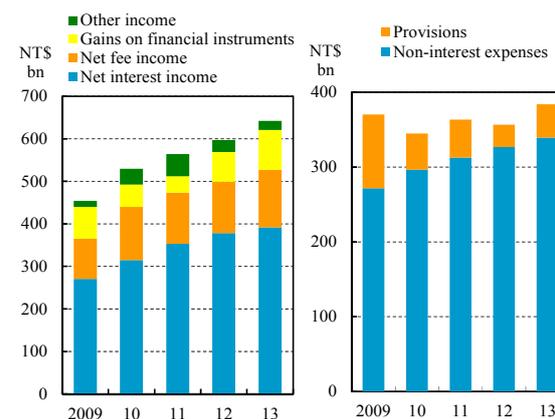
The operating costs of domestic banks registered NT\$384.1 billion in 2013, rising by NT\$27.4 billion or 7.68% compared to the previous year. Non-interest expenses⁵⁵ increased by NT\$12.5 billion or 3.82% and accounted for a decreasing share of 88% of total operating

Chart 3.32 Distribution of ROEs and ROAs of domestic banks



Note: Figures for 2012 and 2013 are on the TIFRSs basis.
Source: CBC.

Chart 3.33 Composition of incomes and costs of domestic banks



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Source: CBC.

⁵⁵ Non-interest expenses include employee benefits expenses, depreciation and amortization expenses, and other operating and management expenses.

costs. Meanwhile, provisions for bad debt expenses and guarantee reserves rose significantly by NT\$14.9 billion or 49.66% year on year, with their share of total operating costs increasing to 12% (Chart 3.33).

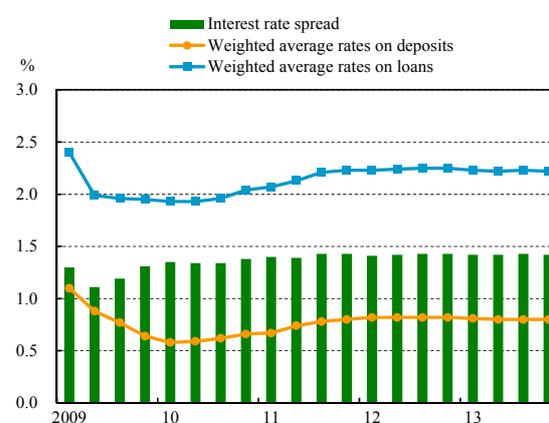
In 2013, provisions for bad debt expenses and guarantee reserves of domestic banks reached NT\$74.4 billion. To cope with an increase in non-performing loans and reach the statutory target of provisions for normal credit assets of 1% or higher,⁵⁶ domestic banks set aside more than NT\$55 billion of provisions. However, its impact on profits was mitigated by the NT\$29.5 billion gains on reversal of bad debt and impaired loans expenses.

Factors that might affect future profitability

The interest rate spread between deposits and loans remained little changed at 1.42 percentage points during 2013 (Chart 3.34). However, the annual growth rate of deposits has outpaced that of loans for six consecutive quarters, and the RMB time deposits that banks took at high interest rates had limited opportunities for funds being used for investments or lending. Their impacts on the growth of net interest income are worth paying attention to.

As of the end of 2013, the average ratio of provisions for normal credit assets of domestic banks was 1.05%. However, some banks with ratios lower than 1% will need to increase provisions by a combined total of NT\$10.3 billion. Although the increase in provisions is viewed to have a limited impact on overall net income, it may adversely affect the 2014 profits of the banks requiring higher provisions. In addition, according to Article 11 of the *Value-added and Non-value-added Business Tax Act*, amended by the Legislative Yuan on 16 May 2014, the business tax rate on authorized business for banking and insurance industries shall resume its former rate of 5%, from 2%. Nevertheless, it is estimated to have a limited impact on overall profits.

Chart 3.34 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.

⁵⁶ The FSC amended the *Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans* on 28 January 2014, raising the minimum ratio of provisions for normal credit assets from 0.5% to 1% of their outstanding balance. The amendment came into force from 1 January 2014.

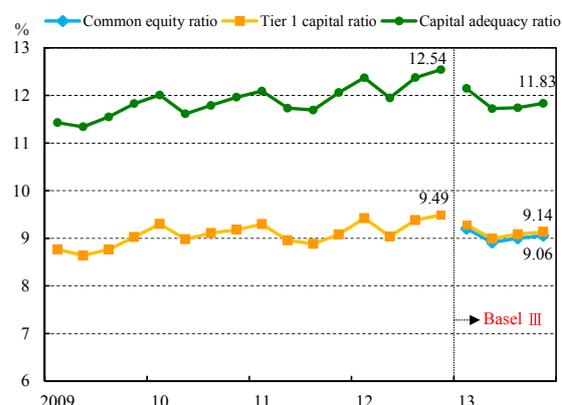
Capital adequacy

Average capital ratios met Basel III standards

In the first half of 2013, average capital ratios of domestic banks turned to a descend as they adopted TIFRSs and Basel III⁵⁷ for the first time, standards that resulted in changes in regulatory capital components and risk-weighted assets calculations. However, in the second half of the year, as a result of capital injection and accumulated earnings as well as the issuance of Basel III-compliant long-term subordinated debt, the average common equity ratio, Tier 1 capital ratio and capital adequacy ratio reversed and rose to 9.06%, 9.14% and 11.83%, respectively. All of which met the statutory minimum standards set for 2019 (Chart 3.35). Compared to some neighboring Asia-Pacific economies, domestic banks in Taiwan had lower capital ratios and their relatively low profitability could constrain future increases of Tier 1 capital (Chart 3.36).

Further broken down by the component of regulatory capital, common equity Tier 1 capital, which features the best loss-bearing capacity, accounted for 76.54% of eligible

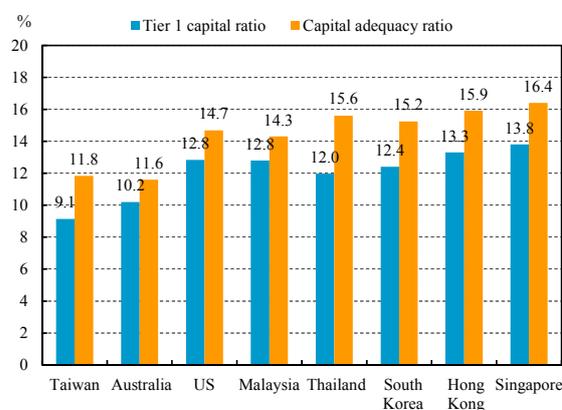
Chart 3.35 Capital ratio of domestic banks



Notes: 1. Figures from 2013 are on a Basel III and TIFRSs basis, while prior years are on a Basel II and ROC GAAP basis.
 2. Common equity capital ratio = common equity Tier 1 capital / risk-weighted assets.
 3. Tier 1 capital ratio = Tier 1 capital / risk-weighted assets.
 4. Capital adequacy ratio = eligible capital / risk-weighted assets.

Source: CBC.

Chart 3.36 Comparison of capital ratios in selected economies



Note: Figures are as of the end of 2013.
 Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA, and MAS.

⁵⁷ For implementation of Basel III in Taiwan, see CBC (2013), *Financial Stability Report, May*. The minimum capital requirements in the transition period are as follows:

Items	2013	2014	2015	2016	2017	2018	2019 onwards
Common equity ratio (%)	3.5	4.0	4.5	5.125	5.75	6.375	7.0
Tier 1 capital ratio (%)	4.5	5.5	6.0	6.625	7.25	7.875	8.5
Capital adequacy ratio (%)	8.0	8.0	8.0	8.625	9.25	9.875	10.5

capital, while non-common equity Tier 1 capital and Tier 2 capital registered only 0.67% and 22.79%, respectively, at the end of 2013. It showed that the capital quality of domestic banks was adequate.

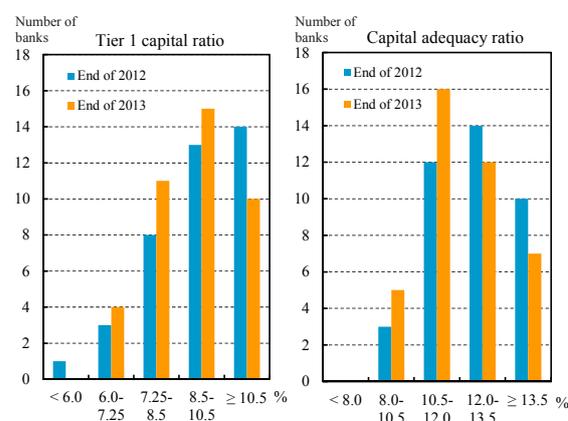
The capital levels of all domestic banks were higher than the 2013 statutory minimum

At the end of 2013, the common equity ratios, Tier 1 capital ratios and capital adequacy ratios for all domestic banks remained above the statutory minimum requirements for 2013 (3.5%, 4.5% and 8.0%) and those for 2015 (4.5%, 6.0% and 8.0%). Compared to the previous year's capital ratios calculated in accordance with Basel II, the number of banks with high capital ratios significantly decreased, indicating capital ratio drops for most banks (Chart 3.37).

Some banks faced pressure to raise their capital levels

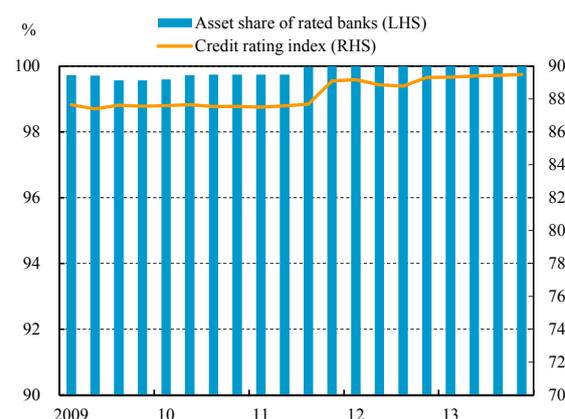
Even though the capital ratios of all banks met current minimum standards for 2013, some banks, particularly state-owned banks and small private banks, might not fulfill all minimum capital requirements set for the transition period. Such banks should actively reinforce their capital adequacy by seasoned equity offerings, accumulating earnings, reducing cash dividends and adjusting loan structures to raise their capital ratios gradually.

Chart 3.37 Number of domestic banks classified by capital ratios



Source: CBC.

Chart 3.38 Credit rating indices of rated domestic banks



Note: End-of-period figures.

Source: CBC.

Credit ratings

Average credit rating level remained stable

According to the rating results⁵⁸ released by credit rating agencies, the credit rating index⁵⁹ of domestic banks lifted slightly in 2013 (Chart 3.38), owing to one bank, which was set up during the year, receiving the highest rating of twAAA. It reflected an improvement of the overall credit rating level.

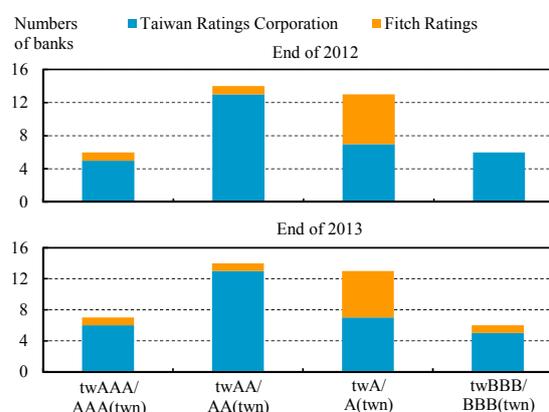
As for the overall risk assessments of Taiwan's banking system made by credit rating agencies, Standard & Poor's Banking Industry Country Risk Assessment (BICRA)⁶⁰ maintained Taiwan's BICRA unchanged at Group 4. Compared to other Asian economies, the risk of Taiwan's banking industry was higher than those of Hong Kong, Singapore, Japan, and South Korea, and about the same as that of Malaysia, but much lower than those of Mainland China, Thailand, Indonesia and the Philippines. The assessments of Taiwan's banking system evaluated by Fitch Ratings' Banking System Indicator/ Macro-Prudential Indicator (BSI/MPI)⁶¹ also remained unchanged at

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard and Poor's		Fitch	
	BICRA		BSI/MPI	
	2013/2	2014/2	2013/2	2014/2
Hong Kong	2	2	a/3	a/3
Singapore	2	2	aa/2	aa/2
Japan	2	2	bbb/1	a/1
South Korea	3	3	bbb/1	bbb/1
Taiwan	4	4	bbb/1	bbb/1
Malaysia	4	4	bbb/1	bbb/1
Mainland China	5	5	bb/3	bb/3
Thailand	5	6	bbb/1	bbb/1
Indonesia	7	7	bb/3	bb/3
Philippines	7	7	bb/1	bb/1

Sources: Standard and Poor's and Fitch Ratings.

