



Central Bank of the Republic of China (Taiwan)

# Financial Stability Report

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May 2015 | Issue No. 9



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# About the Financial Stability Report

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## *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 2015.*

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## Abstract

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The global economic recovery continued at a mild pace despite the fact that the downside risks in international financial markets had risen in 2014. Meanwhile, Taiwan's economy grew steadily. 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) have successively urged banks to reinforce their risk management of real estate loans. In addition, the FSC strengthened the monitoring of risk exposures of domestic banks to Mainland China, which helped to facilitate the soundness of banks' operations.

In 2014, the global recovery proceeded moderately. However, economic performance varied widely in advanced economies. The US economy grew mildly, while recovery in European financial markets remained weak. In contrast, the Japanese economy contracted from the previous year after the implementation of a sales tax increase. Moreover, emerging economies did not gather further momentum for economic recovery. As a result, the economic growth of advanced economies is expected to proceed at a sustainable pace in 2015, as predicted by IHS,<sup>1</sup> while emerging economies will face a slowdown in economic growth. At the same time, international financial markets have improved, owing to surging stock prices in the US and Japan, which benefited from the quantitative easing monetary policies in those countries, yet pressures on euro area financial markets remain high. Several emerging economies suffer heightened financial risks because of the influences of low oil prices and undesirable foreign debt levels; those countries with large capital inflows potentially face challenges of impacts from capital outflows.

Taiwan's economy grew moderately alongside mild inflationary pressures in 2014, bolstered by steady global economic expansion. Current account surpluses persisted and foreign exchange reserves registered US\$419 billion at end-December, reflecting a robust capacity to service external debt. Nonetheless, ongoing reform in strengthening fiscal backstops continues to be implemented amid fiscal deficits and accumulating government debts. With regard to the non-financial sector, the financial health of the corporate sector improved as a

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<sup>1</sup> The forecasts previously provided by Global Insight have been changed to be released via the IHS platform.

result of increasing profitability and declining leverage ratios in listed companies. Household borrowing kept increasing, yet credit quality remained satisfactory. Real estate market trading volume contracted while prices dropped gradually; moreover, 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 2014. As for financial markets, bond issuance in the primary market expanded; meanwhile, stock indices trended up and foreign exchange markets remained dynamically stable. With respect to financial institutions, the profitability of financial institutions increased dramatically, hitting a historical high. The average non-performing loan (NPL) ratio of domestic banks merely posted 0.25% at the end of 2014 and the NPL coverage ratio reached 502.87%, reflecting sound asset quality and abundant loan loss provisions. The average capital adequacy ratio of domestic banks stood at 12.34%, which was well above the statutory minimum requirement of 8%, and there was abundant liquidity in the financial system. Life insurance companies and bills finance 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 2014. In an attempt to improve the payment and settlement systems, the CBC not only continuously expand the functions of the foreign currency clearing platform, but also assisted the development of electronic payment businesses and strengthened the oversight of mobile payments.

To pursue the operating objective of promoting financial stability, the CBC successively adopted appropriate monetary policy measures in 2014 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 preserving 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.

Correspondingly, the FSC continuously improved and amended financial regulations to strengthen financial supervisory measures. These measures enhanced the risk management of real estate loans granted by the domestic banking sector and monitored its exposures to Mainland China. In addition, the FSC improved the exit mechanism for problem insurance companies, reinforcing the functions of the Taiwan Insurance Guaranty Fund and amending



regulations to protect financial consumers. Moreover, measures aimed at reinforcing the legal compliance of financial institutions and the corporate governance of listed companies were also taken by the FSC. All the aforementioned measures facilitated the maintenance of financial stability objectives.



## I. Overview

### Macro environmental factors potentially affecting financial sector

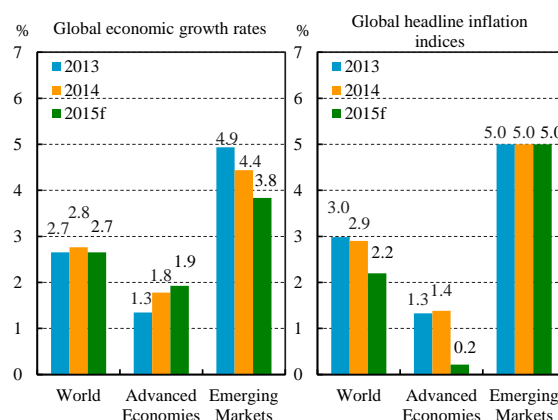
**Global economy saw a moderate recovery, while international financial markets risks increased**

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

In 2014, global economic recovery remained modest with uneven prospects across the major economies. In the US, economic growth sustained, reflecting a resumed growth in private consumption and fixed investment. However, euro area growth remained weak despite it gradually shrugging off the shadow of the sovereign debt crisis. In contrast, Japan witnessed declining economic growth owing to an adverse impact on private demand following its sales tax hike. Meanwhile, growth momentum in emerging markets waned as exports were hampered by a subdued global recovery and the domestic demand in many of the economies fell short of expectations.

In 2015 Q1, US economic growth was weaker than expected owing to harsh winter weather and a strong dollar, while continued monetary easing policies gave impetus to growth in the euro area and Japan. However, recovery momentum in advanced economies was still not strong enough and growth in emerging markets decelerated distinctly. In this setting, IHS<sup>2</sup> predicts<sup>3</sup> world real gross domestic product (GDP) growth to decrease to 2.7% in 2015 from 2.8% in 2014. Real

**Chart 1.1 Global economic growth rates and headline inflation indices**



Note: Figures for 2015 are IHS estimates.

Source: IHS (2015/5/15).

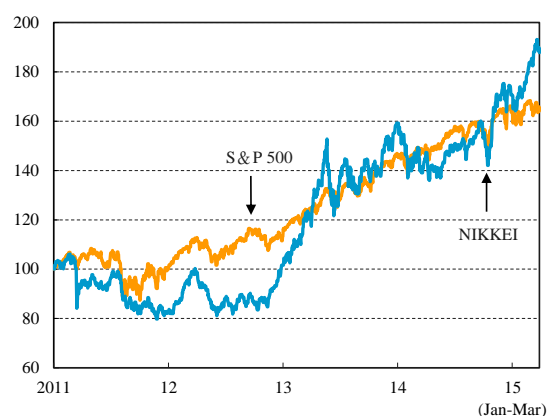
<sup>2</sup> See Note 1.

<sup>3</sup> IHS estimate on 15 May 2015.

GDP in advanced economies is projected to slightly increase to 1.9%. The average growth rate in emerging economies is forecast to decline continuously to 3.8% (Chart 1.1).

Regarding consumer prices, thanks to a fall in the international prices of crude oil and cereals, the global consumer price index (CPI) inflation rate dropped to 2.9% in 2014, slightly lower than the 3.0% recorded a year earlier. CPI inflation rates in advanced economies rose marginally, whereas the rates in emerging economies remained at the same level. IHS predicts the global headline inflation rate to keep decreasing to 2.2% in 2015, while the US and the euro area may both face the challenge of disinflation.

**Chart 1.2 Performance of equity indices of US and Japan**



Note. January 2011 = 100.

Source: Bloomberg.

### ***Financial stability risks have shifted from advanced economies to emerging markets***

In 2014, the global economy recovered moderately, bolstered by continuous easy monetary policies in major advanced economies alongside more neutral fiscal policy relaxations that offset the adverse impacts of the economic slowdown in emerging economies. However, against the backdrop of a prolonged period of monetary policy easing and a low-interest-rate environment, herding among portfolio managers searching for yield has been rising and credit markets appeared to be undergoing structural changes. As a result, financial stability risks have shifted from advanced economies to emerging markets.

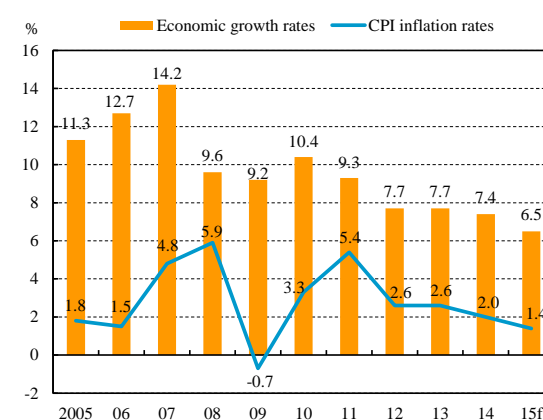
Financial markets in advanced economies had yet to fully stabilize in 2014. US share prices continuously hit new highs; however, credit risks increased, spurred by a rocketing rise in high-yield corporate bonds and leveraged loans. In Japan, the expansion of its monetary easing policy propelled a rise in Japanese stock prices (Chart 1.2) but correspondingly resulted in sharp depreciation of the yen, which may possibly inspire capital outflows and impact other emerging economies through its spillovers. Nevertheless, the euro area periphery economies kept facing the challenges of elevated government debt, high unemployment rates and mounting deflationary risks.

Financial risks in some emerging markets mounted. Among them, some economies suffering from high levels of external debt and some oil and raw material exporters have faced higher financial and economic risks. Meanwhile, Asian emerging economies with considerable capital inflows may encounter intense pressures on their financial markets in the event of a reversal to a massive outflow. In addition, some emerging economies still faced challenges derived from mounting enterprise leverage and worsening loan quality.

***China's economic growth momentum waned, while aggregate financing to the real economy slightly decreased***

Mainland China's economic growth rate dipped to 7.4% throughout 2014 from 7.7% a year before, driven by excess capacity in manufacturing and lackluster property markets. Against the backdrop of this “new normal”<sup>4</sup> economic situation, the authorities adjusted downwards Mainland China's target economic growth rate to 7%. However, IHS projects the economic growth rate to continue falling to 6.5% in 2015 as overcapacity and mounting property inventory problems are still lingering. Meanwhile, affected by sluggish domestic demand and falling international raw material prices, the CPI inflation rate of Mainland China stood at 2.0% in 2014, lower than the official goal of 3.5%. IHS projects the annual CPI inflation rate of 2015 to further decline to 1.4% (Chart 1.3).

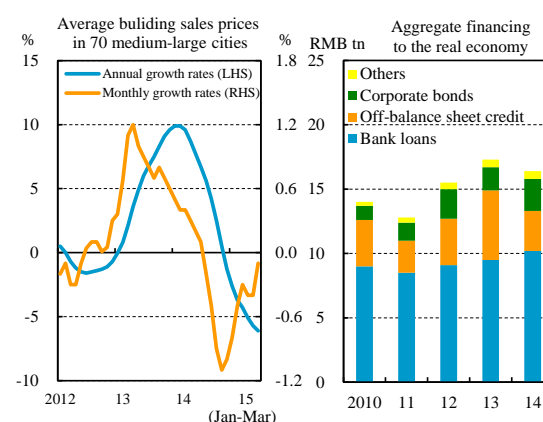
**Chart 1.3 Economic growth rates and CPI inflation rates of Mainland China**



Note: Figures for 2015 are IHS projections.

Sources: National Bureau of Statistics of China and IHS (2015/5/15).

**Chart 1.4 Mainland China's building sales prices in 70 medium-large cities and aggregate financing to the real economy**

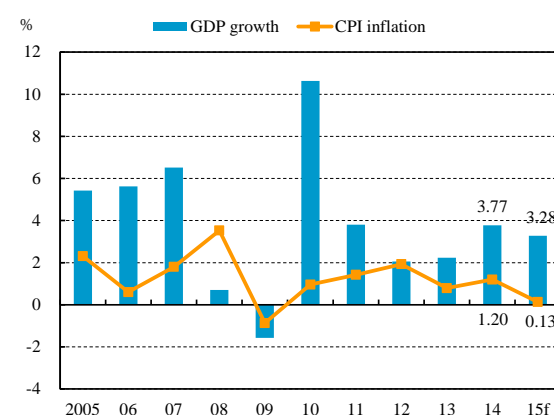


Sources: PBC, National Bureau of Statistics of China and Thomson Reuters..

<sup>4</sup> The term “new normal” refers to the economy entering an era of relatively slower growth, better structure and putting transformation momentum in place.

In view of adjustments in the property markets and waning investor confidence, real estate sales fell in 2014. The annual growth rate of building sales prices in 70 medium-large cities also reversed to decline from May onwards. To avoid the slumping housing prices jeopardizing economic growth, Mainland China's government successively took measures to ease purchase restrictions, aiming to stabilize housing prices. Meanwhile, aggregate financing to the real economy<sup>5</sup> in 2014 contracted to RMB16.4 trillion from the historical high of RMB17.3 trillion in the previous year, mainly resulting from a decline in off-balance sheet financing as Mainland China strengthened supervision on shadow banking and financial institution deleveraging (Chart 1.4). Moreover, various measures were successively launched by the central government in response to local government debt problems.

**Chart 1.5 Economic growth rates and CPI inflation rates of Taiwan**



Note: Figures for 2015 are DGBAS projections on 22 May 2015.  
Source: DGBAS.

### **Domestic economy grew steadily, while consumer prices rose mildly**

Bolstered by expanding exports, increasing private consumption and moderately growing investment, the annual economic growth rate registered 3.77% for 2014, higher than the 2.23% of the previous year. Meanwhile, domestic prices rose mildly throughout 2014, reflecting the fact that the average CPI inflation rate increased to 1.20% from the 0.79% recorded a year earlier (Chart 1.5).

So far in 2015, the global economic recovery has been less robust than expected. This, coupled with the localization of industry supply chains in Mainland China resulting in more competition for domestic companies, could impact on export growth. Moreover, food safety scandals continue to curb private consumption momentum. As a result, the DGBAS forecasts<sup>6</sup> Taiwan's economic growth rate to fall to 3.28% for the whole year. With global economic growth slowing down and the international prices of crude oil and cereals remaining low, the DGBAS projects the annual CPI inflation rate to post 0.13% (Chart 1.5).

Taiwan's external debt registered US\$177.9 billion at the end of 2014 while foreign exchange

<sup>5</sup> It refers to the total funding obtained from the financial system for the real economy within a certain period. The concept is based on an incremental method.

<sup>6</sup> The figures are based on a DGBAS press release on 22 May 2015.

reserves remained at a sufficient level of US\$419 billion, implying that the capacity to service external debt remained robust. With respect to the government's fiscal position, the amount of the fiscal deficit saw an expansion, increasing to 2.06%<sup>7</sup> of annual GDP in 2014. The outstanding public debt at all levels of government in 2014 expanded to NT\$6.26 trillion, but the ratio of outstanding public debt to annual GDP dropped to 38.90%<sup>8</sup> as a result of a higher increase in GDP. The Ministry of Finance kept implementing the “Fiscal Health Plan” in the hope of improving the structures of fiscal revenue and expenditure, and controlling the scale of public debt.

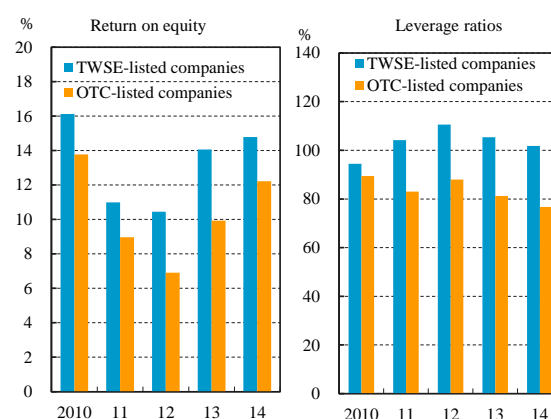
## Non-financial sectors

### Corporate sector

In 2014, the profitability of Taiwan Stock Exchange (TWSE) listed and over-the-counter (OTC) listed companies broadly improved compared to that of the previous year, mainly underpinned by growing profitability from the semiconductor industry. At the end of 2014, leverage ratios for listed companies declined somewhat (Chart 1.6) owing to a greater rise in equity, while short-term debt servicing capacity enhanced as a result of increasing profitability.

The NPL ratio of corporate borrowing declined to 0.40% at the end of 2014, the lowest level on record, reflecting sound credit quality for the corporate sector. Nevertheless, strong industrial competition among countries, economic slowdown and promotion of industrial supply chain localization in Mainland China could pose challenges to the corporate sector's profit outlook.

**Chart 1.6 Return on equity and leverage ratios in corporate sector**



Notes: 1. Figures are from consolidated financial statements, and those from 2012 forward are on the TIFRSs basis, while those of 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.

Source: TEJ.

<sup>7</sup> 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*.

<sup>8</sup> 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*.

## Household sector

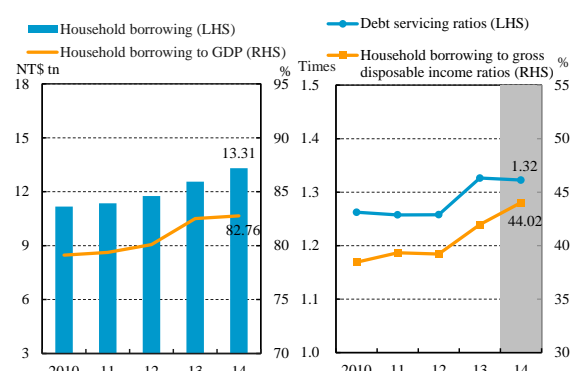
At the end of 2014, total household borrowing saw a continued expansion and reached NT\$13.31 trillion, equivalent to 82.76% of annual GDP. As total household borrowing grew at a slower pace than disposable income in 2014, the ratio of household borrowing to total disposable income shrank to 1.32 at the end of the year, reflecting that the household debt burden lessened. However, owing to the increase in loans for the purchase of movable properties and current operations, the debt servicing ratio uplifted to 44.02% in 2014 (Chart 1.7). As a result, short-term debt servicing pressure remained high.

In 2014, the NPL ratio of household borrowing continuously dropped to 0.23% at the end of 2014 and touched a fifteen-year low, indicating that household credit quality remained satisfactory. Moreover, the decreasing domestic unemployment rate and steady growth of regular earnings should help improve the debt servicing capacity of households.

## Real estate market

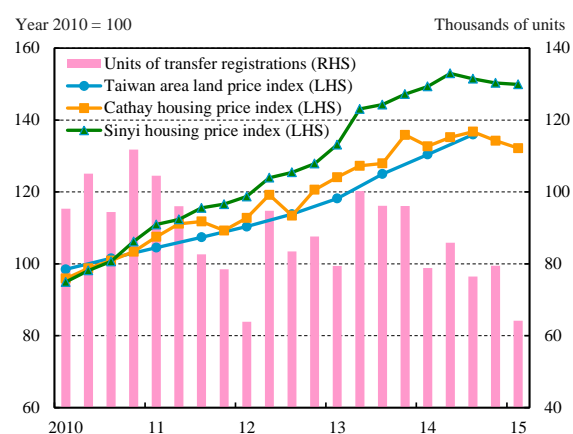
From 2014 onwards, housing market sentiment turned conservative and trading volume in the real estate market kept contracting. The main reasons behind this were that the government expanded the scope of tax audits, strengthened the regulation of non-first-time house-purchase loans, increased the tax burden on high-priced house owners and people who own multiple houses, and proposed to levy a consolidated housing and land tax based on the market price. With subdued housing market transactions, the Sinyi housing price index (for existing buildings) and Cathay housing price index (for new constructions) turned to decline

**Chart 1.7 Household indebtedness and debt-servicing capacity**



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

**Chart 1.8 Building ownership registrations and real estate price indices**



Notes: 1. Taiwan area land price index is released semiannually.  
2. For comparison purposes, all three indices use the same base year of 2010.

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



in 2014 Q3 and Q4, respectively (Chart 1.8).

In 2014, since housing prices stayed high and mortgage interest rates rose slightly, the mortgage burden ratio for Taiwan increased somewhat to 35.61% in Q4. The house price to income ratio during the same period was 8.41. Among them, the mortgage burden and house price to income ratios in Taipei City were the highest, reaching 66.59% and 15.73, respectively (Chart 1.9), implying a still-heavy debt burden.

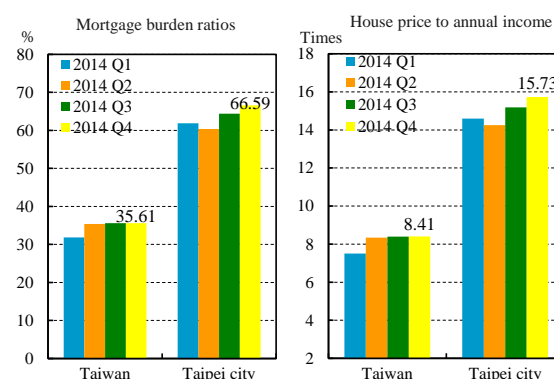
## Assessment of the financial sector

### Financial markets

#### *Bond issuance in the primary market expanded, but the turnover of outright transactions in the secondary market remained at a lower level*

The outstanding amount of bill issuance in the primary market at the end of 2014 slightly reduced. However, trading volume in the secondary market increased owing to the expansion of commercial paper issuance and the ample liquidity in markets fulfilling the increasing needs of banks and private enterprises for bill investments. Meanwhile, the outstanding amount of bond issuance at the end of 2014 was higher than the figure posted a year earlier, particularly with regard to foreign currency-denominated international bonds, which exhibited the highest upsurge. The monthly turnover ratio of outright transactions of the main bonds<sup>9</sup> in the secondary market

**Chart 1.9 Mortgage burden ratios and house price to income ratios**

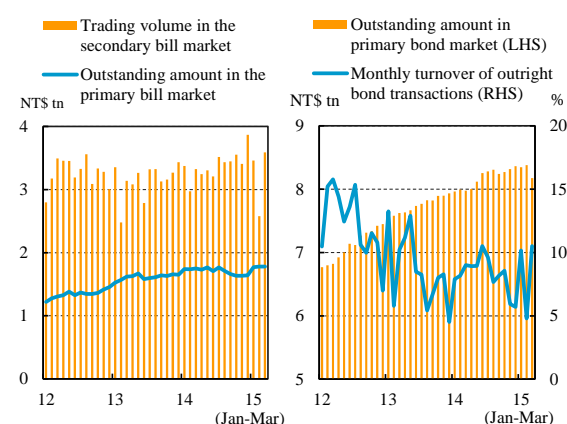


Notes: 1. Mortgage burden ratio = median housing loans monthly payments / median household monthly disposable income.

2. House price to annual income = median house price / median household annual disposable income.

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

**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.

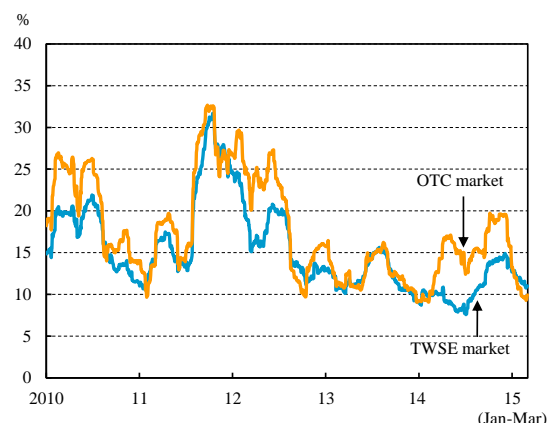
Sources: CBC and FSC.

<sup>9</sup> It includes government bonds, corporate bonds and financial bonds.

roughly remained flat (Chart 1.10).

As for short-term market rates, the yield on 90-day commercial paper in the secondary market remained broadly stable in the first three quarters of 2014. However, at the end of the year, short-term market rates slightly soared owing to seasonal factors. The trend of long-term market rates closely followed the movement of US government bonds. Consequently, in the middle of September, a rising expectation of an interest rate hike made by the Board of Governors of the Federal Reserve System (Fed) in the future drove up the yield on Taiwan's 10-year government bonds. However, from Q4 onwards, a tumble in international oil prices alleviated inflationary pressures. This, coupled with bullish global bond markets in response to the successive implementation of easing monetary policies by some economies, led to a drop in the yield on Taiwan's 10-year government bonds.

**Chart 1.11 TWSE market index and volatility**



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

Sources: TWSE and CBC.

### ***Stock indices trended up gradually amid heavy volatility***

The TWSE market performed better in 2014 than in 2013. The Taiwan Stock Exchange Weighted Index (TAIEX) of the TWSE market registered 9,307 at the end of the year, an increase of 8.08% year on year. In 2015 Q1, the TAIEX continued its upward path, buoyed by the fact that the FSC announced a program to boost securities markets and US stock indices kept hitting new highs (Chart 1.11).

In 2014, volatility in the TWSE market amplified after initially trending down, standing at 14.51% at the end of the year. At the beginning of 2015, volatility contracted gradually as local stock indices rebounded and resumed stability (Chart 1.11).

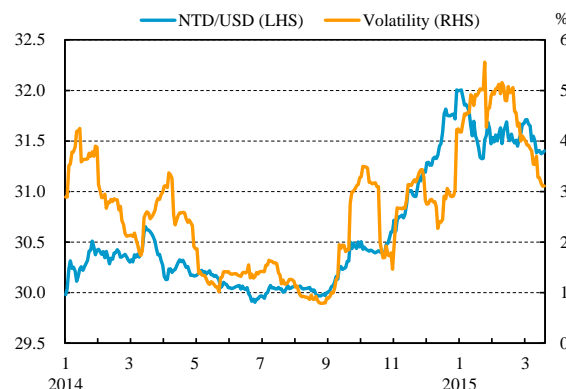
### ***The NT dollar exchange rate reversed from appreciation to depreciation, but the volatility remained relatively stable compared to other currencies***

From 2014 Q2 onwards, the NT dollar exchange rate turned to appreciation against the US dollar, reaching a yearly high of 29.905 on 2 July, owing to an increase in net foreign capital inflows. Thereafter, the Fed ended its asset purchase program, known as quantitative easing

(QE), at the end of October and the European Central Bank (ECB) and the Bank of Japan (BOJ) introduced further monetary easing, leading the US dollar to appreciate and the NT dollar to weaken. At the end of 2014, the NT dollar exchange rate further depreciated and stood at 31.718, with an annual depreciation of 5.57%. Afterwards, the NT dollar exchange rate fluctuated within a narrow range against the US dollar in 2015 Q1 (Chart 1.12).

The volatility in the NT dollar exchange rate against the US dollar fluctuated between 0.79% and 4.25% in 2014, and registered an annual average of 2.22%. In early 2015, Europe, Mainland China and South Korea set off a wave of monetary policy easing and interest-rate reduction. In addition, the Swiss National Bank's (SNB's) announcement to abandon the Swiss franc's cap against the euro, coupled with the introduction of negative interest rates in many countries, induced international capital to flow into Asia and roiled financial markets. The volatility in the NT dollar exchange rate against the US dollar was thus affected and rose by around 5%, yet later gradually trended downwards (Chart 1.12). However, 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.

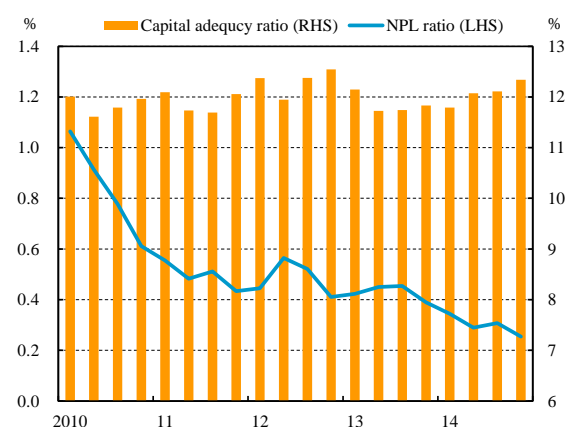
**Chart 1.12 Movements of NT dollar exchange rate against US dollar**



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

Source: CBC.

**Chart 1.13 NPL and capital adequacy ratios of domestic banks**



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

Source: CBC.

## Financial institutions

### Domestic banks

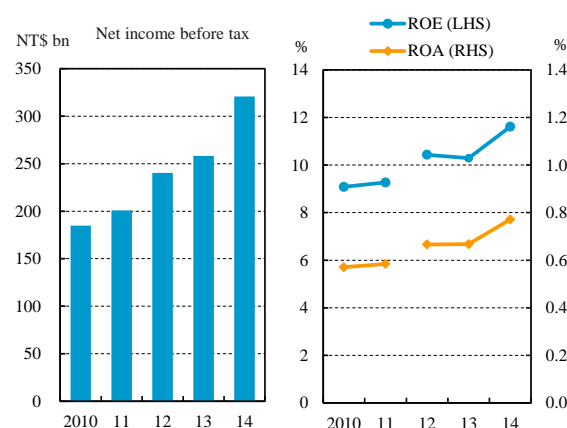
In 2014, the loans granted by domestic banks saw stable growth. The NPL ratio touched a new low of 0.25%, implying satisfactory asset quality (Chart 1.13), along with ample loan loss reserves. The credit concentration of corporate loans continually declined, while the concentration of credit exposure in real estate loans has also been addressed. The aggregate amount of exposure to Mainland China grew constantly in the first three quarters, but turned to drop in the fourth quarter. At the end of 2014, the ratio of the aggregate amount of such exposure to banks' net worth stood at 68%, still within the statutory limit and no domestic bank broke the limit. Meanwhile, the average capital adequacy ratio over the same period was higher than the figure posted a year earlier as a result of capital injection and accumulated earnings of banks. The rise in the ratio was in favor of reinforcing domestic banks' loss absorbency (Chart 1.13). The estimated Value at Risk (VaR)<sup>10</sup> for market risk exposures of domestic banks rose, but had limited influence on capital adequacy.

The aggregate net income before tax of domestic banks reached a historical high of NT\$320.7 billion in 2014. The average return on equity (ROE) and return on assets (ROA) also climbed to new highs of 11.62% and 0.77%, respectively, showing a significant enhancement in business performance (Chart 1.14).

### Life insurance companies

Life insurance companies reported a record-high net income before tax of NT\$115.2 billion in 2014, dramatically increasing by 80.65% over the previous year (Chart 1.15). This was mainly fueled by huge foreign exchange gains derived from the depreciation of the NT dollar, as well as incremental expansion of interest income and realized gains on available-for-sale financial assets spurred by continuous growth and adjustments of bond and bill investments.

Chart 1.14 Profitability of domestic banks



Notes: 1. Figures from 2012 forward are on the TIFRSs basis, while those of 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.

<sup>10</sup> See Note 65 for the calculation of the estimated VaR for market risk.

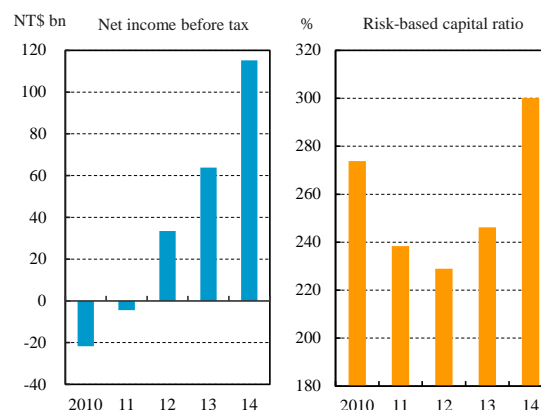
The average risk-based capital (RBC) ratio notably increased to 300.12% at year-end 2014 (excluding Singfor and Global Life Insurance Companies, which were under receivership), posting an eight-year high (Chart 1.15). However, the financial health of the few companies with RBC ratios below 200% warrants improving.

### **Bills finance companies**

The outstanding guarantees business undertaken by bills finance companies increased at the end of 2014, while credit quality remained satisfactory. The reason was primarily because the domestic economy saw a gradual recovery and the issuance of commercial paper by corporations for short-term funding increased thanks to a still-low level of interest rates in the bills markets. The liquidity risk of bills finance companies remained high as a maturity mismatch between assets and liabilities still persisted.

Nonetheless, bills finance companies posted a combined net income before tax of NT\$9.24 billion in 2014, with an increase of 8.12% year on year. The average capital adequacy ratio rebounded to 14.06% (Chart 1.16), while the individual ratio for each bills finance company was higher than 13%.

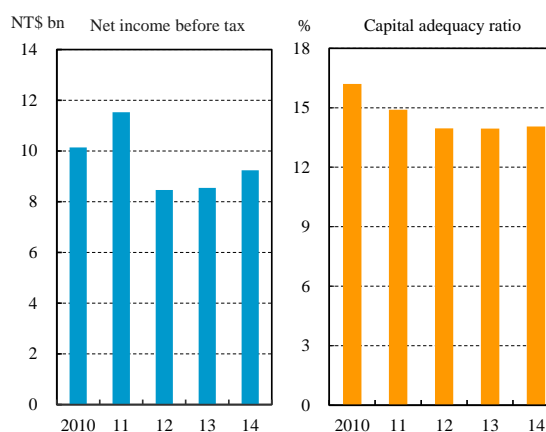
**Chart 1.15 Net income before tax and risk-based capital ratio of life insurance companies**



Notes: 1. Figures for net income before tax from 2012 forward are on the TIFRSs basis, while those of prior years are on the ROC GAAP basis.  
2. Figure for end-2014 is exclusive of Singfor and Global Life Insurance Companies, which were taken into receivership by the Taiwan Insurance Guaranty Fund in August 2014 and sold by tender to Cathay Life Insurance Co. in March 2015.

Source: FSC.

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



Note: Figures for net income before tax from 2012 forward are on the TIFRSs basis, while those of prior years are on the ROC GAAP basis.

Source: CBC.

## Financial infrastructure

### **The CBC continuously expanded the functions of the foreign currency clearing platform and assisted the development of electronic payment services**

In 2014, all three systemically important payment systems (SIPSs)<sup>11</sup> in Taiwan were functioning normally. Moreover, the functions of the foreign currency clearing platform have been continuously expanded since its introduction in March 2013, and the domestic and cross-border euro remittances services are scheduled to launch in June 2015. From then on, the platform will provide payment-versus-payment (PVP) settlement for dual currency transactions, including the US dollar, renminbi, Japanese yen, euro and NT dollar. In addition, the platform plans to set up a delivery-versus-payment (DVP) mechanism for foreign currency-denominated bond and bill transactions in July 2015.

In order to promote the sound operations and development of electronic payment institutions (EPIs), the FSC promulgated the *Act Governing Electronic Payment Institutions* (namely the *Third-party Payment Act*) in February 2015, focusing on EPIs' electronic payment services. The CBC also amended regulations governing deposits of reserves as well as foreign exchange declaration and settlement of EPIs to facilitate their operations. Furthermore, mobile payments have gradually become accepted by the public in recent years. With the intention of helping national authorities to develop sound and effective oversight frameworks for mobile payments, the IMF published a related report "Oversight Issues in Mobile Payments" in 2015, providing an important reference for strengthening the supervision of mobile payments.

### **Other financial regulatory reform**

With a view to strengthening the liquidity risk management of domestic banks and complying with international standards, the FSC and the CBC jointly promulgated *Standards Implementing the Liquidity Coverage Ratio of Banks*, which came into force on 1 January 2015. In addition, the *Offshore Banking Act* was amended and promulgated on 4 February 2015 to include insurance businesses in offshore finance. This was done to benefit the expansion of insurance market scale and reinforce the international competitiveness of the domestic insurance industry.

Furthermore, in order to enhance the internationalization and transparency of financial reports

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<sup>11</sup> The three SIPSs include the CBC Interbank Funds-Transfer System (CIFS), the Interbank Remittance System (IRS) and the Check Clearing House System (CCHS).

of local companies, from 2015 onwards, Taiwan's public companies have fully converged local accounting principles with the International Financial Reporting Standards (IFRSs) and already switched to adopt the updated accounting principles of the 2013 version (excluding IFRS 9 Financial Instruments). The competent authority has taken measures to revamp compensation schemes of financial institutions, contributing to improving the design of incentive compensation schemes. In addition, at the end of 2014, the successful completion of the transformation of interest rate benchmarks for NTD financial contracts promises to help to further improve the financial operating environment as well.

## **Taiwan's financial system remained stable**

In 2014, the domestic economy grew steadily and profitability in the corporate sector was strengthened amid moderate global recovery. 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 divergence in the monetary policies of advanced economies on emerging economies and the subdued growth momentum in Mainland China's economy deserve special attention. In response, the CBC will pay close attention and formulate adequate monetary, credit and foreign exchange policies to mitigate these impacts. Meanwhile, in the hope of facilitating the soundness of financial institutions and promoting financial stability, the FSC will persist in revamping financial regulations and enhancing financial supervisory measures, including: (1) strengthening banks' risk controls over real estate loans and their exposures to Mainland China; (2) establishing an exit mechanism in the insurance industry and strengthening the functions of the Taiwan Insurance Guaranty Fund; (3) amending regulations to better safeguard the interests of financial consumers; and (4) improving compliance officer systems in financial institutions and internal governance of listed companies.



## II. Macro environmental factors potentially affecting financial sector

### 2.1 International economic and financial conditions

#### 2.1.1 International economic conditions

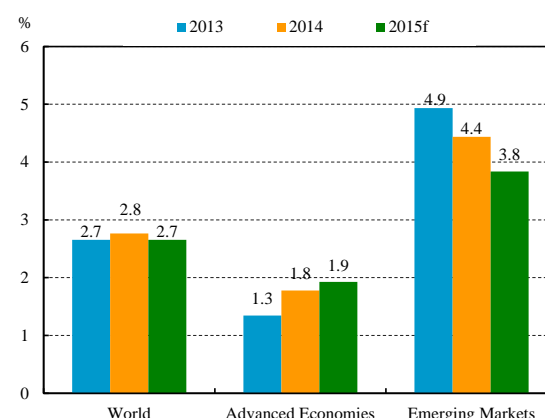
##### *Global economic recovery proceeded at a mild pace*

In 2014, global economic recovery remained modest with uneven prospects across the major economies. In the US, economic growth sustained, reflecting a resumed growth in private consumption and fixed investment. However, euro area growth remained weak despite it gradually shrugging off the shadow of the sovereign debt crisis. Meanwhile, Japan witnessed declining economic growth owing to an adverse impact on private demand following its sales tax hike. In emerging markets, growth momentum waned as exports were hampered by a subdued global recovery and domestic demand in many of the economies fell short of expectations.

In 2015 Q1, growth in the US was weaker than expected owing to harsh winter weather and a strong dollar, while continued monetary easing policies gave impetus to growth in the euro area and Japan. However, growth momentum in advanced economies was still not strong enough and emerging markets slowed sharply. In this setting, IHS<sup>12</sup> predicts world real GDP growth to decrease to 2.7% in 2015 from 2.8% in 2014. Real GDP in advanced economies is projected to slightly increase to 1.9%. The average growth rate in emerging economies is forecast to decline continuously to 3.8% (Chart 2.1).

Moreover, the oil price has fallen more than 40% since the end of June 2014. It is

**Chart 2.1 Global economic growth rates**



Note: Figures for 2015 are IHS estimates.  
Source: IHS (2015/5/15).