Chart 3.39 Number of domestic banks classified by credit ratings



Sources: Taiwan Ratings Corporation and Fitch Ratings.

⁵⁸ As of the end of 2013, 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)).

⁵⁹ 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.

⁶⁰ 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.

⁶¹ 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 represents banking system strength on a scale from aa (very strong) to ccc/cc/c (very weak). 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.

level bbb/1 (Table 3.2).

Rating outlooks remained stable

All domestic banks were rated by credit rating agencies for 2013. Most of them maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2013, and none had credit ratings lower than twBB/BB(twn) (Chart 3.39). The results were similar to those received the previous year. Regarding rating outlooks or CreditWatch, while six banks turned negative in 2013,⁶² 34 banks remained stable or positive.

3.2.2 Life insurance companies

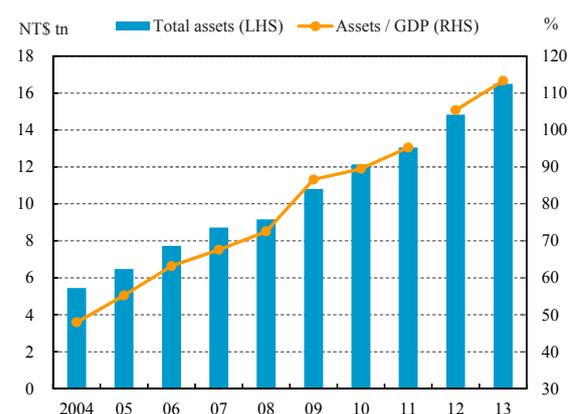
In 2013, the total assets of life insurance companies grew at a speedy pace, and their profitability recorded a six-year high, showing an improvement in operating performance. The average RBC ratio of life insurance companies at the end of 2013 was higher than that of a year earlier. However, the financial strength of a few companies needs to be bolstered as soon as possible.

Assets grew at a considerable pace

The total assets of life insurance companies grew continually and reached NT\$16.50 trillion at the end of 2013, equivalent to 113.33% of annual GDP (Chart 3.40). However, the annual growth rate of total assets declined to a still considerable pace of 11.24% at the end of 2013, from 12.56% a year earlier.

At the end of 2013, 23 domestic life insurance companies⁶³ held a 98.40% market share by assets, five of which were foreign affiliates holding a 3.26% market share, while five foreign life insurance companies held the

Chart 3.40 Total assets of life insurance companies



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

Sources: FSC and DGBAS.

⁶² The reasons for six banks receiving negative rating outlooks or CreditWatch were excessive growth in loans affecting capital levels, decreasing capital levels affecting the ability to absorb losses, deteriorating capital and earnings, a rating downgrade of the bank's parent company, or increasing capital pressure after M&A activity.

⁶³ Foreign affiliates included.

remaining 1.60% of total assets. The top three companies in terms of assets held a combined market share of 53.97%, revealing a slight decrease of 0.28 percentage points year on year. The market structure of the life insurance industry roughly remained unchanged in 2013.

Foreign securities investments had the highest growth rate

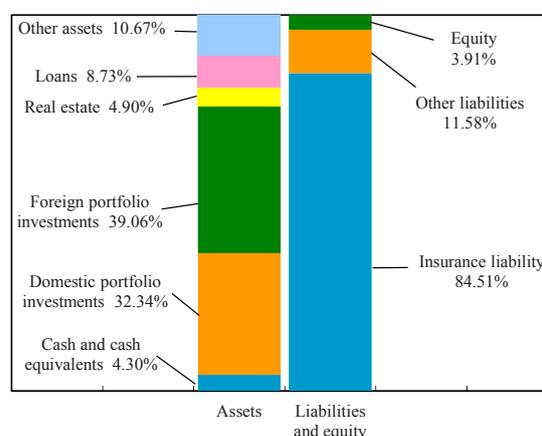
The funds of life insurance companies at the end of 2013 were chiefly invested in foreign and domestic securities which accounted for 39.06% and 32.34% of total assets, respectively. Loans only accounted for 8.73% of total assets, with real estate accounting for 4.90% and cash and cash equivalents for 4.30%. As for the sources of funds, insurance liability accounted for the largest share of 84.51%, while equity dipped to a share of 3.91% due to the huge contraction of unrealized gains on available-for-sale financial assets, reflecting the high financial leverage of life insurance companies (Chart 3.41).

In 2013, foreign securities investments by life insurance companies had the highest growth rate, increasing by 22.27% year on year. However, the growth rate of real estate investment dropped drastically to 6.60% from 15.57% a year earlier owing to the impact stemming from stricter regulations. Loans increased by 15.80% from the previous year's 4.05% as insurance companies tended to provide more real estate-secured loans.

Net income recorded a six-year high

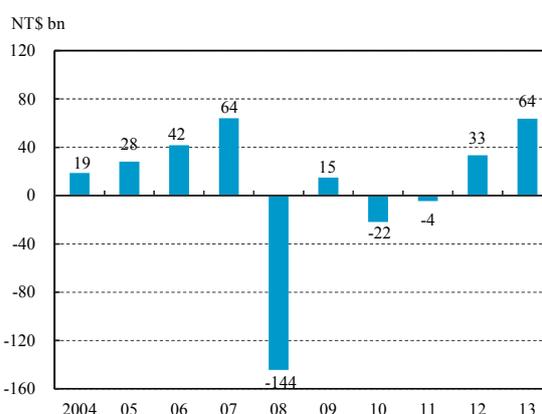
Life insurance companies reported a six-year high net income before tax of NT\$64 billion in 2013, a year-on-year increase of NT\$31 billion or 91.02% (Chart 3.42). This was mainly driven by huge profits on foreign exchange gains derived from investment portfolios, as well as an interest income

Chart 3.41 Asset/liability structure of life insurance companies



Note: Figures are end-December 2013 data.
Source: FSC.

Chart 3.42 Net income before tax of life insurance companies



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Source: FSC.

increase and a recovery of special reserves on unrealized property gains.

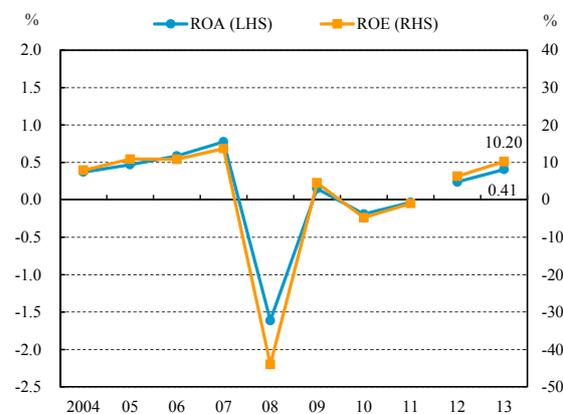
During the same period, average ROE and ROA were 10.20% and 0.41%, respectively, much higher than 6.31% and 0.24% in 2012 (Chart 3.43). Among all 28 insurance companies, six companies posted better profits and achieved ROEs of 10% or more, equivalent to the number of a year earlier. However, there were eleven companies who still suffered losses, two more than that of the previous year.

Average RBC ratio was above the statutory minimum

Owing to greater domestic and foreign securities investments, as well as the FSC's measure to raise the coefficient for RBC, the total amount of RBC increased during 2013. Nevertheless, the industry turned healthy profits and more unrealized gains on investment property were allowed to be included in regulatory capital, along with ongoing capital-raising by several insurance companies, resulting in the increment of the regulatory capital exceeding that of RBC. Consequently, the average RBC ratio rose to 246.22% at year-end 2013 (Chart 3.44) from 228.95% at the end of the previous year (excluding Kuo Hua Life Insurance Company), above the statutory minimum of 200%.

By individual company, there were twelve companies with RBC ratios over 300%. However, five companies had ratios below 200% (Chart 3.45), whose combined assets accounted for 2.42% of the total. Although the share is not particularly high, the financial structure of those companies needs to be improved as soon as possible.

Chart 3.43 ROE & ROA of life insurance companies



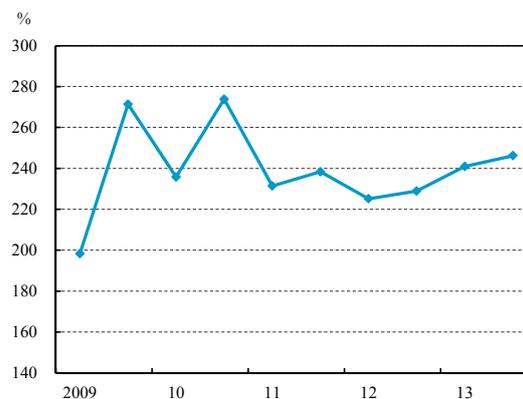
Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. ROE = net income before tax / average equity.

3. ROA = net income before tax / average assets.

Source: FSC.

Chart 3.44 RBC ratio of life insurance companies



Notes: 1. RBC ratio = regulatory capital / risk-based capital.

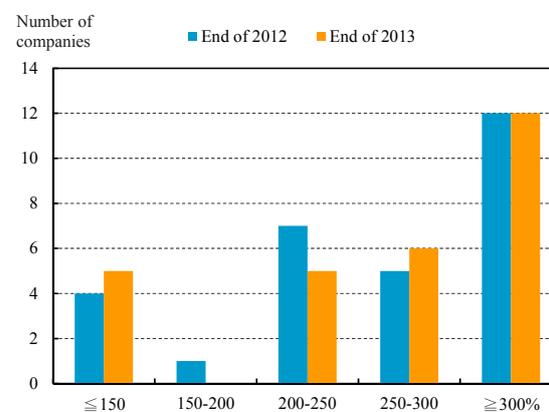
2. Kuo Hua Life Insurance Company, which was taken into receivership by the Insurance Stabilization Fund in August 2009 and merged into TransGlobe Life Insurance Company in March 2013, is excluded from 2009 onwards.

Source: FSC.

Overall credit ratings improved slightly, with most obtaining positive or stable credit outlooks⁶⁴

Overall, the credit rating level of eleven life insurance companies rated by Taiwan Ratings or Fitch Ratings improved slightly in 2013. The main reason behind this was that Standard & Poor's revised its rating criteria for insurance companies, resulting in the rating upgrade of China Life Insurance Company to twAA from twAA-, while others didn't receive credit rating adjustments. As of the end of 2013, all rated insurance companies maintained credit ratings above twA or its equivalent, while most companies except one received positive or stable credit outlooks. The three biggest insurance companies by assets were all rated twAA+, showing strong capability to fulfill all financial commitments.

Chart 3.45 Number of life insurance companies classified by RBC ratios



Note: Figure for end-2012 is exclusive of Kuo Hua Life Insurance Company.

Source: FSC.

The challenges faced by life insurance companies

Although the overall profitability of life insurance companies improved in 2013, fast growth of total assets and limited increase in capital level propelled a soaring leverage ratio. Furthermore, the interest rate spread losses from maturity mismatches in the global climate of prolonged low interest rates remained unresolved. They both require insurance companies' close attention. Besides these, the problem of capital inadequacy faced by a few insurance companies showed that, apart from capital injection and stricter supervision of those companies, it is indeed an urgent matter to address the question of how to strengthen the resolution mechanism for the insurance industry, which could thus protect the rights of the assured and promote the sound development of the insurance industry (Box 5).

⁶⁴ As most life insurance companies were rated by Taiwan Ratings, the analysis in this section focused primarily on the opinions of Taiwan Ratings. Other rating agencies' opinions are also taken into consideration, though.

3.2.3 Bills finance companies

The total assets of bills finance companies increased slightly in 2013. Operating profitability remained stable and the quality of credit assets remained sound, yet the liquidity risk stayed high. The average capital adequacy ratio of bills finance companies as a whole was maintained at a similar level to the previous year, while the ratio of each company stayed well above the statutory minimum.

Total assets increased slightly

The total assets of bills finance companies rebounded slightly in 2013, though still lingering at a level near their ten-year low. The total assets stood at NT\$829.1 billion at the end of 2013, increasing by 7.90% year on year and equivalent to 5.69% of annual GDP (Chart 3.46).

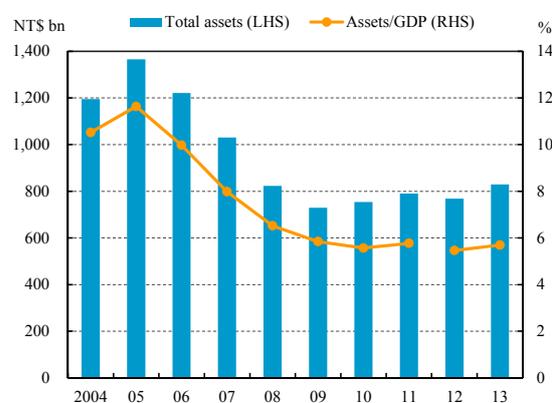
In terms of the assets and liabilities structure of bills finance companies at the end of 2013, bond and bill investments constituted 94.57% of total assets, a decrease of 0.8 percentage points year on year. On the liability side, it was mainly composed of short-term repo transactions and borrowings which accounted for 85.14% of total assets, while equity only accounted for 13.10% of total assets (Chart 3.47).

Credit risks

Outstanding balance of guarantees and real estate-secured credit increased gradually

Benefiting from the increased issuance of commercial paper by private corporations for short-term funding while the interest rate in the bill market remained low, the outstanding

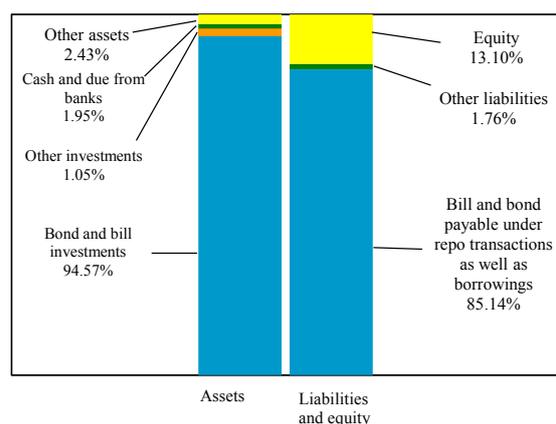
Chart 3.46 Total assets of bills finance companies



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

Sources: CBC and DGBAS.

Chart 3.47 Asset/liability structure of bills finance companies



Note: Figures are end-December 2013 data.

Sources: CBC and FSC.

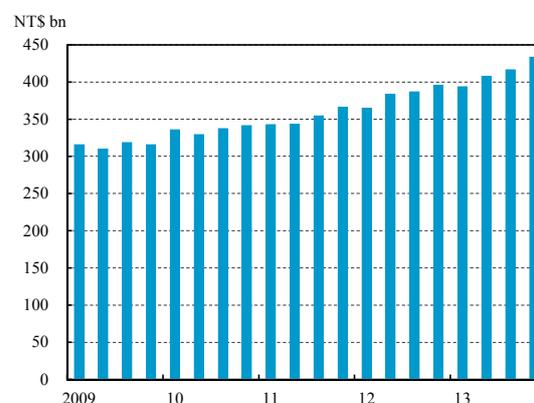
guarantees business undertaken by bills finance companies registered NT\$433.7 billion at the end of 2013, an increase of NT\$38 billion or 9.59% year on year (Chart 3.48). As a result, the average multiple of guarantees outstanding to equity of bills finance companies rose to 4.38 times at the end of 2013, compared to 4.08 times a year before. However, each bills finance company still conformed to the regulatory ceiling of five times.⁶⁵

Guarantees granted to the real estate and construction industry and the credit secured by real estate accounted for 25.22% and 28.54%, respectively, of total credits of bills finance companies, with an upward trend. It is advisable for bills finance companies to closely monitor such credit risks while the domestic housing market might face downturn pressure in the future.

Credit quality remained sound

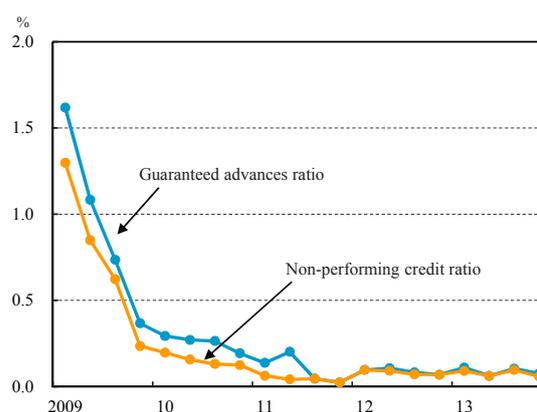
At the end of 2013, the average guaranteed advances ratio and the non-performing credit ratio of bills finance companies stayed at 0.08% and 0.06%, respectively, reflecting sound credit quality (Chart 3.49). At the same time, the ratios of credit loss reserves to non-performing credits as well as those to guaranteed advances registered 2,472.42% and 3,224.90%, respectively, indicating that the reserves set aside were significantly sufficient to cover potential credit losses.

Chart 3.48 Outstanding commercial paper guarantees of bills finance companies



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

Chart 3.49 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.

⁶⁵ According to the *Directions for Outstanding Amount of Guarantees and Endorsements of Short-term Bills by Bills Houses*, the ratio of outstanding commercial paper guaranteed to net worth for a bills finance company should not exceed one, three, four and five times, respectively, depending on the level of its capital adequacy ratio of below 10%, above 10% but below 11%, above 11% but below 12%, or above 12%. As of the end of 2013, the capital adequacy ratio of each bills finance company was above 12%, so the ceiling of five times was set for them each accordingly.

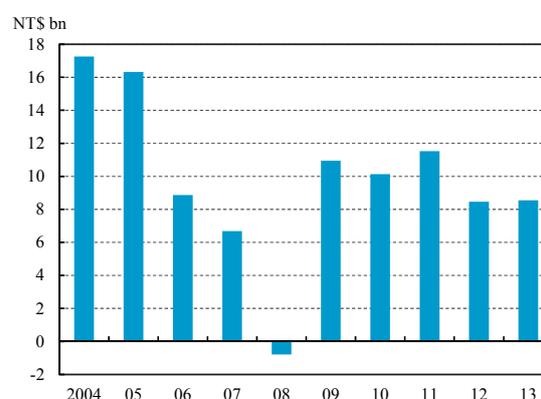
Liquidity risk remained high

In 2013, bills finance companies still heavily relied on short-term interbank call loans and repo transactions as funding sources, while over 40% of funds went to long-term bond investments. The significant maturity mismatch between assets and liabilities showed bills finance companies still faced high liquidity risk. In order to lessen liquidity risk, the FSC set a ceiling ratio of major liabilities to equity for bills finance companies. The average multiple of major liabilities to equity at the end of 2013 rose to 7.13 times, compared to 6.68 times a year before, owing to the 8.93% increase of major liabilities in 2013. However, none of the bills finance companies exceeded the regulatory ceilings of tenor twelve times.⁶⁶

Operating profitability held steady

Bills finance companies posted a net income before tax of NT\$8.55 billion in 2013 (Chart 3.50), with a year-on-year increase of 1.03%. Over the same period, average ROE and ROA registered at 7.9% and 1.07%, respectively, a slight change from 7.85% and 1.08% in 2012 (Chart 3.51). Looking forward, stable growth of the commercial paper guarantees business as well as the underwriting business could be conducive to future profitability of bills finance companies. However, the long-term interest rate might trend up owing to the gradual exit of quantitative easing in the US. This could result in a negative effect on their future

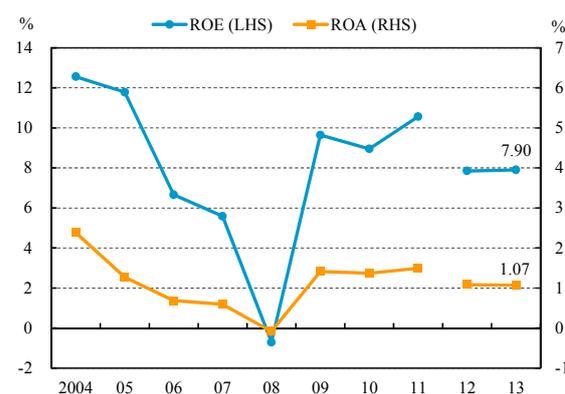
Chart 3.50 Net income before tax of bills finance companies



Note: Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

Source: CBC.

Chart 3.51 ROE & ROA of bills finance companies



Notes: 1. Figures from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. ROE = net income before tax / average equity.

3. ROA = net income before tax / average assets.

Source: CBC.

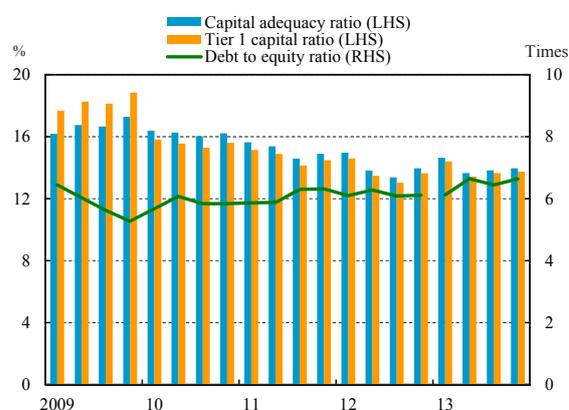
⁶⁶ In order to reduce the operating and liquidity risks of bills finance companies, the FSC amended the *Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses* on 9 April 2010, aimed at contracting the major liabilities of bills 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 2013, the capital adequacy ratio of each bills finance company was above 12%, so the ceilings were ten times or twelve times for each one.

performance.

Average capital adequacy ratio almost unchanged

The average capital adequacy ratio of bills finance companies registered 13.95% at the end of 2013, the same as the previous year. At the same time, the Tier 1 capital ratio slightly rose to 13.75%, from 13.64% a year before. The capital adequacy ratio for each bills finance company was above 13%, well above the statutory minimum of 8%. Nevertheless, the average multiple of debt to equity of bills finance companies climbed to 6.64 times, from 6.11 times a year earlier (Chart 3.52), reflecting a certain degree of increase in the financial leverage of bills finance companies.

Chart 3.52 Capital adequacy and leverage of bills finance companies



Note: Figures from 2013 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

Source: CBC.

Box 4

Opportunities and risks for domestic banks to develop Mainland China market

In the early 1990s, financial supervisors began to gradually liberalize banking policy so that domestic banks could establish representative offices and expand their financial business in Mainland China. After the signing of the *Economic Cooperation Framework Agreement* (ECFA) by cross-strait authorities on 29 June 2010, which put financial service industries on the early harvest list, cross-strait financial interactions entered into a new stage of establishing branches or subsidiaries of financial institutions in the respective areas. Taiwan's banks also enjoyed favorable terms compared with banks from other countries, expediting the approval processes of setting up branches or subsidiaries and conducting RMB business. Given its huge market and rapid economic growth, Mainland China is a place full of business opportunities for domestic banks, but one that also comes with a certain level of risk.

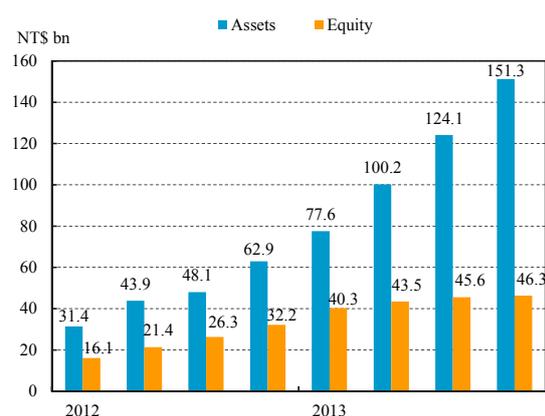
1. Current developments of Mainland Chinese branches of domestic banks

At the end of 2013, domestic banks had eleven branches with three sub-branches in Mainland China. Among them, six branches were allowed to engage in all RMB businesses. Moreover, several domestic banks were in the process of applying for greater presences in Mainland China.