<sup>12</sup> See Note 3.



expected that the global oil supply and demand balance will not resume, therefore allowing the price to stabilize, until the second half of 2015. Overall, the low oil price was favorable to the global economy and decreased the headline inflation rates of the major economies, including the US, euro area and Japan. However, it is likely to undermine the output of oil-exporting countries, such as Russia and Venezuela (Box 1).

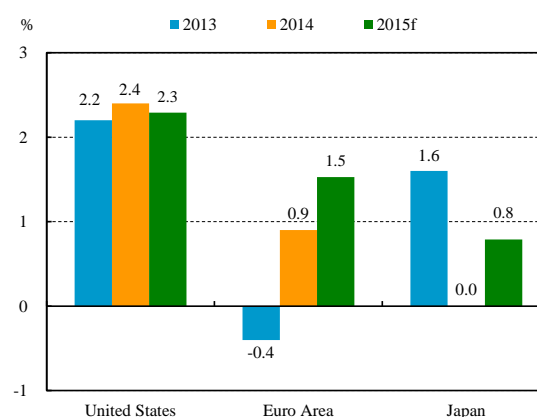
### *Advanced economies took divergent growth paths*

*The US economy grew steadily and its labor market improved continuously*

The US economy grew steadily in 2014. Even as output contracted in Q1 owing to the harsh weather, recovery gained momentum in Q2 as a result of a pick-up in private consumption when the effects of the severe winter weather faded, along with an increase in fixed investment by the manufacturing sector as it moved production back to the US. The economic growth rate for the whole year rebounded to 2.4% from 2.2% in 2013. In 2015 Q1, growth in the US was weaker than expected owing to harsh winter weather and a strong dollar. IHS estimates US economic growth to slow down slightly to 2.3% in 2015 (Chart 2.2).

The labor market in the US improved continuously in 2014, bringing down the unemployment rate to a six-year low of 6.2% from 7.4% registered in 2013. Although US growth momentum waned from 2015 onwards, the unemployment rate dropped continuously. IHS anticipates the US unemployment rate to continue dropping to an annual rate of 5.4% in 2015 (Chart 2.3).

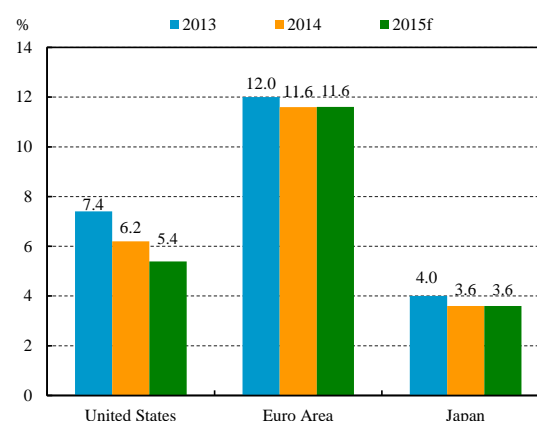
**Chart 2.2 Economic growth rates in US, Euro area and Japan**



Note: Figures for 2015 are IHS estimates.

Sources: Official websites of the selected economies and IHS (2015/5/15).

**Chart 2.3 Unemployment rates in US, Euro area and Japan**



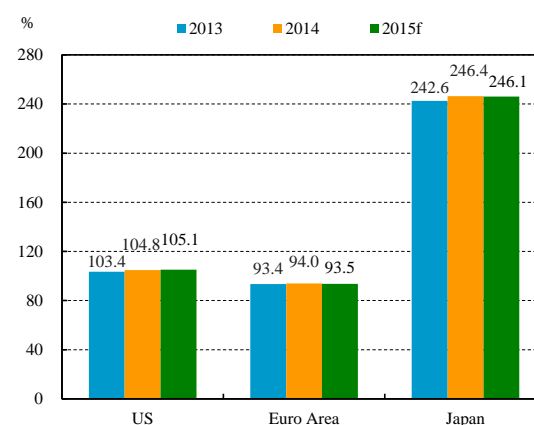
Note: Figures for 2015 are IHS estimates.

Sources: Official websites of the selected economies and IHS (2015/5/15).

In fiscal year 2014, the US deficit shrank to US\$483.3 billion, the lowest level since 2009. Although the fiscal condition improved continuously, the US government's debt burden was still very heavy. Owing to massive fiscal expenditures on medical insurance, social security and interest payments of sovereign debt, outstanding government debt increased persistently and passed the US\$18 trillion mark at the end of 2014, lifting the government debt-to-GDP ratio to 104.8%. Looking ahead, the aging population structure and expenditures on

medical care protection in the US might increase the government's debt burden. The International Monetary Fund (IMF) forecasts that the ratio of outstanding government debt relative to annual GDP will elevate to an estimated 105.1% in 2015<sup>13</sup> (Chart 2.4).

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



Note: Figures for 2015 are IMF projections.  
Source: IMF (2015), *Fiscal Monitor*, April.

### *The ECB implemented monetary easing policy to lift growth and inflation*

Thanks to the receding impact of the European sovereign debt crisis, the euro area has resumed growth since 2013 Q2. However, the euro area unemployment rate has not effectively improved, and governments in the area have implemented harsh austerity measures depressing demand and bringing the shadow of deflation. This, coupled with economic sanctions on Russia that hit the German and French economies, undermined growth momentum in the euro area. As a result, euro area GDP grew by merely 0.9% year on year in 2014. To lift growth and inflation, on 22 January 2015, the ECB announced it would embark on a €1.14 trillion bond purchasing program in March. IHS predicts euro area economic growth to increase to 1.5% in 2015 (Chart 2.2).

Although the euro area unemployment rate gradually descended from its historical high of 12.0% in 2013, the unemployment rate in 2014 was still high at 11.6%, implying further improvement in the labor market is still needed. Severe youth unemployment is an open question across the area, where Spain and Greece suffered youth unemployment rates of more than 50%. Owing to persistent structural problems in euro area labor markets, IHS predicts the unemployment rate to stay at 11.6% in 2015, even as the ECB's quantitative easing measures are expected to stimulate economic growth in the area (Chart 2.3).

<sup>13</sup> IMF (2015), *Fiscal Monitor*, April.

Regarding the government's fiscal position, thanks to harsh fiscal austerity measures, the fiscal deficit to GDP ratio dropped to a six-year low of 2.7% in 2014, with Spain and Ireland exiting their respective international bailout programs one after the other. However, owing to weak economic recovery impetus and arduous fiscal problems in Greece, the euro area's outstanding government debt-to-GDP ratio ascended to 94.0%. With the euro area gradually gaining growth momentum, the IMF predicts the ratio to fall slightly to 93.5% in 2015 (Chart 2.4).

#### *Sales tax hike hit Japanese economic growth*

In 2014, although Japan sped up implementing its ¥5.5 trillion economic stimulus package, Japanese economic growth turned negative in Q2 owing to the sales tax hike in April hitting private consumption in durables and corporate facility investment. As a result, Japanese annual economic growth dropped to 0% from 1.6% in 2013. In light of the weak economic prospects and growing deflationary expectations, the BOJ expanded quantitative and qualitative monetary easing in October 2014, while the Japanese government phased in a 3.29 percentage points cut in the corporate tax rate to underpin corporate profitability and investment. Moreover, considering that the impact of the sales tax rate increase on consumer confidence was stronger than expected, the Shinzo Abe cabinet postponed the second sales tax hike until April 2017 and approved a ¥3.5 trillion emergency stimulus package to boost private consumption. IHS estimates Japanese economic growth to rebound to 0.8% and the unemployment rate to stabilize at 3.6% in 2015 (Chart 2.2 and 2.3), while the IMF predicts the outstanding government debt-to-GDP ratio to decrease slightly to 246.1% in 2015 alongside the economic recovery (Chart 2.4).

#### *Economic growth of Asian emerging economies slowed down*

In 2014, GDP growth in most Asian emerging economies experienced slowdowns. The Asian newly industrialized economies saw slack recoveries in exports; however, output growth in these economies rose to 3.2% from 2.9% in 2013 as falling oil prices boosted private consumption in some economies. Among member countries in the Association of South East Asian Nations (ASEAN-10), Thailand was mired in political vulnerabilities, while growth in Indonesia slowed as a slump in major international commodity prices deteriorated the terms of trade. As a result, the overall growth rates of the ASEAN-10 contracted to 4.4% from 5.1% in 2013. In Mainland China, the economic transition was carried out continuously. While overcapacity industries and falling property prices jeopardized consumption and investment, export growth slowed amid weak external demand. Reflecting this, Mainland China's

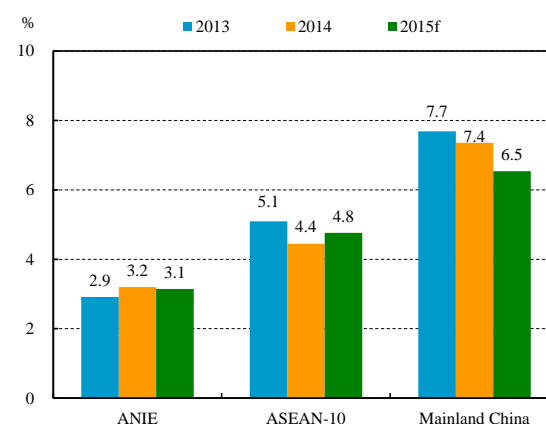
economic growth declined continuously to 7.4% in 2014, the lowest level in 24 years (Chart 2.5).

IHS anticipates that the economic growth rate in the Asian newly industrialized economies will slow slightly to 3.1% in 2015, whereas the ASEAN-10 countries are likely to see rebounding growth of 4.8% thanks to continued strong growth in the Philippines and Vietnam. Meanwhile, Mainland China, suffering from overcapacity and mounting property inventory, is predicted to achieve a more moderate growth rate of 6.5% (Chart 2.5). In addition, the unemployment rate in the Asian newly industrialized economies is projected to decline slightly to 3.4% in 2015 from 3.5% in 2014, while the rate will stand at 4.4% in the ASEAN-10 countries, the same figure as in 2014. In Mainland China, the unemployment rate is forecast to elevate slightly to 4.2% from 4.1% in 2014 (Chart 2.6).

### Global inflation fell continuously

In 2014, global prices of crude oil fell continuously from mid-June as oil supply surpassed demand and speculative trading arose in oil markets. As for cereals, in the beginning of 2014, the cereal supply was impacted by harsh weather and political tension in Ukraine, resulting in a rise in international prices. As the weather improved afterwards, the production of soy, wheat and corn increased, reversing the international prices of cereals to trend downwards. Reflecting this, the global headline inflation rate declined slightly to 2.9% from 3.0% in 2013. Headline inflation rates in advanced economies increased marginally to 1.4% from 1.3% in 2013 as

**Chart 2.5 Economic growth rates in Asian emerging economies**



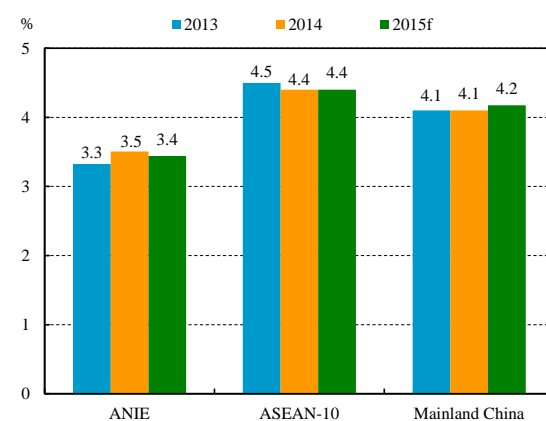
Notes: 1. Figures for 2015 are IHS projections.

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 IHS (2015/5/15).

**Chart 2.6 Unemployment rates in Asian emerging economies**



Notes: 1. Figures for 2015 are IHS projections.

2. For ANIE and ASEAN-10, see Notes 2 & 3 in Chart 2.5.

Sources: Official websites of the selected economies and IHS (2015/5/15).

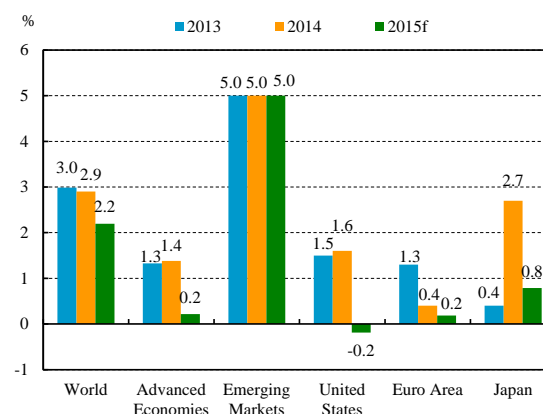
Japan's sales tax hike greatly inflated consumer prices, whereas the rates in emerging economies stabilized at 5% (Chart 2.7).

From the beginning of 2015 onwards, global prices of crude oil rebounded slightly owing to geopolitical uncertainty in the Middle East and a slump in US oil rig count. However, most international research institutions still expected oil prices to stay at low levels. With regard to cereals, owing to climate improvement and increasing cultivation area, international cereal prices fluctuated with a downward trend. IHS predicts the global headline inflation rate to fall continuously to 2.2% in 2015, while the US and the euro area may both face the challenge of disinflation (Chart 2.7).

**Most emerging economies adopted easy monetary policy stances, while the US ended its asset purchase program**

From 2014 onwards, most economies preserved their easy monetary policy stances. In advanced economies, the US ended its asset purchase program at the end of October 2014 owing to economic recovery and improvements in the labor market. Although the federal funds rate target remained unchanged, future interest rate rises or the Fed ceasing to reinvest proceeds from its maturing holdings may create negative spillover effects on emerging economies, and thus warrants close attention (Box 2). Japan and the euro area expanded the sizes of their asset purchase programs successively owing to low growth and inflation, while Canada and Australia lowered policy rates to boost economic growth. As for

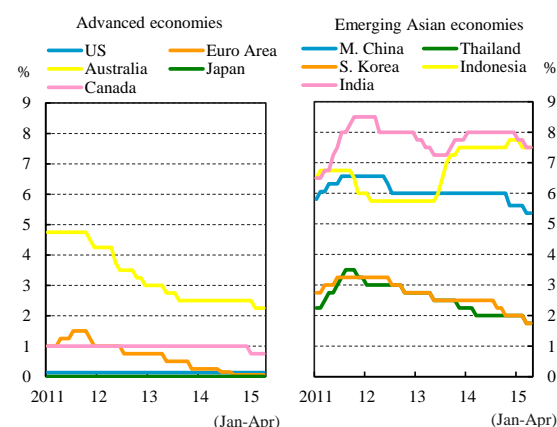
**Chart 2.7 Global headline inflation indices**



Note: Figures for 2015 are IHS estimates.

Sources: Official websites of the selected economies and IHS (2015/5/15).

**Chart 2.8 Policy rates in selected economies**



Notes: 1. Advanced economies: figure for the US is based on the target federal funds rate; for the euro area, the main refinancing operations fixed rate; for Australia, cash rate target; for Japan, uncollateralized overnight call rate; for Canada, the target for the overnight rate.

2. Emerging Asia: figure for Mainland China is based on financial institution one-year lending base rate; for Thailand, 1-day repurchase rate; for South Korea, base rate; for Indonesia, Bank Indonesia rate; for India, repurchase rate.

3. Figures are as of 24 April 2015.

Sources: Central banks' websites.

emerging Asian economies, in order to alleviate the impact of insufficient global output growth momentum on their domestic economies and prevent financial market turmoil caused by massive capital outflows from major economies arising from their easy monetary policy stances, most emerging economies kept reducing policy rates (Chart 2.8).

## **2.1.2 International financial conditions**

### **Macroeconomic impacts threatened global financial markets**

In 2014, the global economy recovered moderately, bolstered by persistent easy monetary policies in major advanced economies alongside more neutral fiscal policy relaxations that offset the adverse impacts of the economic slowdown in emerging economies. However, against the backdrop of a prolonged period of monetary policy easing and a low-interest-rate environment, herding among portfolio managers searching for yield has been rising and credit markets appeared to be undergoing structural changes. As a result, financial stability risks have shifted from advanced economies to emerging markets and from banks to shadow banks, particularly the asset management industry, amplifying market risks and liquidity risks.

Major threats to global financial stability flagged by the IMF<sup>14</sup> include the following: (1) persistent financial risk taking and search for yield keep stretching some asset valuations; (2) oil- and commodity-exporting countries and firms have been severely affected by dropping asset valuations and climbing credit risks; (3) briskly depreciating exchange rates not only have increased repayment pressures on firms that borrowed heavily in foreign currencies but also have sparked massive capital flow reversals for several emerging markets; (4) volatility in major exchange rates has increased to even more than it was during the global financial crisis period, reflecting increased market and liquidity risks given that sudden episodes of volatility could become more common and more pronounced.

### **Financial markets in advanced economies had yet to fully stabilized**

In the US, the Fed kept moderately tapering its asset purchases throughout 2014. Over this period, the S&P 500 initially dropped owing to unfavorable market sentiment. However, subsequently benefitting from better-than-expected performance in the profitability of domestic enterprises, share prices trended upwards and repeatedly hit new highs (Chart 2.9). In addition, with a gradual economic recovery, the US ended its asset purchase program at the

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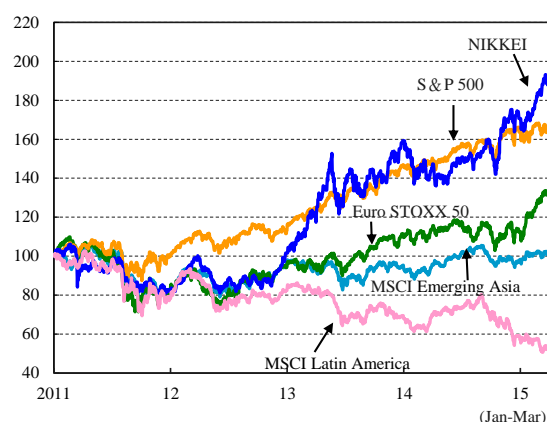
<sup>14</sup> IMF (2015), *Global Financial Stability Report*, April.

end of October 2014 and kept its low-interest-rate policy unchanged. Nevertheless, chronically low interest rates have spurred a dramatic rise in the borrowings of domestic speculative firms and resulted in rocketing growth in high-yield corporate bonds and leveraged loans. These, coupled with easing lending conditions in credit markets, induced amplified credit risk. Moreover, mutual funds and exchange-traded funds (ETFs), which increased their holdings in illiquid high yield corporate bonds or leveraged loans, could be faced with liquidity pressures and jeopardize financial stability if investors were to make significant redemptions from these funds.

In early 2014, the current account deficit recorded a historical high in Japan. Following this, the Japanese Nikkei 225 stock index fluctuated within a narrow range. Then the volatility became more dramatic driven by volatility in the US and the European stock markets over the same period. Afterwards, Japanese stock prices witnessed a rebound (Chart 2.9) propelled by incentives such as: the Government Pension Investment Fund deciding to expand its allocation to domestic equities; the BOJ announcing a bold new monetary measure; and the Japanese government delaying its sales tax rate hike until 2017 (Chart 2.10). Moreover, sharp yen depreciation<sup>15</sup> (Chart 2.10), resulting from the ongoing expansion of the Quantitative and Qualitative Monetary Easing (QQE) policy by the BOJ at the end of October, may possibly spur capital outflows and impact both emerging economies and advanced economies through its spillovers.