1.1 Rapid growth in assets

Along with banks' increasing numbers of Mainland Chinese branches, their assets and equity increased dramatically. As of the end of 2013, total assets and equity of Mainland Chinese branches amounted to NT\$151.3 billion and NT\$46.3 billion with annual growth rates of 141% and 44%, respectively (Chart B4.1). However, the average NPL ratio of Mainland Chinese branches reported merely 0.08%, representing satisfactory asset quality.

Chart B4.1 Total assets and equity of Mainland Chinese branches of domestic banks



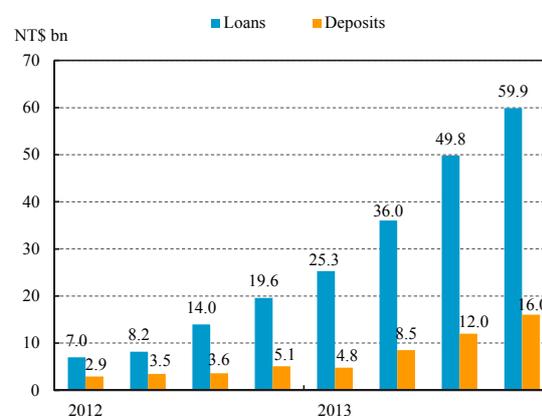
Note: Data includes branches and sub-branches.

Source: CBC.

1.2 Concentration of sources and uses of funds

The funds of Mainland Chinese branches mainly came from equity capital provided by their headquarters and due to affiliates, which accounted for 86.16% of total assets, while deposits accounted for only 10.58% of total assets at the end of 2013. As for the uses of funds, due from banks accounted for the largest share of 57.7% of the total, followed by customer loans at 39.19%.

Chart B4.2 Total deposits and loans of Mainland Chinese branches of domestic banks



Source: CBC.

In the most recent two years, Mainland Chinese branches actively engaged in the local syndicated loan market. It resulted in a dramatic increase in loans outstanding to NT\$59.9 billion at the end of 2013, with an annual growth rate of 206%. At the same time, total deposits registered only NT\$16 billion, much lower than total loans because of constraints of local deposit regulations; nevertheless, their annual growth rate reached 214% (Chart B4.2).

1.3 Net income rose substantially

In 2013, net income before tax of all Mainland Chinese branches reported NT\$1.65 billion, dramatically increasing by 87.5% year on year. It was mainly contributed to by an increase in interest income arising from due from banks and customer loans.

2. Opportunities and risks in the Mainland China market

As business opportunities in the Mainland China market come with risks, domestic banks should take preventive actions in a prudent manner to mitigate such risks.

2.1 Opportunities

2.1.1 Expanding presence in Mainland China by setting up subsidiaries

Since setting up subsidiaries, rather than branches, would allow banks to enjoy a greater presence, business scope and customer pool, domestic banks were more inclined to set up subsidiaries or transferring their branches into subsidiaries to facilitate their business expansion.

2.1.2 Taking advantage of fast track program to expand business in the central and western regions of Mainland China

The government of Mainland China, under the policy of encouraging foreign banks to expand their presence in the central, western and northeastern regions, provided a fast track program for Taiwan's banks to set up branches in those regions. Domestic banks may take advantage of this to expand their business in Mainland China.

2.1.3 Better grasping the operations of Taiwanese enterprises and establishing a centralized financial service platform

Domestic banks could better grasp the cash flows and business activities of their customers, mainly Taiwanese enterprises and their subsidiaries in Mainland China, so as to mitigate credit risk and improve their customer relationships. Furthermore, domestic banks could establish their own centralized financial service platforms which linked financial services provided in Taiwan, Hong Kong and Mainland China together to meet the financial needs of Taiwanese enterprises operating in these regions.

2.1.4 Expanding SME financing in Mainland China

As Mainland China's government has been promoting SME financing in recent years, domestic banks could take this opportunity to expand SME financing in Mainland China based on their profound experiences. However, given the deficient financial transparency of Mainland China's SMEs, domestic banks should also take measures to mitigate potential risks.

2.2 Risks and limitations faced by domestic banks in the Mainland China market

2.2.1 Increasing credit risk

Credit risk in Mainland China might increase due to slowing economic growth, decreasing profits for enterprises, potential losses for the solar panel industry caused by oversupply, as well as a possible downturn in its real estate market.

2.2.2 Potentially rising interest rate risk

After the launching of a market-oriented reform of interest rates policy by the People's Bank of China, the interest rate floors for consumer loans were removed in July 2013. In the future, when the ceilings of deposit interest rates are also lifted, banks might face higher interest rate risk as interest rate spreads contract under severe competition.

2.2.3 Constrained business activities

The funding sources of Mainland Chinese branches were limited as they were only allowed to accept time deposits over RMB1 billion and borrow overseas on an approval basis, restraining their capability to extend RMB loans. In addition, local regulations stipulate that either interbank lending or borrowing of Mainland Chinese branches cannot exceed 200% of their RMB working capital, thus limiting the flexibility of their funding management.

3. The FSC's supervision of Mainland Chinese branches

The FSC has established a comprehensive mechanism including authorization previews, risk controls and follow-ups to enhance the supervision of Mainland Chinese branches of domestic banks.

3.1 Setting up risk limitations

According to the *Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area*, domestic banks shall comply with the following risk limitations:

- **Total investment limit:** the total of cumulative allocated working capital and equity investments for a bank's branches and subsidiaries in Mainland China cannot exceed 15% of the bank's net worth.
- **Total risk exposure limit:** the aggregate amount of credit, investment as well as interbank loans and deposits in Mainland China may not exceed 100% of the bank's net worth as of the end of the preceding fiscal year. At the end of 2013, the average ratio of risk exposure to net worth of domestic banks was 58%, still an acceptable level; however, some banks were close to the regulatory ceiling of their risk limits.
- **The limit of total credit extended by third-area branches and OBUs:** the total credit granted by third-area branches and OBUs to borrowers in Mainland China may not exceed 30% of their combined net total assets.

3.2 Closely monitoring Mainland Chinese operations of domestic banks

Besides the risk limitations, domestic banks are urged to strengthen their risk management. In addition, the FSC closely monitors the conditions and operations of Mainland Chinese bank branches via cross-strait supervisory cooperation and on-site

examination based upon the Cross-strait Banking Supervisory Platform, which was established by the FSC and Mainland China's banking supervisors.

4. Conclusion

- In view of the significant gap with regard to financial market openness and structure between Taiwan and Mainland China, negotiations on the issues of cross-strait financial services should be undertaken on a gradual basis.
- Given that the risk exposures of some domestic banks to Mainland China are close to the regulatory ceilings, the competent authority will continue to implement the aforementioned risk control measures in a prudent manner and urge the banks to abide by the risk exposure limitations so as to avoid further risk concentration in Mainland China.
- When promoting business in Mainland China, domestic banks should ensure related regulation compliance, internal controls and internal audits, and put risk management as the first priority.

Reference: Wen-Chieh Wang (2014), *Cross-strait Banking Interaction and Development in the Post-ECFA Era- Review on Legal Framework*, Section 50 II, Taiwan Economic Financial Monthly Journal, Bank of Taiwan.

Box 5

Enhancing the resolution regime for problem insurers in Taiwan

Since the opening up of Taiwan's insurance market in the 1990s, several insurance companies have gone into insolvency due to inadequate management and have been liquidated or taken over by the supervisory authority. Among them, Kuo Hua Life Insurance Company had a negative net worth since 2000 and was not taken over by the Taiwan Insurance Guaranty Fund (TIGF) until August 2009. Eventually, it was sold to Trans Globe Life Insurance Company and exited from the market in March 2013, with the cost of NT\$88.37 billion paid by the TIGF. This indicated that the current resolution regime for problem insurers needs to be improved. Given that a few life insurance companies still face problems of insufficient capital, it is urgent for the supervisory authority to establish a more comprehensive and efficient resolution regime so as to maintain the soundness of the insurance industry.

1. Current resolution regime for problem insurers in Taiwan

The current resolution regime for problem insurers is stipulated mainly by three pieces of regulations as shown below. These regulations authorize the competent authority to adopt different supervisory measures (including resolution and exit from the market) depending on the severity of the insurer's problems. Additionally, the TIGF plays an important role in the resolution regime, such as extending loans or advancing funds to problem insurers, assuming their insurance contracts, or taking them into receivership, resolution or liquidation.

1.1 Paragraph 4, Article 149 of the Insurance Act

The main regulations on resolution procedures for problem insurers is stipulated in Paragraph 4, Article 149 of the *Insurance Act*. It states that if an insurance company experiences significant deterioration of business or financial conditions and is unable to pay its debts or perform contractual obligations, or might damage the rights and interests of insured parties, the competent authority "may" place the company under conservatorship or receivership, order it to suspend business and undergo rehabilitation, or take other resolution measures depending on the severity of the circumstances.

1.2 Regulations Governing Capital Adequacy of Insurance Companies

The *Regulations* are formulated in accordance with the provisions of Paragraph 3, Article 143-4 of the *Insurance Act*. It stipulates that if the risk-based capital (RBC) ratio of an

insurance company falls below 200%, the competent authority “may” adopt restrictive or resolution measures, such as (1) requiring it to increase capital or improve operation within the specified period; (2) restricting the scope of its business or trading; (3) dismissing its directors or supervisors; or (4) assigning personnel to supervise the company.

1.3 Guidelines for Dealing with Business Crises of Financial Institutions

According to the *Guideline*, when an insurance company encounters situations of abnormal policy surrenders, significant cash outflow or severe illiquidity and may go into insolvency, the FSC should set up a crisis management task force and coordinate with the CBC, the TIGF and other relevant authorities when necessary, in order to take responsive actions to deal with the crisis. If the company is assessed to be solvent, it could apply to other financial institutions and the TIGF for funding. If insolvent, the FSC will take resolution measures such as taking it into receivership, suspending its business or others.

1.4 Roles and functions of the TIGF

The TIGF was set up in accordance with Article 143-1 of the *Insurance Act*, for the purpose of protecting policyholders’ interests and maintaining financial stability. According to Article 143-3 of the *Insurance Act*, the TIGF has several functions, for example, extending loans, providing low-interest loans or subsidies, advancing funds on behalf of the insurer to settle claims, acting as receiver, rehabilitator or liquidator, assuming insurance policies of the insolvent insurer, etc.

The funds of the TIGF are pre-contributed by all insurers, with the contribution rates of 1‰ and 2‰ of gross premium income for life and non-life insurers, respectively. If the accumulated funds of the TIGF are insufficient to safeguard the interests of insured parties to the extent that it might seriously threaten financial stability, the TIGF may borrow from financial institutions after getting approval from the competent authority. At the end of 2013, the TIGF suffered a huge financial gap with an adjusted net worth of negative NT\$45 billion and a borrowing balance from financial institutions of NT\$48.4 billion, owing to the payout of NT\$88.37 billion for resolving Kuo Hua Life Insurance Company.

2. Problems of the current resolution regime in Taiwan

2.1 Too much regulatory discretion might delay the resolution process

Authorized by the aforementioned regulations, the competent authority has the

discretionary power to determine the time and measures for dealing with problem insurers. It is different from the prompt corrective actions (PCAs) stipulated in Article 44-2 of the *Banking Act* for the banking sector.¹ Although regulatory discretion grants the competent authority more flexibility in crisis management, they may result in delaying resolutions and exacerbating the crises.

2.2 Adopting a flat contribution rate for the TIGF and lacking limited coverage might give rise to moral risk

Currently, the TIGF adopts a flat contribution rate which disregards the risk level of individual insurers, lacking incentives to urge them to adequately manage risks. Moreover, contrary to the limited deposit insurance coverage system for the banking sector,² the coverage limit for insurance policies is not stated in the regulations but subject to the discretion of the competent authority, which could lead to higher moral risk of insurers and undermine the financial soundness of the TIGF.

2.3 The enormous financial gap of the TIGF might undermine its ability to resolve other problem insurers

The TIGF faced an enormous financial gap with an adjusted net worth of negative NT\$45 billion after paying out for Kuo Hua Life. While there are still three insurance companies with negative net worth, the TIGF has little capacity for their resolution without obtaining more financial resources.

3. Recommendations for strengthening the resolution regime for problem insurers

To strengthen the resolution regime, while referring to *Key Attributes of Effective Resolution Regimes for Financial Institutions* released by the Financial Stability Board in October 2011 and considering the current status of Taiwan's insurance industry, several recommendations are provided as follows. Some of them have been included in the *Insurance Act* amendments in May 2014 and will be implemented immediately. Others may be difficult to carry out in the near future; however, they can be incorporated as part of long-term reforms.

3.1 Strengthening the supervisor's early intervention power over problem insurers

By referring to the PCAs in the *Banking Act*, PCAs for the insurance industry based on regulatory capital³ should be established. Moreover, the early intervention power of the competent authority needs to be strengthened and regulatory discretion should be adequately constrained so as to diminish resolving costs.

3.2 Adopting a limited coverage scheme

By referring to the practices of the insurance industries in Singapore, South Korea and Malaysia, and of the banking industry in Taiwan, the coverage amount for insurance policies should be subject to a specific limit in order to eliminate moral hazard and lessen financial pressure on the TIGF.

3.3 Setting up a bridge insurer system

In view of the bridge bank scheme in the *Deposit Insurance Act*, a bridge insurer system to deal with problem insurers⁴ should be taken into consideration. The bridge insurer can help problem insurers to temporarily continue the operations without paying out immediately, while maintaining the value of problem insurers and minimizing resolution costs.

3.4 Requiring insurers to prepare recovery and resolution plans

Requiring insurers to set up recovery and resolution plans in advance will help the supervisory authority to deal with crises in an orderly manner when they occur and, in turn, prevent them from causing financial instability and social disturbance. The plans should be regularly reviewed and be realistically exercised by insurers so as to strengthen their crisis management capabilities.

3.5 Accelerating the accumulation of the TIGF's funds and controlling insurance risk

3.5.1 Moderately increasing the contribution rate of the funds and implementing a risk-based contribution scheme

Currently, the TIGF's funds are contributed to at a flat rate with the annual accumulated amount equaling approximately several NT\$ billion, significantly less than the amount paid out for the resolution of Kuo Hua Life Insurance Company, indicating notable insufficiency of the annual contribution to the funds. The competent authority should moderately increase the contribution rate and implement a risk-based contribution scheme⁵ based on the risk level of individual insurers, similar to the system of deposit insurance.

3.5.2 Calculating the contribution of insurers based on their insurance liability reserves

Currently, the calculation of insurers' contributions is based on their gross premium income, which only considers the income scale of the insurer and has no relationship

with the accumulated insurance liabilities of the insurer. Calculating insurers' contributions based on their insurance liability reserves will more adequately connect the contribution with the potential responsibilities and risk imposed on the TIGF when resolving problem insurers.⁶

3.5.3 Establishing a special contribution mechanism

Referring to the special insurance premium of the deposit insurance system, the TIGF could also establish a mechanism of charging insurers a special contribution in the case of insufficient funds to payout, so as to complement the funds as soon as possible.

3.5.4 Promoting a risk control system designed by the TIGF

In order to control the insurance risk, the TIGF should be empowered to establish an early warning system and conduct inspection, as well as issuing warnings to insurers or requiring them to take corrective actions within a specified period.⁷

- Notes:
1. According to PCAs of Article 44-2 of the *Banking Act*, when the capital adequacy ratio of a bank is lower than the statutory minimum, the competent authority “shall” undertake different enforcement actions to intervene at an early stage, depending on severity of insufficient capital.
 2. According Article 13 of the *Deposit Insurance Act*, the maximum deposit insurance coverage limit for each depositor of any insured institution is NT\$3 million.
 3. The FSC held three meetings to collect opinions from the industry and experts regarding the implementation of PCAs in the insurance industry. However, after prudent evaluation, the FSC decided to postpone its implementation and put it into the next schedule of revising the *Insurance Act*.
 4. The bridge insurer system was introduced in the newly revised *Insurance Act*, which was passed by the Legislature on 20 May 2014.
 5. The FSC amended regulations on 2 April 2014 to raise the contribution rate of life insurance companies from 1‰ to 2‰ of gross premium income, and implement a risk-based contribution scheme based on RBC and management performance of individual insurers. The new regulations will be effective from July 2014.
 6. The FSC has received comments on the issue of using insurance liability reserves instead of gross premium income as the calculation basis of contributions by insurers to the TIGF's fund. After deliberation, the FSC decided to keep the current rule unchanged, with potential adjustment in the future depending on the progress of implementation.
 7. According to the newly revised *Insurance Act*, the TIGF can require insurers to provide necessary electronic data files, conduct inspection and undertake enforcement action.

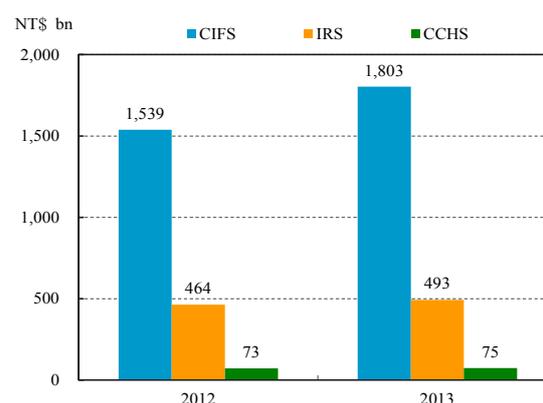
3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of systemically important payment systems in 2013

The three systemically important payment systems (SIPs),⁶⁷ which process domestic interbank payments, operated soundly in 2013, with an increase of average daily transaction value compared to the previous year (Chart 3.53). Among them, the CBC's 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\$1.80 trillion and accounting for 76% of the total.

Chart 3.53 Average daily transaction value of the three SIPs



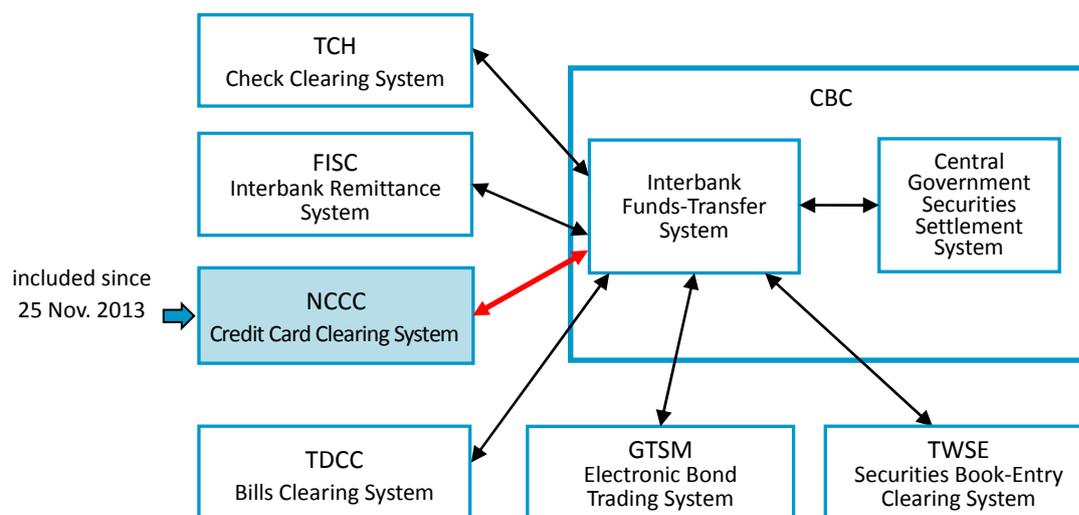
Source: CBC.

Incorporating credit card settlement into the CIFS

In the past, the NCCC opened clearing accounts in Mega Bank, Cathay United Bank and CTBC Bank, respectively, for credit card payments and settlements. It meant that the NCCC had to deposit funds in three banks and transfer funds between them through the Interbank Remittance System (IRS), resulting in inconvenient operations. Therefore, the CBC allowed the NCCC to open a clearing account in the CIFS to centrally process the payments of credit card acquirers and issuers to facilitate interbank settlements of credit card transactions.

The NCCC started to settle credit card transactions through the CIFS on 25 November 2013 and its operation has worked smoothly since then. Participant banks of the NCCC can transfer the funds of credit card payments through reserve accounts in the CIFS, which not only enhances the efficiency of credit card settlements but also contributes to the banks' fund management operations. In addition, incorporating credit card settlements into the CIFS has further strengthened the security and efficiency of domestic retail payment systems (Chart 3-54).

⁶⁷ The three SIPs include the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) and the Check Clearing House System (CCHS).

Chart 3.54 Framework of payment and settlement systems in Taiwan

Note: TCH = Taiwan Clearing House; TDCC = Taiwan Depository and Clearing Corporation; GTSM = GreTai Securities Market; TWSE = Taiwan Stock Exchange Corporation.
Source: CBC.

Establishing the foreign currency clearing platform

The foreign currency clearing platform planned by the CBC and established by the FISC was launched on 1 March 2013, with the aim to reinforce domestic financial infrastructure. The platform was scheduled to expand its function in four phases. Initially, the platform only processed domestic US dollar remittances. After that, domestic and cross-border RMB remittances were included in the platform on 30 September 2013, followed by cross-strait USD remittances and the PVP mechanism for NTD/USD transactions introduced on 14 February and 17 February 2014, respectively. The establishment and development of the foreign currency clearing platform is detailed in Box 6.

In the future, the CBC will continuously expand the functions of the platform, including the incorporation of Japanese yen and euro payments, and the setup of a delivery-versus-payment (DVP) mechanism for foreign currency-denominated bonds to reduce their settlement risk. The platform not only centralizes the process of foreign currency payments with the benefits of effectively simplifying banks' operations and achieving economies of scale, but also adopts SWIFT standards and processes both domestic and cross-border foreign currency payments, with the benefit of facilitating the development of the domestic financial services industry.

Strengthening the management mechanism of the certificates of bonds for RP transactions

For the purpose of promoting the efficiency of government bonds settlement, the CBC proposed to adopt a book-entry central government bond scheme and set up the Central Government Securities Settlement System (CGSS) in September 1997. Subsequently, the CBC linked the CGSS and the CIFS on a DVP mechanism in April 2008, so as to improve settlement security and reduce settlement risk.

The settlement of central government bond repurchase (RP) transactions between investors and securities firms requires the transfer of bonds through book-entry accounts or delivery of RP certificates issued by the clearing bank. Originally, for the latter, the clearing bank issued two copies of RP certificates and debited the disposable account of the securities firm. The original of RP certificate was delivered to the investor by the securities firm, while the duplicate was held by the securities firm. When the RP transaction came due, the securities firm could apply to the clearing bank with the duplicate for crediting its disposable account and cancelling the certificate, and the original certificate would become invalid automatically, no matter whether the firm made the payments or not. This increased the settlement risk for investors when securities firms defaulted and failed to make the payments to investors.

To reduce the settlement risk, the CBC and the FSC set up a working group in September 2010 to jointly deliberate the proposal of strengthening the management mechanism of certificates for bond RP transactions, and subsequently improved the CGSS as well as amended related regulations which became effective in January 2012. Accordingly, securities firms should submit both the duplicate certificate and proof of fund payment to the clearing bank for certificate cancellation when the RP transaction is due. Otherwise, the investor may apply to the clearing bank with the original certificate for bond transfers. This significantly reduces settlement risk and protects investors' interests. Furthermore, the CBC has conducted on-site audits on the settlement operations of RP certificates at clearing banks since 2012 to ensure their compliance with the new regulations. In 2013, the amount of book-entry CGSS transfers reached NT\$28.7 trillion. Among them, transfers by way of issuance and cancellation of RP certificates accounted for a share of 46.61% of the total, all of which complied with the regulations.