In response to the potential deflation risks and growth downturn, the ECB continued

**Chart 2.9 Performance of key international equity indices**

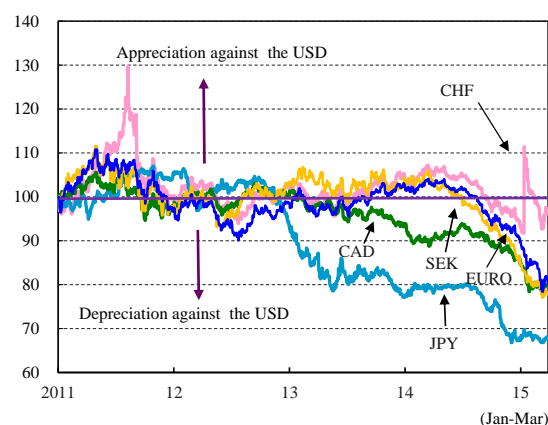


Notes: 1. 1 January 2011 = 100.

2. The Euro STOXX 50 refers to a stock index of the euro area consisting of the largest 50 stocks in the 12 major economies.

Source: Bloomberg.

**Chart 2.10 Movements of various currencies against the US dollar**



Note: 1 January 2011 = 100.

Source: Bloomberg.

<sup>15</sup> The Japanese yen exchange rate against the US dollar was 119.62 at the end of 2014, depreciating by 12.24% year on year.



implementing the Targeted Long-Term Refinancing Operations and further announced additional quantitative easing monetary policy measures by launching a bond purchase program totaling €1.14 trillion in January 2015 (Charts 2.9 and 2.10). Reflecting this, European stock prices surged and the euro depreciated considerably against the US dollar. In some economies (such as France, Italy, Portugal and Spain), the persistently high level of debt in the corporate sector has cast a shadow over the prospects for economic growth and financial stability. The euro area periphery economies kept facing the challenges of elevated government debt, high unemployment rates, mounting deflationary risks and financial fragmentation.<sup>16</sup> In particular, the new Greek government, which advocated anti-austerity policies when it came to power in January 2015, has yet to reach bailout and debt-servicing agreements with international creditors, continuing to impact global investor confidence.

In addition, some European central banks reshaped their monetary policy stances without warning, also triggering turmoil in the financial markets. For example, in January 2015, the SNB announced an end to its cap of 1.20 francs per euro, which was introduced in September 2011, and lowered the interest rate on sight deposits in the SNB to -0.75% from 0.5%. As a result, the Swiss franc immediately soared and the stock market plunged.<sup>17</sup> In February, the Bank of Sweden, in a surprising move, cut interest rates and ventured further into negative territory, and launched a quantitative easing monetary policy by purchasing government bonds worth SEK10 billion (US\$1.2 billion). Reflecting this, the Swedish krona tumbled to a post-April 2009 low against the US dollar<sup>18</sup> (Chart 2.10).

### **Financial risks in some emerging markets mounted**

In 2014, falling oil and raw material prices alongside alleviated inflation pressures benefited emerging economies. In addition, a stronger US dollar also helped improve their market competitiveness. However, some oil and raw material exporting countries or economies subject to high levels of external debt, notably Russia, Argentina, and Brazil, faced higher economic and financial risks because of shrinking export revenues or mounting debt pressures. Among them, as a consequence of the imposition of economic sanctions by NATO countries,<sup>19</sup> Russian stock markets plummeted sharply and triggered a currency crisis, with the ruble depreciating by more than 45% over the course of 2014 (Chart 2.11).

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<sup>16</sup> The ECB adopted an easy monetary policy keeping interest rates at historical lows. This allowed businesses in the euro area core economies to access funds at lower interest rates. Nevertheless, for businesses in the euro area peripheral economies it remained difficult to raise funds.

<sup>17</sup> The Swiss National Bank announced to decouple the Swiss franc from the euro on 15 January 2015, causing the Swiss franc against the euro to appreciate by 41% to 1.1741. Meanwhile, stock markets tumbled by 10%, recording their biggest one-day drop in 25 years.

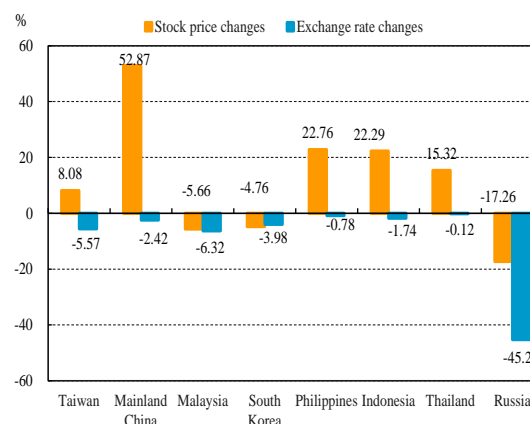
<sup>18</sup> The Swedish krona exchange rate against the US dollar at one point dipped to 8.7136 on 13 March 2015.

<sup>19</sup> Refers to the major countries of the North Atlantic Treaty Organization such as the UK, US, Germany, France, and Italy.



Furthermore, massive capital flows into Asian emerging economies led to Asian stock markets staying mostly buoyant in the face of the monetary easing constantly embarked upon by major advanced economies. With the exception of Korea and Malaysia,<sup>20</sup> among others, stock markets in Taiwan, the Philippines, Indonesia and Thailand trended upwards. In regard to foreign exchange markets, Asian currencies against the US dollar mostly depreciated in 2014, arising from the effect of price comparison between the strengthening US dollar and the markedly weakening Japanese yen. Among them, the sharpest was the depreciation of the Malaysian ringgit against the US dollar, registering a decline of 6.32% as falling international raw material prices adversely impacted on exports. The renminbi remained undervalued against the dollar and declined by 2.42% throughout the year (Chart 2.11).

**Chart 2.11 Changes in equity indices and exchange rates among Asian and European emerging economies**



Note: The comparison is based on the difference between the figures at end-2013 and end-2014.

Sources: Datastream and Bloomberg.

However, given the possible future scenario that the US raises interest rates and further appreciates the dollar, or that foreign investors reduce asset holdings amid large outflows in response to rising geopolitical risks, these situations would impose intense pressures on the financial markets in emerging economies. In addition, some emerging economies still face challenges derived from mounting enterprise leverage, worsening loan quality and rapid growth in non-bank lending. These impacts would also pose a threat to their financial stability were they to come to fruition.

### **International organizations called on national authorities to take measures to promote global financial stability**

According to the IMF assessment in 2014,<sup>21</sup> structural changes in global financial risks were shifting their locus from advanced economies to emerging economies, from banks to shadow banks, and from credit risks to market liquidity risks. In view of the increase in market

<sup>20</sup> For South Korea, feeble stock prices were mainly derived from a devaluation of the yen severely impacting their major export industries and fierce competition in mobile phone markets. Malaysia was affected by a slump in energy stock prices as well. Stock prices for South Korea and Malaysia both fell by 4.76% and 5.66%, respectively, at the end of 2014.

<sup>21</sup> See Note 14.

volatilities and growing financial risks, international organizations such as the IMF<sup>22</sup> and the OECD<sup>23</sup> advocated that national authorities should take further preemptive measures to reduce the related risks by heeding the major suggestions as follows:

- National authorities should deliberately mitigate adverse spillovers that could threaten global financial stability, lessen the reliance on unconventional monetary accommodation and easy liquidity conditions, which, in turn, would allow economies to move toward sustained investment-oriented growth.
- Supervisory authorities should strengthen the transmission of monetary policy, encourage the efficient allocation of credit, and properly employ macroprudential tools. This, in turn, could avoid prematurely adjusting interest rates, reinforce the resilience of systemically important financial institutions, and dampen the procyclicality of asset prices and credit, so as to safeguard financial stability.
- Policymakers could take the following measures to mitigate risks associated with shadow banking: (i) enhancing supervision on shadow banks or banks' exposures to shadow banking, (ii) addressing the root causes driving the growth of shadow banking, (iii) extending the protection of a public safety net to systemically important banks; and (iv) establishing a resolution regime or similar deposit insurance schemes for shadow banking.
- With an increase in international banks transforming business models to subsidiary-based operations in extending local loans in order to slim down cross-border lending, policymakers, in addition to continuing to strengthen banks' capacities to take risks, should fortify international cooperation to jointly address regional or global impacts as well.
- The euro area is expected to relax fiscal norms to revitalize its sluggish economy, and to improve the restructuring of the corporate sector and banks' asset quality. Nevertheless, financial authorities should cautiously prevent the contraction of domestic credit from the further deleveraging of banks and avoid this adverse effect spilling over to other economies.
- Emerging economies should adopt more powerful macroprudential measures to address considerable international capital inflows resulting in the problems of rapid credit growth and an excessive buildup of leverage. In addition, supervisory authorities should require

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<sup>22</sup> IMF (2014), *Global Financial Stability Report*, October; IMF (2015), *Global Financial Stability Report*, April.

<sup>23</sup> OECD (2014), *Economic Outlook*, NO. 96 November.

banks to conduct stress tests on risks associated with foreign currencies and raw material prices, and thoroughly monitor the degree of leverage and the risk exposure of foreign exchange in the corporate sector.

- In response to vigorous development in the asset management industry and structural changes in financial investments, such as substantial expansion in bond funds and more investment in illiquid assets, national authorities should strengthen the oversight of the asset management industry, and reexamine the roles and adequacy of existing risk management tools, including liquidity requirements, fees, and fund share pricing rules.

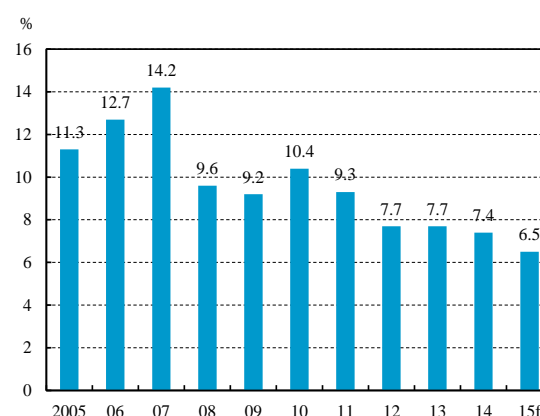
### 2.1.3 Mainland China's economic and financial conditions

#### Economic growth momentum waned

In early 2014, affected by excess capacity in manufacturing and weakening property markets, Mainland China's economic growth rate dipped to 7.4% in Q1. In Q2, thanks to the government's micro-stimulus measures,<sup>24</sup> economic growth rebounded to 7.5%. However, in the second half of 2014, owing to the housing recession, economic growth rates stood at 7.3% in Q3 and Q4, the lowest quarterly growth in six years. As a result, the annual economic growth rate fell to 7.4% from 7.7% in 2013, lower than its official 2014 growth target of 7.5% (Chart 2.12).

Taking a glance into 2015, despite low oil prices being favorable to global economic growth, it is expected that the growth momentum of consumption and investment will move at a slower pace. Consequently, in March, the National People's Congress (NPC) and Chinese People's Political Consultative Conference (CPPCC) targeted an economic growth rate of 7% for 2015, revealing that Mainland China's economy will shift to a "new normal" phase. Accordingly, IHS projects the economic growth rate to continue falling to 6.5% in 2015 (Chart 2.12).

**Chart 2.12 Economic growth rates of Mainland China**



Note: Figure for 2015 is an IHS projection.

Sources: National Bureau of Statistics of China and IHS (2015/5/15).

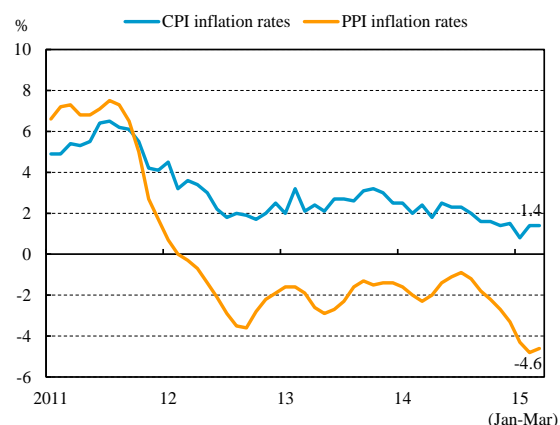
<sup>24</sup> The measures include extending tax exemptions for small businesses, building social housing to replace shanty villages, improving railway construction and cutting the reserve requirement rate (RRR) for rural financial institutions, etc.

### Prices remained stable and housing prices turned to decline

Owing to sluggish domestic demand and falling international raw material prices, the CPI inflation rate of Mainland China was 2.0% in 2014, lower than the official goal of 3.5%. In 2015, the CPI inflation rate slightly rebounded to 1.4% in March after reaching a five-year low of 0.8% in January. IHS projects the annual CPI inflation rate of 2015 to decrease to 1.4%. Moreover, in 2014, the producer price index (PPI) inflation rate registered -1.9% owing to industrial overcapacity and lackluster domestic demand. The PPI inflation rate further dropped to -4.6% in March 2015, the 37<sup>th</sup> consecutive month in negative territory (Chart 2.13).

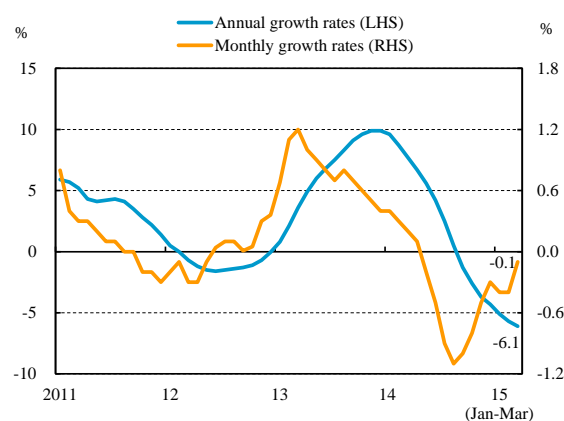
With a view to adjustments in the property market and lack of investor confidence, real estate sales fell by 7.8% in 2014. The annual growth rate of building sales prices in 70 medium-large cities reversed to decline at a faster pace month by month from May onwards. To avoid the slumping housing prices jeopardizing economic growth, several specific second-tier cities successively eased purchase restrictions from September 2014. Additionally, housing prices witnessed a narrower downturn thanks to the People's Bank of China (PBC) loosening mortgage loan restrictions<sup>25</sup> at the end of September. The monthly growth rate of building sales prices in 70 medium-large cities recorded a contraction of -0.3% at the end of the year, while the corresponding annual growth rate reached -4.3%. In the beginning of 2015, housing prices continued their downtrend owing to the real estate market remaining sluggish. Accordingly,

**Chart 2.13 Inflation rates of Mainland China**



Source: National Bureau of Statistics of China.

**Chart 2.14 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.

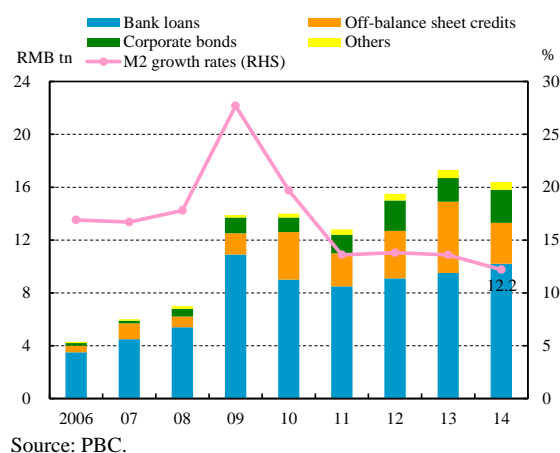
<sup>25</sup> Such loosening restrictions will affect Chinese citizens who wish to buy a second home as they will be able to enjoy the same 30 percent down payment and 30 percent discount on the benchmark rate for mortgage requirements as first-time home buyers if they have fully repaid their previous mortgage loans.

Mainland China further launched a series of deregulation measures in the housing market at the end of March 2015 aimed at stabilizing housing prices and promoting economic growth. The measures include cutting the down payment ratio for second house buyers and shortening the owning period to exempt sellers from business taxes when individuals sell an ordinary house (Chart 2.14).

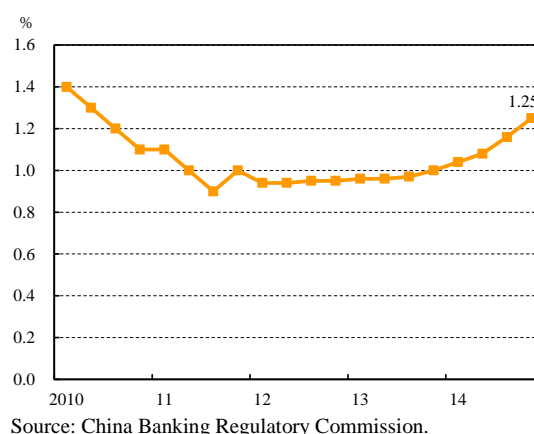
**Aggregate financing to the real economy slightly decreased, but NPL ratios of banks trended up**

The annual growth rate of broad money supply M2 in 2014 increased from 12.9% in Q1 to 14.7% in Q2, in line with the PBC's reinforcement of the financial sector to support the real economy. However, the figure declined to 12.2% at the end of 2014, slightly lower than the official annual target of 13%.<sup>26</sup> Meanwhile, aggregate financing to the real economy<sup>27</sup> in 2014 contracted to RMB16.4 trillion from RMB17.3 trillion in the previous year, mainly resulting from a decline in trust loans and entrusted loans as Mainland China strengthened its supervision on shadow banking<sup>28</sup> and financial institution deleveraging (Chart 2.15). Despite a sustained rise in bank loans in the most recent three years, NPLs edged up to 1.25% at the end of 2014 from 1% recorded a year earlier as a result of moderate economic growth and the implementation of economic restructuring (Chart 2.16).

**Chart 2.15 Aggregate financing to the real economy and annual growth rates of M2 of Mainland China**



**Chart 2.16 NPL ratios of Mainland Chinese commercial banks**



<sup>26</sup> The PBC set M2 growth target at around 12% for 2015.

<sup>27</sup> See Note 5.

<sup>28</sup> 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.

### ***With local government debts coming due, various measures were successively launched***

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 reached RMB17.9 trillion at the end of June 2013, of which RMB2.78 trillion will fall due in 2015. Given that local governments are facing increasing pressure to service their debts owing to ongoing economic slowdown, Mainland China amended the *Budget Law of the People's Republic of China* (hereafter *Budget Law*) in January 2015 in order to strengthen transparency in the national fiscal system and local government debt management, and lessen local government debt burden by refinancing. The new *Budget Law* will put local government debt management in place and address the related problems via the following methods: (1) allowing local governments to issue bonds directly; (2) replacing existing debts with new loans by refinancing; (3) balancing expenditure and revenue; and (4) except for bond issuance, offering local governments more flexibility in collecting tax revenue, which will allow them to levy property taxes as a source of revenue.

Furthermore, in March 2015, the State Council of the People's Republic of China consented to launch a RMB1 trillion local government debt-swap program, aimed at converting part of local government financing platform debt to local government bonds with longer maturity and lower interest rates. Afterwards, the State Council determined to raise the limit that allows the National Social Security Fund to invest in local government bonds in April, so as to enable local governments to tackle their debt due problems.