3.3.2 Securities firms permitted to conduct FX business

Internationalization and liberalization of the foreign exchange (FX) business has further

evolved toward a mature stage over recent years. The FX-related activities conducted by securities firms already have a certain scale as well. In view of these positive developments, the CBC decided to duly grant securities firms authorization to conduct specified FX business so as to spur continued growth of their activities. Moreover, to subject the conduct of securities firms' FX business to clearer requirements and effective supervision, the CBC consolidated relevant rules into a single regulation and thereby promulgated the *Regulations Governing Foreign Exchange Business of Securities Enterprises* on 26 December 2013.

Highlights of the opening-up of FX business

- The FX transactions not involving NT dollars undertaken by securities firms with customers should be based on the actual needs in connection with their securities business.
- Foreign currency financial products and credit derivatives.
- Structured products linked with foreign currency-denominated international bonds.

Overview of Securities firms' FX business approved by the CBC

As of the end of 2013, FX dealings approved for securities firms to conduct mainly included accepting orders to trade foreign securities, underwriting of international bonds, and interest rate-related products denominated in foreign currencies.

3.3.3 Policies in response to Basel III Liquidity Standards

The BCBS published *Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring* in December 2010. It developed two minimum standards in liquidity risk management (i.e., the LCR and the Net Stable Funding Ratio (NSFR)), especially focusing on internationally active banks. These two standards are expected to be put into effect in 2015 and 2018, respectively.

In January 2013, the BCBS further published *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools*, which made amendments to the calculation of the LCR and its implementation schedule. Major changes include loosening the definition of high-quality liquid assets, adjusting the assumptions made in various scenarios for stress tests, and introducing a phased timetable for its implementation (Table 3.3). As for the NSFR, due to its later implementation date, the BCBS has already published a consultative document in January 2014 to invite comments from the public.

Table 3.3 Phase-in timetable of LCR implementation

	2015	2016	2017	2018	2019
Minimum LCR	60%	70%	80%	90%	100%

Source: BCBS.

The contents of the LCR and the NSFR

The LCR and the NSFR were developed to meet two separate but complementary objectives for liquidity risk management. The aim of the LCR is to promote short-term resilience of a bank under adverse liquidity shocks. It requires banks to maintain a sound funding structure during normal times and have enough high-quality liquid assets to survive a significant stress scenario lasting for 30 days. As for the purpose of the NSFR, it requires banks to fund their activities with more stable sources so as to enhance their long-term resilience in the face of a crisis (Table 3.4).

Table 3.4 Definitions and implications of the LCR and the NSFR

	LCR	NSFR
Objectives	Requiring banks to retain adequate high-quality liquid assets (HQLA) to cope with liquidity needs for a 30-day time horizon under a liquidity stress scenario.	Requiring banks to raise funds from stable sources (over 1 year) on the basis of continuous operation to enhance long-term resilience.
Definition	$\frac{\text{Stock of HQLA}}{\text{Total net cash outflow over the next 30 calendar days}} \geq 100\%$	$\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$
Implications	To measure short-term resilience of a bank under liquidity stress; the higher the LCR, the higher the resilience.	To measure the funding source stability of a bank; the higher the NSFR, the higher the stability of funding sources.

Source: BCBS.

Implementation of the LCR and the NSFR in Taiwan

To strengthen financial institutions' liquidity risk management, the FSC, the CBC, and the Bankers Association jointly established a sub-group on liquidity risk under the Basel III working group in 2012. It aimed to formulate Taiwan's LCR and NSFR regulations, based on the BCBS's liquidity risk framework and domestic banks' practices.

Referring to the methodology of the LCR standard revised by the BCBS in 2013, the working group completed the first draft of the LCR's calculation tables and explanations in December 2013. The Bankers Association then held a seminar to explain LCR calculation in March

2014. The FSC also required all banks to conduct quantitative impact studies for LCR regulations. In addition, to be consistent with international standards and with the benefit of facilitating international comparisons, Taiwan's LCR implementation schedule is set to follow the recommended timeframe set by the BCBS. As for the implementation of the NSFR, it is still under discussion before the BCBS publishes the final document.

3.3.4 Taiwan scheduled to switch to 2013 TIFRSs in 2015

Converging with global trends of financial supervision, the FSC has announced a two-phase timetable⁶⁸ for entities in Taiwan to adopt the IFRSs from 2013 onwards and endorsed the 2010 TIFRSs as the adopted version. However, because the International Accounting Standards Board (IASB) continuously amended or issued new accounting standards, the 2010 TIFRSs were significantly different from the latest IASB accounting standards. Moreover, adopting the new version of IFRSs not only could enhance the quality and transparency of financial reports, but also could facilitate cross-country comparison of financial statements. Therefore, on 29 January 2014, the FSC announced the Roadmap to Full Adoption of the Upgraded IFRSs with the aim to continuously converge local accounting principles with international standards via a two-phase process.

- Phase 1: From 2015 onwards, entities that adopt the 2010 TIFRSs, credit card companies and unlisted public companies should adopt the 2013 TIFRSs.
- Phase 2: From 2017 onwards, each subsequently issued IFRS will be adopted after being endorsed by the FSC.

The 2013 TIFRSs contain 41 standards and 24 interpretations. Compared to the 2010 TIFRSs, 24 standards and interpretations were either issued, amended or abolished in the 2013 TIFRSs. Among them, changes in pension recognition, consolidation accounting and disclosure requirements, which are elaborated below, are expected to have greater impacts on local entities. However, due to differences in business strategies and industry features, the impacts of changes in the version of TIFRSs on individual entities may be different.

- Abolish amortization of actuarial gains and losses and past service cost for pension recognition. Both should be recognized immediately in the period they occur. The actuarial gains and losses should be recognized in other comprehensive income, while the

⁶⁸ First-phase adopters, including the companies listed on 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), were required to prepare TIFRSs-based financial statements from 2013. As for second-phase adopters, including unlisted public companies, credit cooperatives and credit card companies, they should apply TIFRSs from 2015.

past service cost should be recognized in profit and loss.

- Revise definitions of control and the type of joint arrangements and prohibit using proportionate consolidation for joint ventures. Moreover, if an investment in a joint venture becomes an investment in an associate, the entity should continue to apply the equity method to the remaining interests instead of remeasuring the investment at its fair value.
- Require extensive disclosure of information. For example, entities should (1) provide more comprehensive information on interests in subsidiaries, joint arrangements, associates and unconsolidated structured entities; (2) begin to disclose information on the offsetting of financial assets and liabilities, and transfers of financial assets.

The 2013 TIFRSs is significantly different from current accounting treatments in Taiwan. Its impacts will not only be on accounting, but also on entities' information systems, funding management and investor relations. Therefore, entities shall be well-advised to study thoroughly the 2013 TIFRSs, evaluate potential impacts and develop responsive measures in order to mitigate the impacts.

Box 6**Setup and development of foreign currency clearing platform**

In the past, the domestic USD payments by banks were wired to their correspondent banks in the US for clearing. Because the time zone difference between Taiwan and the US is about 12 hours, it could cause delays in transaction payments on some occasions, with potential risks of settlement default. On top of that, customers had to bear additional costs incurred from the process of remittance transfer by intermediary banks both in extra time and higher charges. For the purpose of improving the process for domestic USD remittance, the CBC embarked on launching a domestic USD dollar settlement system in September 2008 and thereby selected Mega International Commercial Bank (Mega Bank) as the settlement bank. Accordingly, Mega Bank established a domestic USD settlement system which officially began operations in December 2010.

On 31 August 2012, the CBC and the People's Bank of China jointly signed the *Memorandum on Cross-Strait Currency Clearing Cooperation*. The Executive Yuan subsequently approved the Program to Develop Financial Services with Cross-Strait Characteristics on 6 September 2012, including a modern cross-strait money remittance platform that would be jointly planned by the CBC and the FSC. As a result of the policy initiatives, the need for RMB settlement domestically in addition to the USD arose. Thus, the CBC further programmed a multi-currencies clearing platform which expanded the existing framework and function of domestic USD settlement and adopted the globally-accepted SWIFT message format, network and international settlement mechanism, with a view to gearing towards international practices.

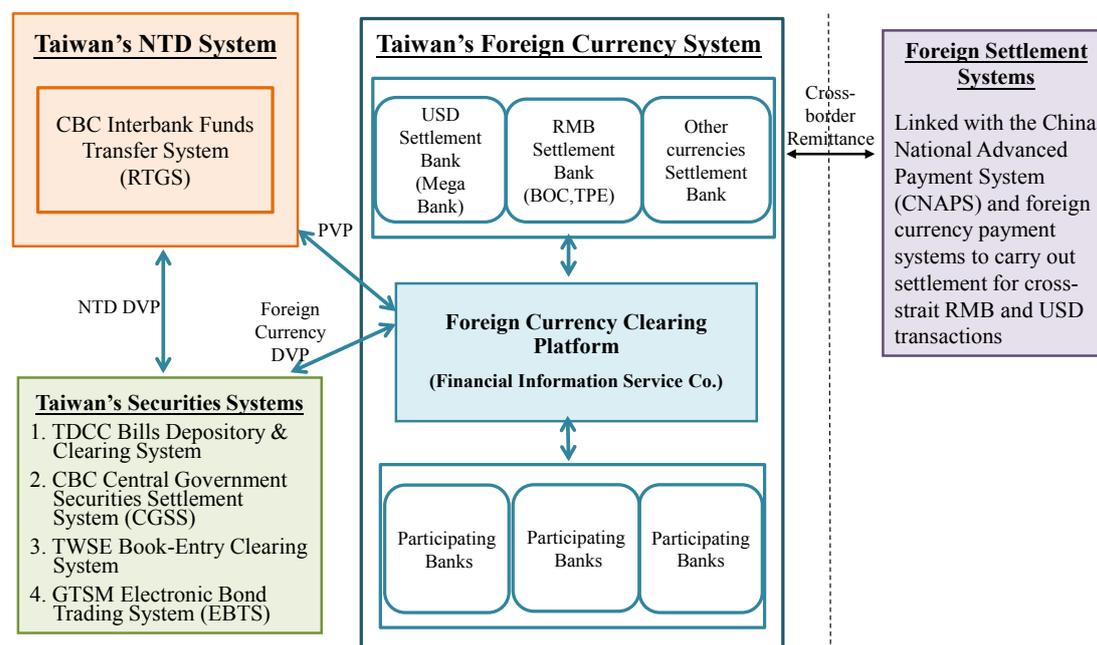
In order to smooth the proceedings of setting up the new platform, the CBC together with the Financial Information Service Co. (FISC) and Mega Bank organized a task force in October 2012. After the CBC reported the proposal to the Premier on 12 December 2012, the new platform was approved to be established and operated by the FISC. The Executive Yuan also resolved to shift the equity of the FISC, which was entirely held by the Ministry of Finance, to the CBC on 1 January 2014, so as to facilitate supervision of the FISC's liquidity provided by the CBC.

The foreign currency clearing platform was scheduled to expand its function in four phases (Table B6.1). When the relevant functions are set in position, the platform's framework will become further integrated (Chart B6.1). This will significantly upgrade the function of the financial payment system as a whole and thereby give an advantage for building a much more competitive financial environment in Taiwan.

Table B6.1 Phased timetable for the foreign currency clearing platform

Phases	Function	Effective date
Phase 1	1. Adoption of SWIFT message format and network. 2. Origination of domestic USD remittances.	1 March 2013
Phase 2	Inception of domestic and cross-border RMB remittances.	30 September 2013
Phase 3	1. Launch of cross-strait USD remittances; linking with the CBC's CIFS; augmentation of the mechanism of payment-versus-payment (PVP) settlement for NTD/USD transactions. 2. Addition of the mechanism for reduction of USD liquidity needs to lower the costs of USD settlement.	1. 14 February 2014 17 February 2014 2. Expected to be completed in July 2014
Phase 4	1. Addition of clearing and settlement services for other foreign currencies (such as euro and yen) transactions. 2. Provision of delivery-versus-payment (DVP) settlement mechanism for foreign currency-denominated bonds.	1. Expected to be finished in December 2014 2. Under construction

Source: CBC.