### ***Implementing easing monetary policy to maintain balance between stabilizing growth and restructuring the economy***

In efforts to enhance financial support to the real economy and to reduce financing costs with the aim of sustaining economic growth, the PBC launched a series of monetary easing measures in 2014, such as successively cutting the reserve requirement rate (RRR) for targeted<sup>29</sup> agricultural and micro enterprises in April and June. Subsequently, alternative targeted monetary easing measures were taken that injected funds into markets through different policy tools, including cutting repurchase rates several times, launching a medium-term lending facility (MLF)<sup>30</sup> and short-term liquidity operations (SLOs). Besides

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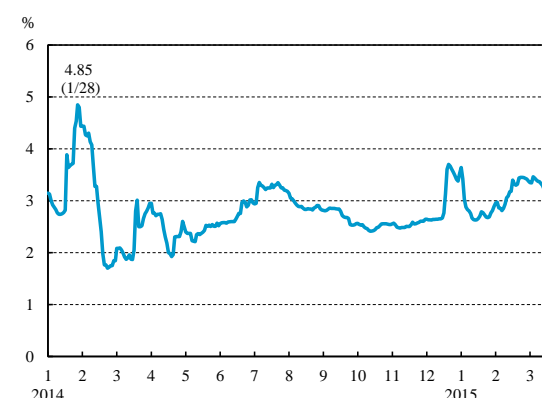
<sup>29</sup> The PBC cut the RRR for country-level rural commercial banks and rural cooperatives by 200 bps and 50 bps to 16% and 14%, respectively, from 25 April 2014. On 16 June, the PBC lowered the RRR by 0.5 percentage points for banks whose proportions of lending extended to agricultural-related and micro-sized companies met a certain ratio.

<sup>30</sup> The PBC provides funds for the targeted financial institutions through setting interest rates on credit which is backed by collateral within three months, aiming to guide commercial banks to lower their lending rates and overall social-financing costs.

these, the PBC applied asymmetric adjustments<sup>31</sup> to the official loan and deposit rates by cutting their corresponding one-year benchmark rates to 2.75% and 5.6%, respectively, in November, which was the first interest rate cut since July 2012. In view of economic slowdown in 2015 Q1, the PBC kept lowering the benchmark deposit and lending rates to 2.5% and 5.35%, separately, in March 2015. Later, the RRRs for all banks were slashed in February and April 2015, respectively, with a view to maintaining the sustainability of economic growth in China.

In the face of easy monetary policy, the Shanghai Interbank Offered Rate (SHIBOR) essentially fluctuated within a narrow range except for a temporary rise during Chinese New Year because of seasonal demand (Chart 2.17).

**Chart 2.17 Shanghai Interbank Offered Rates**



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

<sup>31</sup> Asymmetric adjustments refer to lower deposit and lending rates at the same time with changed spreads. The PBC slashed its benchmark deposit rate by 0.25 percentage points, while cutting its lending rate by 0.4 per cent.

### Box 1

## Anatomy of the recent oil price fall and its impacts on the global and Taiwan's economy

World crude oil prices have declined by over 40% since June 2014. While the decline reflects weaker demand, the accelerating growth in output owing to increased production from US shale oil and Canada's oil sands has also been a key factor leading to excess supply in the market. The price fall has also been impacted by relevant financial-side factors including the appreciation of the US dollar, driven by a veer in US monetary policy, and speculative trading in oil futures. According to analysis by the Energy Information Administration (EIA) and the International Energy Agency (IEA), the global oil supply still outstripped demand in the first half of 2015; however, the supply-demand balance is expected to be gradually restored in the second half of the year, helping oil prices to continue stabilizing. This box will address the causes of the recent oil price slide and its impacts on the global and Taiwan's economy.

### 1. Causes of the recent oil price fall and future outlook

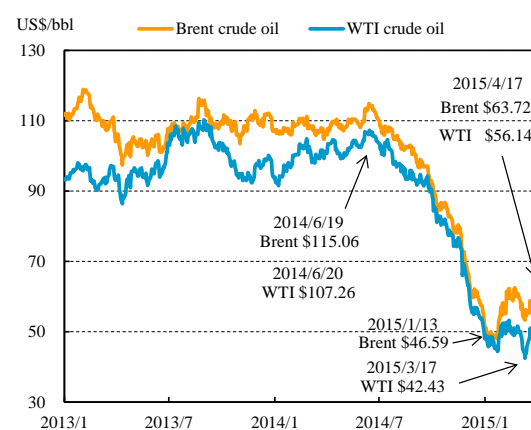
#### 1.1 The recent dip in oil prices was mainly owing to oversupply and a stronger dollar

Brent crude oil plunged from a high of US\$115.06 per barrel on 19 June 2014 to a low of US\$46.59 on 13 January 2015, a drop of nearly 60%. Nevertheless, oil prices appeared to have stopped dropping somewhat, closing at US\$63.72 a barrel on 17 April. The price for West Texas Intermediate (WTI) crude oil also showed a similar trend (Chart B1.1).

Janet L. Yellen, Chair of the Board of Governors of the Federal Reserve System testified in Congress on 24 February

2015 that the bulk of the decline in oil prices was ascribed to supply-side factors.<sup>1</sup> The International Monetary Fund (IMF) has also expressed similar viewpoints.<sup>2</sup> In addition, a study published by the Bank for International Settlements (BIS)<sup>3</sup> indicated that both trading in commodity futures and imbalance between supply of and demand for crude oil were the factors that dragged down oil prices. Therefore, the possible causes of the recent slump in

Chart B1.1 Trends in crude oil futures prices



Source: Bloomberg.



oil prices are comprised of:

- (1) Expeditionary growth in the supply of US shale oil and production from Canada's oil sands, along with a slowdown in demand owing to a slack global economy and the increased supply of energy conservation products and alternative energy.<sup>4</sup>
- (2) A change of direction in US monetary policy pushing up the value of the US dollar, and thereby leading commodity prices denominated in US dollars to head lower.<sup>5</sup>
- (3) Speculative trading in oil futures markets resulting in the significant fluctuation of oil prices.<sup>6</sup>

## **1.2 Prospects for the crude oil market**

- (1) Low oil prices have caused investment in US shale oil to slow down. The shale-oil rig count falling from 1,609 on 10 October 2014 to 734 on 17 April 2015 should be conducive to rebalancing the supply and demand of crude oil.
- (2) Expansion of shale oil production intensified the competitiveness of the crude oil market. Shale oil producers replaced OPEC as the global "swing producer." It is widely envisaged that, in the case of a rise in oil prices, shale oil producers that exited from the supply chain will throw their production into the market again, thereby subduing oil prices. Under such a situation, crude oil prices higher than US\$100 per barrel seem unlikely.
- (3) The EIA projects<sup>7</sup> that low oil prices will retard production growth in North America markedly in the second half of 2015. Combined with the soft growth in global demand, supply-demand balance in the crude oil market is not expected to resume until 2016 Q1.
- (4) The EIA and the Economist Intelligence Unit (EIU) predict that the excess supply problem will be serious in the first half of 2015, while oil prices could drop to a low between the first and second quarter. With supply and demand returning to equilibrium in the second half of 2015, oil prices are expected to gradually rise in 2016.

## ***2. Low oil prices benefit the world economy, but come as mixed blessings for oil-importing and -exporting countries***

An IMF study<sup>8</sup> noted that the current drop of 50% in oil prices would add between 0.3% and 0.7% to global gross domestic product (GDP) in 2015 (Table B1.1). In terms of the impact on inflation, it supposes that the recent oil price fall will cause the overall inflation rate to slide 1 percentage point in major economies like the United States, Europe, Japan,

etc., and core inflation to decline by 0.2 percentage points.

In addition, the World Bank's Global Economic Prospects published in January 2015 indicates that, when world oil prices fall 30%, global GDP growth will increase by about 0.5 percentage points in the medium term. Overall, the recent oil price fall is favorable to oil-importers (for example, India and Mainland China), but unfavorable to oil-exporters (such as Russia, Venezuela, etc.) (Table B1.2).

**Table B1.1 Impacts on global, US and Mainland China GDP of the current episode of falling oil prices**

Unit : %

Year	Global GDP	US GDP	Mainland China GDP
2015	+0.3 ~ +0.7	+0.2 ~ +0.5	+0.4 ~ +0.7
2016	+0.4 ~ +0.8	+0.3 ~ +0.6	+0.5 ~ +0.9

Source: IMF.

**Table B1.2 Impacts on the global economy of world oil price falls**

Category	Drop in oil prices	Effects
Global economy	30%	It is expected to raise global GDP by 0.5 percentage points in the medium term.
Oil-importing countries	10%	GDP growth over the following year would rise by between 0.1 and 0.5 percentage points, and fiscal and financial accounts would noticeably improve.
Oil-exporting countries	10%	GDP growth over the following year would fall by between 0.8 and 2.5 percentage points, and fiscal pressures will noticeably rise.

Source: World Bank.

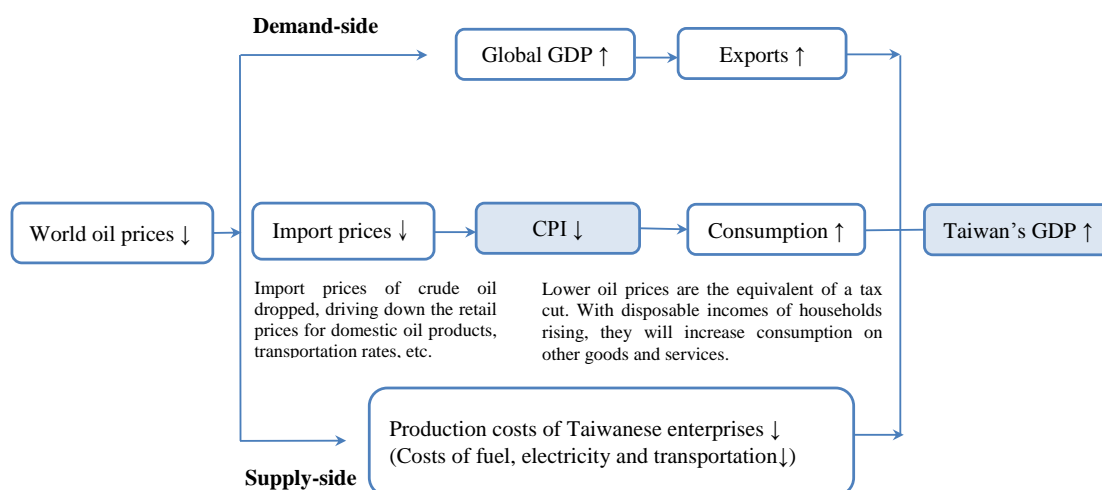
### ***3. Taiwan's economy is expected to benefit from falling oil prices***

On the demand side, as the international oil price fall is conducive to global GDP, it will indirectly increase Taiwan's overall exports<sup>9</sup> and bring forth investment. Moreover, a drop in import prices of crude oil will also trigger the retail prices of domestic oil products to slide,<sup>10</sup> which is akin to a tax cut, thereby raising the disposable incomes of the household sector. On the supply side, the world oil price decline helps reduce the costs of Taiwanese enterprises with respect to oil consumption, electricity bills and transportation expenses, further pulling down their production costs, and is therefore beneficial to increasing production (Chart B1.2). On the whole, Taiwan is expected to benefit from falling international oil prices.

According to the projections by Liang, C. Y. (2009)<sup>11</sup> and Yang, T. H. (2013),<sup>12</sup> when domestic oil prices fall 10%, Taiwan's GDP is estimated to increase by between 0.10 and 0.24 percentage points. Furthermore, according to the CBC's estimation, a drop of 20% in

world oil prices would be reflected by a fall of 10% in the retail prices of domestic oil products. Provided that a fall of 10% in such retail prices continues for one year, its direct impact on the annual growth of CPI is estimated to be -0.35 percentage points, while its indirect impact is estimated to be -0.15 percent points, with a total drop of 0.50 percentage points.

**Chart B1.2 The transmission channels of world oil price falls on Taiwan's economy**



Source: CBC.

- Notes: 1. Yellen, J. (2015), *Semiannual Monetary Policy Report to the Congress Before the Committee on Banking, Housing, and Urban Affairs*, Feb. 24.
2. Arezki, R. and O. Blanchard (2014), *Seven Questions About The Recent Oil Price Slump*, IMFdirect, International Monetary Fund, Dec. 22.
3. BIS (2015), *Global liquidity: Selected indicators*, Feb. 7.
4. Economist News (2014), *Oil Spill*, Economist, Dec. 15.
5. Frankel, J. (2014), *Why Are Commodity Prices Falling?* Project Syndicate, Dec. 15. The US dollar index has risen about 22.1% since the end of June 2014 until 17 April 2015.
6. Reuters News (2014), *OPEC Chief Defends Policy, Says Group to Try to Ride Out Price Fall*, Reuters, Dec. 14. Beidas-Strom et al. (2014), *Oil Price Volatility and the Role of Speculation*, IMF Working Paper, No. 14/218, Dec. 18.
7. US Energy Information Administration (2015), *Short-Term Energy Outlook*, Apr. 7.
8. Same as Note 2.
9. According to the IMF's estimation, a 50% drop in recent oil prices would boost global GDP growth by between 0.3 and 0.7 percent points in 2015. Even though the world oil price fall is unfavorable to Taiwan's exports of oil products and petrochemicals (accounting for about 20% of total exports), Taiwan's economy, generally speaking, is expected to benefit from the rising global GDP because its exports focus on electronics, information and communication products (about 40% of the total).
10. Taiwan is an oil-importing country. Its imports of crude oil accounted for 12% of total imports in 2014. From January to February 2015, Brent oil dropped by 51.49% compared to the prices during the same period of 2014. Domestic fuel costs also fell by 28.81% correspondingly, making

the annual CPI inflation rate decline by 1.08 percentage points to -0.56%.

11. Liang, C.Y. (2009), *The impacts of energy price changes on domestic prices and economic activities*, Central Bank Quarterly, Volume 31, Issue 1, March 2009, pp. 9-34. This study found that, as domestic oil prices fall 20.6%, Taiwan's GDP would increase by 0.49 percentage points. If projected by a linear proportion, a 10% drop in the domestic oil prices would add 0.24 percentage points to Taiwan's GDP.
12. Yang, T. H. (2013), *Assessment of the economic effect of domestic oil mechanism adjustment*, National Development Council, Economic Research, Volume 14, pp. 67-79. This study found that, in the case of a 10% rise in domestic oil prices, Taiwan's GDP would decrease by between 0.10 and 0.195 percentage points. The study assumes that the simulation effect of the model is symmetrical, a drop of 10% in domestic oil prices would support Taiwan's GDP growth by 0.10 to 0.195 percent points.

## Box 2

### The effect of the US's gradual exit from unconventional policy measures on emerging market economies

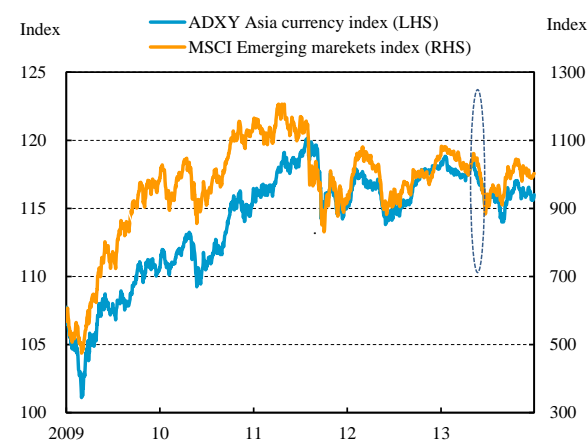
Lehman Brothers filed for bankruptcy protection on 15 September 2008, triggering the global financial crisis and deeply traumatizing the US financial system. In response, the US Board of Governors of the Federal Reserve System (Fed) engaged in three successive rounds of quantitative easing (QE) in November 2008, November 2010 and September 2012, with a total of US\$3.98 trillion in asset purchases. These unconventional policy measures have succeeded in stabilizing US financial markets, prompting a rebound in property prices, improving unemployment rates, and promoting economic growth. However, ample liquidity caused by the three rounds of QE raised concerns about potential asset price bubbles. Moreover, the spillover effects of US QE on emerging economies fueled the surge of massive capital inflows, and further translated into currency appreciation and inflationary pressures.

In 2013, the US Fed officials revealed messages hinting at the gradual tapering of asset purchase programs on several occasions, significantly impacting emerging financial markets. The Fed started to taper its monthly bond purchases in January 2014, and eventually ended its asset purchase program in October owing to improvements in employment and economic growth, and plans to raise interest rates and cut its balance sheet in the future. Such events could have sizable influences on emerging market economies and hold cause for concern.

#### *1. The tapering announcements of the US Fed in 2013 had significant impacts on emerging markets*

Ben Bernanke, the former US Fed Chairman, delivered a speech in a hearing before Congress on 22 May 2013, revealing, for the first time, the message of tapering bond purchases in the future. It immediately brought about significant impacts on Asian emerging financial markets and resulted in currency depreciation and stock prices dropping (Chart B2.1), as foreign investors switched to net selling of local

**Chart B2.1 Trends of Asian Currencies Index and MSCI Emerging Markets Index**



Source: Bloomberg.

shares (Table B2.1, column 2). Later, on 10 July 2013, after a speech delivered at the National Bureau of Economic Research (NBER) conference, Ben Bernanke made some dovish comments to ease the market disturbance. In consequence, most Asian stock prices rebounded as foreign investors turned to net buying (Table B2.1, column 3). However, in August 2013, three directors of the Fed showed their support for a steady reduction in bond purchases, causing foreign investors to switch to net selling of stocks in most Asian markets and pulling down stock prices (Table B2.1, column 4).

**Table B2.1 Frequent foreign capital movements in Asian stock markets caused by uncertainties over US monetary policy**

Units : US\$ billion

Periods Countries	2013/1/2-5/22 Risk on		2013/5/22-7/10 Risk off		2013/7/11-8/5 Risk on		2013/8/6-8/21 Risk off	
	Net buy /sell	Changes of stock prices	Net buy /sell	Changes of stock prices	Net buy /sell	Changes of stock prices	Net buy /sell	Changes of stock prices
Taiwan	5.10	9.08%	-5.33	-4.61%	3.17	1.58%	-1.63	-3.76%
South Korea	-4.35	-0.16%	-4.36	-8.51%	1.75	5.05%	0.52	-2.54%
India	14.49	3.18%	-0.97	-3.83%	-1.02	-0.58%	-0.43	-6.65%
Indonesia	2.57	20.65%	-3.03	-14.00%	0.40	3.62%	-0.57	-9.10%
Thailand	-0.15	17.19%	-2.52	-14.89%	0.08	2.59%	-0.90	-4.86%
Philippines	1.59	27.05%	-0.09	-14.58%	0.21	3.20%	-0.10	0.25%

Notes: 1. Risk on/off mode refers to the buying/selling of risky assets because of decreases/increases in the risk aversion of investors.  
 2. Changes of stock prices refer to changes of stock market indices. The Bloomberg tickers of these countries are TWSE, KOSPI, SENSEX, JCI, SET and PSEi.  
 3. Periods of risk on/off modes refer to periods of buying/selling of risky assets of investors, owing to decreases/increases in risk aversion affected by announcements and speeches of US Fed officials.

Source: CBC calculation.

## 2. The effects of the Fed's exit from QE on emerging market economies

Because of the ample liquidity in the global financial system, the end of the Fed's asset purchase program in October 2014 only had limited effects on global economic and financial conditions. Nevertheless, when the Fed raises its policy rates or stops its reinvestments of maturing bonds owing to improvements in the US economy and employment, it could induce global capital to flow back to the US and have heavy impacts on emerging stock and foreign exchange markets. However, the European Central Bank's (ECB) expansion of its quantitative easing program<sup>1</sup> and other central banks' continuous implementation of stimulus policies could help to dampen the adverse impacts of the Fed raising policy rates.

## **2.1 The end of US QE may impact several emerging market economies**

Short-term foreign capital movements have become an important driver of the volatility in foreign exchange rates and stock prices in emerging market economies. Foreign investors may collectively buy or sell stocks and foreign currencies based on specific market information. The asymmetry and incompleteness of information usually evokes herding behavior among foreign investors, with the consequence of massive movements of short-term capital and over reaction of the markets. In particular, the messages sent from US monetary policymakers play a key role in driving short-term global capital movements.

The end of US QE could have more severe impacts on financially fragile emerging market economies because large capital outflows caused by the ending of QE could lead to rising local borrowing costs, contracting credit supply and declining asset prices, and eventually result in financial turmoil. In turn, such a disturbance in the financial system might spill over to the real sector and worsen the fundamentals of the macro economy.

## **2.2 The end of US QE is only likely to have a minor influence on Taiwan**

Compared to other emerging markets, Taiwan, with a current account surplus, sufficient foreign exchange reserves, ample liquidity in local financial markets and limited foreign debts, has relatively less capital outflow pressures. Therefore, it is expected that the threat of an exit from US QE to Taiwan's economy is likely to be limited. Additionally, research<sup>2</sup> on exchange rate changes and economic vulnerabilities in 15 emerging market economies (including Taiwan) published by the US Fed in February 2014 indicated that emerging market economies which were more vulnerable suffered sharper depreciations of their currencies. It also pointed out that Taiwan was more resilient to economic shocks from the end of US QE, as it has strong economic fundamentals and relatively stable foreign exchange rates. Therefore, the impacts of the Fed's interest rates increase on Taiwan's economy is expected to be limited.

Notes: 1. The ECB announced the expanded asset purchase program on 22 January 2015. According to the program, the ECB will expand asset purchases to €60 billion each month from March 2015 to September 2016, with a total of €1.14 trillion.

2. Monetary Policy Report submitted by the Fed on 11 February 2014 delivered an analysis of foreign exchange rate changes and the economic vulnerability in 15 emerging-market economies.

## 2.2 Domestic economic conditions

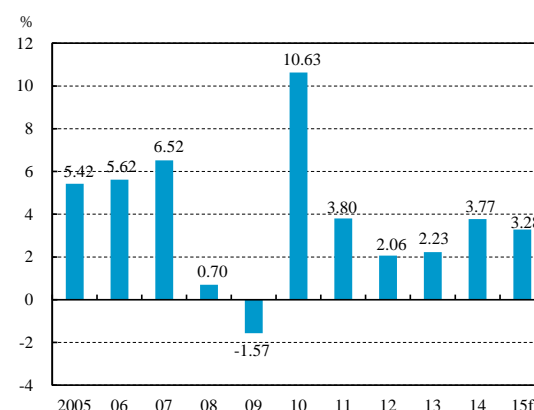
As economic growth in the US and euro area gained momentum, the global economy expanded moderately in 2014. Consequently, the domestic economy grew steadily and labor market conditions improved constantly along with mild inflationary pressure. Short-term external debt servicing ability remained strong on the back of a sustained 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 rebounded and total government debt continuously mounted; nevertheless, the government kept implementing the "Fiscal Health Plan" to enhance a sound fiscal system.

### 2.2.1 Domestic economy grew steadily and labor market improved constantly

With the moderate global economic expansion and an active domestic stock market, the economic growth rates of the first three quarters in 2014 rose gradually thanks to growing exports and increasing private consumption and investment. The economic growth rate registered 4.32% in Q3. However, it fell to 3.47% in Q4 owing to receding exports of mineral products, chemicals, and plastics and slowing private consumption affected by food safety scandals. Eventually, the annual economic growth rate stood at 3.77%<sup>32</sup> in 2014, higher than the 2.23% of the previous year (Chart 2.18).

Owing to the recovering domestic economy and increasing profitability of the corporate sector, the domestic labor market improved constantly in 2014. As a result, domestic unemployment rates trended downwards,

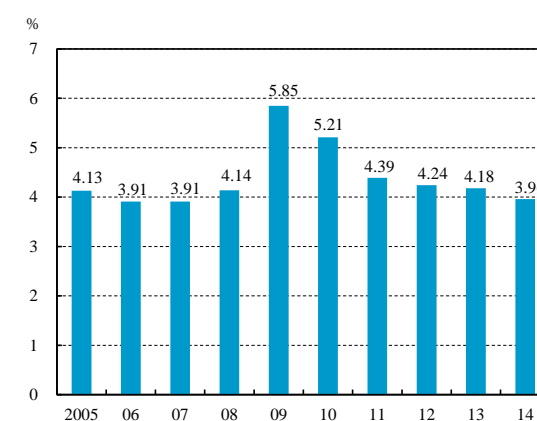
Chart 2.18 Economic growth rates in Taiwan



Note: Figure for 2015 is forecast by DGBAS.

Source: DGBAS.

Chart 2.19 Unemployment rates in Taiwan



Source: DGBAS.

<sup>32</sup> See Note 6.



except from June to August when the rates rose slightly owing to the seasonal effect of graduates pursuing jobs. It fell to 3.79% in December, and the average unemployment rate of 2014 dropped to 3.96%, the lowest level since the financial crisis in 2008 (Chart 2.19).

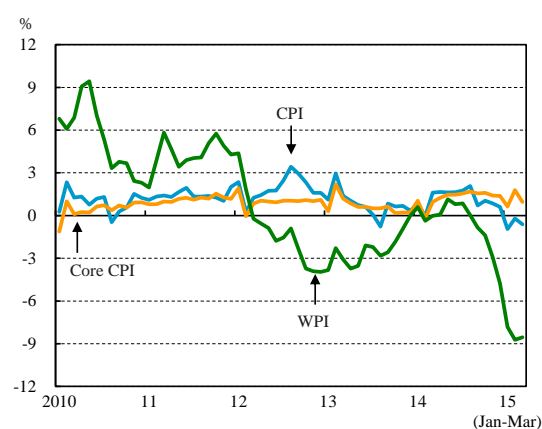
Taking a glance into 2015, global prices of crude oil remain low, which is beneficial to domestic economic developments (Box 2). However, global economic growth momentum is more measured than expected, and the localization of industry supply chains in Mainland China is showing a preliminary effect, resulting in more competition for domestic companies. Both of these may have an impact on export growth. Moreover, food safety scandals continue to curb private consumption momentum. As a result, the DGBAS forecasts Taiwan's economic growth rate to fall to 3.28%<sup>33</sup> in 2015 (Chart 2.18).

### 2.2.2 Domestic prices rose mildly

In the beginning of 2014, owing to a modest upswing in the international prices of commodities and raw materials, the wholesale price index (WPI) inflation rate showed a slight rise, registering 1.15% in May. However, in the second half of the year, affected by the descending prices of crude oil, the WPI inflation rate declined significantly from June and turned negative in September, registering -4.78% in December (Chart 2.20). The annual WPI inflation rate stood at -0.57% in 2014, higher than the -2.43% recorded a year earlier, according to the DGBAS.

Attributed to infected piglets and unfavorable weather conditions, prices of meat and food-away-from-home went up from early 2014. As a result, the CPI inflation rate rose and registered 2.07% in August. Subsequently, domestic prices of vegetables and gasoline dropped owing to good weather and the descending price of crude oil, leading the CPI inflation rate to trend downwards and register 0.60% in December (Chart 2.20). Overall, domestic prices rose mildly in 2014 as the average CPI inflation rate was 1.20%, higher than the 0.79% of the previous year, whereas the core CPI<sup>34</sup> inflation rate was 1.26%, higher than

**Chart 2.20 Consumer and wholesale price inflation rates**



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

<sup>33</sup> See Note 6.

<sup>34</sup> The term "core CPI" in this report refers to the consumer price index excluding fresh fruits, vegetables and energy.

the 0.66% recorded a year earlier.

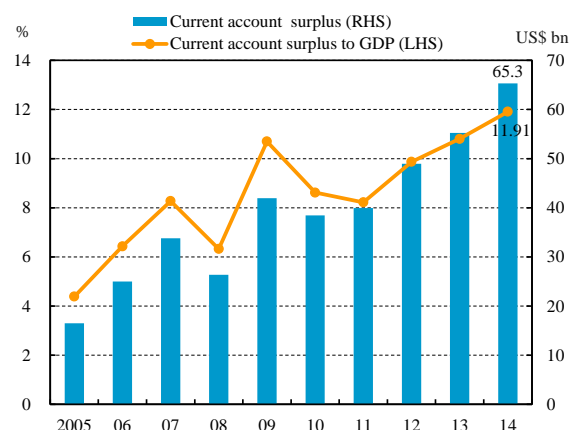
In 2015, with global economic growth slowing down and the international prices of crude oil and cereals remaining low, the DGBAS projects the annual WPI inflation rate and CPI inflation rate to decline to -6.42% and 0.13%,<sup>35</sup> respectively.

### 2.2.3 Current account surplus persisted and foreign exchange reserves stayed abundant

Benefiting from stable growth of the global economy in 2014, both exports and imports increased. The merchandise trade surplus trended up on account of exports increasing more than imports. This, combined with a larger services and income surplus and contracted current transfers deficit, caused the annual current account surplus to reach US\$65.3 billion, or 11.91%<sup>36</sup> of annual GDP, increasing by US\$10.1 billion or 18.24% compared to 2013 (Chart 2.21).

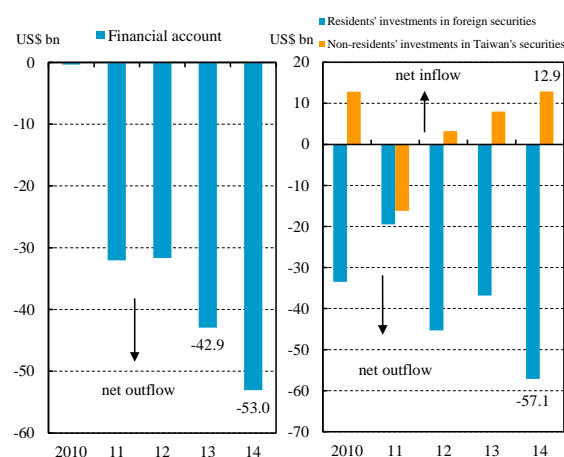
As for the financial account, in 2014, the annual balance of outflows registered a record high of US\$53 billion, primarily because net outflows of securities investments registered a record high. Analyzing the components of the financial account, the net outflows of residents' investments in foreign securities in 2014 recorded US\$57.1 billion, mainly owing to more foreign debt investments by insurance companies. During the same period, the net inflows of non-residents' investments in Taiwan's securities registered US\$12.9 billion because of greater investments by foreign institutional investors in the domestic stock market (Chart 2.22).

Chart 2.21 Current account surplus



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

Chart 2.22 Financial account and net inflow/outflow of securities investments



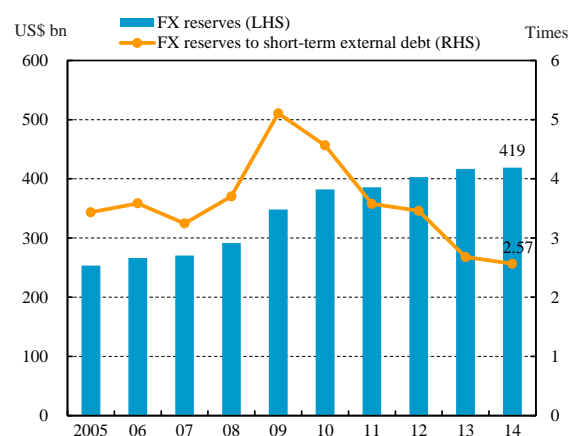
Source: CBC.

<sup>35</sup> See Note 6.

<sup>36</sup> 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.

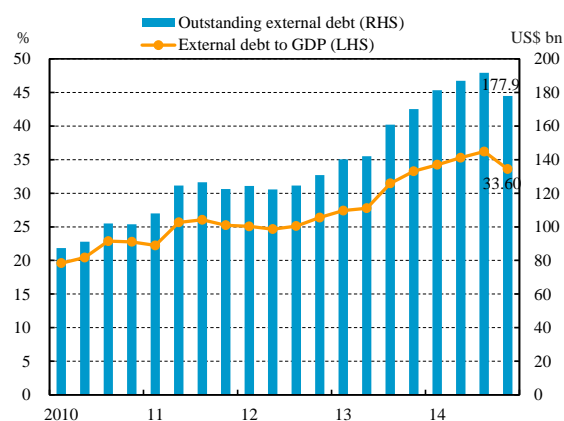
With rising outflows on the financial account but a greater increase in the current account surplus, the balance of payments surplus expanded to US\$13 billion in 2014, increasing by 14.99% from a year earlier. Over the same period, continuously ascending investment earnings of reserve assets contributed to accumulating foreign exchange reserves, which reached US\$419 billion at the end of December. As the euro and other major currencies depreciated against the US dollar, the dollar value of foreign exchange reserve assets denominated in those currencies diminished. Consequently, the total amount of foreign exchange reserves merely increased by 0.52% from the previous year. At the end of March 2015, this total amount declined to US\$414.7 billion, yet remained ample. At the end of 2014, the ratio of foreign exchange reserves to short-term external debt decreased to 2.57 times<sup>37</sup> owing to a greater rise in external debt. Nevertheless, it was higher than internationally recognized minimum levels, implying that Taiwan's foreign exchange reserves have a robust capacity to meet payment obligations (Chart 2.23).

**Chart 2.23 Short-term external debt servicing capacity**



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

**Chart 2.24 External debt servicing capacity**



Notes: 1. External debts are end-of-period figures.

2. GDP is annual figures.

Sources: CBC, DGBAS and MOF.

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

Taiwan's external debt<sup>38</sup> increased continuously in the first three quarters of 2014 owing to the

<sup>37</sup> The general international consensus is that a ratio of foreign exchange reserves to short-term external debt higher than 100% indicates relatively low risk.

<sup>38</sup> 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.

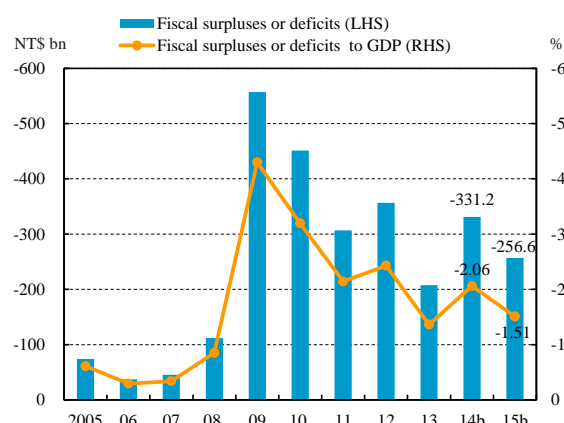
increases of domestic banks' due from affiliated banks and foreign banks. In Q4, domestic banks repaid foreign loans with abundant capital. As a result, external debt registered US\$177.9 billion, or 33.60% of annual GDP, at the end of the year, indicating that the capacity to service external debt remained robust<sup>39</sup> (Chart 2.24).

### 2.2.5 Fiscal deficits rebounded while government debt kept accumulating

Since the times of peak spending on public infrastructure construction and domestic demand expansion plans ended, fiscal deficits at all levels of government have notably contracted from 2009 onwards. In order to support domestic economic growth momentum, annual expenditure increased appropriately in 2014. Consequently, the amount of the fiscal deficits expanded to NT\$331.2 billion, or 2.06 % of annual GDP, after reaching a relatively low level in 2013. It is expected that fiscal deficits will decline to NT\$256.6 billion alongside a fall in the ratio of fiscal deficits to annual GDP to 1.51%<sup>40</sup> in 2015 (Chart 2.25).

As fiscal deficits stayed high and both central government and local governments relied on debt issuance to finance debt servicing expenditures, outstanding public debt at all levels of government<sup>41</sup> in 2014 expanded to

Chart 2.25 Fiscal deficits position

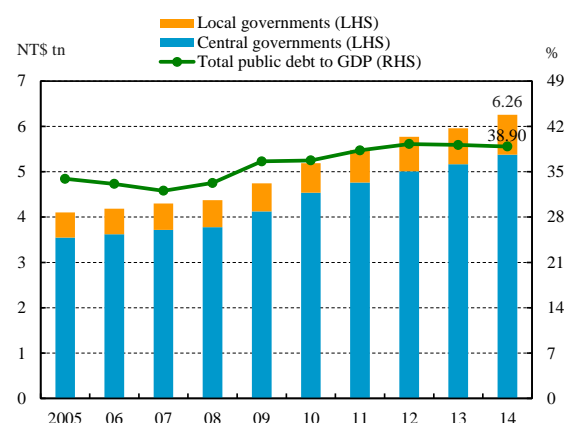


Notes: 1. Fiscal position data include those of central and local governments.

2. Data of fiscal deficits are annual figures. Figures for 2014 and 2015 are budgets.

Sources: MOF and DGBAS.

Chart 2.26 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 2014 are preliminary final accounts and budgets for the central government and local governments, respectively.

Sources: MOF and DGBAS.

<sup>39</sup> 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.

<sup>40</sup> See Note 7.

<sup>41</sup> 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 2015, the outstanding one-year-or-longer non-self-liquidating public debts are NT\$5.33 trillion, NT\$0.58 trillion, NT\$0.17 trillion, and NT\$1.0 billion for central government, municipalities, counties, and townships, respectively. The figures account for 34.74%, 3.81%, 1.08%, and 0.01% 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*.

NT\$6.26 trillion,<sup>42</sup> or 38.90% of annual GDP,<sup>43</sup> well above the NT\$5.96 trillion recorded in 2013 (Chart 2.26).

To promote fiscal health, the Ministry of Finance kept implementing the “Fiscal Health Plan” that seeks to enhance a sound fiscal system through the following directions: implementing all the measures of increasing income and reducing expenses; improving the structures of revenue and expenditure; controlling the scale of debt; coordinating all the resources; diversifying sources of finance; and timely modifying taxation.

## 2.3 Non-financial sectors

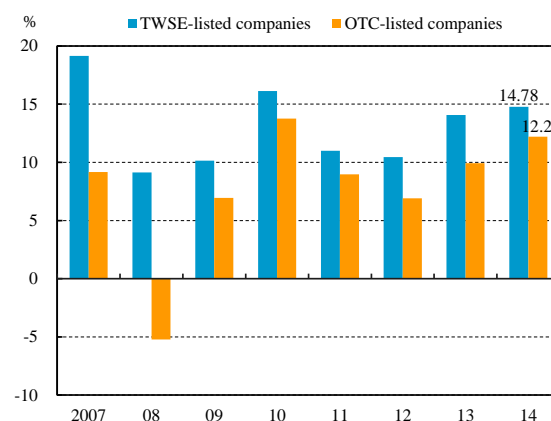
### 2.3.1 Corporate sector<sup>44</sup>

The profitability of listed companies increased in 2014. Likewise, their financial structure was stable and short-term debt servicing capacity enhanced. The credit quality of corporate loans stayed sound, as NPL ratios were at their lowest recorded level. However, owing to strong industrial competition among countries, economic slowdown and promotion of industrial supply chain localization in Mainland China, as well as aggravated fluctuations in foreign exchange rates of major international currencies recently, the corporate sector’s profit outlook still faces challenges.

#### *Profitability of listed companies grew in 2014*

In 2014, benefiting from the modest recovery in the global economy and stable export growth in Taiwan, average ROEs of TWSE-listed and OTC-listed companies rose to 14.78% and 12.21%, respectively, compared to 14.06% and 9.92% in 2013 (Chart 2.27). Profitability enhanced, mainly

**Chart 2.27 Return on equity in corporate sector**



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

Source: TEJ.