Chart B6.1 Framework of foreign currency clearing platform

Source: CBC.

The setup of the foreign currency clearing platform offers several advantages as follows:

(1) Centralized processing of various currency transactions by a single platform allows

efficacious use of resources to achieve economies of scale.

- (2) Domestic USD and RMB remittances can be exempted from fees charged by intermediary banks, with the full amount arriving in the beneficiary's account the same working day. Banks' relevant operational costs and risks can also be reduced.
- (3) Centralized settlement of transactions between different currencies through the PVP mechanism can not only avoid delay in settlement by correspondent agents abroad due to time zone differences, but eliminate default risk as well.
- (4) Centralized processing of foreign currency transactions is able to prevent settlement banks from acquiring customer information from participating banks and thereby help maintain fair competition in the market.

IV. Measures to maintain financial stability

In 2013, under the circumstances of stable recovery in the global and domestic economies and moderate inflation, Taiwan's financial market performed smoothly. Profitability of financial institutions kept trending up, and asset quality continued to improve, while most financial institutions maintained satisfactory capital levels except for a few life insurance companies. The three systemically important payment systems also operated soundly. As a whole, Taiwan's financial system remained stable.

The CBC has been closely watching the changes in global and domestic economic and financial conditions and noted several issues, especially the spillover effects of the US gradual exit from its easy monetary policy, slowing economic growth and rising shadow banking risks in Mainland China, and the potential impacts of domestic house price movements on the asset quality of real estate loans of financial institutions. The CBC will continually monitor the influence of those issues on the domestic economy and financial system and implement appropriate monetary, credit and foreign exchange policies. Meanwhile, the FSC also continues to amend financial laws and regulations and undertakes measures to strengthen financial supervision, aiming at maintaining the soundness of financial institutions and improving financial stability.

4.1 Measures taken by the CBC to promote financial stability

4.1.1 Adopting sound monetary policies to address the changes in economic and financial conditions

Policy rates remained unchanged in 2013

Considering the moderate prospects for domestic economy growth and inflation, as well as the uncertainties in the global economic outlook, the CBC kept policy rates unchanged⁶⁹ in 2013 so as to maintain price and financial stability and promote economic growth.

⁶⁹ 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.

Reserve money growth remained moderate

The CBC adopted open market operations to keep reserve money at appropriate levels. In 2013, the total loans and investments of all banks grew by 5.60%, while M2 grew by 4.78% year on year, both of which were higher than the GDP growth of 2.11% in the same period. This illustrated that market liquidity was sufficient to support economic activity.

The CBC will implement appropriate monetary policies in a timely manner

The CBC will keep closely monitoring inflation, the output gap, as well as global and domestic economic and financial developments and undertake appropriate monetary policies in a timely manner.

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

To maintain financial stability and urge financial institutions to control the risks associated with real estate loans, the CBC has implemented targeted prudential measures against housing loans in specific areas, land collateralized loans and high-value housing loans since June 2010. The effort has come to fruition.

In 2013, the CBC continued to implement risk management policies for real estate loans. Firstly, the CBC urged banks to strengthen their risk management for real-estate lending in “non-specific areas” with considerable housing price surges in March. To follow the CBC’s policies, most big banks adopted self-restraint measures, such as expanding the scopes of specific areas, lowering loan-to-value ratios, removing grace periods and raising mortgage interest rates. In December, to prevent banks’ funds from being used for real estate speculation, the CBC further urged those banks with greater business volumes in collateralized industrial land lending to rigorously comply with credit regulations.

4.1.3 Stabilizing the NT dollar exchange rate under a managed float regime

Implementing flexible foreign exchange rate policies

Taiwan adopts a flexible managed floating exchange rate regime, and 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 inflow 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. The exchange rate of the NTD against the USD has been relatively stable since the onset of the global financial crisis.

4.1.4 Maintaining an orderly foreign exchange market and improving its sound development

To prevent excessive volatility of the NTD exchange rate from endangering financial stability, the CBC continued to adopt management measures targeting massive short-term capital inflows and outflows, mainly including (1) implementing a Real Time Reporting System for Large-Amount Foreign Exchange Transactions to closely monitor the inflows and outflows of foreign capital; (2) overseeing the usage of NTD demand deposit accounts of foreign capital to ensure the funds were invested in domestic securities as declared and not placed in demand deposit accounts for a long time.

The CBC urges authorized foreign exchange banks to strengthen their foreign exchange rate management in order to mitigate the risk exposures of individual banks and systemic risks of the whole market.

The CBC strengthens on-site inspections on foreign exchange forward transactions to ensure they were undertaken for real demand purposes in order to restrain foreign exchange speculation. Moreover, target examinations on foreign exchange transactions were implemented when necessary to maintain an orderly foreign exchange market.

4.1.5 Continually opening the market for new foreign currency derivatives and expanding foreign currency call loan and swap markets

In order to expand the services provided by financial institutions and satisfy customer demand for risk hedging and portfolio management, 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. At the end of 2013, 24 foreign currency derivative products and five NTD-linked derivative products had been approved. The transaction volume of these products totaled US\$4.54 trillion in 2013.

Furthermore, the CBC has appropriated US\$20 billion, €1 billion, and ¥80 billion as seed funds from its foreign exchange reserves to participate in the operation of the Taipei Foreign Currency Call Loan Market. The CBC also continued to extend foreign currency call loans to

banks and conduct currency swaps with banks to meet corporate funding needs and maintain foreign currency liquidity in the domestic banking system. In 2013, the turnover amounts of the Taipei foreign currency call loan and interbank USD/NTD currency swap markets were US\$1.36 trillion and US\$1.13 trillion, respectively, and the outstanding of both markets at the end of the year registered US\$24.2 billion and US\$158.8 billion, respectively.

4.1.6 Continually developing financial stability assessment tools

To strengthen its function of financial stability assessment, the CBC continued to collect and study the new assessment tools developed around the world, and explored the possibilities to incorporate them into the domestic financial system for reference. Among them, the Bank Health Index (BHI) and Health Assessment Tool (HEAT), developed by the IMF,⁷⁰ have the merits of easy operation and effectively testing bank soundness.

Referring to HEAT, the CBC conducted a practice run using domestic banking data from 1998 to 2013. The result showed that, in general, the HEAT assessment tool could capture the influences of severe financial events and banking M&A on banks' soundness. Meanwhile, it should be noted that the BHI index only reflected the relative but not absolute soundness or weakness of individual banks. In addition, HEAT may have some room for improvement when implemented in Taiwan, such as including more financial indices and considering the appliance of different weights on individual banks based on their importance to the whole banking sector.

4.2 Measures undertaken by the FSC to maintain financial stability

From 2013 onwards, the FSC launched several policy measures to facilitate financial development and financial deregulation, including, among others, expedited promotion of a Taiwan-centric wealth management platform, development of financial services with cross-strait characteristics, and inclusion of the financial industry in the government's free economic pilot zones plan. Concurrently, the FSC continually revised financial laws and regulations and undertook supervisory reforms to preserve financial stability.

⁷⁰ Li Lian Ong, Phakawa Jeasakul and Sarah Kwoh, (2013) "HEAT! A Bank Health Assessment Tool," *IMF Working Paper*, WP/13/177, August.

4.2.1 Strengthening surveillance of the risks related to banks' real estate loans

Continued supervision of the banks overly concentrating in real estate lending

For those banks with higher concentrations in real estate loans, the FSC consistently urged them to set aside additional provisions for loan losses based on the principle of differentiated supervision. Moreover, the FSC required that banks should not increase the loans to real estate development projects in the name of working capital financing or other types of loans by way of pledge or transfer of the beneficiary rights of real estate asset trusts. In 2013, there were nine banks under close surveillance, less than the 17 in 2011, showing that the surveillance of those banks was effective.

Implementing stress testing to evaluate banks' ability to respond to house price declines that could cause potential losses

In order to address potential risks resulting from house price declines, the FSC required domestic banks to carry out stress tests in April 2014 using financial data as of the end of 2013. The tests focused on credit exposures associated with housing loans and lending to the construction industry based on three risk factors including a fall in house prices, a rise in the interest rate, and a decrease in borrowers' incomes under adverse scenarios in differing degrees.⁷¹ The test result showed that all banks' capital adequacy ratios were higher than the minimum standard of 8% under the stress scenarios, indicating that banks were still able to react to potential losses arising from house price declines.

4.2.2 Persistently enhancing banks' risk bearing and managerial ability

Raising banks' regulatory capital ratios and loan loss provisions

Domestic banks have implemented the Basel III requirements since 2013, raising capital and improving its quality year by year. The FSC issued the *Regulatory Measures to Strengthen the Credit Risk Management of Domestic Banks* in January 2013, adopting differentiated incentive rewarding and supervision to guide banks to raise the loan loss provision ratios for credit assets classified as category one (i.e., normal credit assets), to be at or above the 1% minimum. Subsequently, the FSC, in January 2014, revised the *Regulations Governing the*

⁷¹ The adverse scenario assumes a 20% drop in house prices and a one-percentage-point increase in the interest rate while the more adverse scenario assumes a 30% drop in house prices and a rise of two percentage points in the interest rate. Both scenarios additionally assume a decrease in borrowers' incomes to make the stress testing effects stronger.

Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans, which stipulated that the minimum loan loss provision and guarantee reserve shall be the sum of 1% of the outstanding claim balance of category one credit assets by the end of 2014. The *Regulations* added a requirement that, the FSC, if necessary, may require banks to raise loan loss provisions and guarantee reserves of specific credit assets, so as to strengthen the ability of banks to bear risks and ensure their loss absorbency.

Reinforcing the oversight of banks' exposures to Mainland China

By way of total investment control, capping risk exposures and imposing a ceiling on credits undertaken by OBUs or overseas branches of financial institutions (Box 4), the FSC strengthened its oversight of banks' exposures to Mainland China and urged banks to earnestly fulfill risk management.

4.2.3 Strengthening the supervision of the insurance industry

Improving the financial structure and loss absorbency of insurers

In order to improve the financial structure of life insurance companies, the FSC required that the special reserve set aside for the real estate revaluation increment under the IFRSs in 2013 should first of all offset any shortfall after the reserves for in-force business have been calculated on the assigned basis of fair value. If there is a remainder after the offsetting, it should be recognized as a special surplus reserve under stockholders' equity and should not be distributed without approval.

In February 2014, the FSC further issued rules that allow insurers to opt for subsequent measurement of investment property at fair value and set out the relevant package measures, such as requirements on outsourced professional appraisal, case-by-case reviews by certified public accountants (CPA), and appropriation of special surplus reserves for related capital gains along with limiting their distribution for the purpose of offsetting any subsequent liabilities that might arise due to a shortfall in reserves.

Moreover, in order to raise insurers' loss absorbency, the FSC revised regulations in October 2013, requiring them to set aside sufficient provisions for loan losses not lower than 1% of their outstanding loan assets.

Broadening the channels for insurers' uses of funds

In order to raise insurers' capital efficiency and broaden the channels for the uses of funds, the FSC successively promoted and guided their funds towards investments in public infrastructure projects and long-term care facilities. Furthermore, the FSC loosened restrictions, allowing insurers that meet certain conditions to be eligible to invest in foreign corporate bonds, offshore (covering Mainland China) real estate, and RMB-denominated financial products.

Enhancing the resolution regime for troubled insurers

In order to strengthen the resolution regime for and supervision of troubled insurers, the FSC put forward a draft for partial revision to the *Insurance Act* in 2013, which was passed by the Legislative Yuan on 20 May 2014. The focal points of the revisions include enhancement of supervisory measures on insurers experiencing operational difficulties: for example, ordering them to submit a plan to improve their finances and business and take disciplinary actions. The revisions also include the strengthened resolution regime for troubled insurers, which contains that a receiver may deliberate a bridge plan for recovery and resolution of a failed insurer.