<sup>42</sup> 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\$6.08 trillion as of the end of February 2015.

<sup>43</sup> See Note 8.

<sup>44</sup> Corporate sector originally includes the data of overall corporations, TWSE-listed companies, and OTC-listed companies. Because listed companies have adopted the TIFRSs since 2013 and other corporations are still in accordance with ROC GAAP in Taiwan, the integration of financial information is not available. Therefore, this section starts to include only listed companies which are the targets for analysis since this issue. Throughout this section, figures for listed companies are consolidated financial data; prior to 2011 are under ROC GAAP, while from 2012 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.

driven by the strong demand for semiconductors, as well as the strong sales of consumer electronic products and smartphones, resulting in profit growth of the semiconductor, computers and peripheral equipment, and other electronics industries.

Except for the building material and construction and the plastics industries, all major industries for TWSE-listed companies reported increasing ROEs in 2014, especially the electronics industry. For OTC-listed companies, except for sharply increased profitability in the electronics and the iron and steel industries, all other industries experienced slightly descended performance (Chart 2.28).

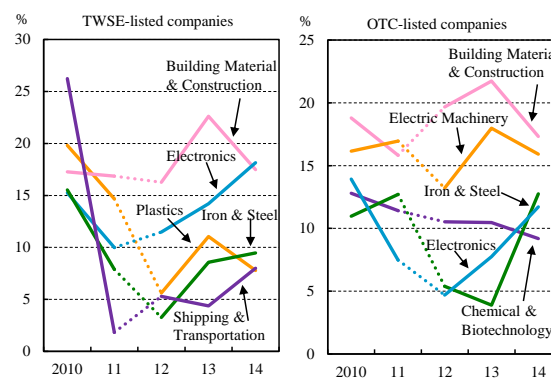
### **Leverage ratio decreased for listed companies**

At the end of 2014, the average leverage ratio for TWSE-listed companies fell to 101.77% from 105.35% at the end of the previous year, but remained at a relatively high level. In addition, the average leverage ratio for OTC-listed companies decreased to 76.76% from 81.22% a year earlier (Chart 2.29). In 2014, listed companies raised bank borrowing to deal with the demand for investment and operating funds, resulting in the run-up of total liabilities. However, leverage ratios declined somewhat owing to a greater increase in equity.

### **Short-term debt servicing capacity for listed companies enhanced**

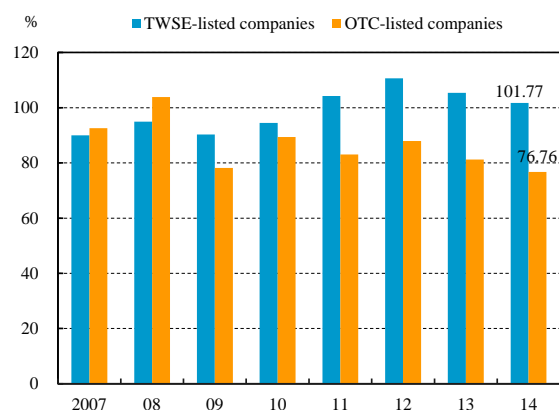
Owing to a greater increase in current assets, the current ratio for TWSE-listed companies increased to 152% at the end of 2014, while the interest coverage ratio slightly rose to 13.38. Moreover, the current ratio and interest coverage ratio for OTC-listed companies rebounded to 184% and 14.50, respectively, both the highest levels in recent years (Chart 2.30 and 2.31).

**Chart 2.28 Return on equity of TWSE-listed and OTC-listed companies by major industries**



Source: TEJ.

**Chart 2.29 Leverage ratios in corporate sector**



Note: Leverage ratio = total liabilities / equity.

Source: TEJ.

For listed companies as a whole, short-term debt servicing capacity enhanced.

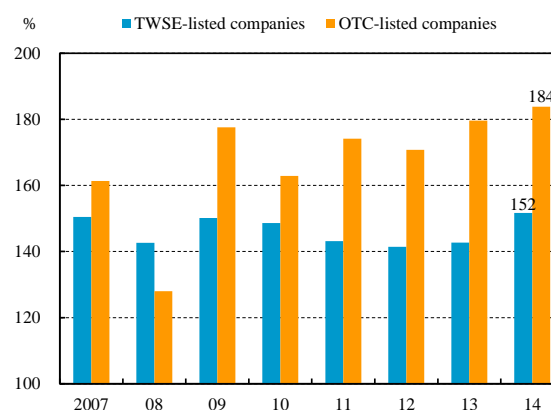
### **Credit quality of corporate loans remained sound**

In 2014, the NPL ratio for corporate loans granted by financial institutions continued to decline as a result of massive write-offs of NPLs in large corporations, such as TMT Group, ProMOS Technologies, and TPSi. The ratio declined to 0.40% at the end of the year, from 0.63% at the end of previous year, and reached the lowest level on record, reflecting sound credit quality for the corporate sector (Chart 2.32).

### **Corporate sector's profit outlook still faces challenges**

Although the global economy has experienced a slight recovery that can help to sustain profitability in the corporate sector, strong industrial competition among countries, economic slowdown and promotion of industrial supply chain localization in Mainland China, as well as aggravated fluctuations in foreign exchange rates of major international currencies recently, all continue to closely affect the profitability of Taiwan's export industries. In addition, the decline of international oil prices may indirectly reduce the costs of production in the corporate sector; however, it may also have negative effects on the mineral products and the petrochemical industries in Taiwan.

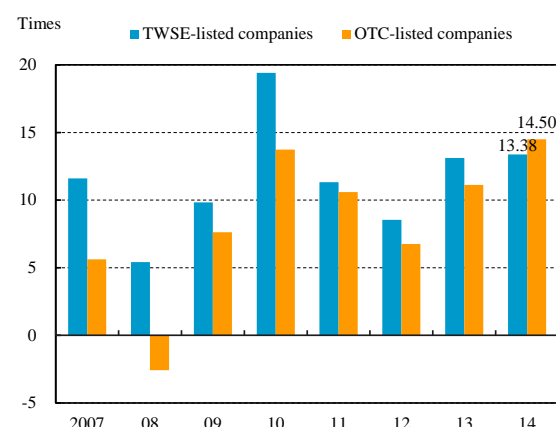
**Chart 2.30 Current ratios in corporate sector**



Note: Current ratio = current assets / current liabilities.

Source: TEJ.

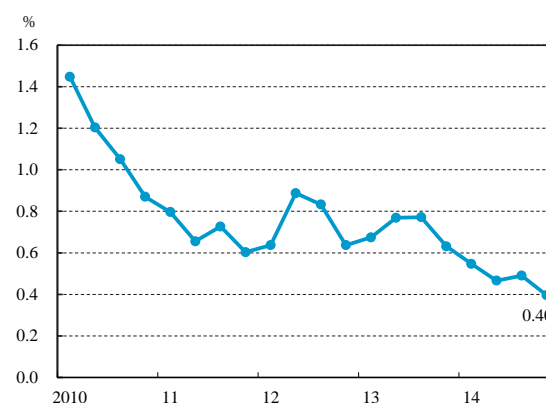
**Chart 2.31 Interest coverage ratios in corporate sector**



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

Source: TEJ.

**Chart 2.32 NPL ratios of corporate loans**



Note: End-of-period figures.

Source: JCIC.



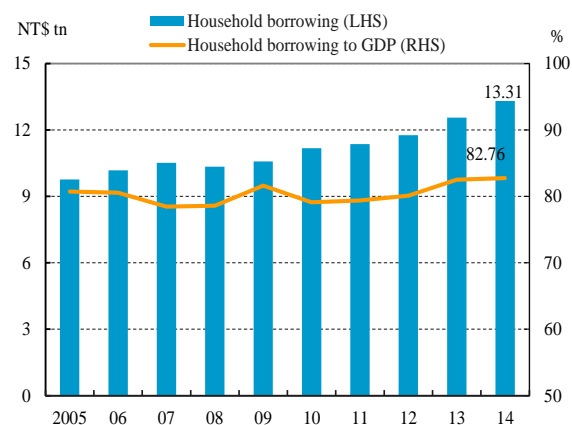
### 2.3.2 Household sector

The household debt burden relieved slightly as the balance of total household borrowing expanded more slowly than that of disposable income. Short-term debt servicing pressure increased, driven by the build-up of medium- and short-term borrowing; however, the overall credit quality of household borrowing remained satisfactory. Furthermore, combined with the falling unemployment rate and steadily growing regular earnings, this should help underpin the debt servicing capacity of households.

#### Household borrowing increased continuously

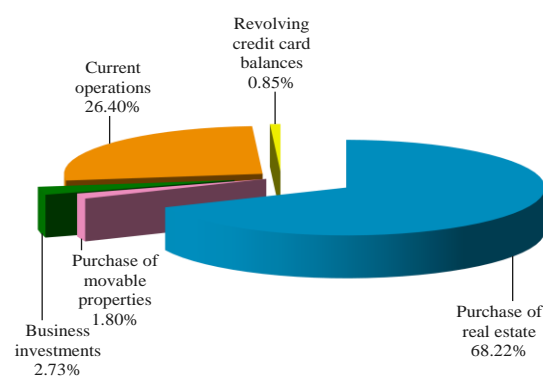
At the end of 2014, total household borrowing<sup>45</sup> saw a continued expansion and reached NT\$13.31 trillion, equivalent to 82.76% of annual GDP (Chart 2.33), mainly owing to an increase in loans for the purchase of real estate and current operations. The largest share of household borrowing went for the purchase of real estate (68.22%), with an annual growth rate of 3.65%, followed by current operation loans<sup>46</sup> (26.40%), with a considerably increased annual growth rate of 11.89%. The rest of the household borrowing categories took only minor percentages, including loans to purchase movable properties, largely consisting of vehicle loans, business investment loans, and revolving balances on credit cards (Chart 2.34).

Chart 2.33 Household borrowing to GDP



Sources: CBC, JCIC and DGBAS.

Chart 2.34 Household borrowing by purpose



Note: Figures are as of the end of 2014.

Sources: CBC and JCIC.

<sup>45</sup> 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) Other monetary 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.

<sup>46</sup> The term “current operation loans” includes outstanding cash card loans.



The annual growth rate of total household borrowing in Taiwan reduced to 5.98% at the end of 2014 from 6.77% a year earlier, posting a figure still higher than that in Japan and the US, and equivalent to that in South Korea, but lower than that in Australia. In addition, as a percentage of GDP, household borrowing in Taiwan was lower than that in Australia and South Korea (Chart 2.35).

### **Household debt burden alleviated somewhat, while short-term debt servicing pressure mounted**

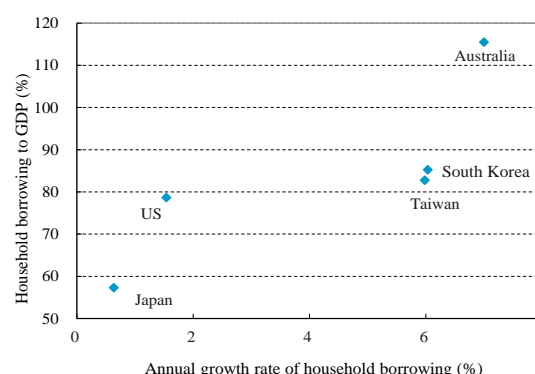
As total household borrowing grew at a slower pace than disposable income in 2014, the ratio of household borrowing to total disposable income<sup>47</sup> shrank to 1.32 at the end of the year, reflecting that the household debt burden lessened. However, owing to the increase in loans for the purchase of movable properties and current operations, the debt servicing ratio uplifted to 44.02% in 2014 from 41.97% a year earlier (Chart 2.36). As a

result, short-term debt servicing pressure remained high. Nevertheless, the decreasing domestic unemployment rate and steady growth of regular earnings should help improve the debt servicing capacity of households (Chart 2.37).

### **NPL ratio of household borrowing declined to a historical low**

The NPL ratio of household borrowing

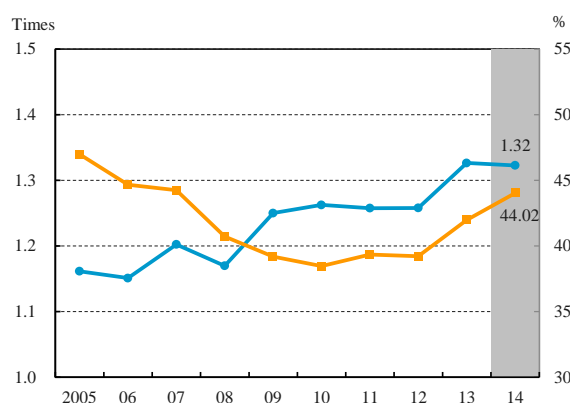
**Chart 2.35 Household indebtedness in selected countries**



Note: Figures for Taiwan and the US are as of the end of 2014. The others are as of the end-of September 2014.

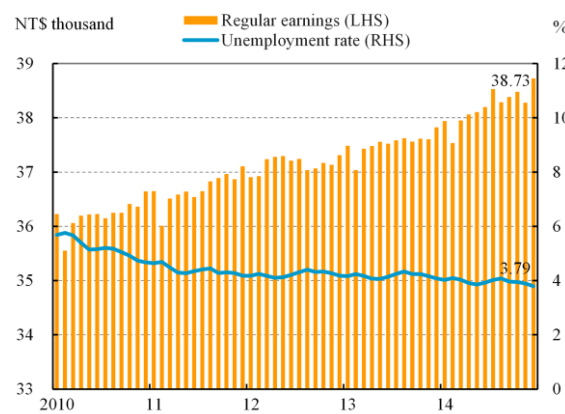
Sources: Fed, BOJ, BOK, ABS, IMF, DGBAS, CBC and JCIC.

**Chart 2.36 Household indebtedness and debt servicing ratios**



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

**Chart 2.37 Unemployment rate and regular earnings**



Source: DGBAS.

<sup>47</sup> Total disposable income = disposable income + rental expenses + interest expenses.

continuously dropped to 0.23% at the end of 2014, touching a 15-year low (Chart 2.38). The main reason behind this was that NPLs for loans to purchase real estate steadily contracted during the year. This indicated that household credit quality remained satisfactory.

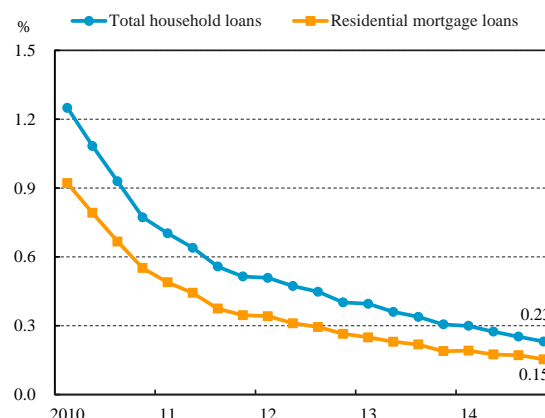
### 2.3.3 Real estate market

From 2014 onwards, trading volume in the real estate market contracted. The house price in some areas showed signs of a slight decline but remained high. In addition, real estate loans grew slowly as mortgage interest rates rose slightly. The CBC continuously implemented targeted prudential measures and reminded borrowers to pay attention to the risk of interest rate fluctuations, while the government carried out several measures, including levying a consolidated housing and land tax based on the market price. All the above-mentioned measures helped promote sound development of the real estate market.

#### Trading volume in the real estate market contracted

In 2014, housing market sentiment turned conservative and trading volume in the real estate market showed double-digit negative growth from Q2, owing to the government expanding the scope of tax audits, strengthening the regulation of non-first-time house-purchase loans, increasing the tax burden on high-priced house owners and people who own multiple houses, and proposing to levy a consolidated housing and land tax based on the market price. In Q4, the total number of building ownership transfers for transaction declined to 79.5 thousand units, decreasing by 17.30% year on year (Chart 2.39). The accumulated number of transfers for transaction was 320 thousand units in 2014, with an annual growth rate of -13.79%.

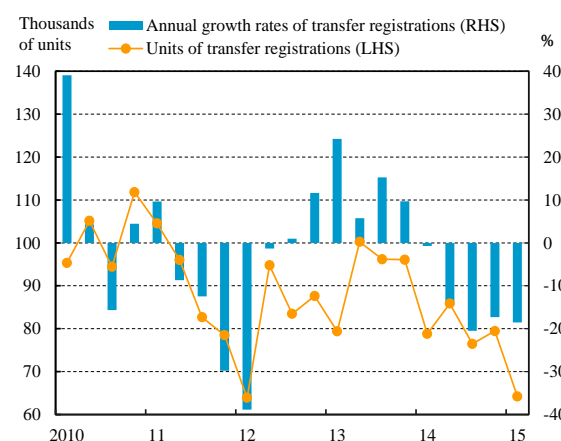
Chart 2.38 NPL ratios of household borrowing



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

Source: JCIC.

Chart 2.39 Building ownership registrations for transaction



Source: Monthly Bulletin of Interior Statistics, MOI.

Among the six metropolitan areas,<sup>48</sup> New Taipei City registered the greatest year-on-year decrease of 25.04%, while the others saw year-on-year decreases of over 10%.

In 2015 Q1, the total number of building ownership transfers for transaction further decreased, with an annual growth rate of -18.55%. Among the six metropolitan areas, New Taipei City registered the greatest year-on-year decrease of -25.15%, followed by Taipei City with -21.13%.

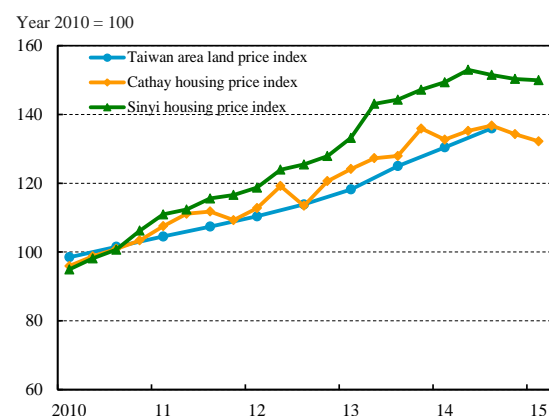
### Real estate prices declined slightly

In 2014, driven by a contracted housing market, housing prices fell moderately. Over the same period, land prices trended up as the land price index recorded an annual growth rate of 8.77% as of the end of September 2014<sup>49</sup> (Chart 2.40).

The Cathay housing price index (for new constructions) rose with a gradually narrowing trend. In 2014 Q4, the housing price index for Taiwan turned to decline, with an annual growth rate of -1.20%. The average annual growth rate in 2014 registered 4.67%, lower than 10.62% a year earlier. The average annual growth rates in Taipei and New Taipei City were -0.46% and -5.46%, respectively. In 2015 Q1, the annual growth rate was -0.38%.

The Sinyi housing price index (for existing buildings) also fell in 2014 Q3, while the annual growth rate contracted to 2.12% in Q4. The average increase registered 6.55% in 2014, lower than 14.43% a year earlier. Among the metropolitan areas, New Taipei City and Kaohsiung City registered greater increases, but Taipei City saw a fall in Q4. In 2015 Q1, the annual growth rate decreased to 0.38%, while both New Taipei City and Taoyuan City reversed to trend downwards.

**Chart 2.40 Land and house price indices**



Notes: 1. Taiwan area land price index is released semiannually. Figures are as of the end of March and September.