4.2.4 Improving securities market order and facilitating its development

Strengthening the supervision of backdoor listings

To protect the rights of shareholders, the TWSE and the GTSM have been implementing the enhanced supervisory measures for backdoor listings since December 2013. For example, in the case of listed companies which underwent a transfer of management rights and significantly changed the scope of their operations within one year before or after that transfer, their stocks may be suspended from trading for up to a maximum of six months. Such companies will also be required to fully disclose all information pertaining to the transfer of management rights, the change in the scope of business, and their future business plans. Furthermore, the Market Observation Post System (MOPS) set up a specific compilation table related to changes in management rights (namely, information about major shareholdings of directors, supervisors and high-ranking managers) in December 2013, providing investors with the relevant information.

Promoting the RMB Formosa Bond Market and creating GISA

In order to promote the development of the offshore RMB bond market in Taiwan, the FSC, subsequent to the first public listing of Formosa Bonds in March 2013, announced policy measures in November on the expansion of the scale of issuance and scope of participation in the Formosa Bond market. Mainland Chinese banks and their overseas affiliates or branches, overseas branches of Taiwanese financial institutions in Mainland China, and Taiwan's listed companies' affiliates in Mainland China are allowed to issue RMB-denominated common corporate bonds that can only be sold to professional institutional investors. Moreover, to enable micro and small innovative companies to raise needed capital, the FSC approved the GTSM's *Regulations Governing the Go Incubation Board for Startup and Acceleration Firms* (GISA) in November 2013, which enabled the GISA to start operation from January 2014.

Appendix: Financial soundness indicators

Table 1: Domestic Banks

Unit: %

Items	Year (end of year)					
	2008	2009	2010	2011	2012	2013
Earnings and profitability						
Return on assets (ROA)	0.12	0.28	0.57	0.58	0.67	0.67
Return on equity (ROE)	1.86	4.52	9.08	9.27	R 10.44	10.24
Net interest income to gross income	78.53	59.54	59.52	62.61	R 63.37	60.97
Non-interest expenses to gross income	62.97	59.81	55.99	55.44	R 54.71	52.81
Gains and losses on financial instruments to gross income	3.91	16.43	9.93	6.92	R 11.74	14.63
Employee benefits expenses to non-interest expenses	54.80	57.56	57.67	57.71	R 59.66	59.32
Spread between lending and deposit rates (basis points)	1.75	1.22	1.36	1.41	1.42	1.42
Asset quality						
Non-performing loans to total loans	1.54	1.15	0.61	0.43	0.41	0.39
Provision coverage ratio	69.48	90.35	157.32	250.08	269.07	311.65
Capital adequacy						
Regulatory capital to risk-weighted assets	11.04	11.83	11.96	12.06	12.54	11.83
Tier 1 capital to risk-weighted assets	8.42	9.03	9.18	9.08	9.49	9.14
Common equity Tier 1 capital to risk-weighted assets	-	-	-	-	-	9.06
Capital to total assets	6.12	6.25	6.31	6.29	R 6.53	6.60
Non-performing loans net of provisions to capital	10.33	6.41	2.91	R -0.38	-0.82	-3.24
Liquidity						
Customer deposits to total loans	122.34	133.13	132.28	128.66	129.06	130.06
Liquid assets to total assets	12.69	15.20	10.46	11.05	9.77	13.40
Liquid assets to short-term liabilities	18.39	20.98	14.65	15.67	14.00	18.42

Table 1 : Domestic Banks (cont.)

Unit: %

Items	Year (end of year)					
	2008	2009	2010	2011	2012	2013
Credit risk concentration						
Household loans to total loans	45.48	46.41	46.67	46.06	46.36	47.73
Corporate loans to total loans	45.27	43.26	43.66	44.91	44.82	44.65
Large exposures to capital	142.38	142.48	141.36	141.16	125.50	106.26
Gross asset positions in financial derivatives to capital	21.92	8.17	8.54	7.57	5.84	6.79
Gross liability positions in financial derivatives to capital	16.48	8.44	10.02	7.05	6.11	8.09
Sensitivity to market risk						
Net open position in foreign exchange to capital	2.41	2.43	2.72	2.71	2.91	3.04
Foreign-currency-denominated loans to total loans	16.54	16.22	16.28	18.14	19.04	20.84
Net open position in equities to capital	24.99	25.69	24.48	24.15	22.13	22.71
Foreign-currency-denominated liabilities to total liabilities	20.41	19.48	20.31	21.65	21.84	27.01

Notes: 1. Figures for "Earnings and profitability" from 2012 are on the TIFRSs basis, while prior years are on the ROC GAAP basis.

2. Figures for "Spread between lending and deposit rates" exclude the data of preferred deposits rates of retired government employees and central government lending rates.

3. Figures for "Capital adequacy" in 2013 are on the Basel III basis.

4. Figures with "R" are revised data.

Table 2: Non-financial Corporate Sector

Units: %, times

Items	Year (end of year)					
	2008	2009	2010	2011	2012	2013
Total liabilities to equity						
Corporate sector	90.02	86.88	85.59	96.66	98.84	-
TWSE-listed companies	94.96	90.26	94.49	104.22	110.61	107.07
OTC-listed companies	103.85	78.18	89.41	83.03	87.95	81.65
Return on equity						
Corporate sector	4.76	8.07	13.32	8.66	7.33	-
TWSE-listed companies	9.13	10.14	16.12	10.99	10.45	13.95
OTC-listed companies	-5.21	6.95	13.77	8.97	6.91	9.90
Net income before interest and tax / interest expenses (times)						
Corporate sector	3.39	8.54	16.73	9.64	8.11	-
TWSE-listed companies	5.42	9.83	19.40	11.32	8.55	12.96
OTC-listed companies	-	7.62	13.74	10.59	6.75	11.24

Notes: 1. Data of corporate sector are from JCIC, and those of TWSE-listed and OTC-listed corporates are from TEJ.

2. Figures for the corporate sector are entity financial data in accordance with ROC GAAP. Figures for listed companies are consolidated financial data; prior to 2011 are under ROC GAAP, while 2012 and 2013 are under TIFRS.

3. 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)					
	2008	2009	2010	2011	2012	2013
Household borrowing to GDP	81.92	84.74	R 82.42	R 82.87	R 83.56	86.26
Borrowing service and principal payments to gross disposable income	40.72	36.80	R 36.04	R 36.93	R 36.98	37.15

Notes: 1. Figure of disposable income for 2013 is a CBC estimate.

2. Figures with "R" are revised data.

Table 4: Real Estate Market

Unit: %

Items	Year (end of year)					
	2008	2009	2010	2011	2012	2013
Land price index	100.51	100.38	105.93	112.05	118.78	130.46
Residential real estate loans to total loans	29.16	30.57	29.99	28.64	28.21	27.91
Commercial real estate loans to total loans	12.14	12.47	13.25	13.70	14.14	14.26

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

Table 5: Market Liquidity

Unit: %

Items	Year (end of year)					
	2008	2009	2010	2011	2012	2013
The turnover ratio of trading value in stock market	145.45	178.28	136.74	119.87	97.33	82.64
The monthly average turnover ratio in bond market	R 49.43	R 32.13	R 32.95	R 19.73	R 12.26	8.59

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.

3. Figures with "R" are revised data.

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 “Financial Soundness Indicators: Compilation Guide” issued by the IMF. 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 2013 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, ANZ (Taiwan) Bank, 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 CTBC Bank Co., Ltd., amounting to 40 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.

- $ROA = \text{net income before income tax} / \text{average total assets}$
 - Net income: net income before income tax.
 - 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.

- $ROE = \text{net income before income tax} / \text{average equity}$
 - 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:
 - Employee benefits expenses.
 - Other expenses related to operations.
 - Expenses for property and equipment, including: purchasing, ordinary and regular maintenance and repair, depreciation, and rental.
 - 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 statement of comprehensive income 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 Employee benefits expenses to non-interest expenses

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

- Employee benefits 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 shall not be less than a certain ratio, based on the *Regulations Governing the Capital Adequacy Ratio and Capital Category of Banks*.

- Regulatory capital: the aggregate amount of net Tier 1 Capital and net Tier 2 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: the aggregate amount of net Common Equity Tier 1 and net additional Tier

1 Capital.

- Risk-weighted assets: same as 1.3.1.

1.3.3 Common equity Tier 1 capital to risk-weighted assets

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

- Common equity Tier 1 capital: includes common stock and additional paid-in capital in excess of par value of common stock, capital collected in advance, capital reserves, statutory surplus reserves, special reserves, accumulated profit or loss, non-controlling interests and other items of interest, less supervisory deductions.
- Risk-weighted assets: same as 1.3.1.

1.3.4 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.

1.3.5 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 = $(\text{non-performing loans} - \text{specific loan provisions}) / \text{capital}$
 - 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 1.3.4.

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, checks for clearing, amounts due from the Central Bank, amounts due from banks, and asset with remaining maturity of no more than three months, can be converted into cash quickly and with minimal impact to the price received.
- Total assets: same as 1.3.4.

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).

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 1.3.4.

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 1.3.4.

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 1.3.4.

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 1.3.4.

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 1.3.4.

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: 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
BHI	Bank Health Index
BICRA	Banking Industry Country Risk Assessment
BNM	Bank Negara Malaysia
BOJ	Bank of Japan
BOK	Bank of Korea
BOT	Bank of Thailand; Bank of Taiwan
BSI	Banking System Indicator
CBC	Central Bank of the Republic of China (Taiwan)
CCHS	Check Clearing House System
CGSS	Central Government Securities Settlement System
CIFS	CBC Interbank Funds-Transfer System
CIPS	China International Payment System
CNAPS	China National Advanced Payment System
CPA	Certified public accountants
CPI	Consumer price index
CPPCC	Chinese People's Political Consultative Conference
DBUs	Domestic banking units
DGBAS	Directorate-General of Budget, Accounting and Statistics of the Executive Yuan
DVP	Delivery-versus-payment
ECB	European Central Bank
ECFA	Economic Cooperation Framework Agreement

ETFs	Exchange-traded funds
EU	European Union
EBTS	Electronic Bond Trading System
Fed	Federal Reserve System
FDIC	Federal Deposit Insurance Corporation
FISC	Financial Information Service Co.
FSA	Financial Services Agency, Japan
FSC	Financial Supervisory Commission
FSIs	Financial soundness indicators
FSS	Financial Supervisory Service, South Korea
FX	Foreign exchange
GAAP	Generally accepted accounting principles
GDP	Gross domestic product
GPD	Generalized Pareto distribution
GTSM	GreTai securities market
HEAT	Health Assessment Tool
HKMA	Hong Kong Monetary Authority
HQLA	High-quality liquidity assets
IASB	International Accounting Standards Board
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
M&A	Mergers and Acquisitions
MAS	Monetary Authority of Singapore
MOF	Ministry of Finance
MOI	Ministry of Interior
MOPS	Market Observation Post System

MPI	Macro-prudential indicator
NCCC	National Credit Card Center
NPC	National People's Congress
NPL	Non-performing loan
NSFR	Net stable funding ratio
NTD	New Taiwan dollar
OBUs	Offshore banking units
OTC	Over-the-counter
PBC	People's Bank of China
PCA	Prompt corrective actions
PPI	Producer price index
PVP	Payment-versus-payment
QE	Quantitative easing
QQE	Quantitative and qualitative monetary easing
RBC	Risk-based capital
REER	Real effective exchange rate
RFDI	RMB foreign direct investment
RMB	Renminbi
ROA	Return on assets
ROE	Return on equity
RP	Repurchase
RQFII	RMB qualified foreign institutional investor
RTGS	Real time gross settlement systems
S&P	Standard and Poor's
SHIBOR	Shanghai Interbank Offered Rate
SLO	Short-term liquidity operations
SMEG	Small and Medium Enterprise Credit Guarantee Fund of Taiwan
SMEs	Small- and medium-sized enterprises
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TAIBOR	Taipei Interbank Offered Rate
TAIEX	Taiwan Stock Exchange Weighted Index
TEJ	Taiwan Economic Journal Co., Ltd
TFT-LCD	Thin film transistor-liquid crystal display

TIFRSs	Taiwan-IFRSs
TIGF	Taiwan Insurance Guaranty Fund
TWSE	Taiwan Stock Exchange
USD	US dollar
VaR	Value at Risk
WPI	Wholesale price index
4G	4th generation broadband wireless

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