2. For comparison purposes, all the three indices use the same base year of 2010 (2010 average=100).

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

<sup>48</sup> Refers to New Taipei City, Taipei City, Taoyuan City, Taichung City, Tainan City, and Kaohsiung City.

<sup>49</sup> The land price index was 115.04 as the Ministry of Interior re-designated 31 March 2013 as the base period (index=100).

### Mortgage burden remained heavy

In 2014, since housing prices stayed high and mortgage interest rates rose slightly, the mortgage burden ratio for Taiwan increased quarter by quarter from Q2 and registered 35.61% in Q4. The house price to income ratio during the same period was 8.41 (Chart 2.41). Among them, the mortgage burden and house price to income ratios in Taipei City were the highest, reaching 66.59% and 15.73, respectively.

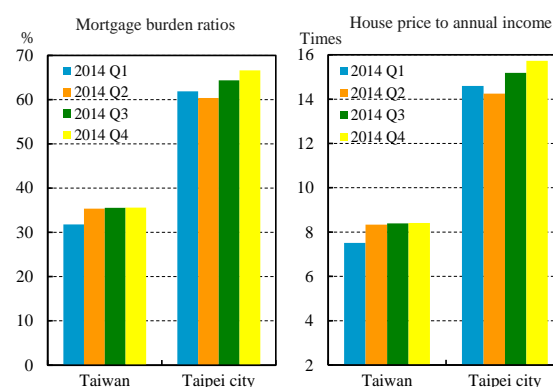
### Construction license permits contracted, while new residential properties construction expanded

In 2014, the economy grew gradually, enterprises increased their demand for floor space to launch new stores and expand plant capacity. However, the total floor space of construction license permits decreased by 2.83% year on year, with residential properties decreasing by 12.53%, owing to a decrease in new residential properties construction projects. In 2015 Q1, the annual growth rate of the total floor space of construction license permits decreased to -13.38%, with residential properties decreasing to -20.25%.

Additionally, the total floor space of usage permits increased continuously in 2014 (Chart 2.42) and the annual growth rate was 10.24%, because of residential properties increasing by 7.23%. In 2015 Q1, the annual growth rate of the total floor space of usage permits registered 0.92%, with the growth rate of residential properties reaching 8.19%.

Moreover, the number of vacant residential properties was 1.43 million units in 2014, estimated by the number of units consuming less electricity than the minimum service charge

**Chart 2.41 Mortgage burden ratios and house price to income ratios**

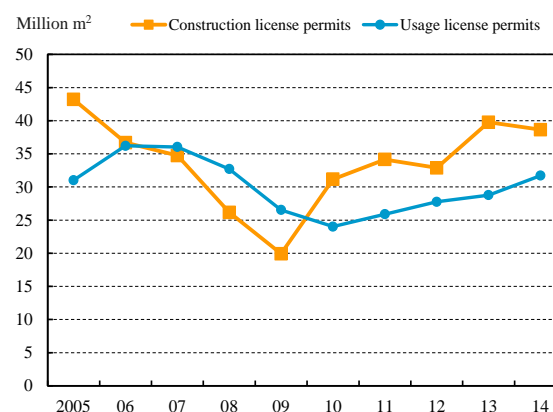


Notes: 1. Mortgage burden ratio = median housing loans monthly payments / median household monthly disposable income.

2. House price to annual income = median house price / median household annual disposable income.

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

**Chart 2.42 Floor space of construction license permits and usage license permits**



Source: Monthly Bulletin of Interior Statistics, MOI.

from the Taiwan Power Company (Chart 2.43).

**Real estate loans grew modestly as mortgage interest rates gradually increased**

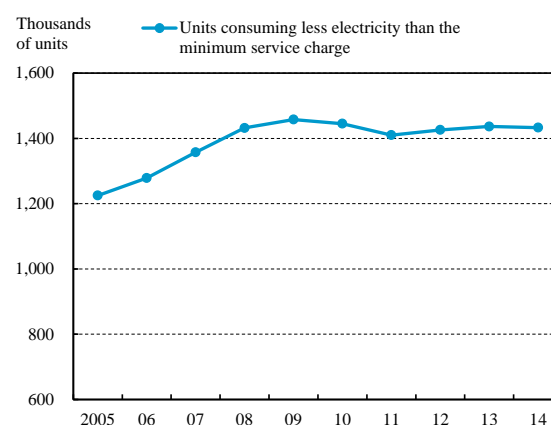
From June 2014 onwards, house-purchase loans grew slowly, owing to the CBC and the FSC continuously strengthening risk management regarding the real estate loans of financial institutions. At the end of March 2015, the outstanding loans for house purchases and house refurbishments granted by banks<sup>50</sup> reached NT\$6.11 trillion, with an annual growth rate of 2.44%. Meanwhile, outstanding construction loans reached NT\$1.64 trillion, with an annual growth rate of 6.52% (Chart 2.44).

The new loans for house purchases granted by the five large banks<sup>51</sup> decreased by 6.89% year on year to NT\$502.4 billion in 2014. In 2015 Q1, they continued to significantly decrease by 30.07% year on year. As for the interest rate for new mortgages, it gradually increased but remained at a low level. In March 2015, it reached 1.99% (Chart 2.45).

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

In 2014, the CBC continuously deployed

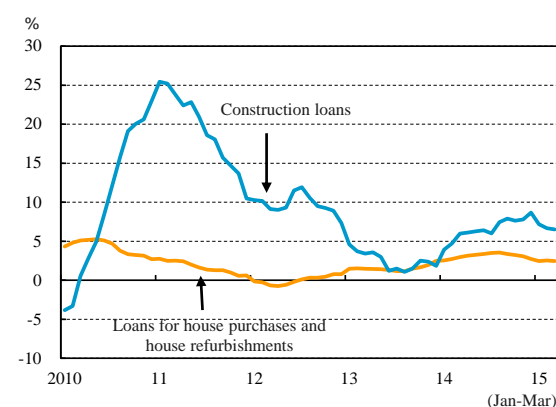
**Chart 2.43 Estimated units of vacant houses**



Note: The number of units consuming less electricity than the minimum service charge is monthly average within the current year.

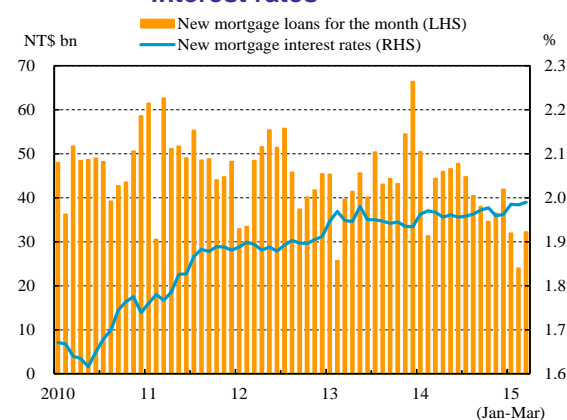
Source: Taiwan Power Company.

**Chart 2.44 Annual growth rates of real estate loans**



Source: CBC.

**Chart 2.45 New mortgages – amounts and interest rates**



Source: CBC.

<sup>50</sup> Refers to domestic banks and the local branches of foreign and Mainland Chinese banks.

<sup>51</sup> The five large banks refer to Bank of Taiwan, Taiwan Cooperative Bank, First Commercial Bank, Hua Nan Commercial Bank, and Land Bank of Taiwan.

measures to enhance risk management regarding the real estate loans of financial institutions. In June, for the purpose of further strengthening risk management regarding housing mortgages, the CBC expanded the scope of stipulated Specific Areas, revised the definition of high-value housing, introduced the regulation on third or more house-purchase loans taken out by a single borrower and lowered the loan-to-value (LTV) ratio ceiling on loans for high-value house purchases and house-purchase loans taken out by corporate legal entities.

With the gradual exit from QE in the US, the market expects interest rates will reverse to move upwards in the future. The CBC has repeatedly alerted borrowers to pay attention to the risk of interest rate fluctuations.

In addition, since the CBC urged banks to prudently conduct the business of industrial land collateralized loans in order to strengthen risk management on December 23, 2013, most banks have complied with the principles the CBC suggested. On February 4, 2015, the CBC invited related institutions and principal banks once again to discuss the above-mentioned issues, and reached a consensus about implementing more rigorous self-restraint measures on land collateralized loans in idle industrial zones.

Since the CBC implemented the aforementioned targeted prudential measures, both the concentration of real estate loans and LTV ratios of banks have fallen, helping the sound operations of banks and promoting financial stability (Box 3). Such measures, together with the government facilitating tax reforms by levying a consolidated housing and land tax based on the market price, strengthening of tax audits on real estate transactions, expanding the units of social housing and rental subsidized housing and continuously improving the property transaction price registration system, have been favorable for the sound development of the real estate market.

**Box 3****The effectiveness of the CBC's macro-prudential measures on real estate loans**

In view of banks' credit portfolios being over-concentrated on real estate loans, specifically newly extended housing loans in metropolitan Taipei during the second half of 2009, which undermined banks' credit risk management, the CBC conducted moral suasion in October 2009 to urge banks to extend real estate loans in a more prudent manner. Furthermore, the CBC has introduced a series of targeted prudential measures for real estate lending since June 2010 (Table B3.1), aiming to further enhance banks' risk management on real estate loans.

**Table B3.1 The CBC's targeted macro-prudential measures on real estate lending**

Year/month	Measures	Contents of the measures
2010/6	Enacting the regulations governing house-purchase loans in Specific Areas	1. Applying to second or more house-purchase loans for home purchases in Specific Areas, including Taipei City and ten districts in New Taipei City. 2. Capping the loan-to-value (LTV) ratios at 70% and removing the grace period.
2010/12	1. Expanding the scope of Specific Areas	Expanding the scope of Specific Areas to include three more districts in New Taipei City, enlarging regulated entities to include corporates and lowering the LTV ratio cap to 60%.
	2. Regulating land collateralized loans	For the loans collateralized by residential or commercial land plots in urban planning districts, requiring borrowers to submit concrete construction projects, capping LTV ratios at 65% and requesting 10% of approved loans to be extended only after the construction commences.
2012/6	Enacting the guidelines governing loans for high-value house purchases	1. Defining high-value properties as: (1) located in Taipei City or New Taipei City valued at NT\$80 million or more; (2) located in other areas valued at NT\$50 million or more. 2. Capping LTV ratios of those loans at 60% and removing their grace period.
2013/3	Adopting self-discipline measures for house-purchase loans in districts outside Specific Areas	Requiring banks to exercise self-discipline for house-purchase loans in districts outside Specific Areas with considerable surges in housing prices.
2013/12	Adopting self-discipline measures for loans collateralized by industrial zone land	Urging banks to strengthen risk management on loans collateralized by industrial zone land, including: 1. Requiring borrowers to submit construction projects and related financial information. 2. Requiring borrowers to commit to writing that construction will commence on the collateralized land within a specific period. 3. Conducting post-loan-reviews to ensure the fulfillment of commitments by borrowers.
2014/6	Amending the regulations governing house-purchase loans in Specific Areas	1. Expanding the scope of Specific Areas to include four more districts in New Taipei City and four districts in Taoyuan County, and capping their LTV ratio at 60%. 2. Capping the LTV ratio at 50% for third or more



		<p>house-purchase loans by a single borrower across the country.</p> <p>3. Revising the definition of high-value housing to include residential properties valued at more than NT\$70 million in Taipei City, NT\$60 million in New Taipei City and NT\$40 million in other areas, and lowering their LTV ratio ceiling to 50%.</p> <p>4. Lowering the LTV ratio ceiling of house-purchase loans granted to corporate legal entities to 50% across the country.</p>
2015/2	Further enhancing self-discipline measures for land lending in idle industrial zones	<p>Inviting related competent authorities and main banks to discuss lending principles for idle industrial zone land, and reaching the following consensuses:</p> <p>1. For loans collateralized by idle industrial zone land stated in the Joint Credit Information Center's database:</p> <p>(1) Renewed loans or transferred loans: capping LTV ratio at 55% if the construction does not commence.</p> <p>(2) New loans: capping LTV ratio at 55% if borrowers fail to implement construction projects.</p> <p>2. For other land collateralized loans: continuing to implement self-discipline measures issued by the CBC in December 2013.</p> <p>3. Above-mentioned lending principles should be encompassed into internal credit procedures of banks and listed as the examination targets of financial authorities.</p>

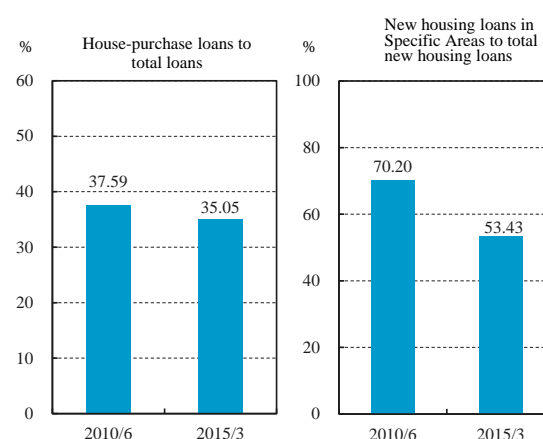
Source: CBC.

The aforesaid measures have already achieved the following results:

- **The concentration of banks' housing loans in Specific Areas has been addressed**

The ratio of house-purchase loans to total loans declined from 37.59% at the end of June 2010 to 35.05% at the end of March 2015. In addition, the ratio of new housing loans in Specific Areas to total new housing loans declined from 70.20% to 53.43% during the same period, showing that the concentration of housing loans in the banking system has been improved (Chart B3.1).

**Chart B3.1 Concentration of house-purchase loans**



Source: CBC.

- **The average LTV ratio of real estate loans has declined, while the average mortgage rate has risen gradually**

After the CBC implemented various targeted macro-prudential measures, the average LTV ratio of real estate loans has subsided and the average mortgage rate has risen gradually

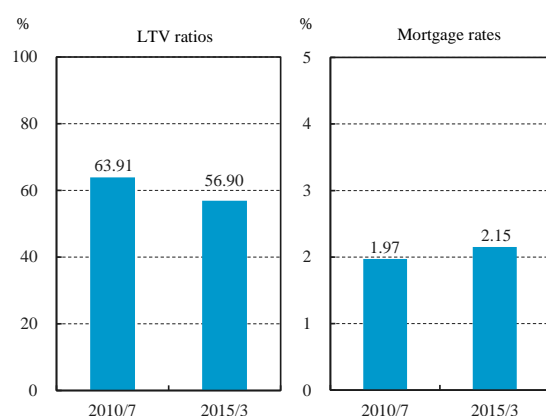


(Chart B3.2, B3.3 and B3.4).

● **The number of building ownership registrations for transaction in Taiwan has dropped**

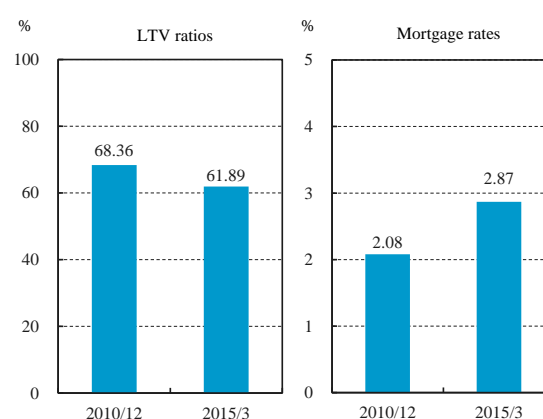
In 2014, the number of building ownership registrations for transaction in Taiwan was equivalent to those in the period of SARS during 2002 and 2003 (Chart B3.5), dropping by 13.8% year on year (Table B3.2). Moreover, the number slid down further in the first quarter of 2015,<sup>1</sup> indicating a depression of speculative transactions in the housing market.

**Chart B3.2 The LTV ratios and mortgage rates on new house-purchase loans in Specific Areas**



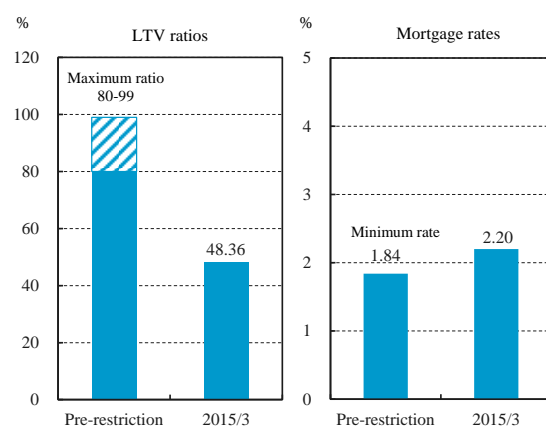
Source: CBC.

**Chart B3.3 The LTV ratios and mortgage rates on new land collateralized loans**



Source: CBC.

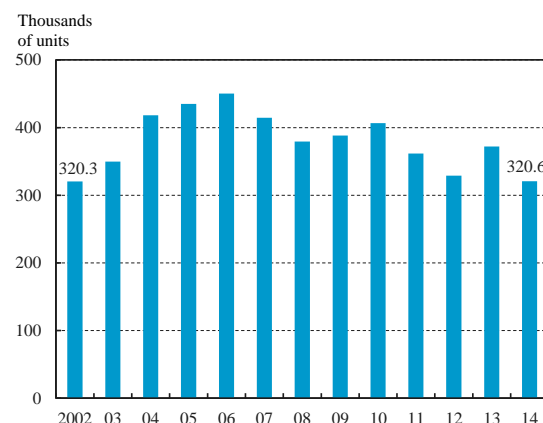
**Chart B3.4 The LTV ratios and mortgage rates of high-value house-purchase loans**



Note: The slashed square indicates the LTV ratios of loans for high-value house purchases were between 80% and 99%.

Source: CBC.

**Chart B3.5 Building ownership registrations for transaction in Taiwan**



Source: Monthly Bulletin of Interior Statistics, MOI.

**Table B3.2 Building ownership registrations for transaction in Taiwan and Specific Areas**

Unit : buildings

Area Year	Taiwan	Taipei City	New Taipei City	Taoyuan City	Taichung City	Tainan City	Kaohsiung City
2013	371,892	39,496	80,601	50,870	53,695	23,378	43,755
2014	320,598	32,023	60,416	43,662	47,887	20,552	38,815
Annual growth rate	-13.8%	-18.9%	-25.0%	-14.2%	-10.8%	-12.1%	-11.3%

Source: Monthly Bulletin of Interior Statistics, MOI.

Note: In the first quarter of 2015, the number of building ownership registrations for transaction in Taiwan was 64,190 buildings, 18.6% less than the same period of the previous year.

## III. Financial sector assessment

### 3.1 Financial markets

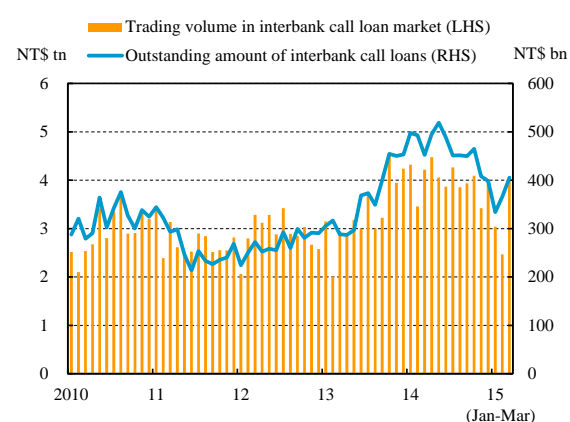
With respect to money and bond markets in 2014, the trading volume of interbank call loans initially expanded and then shrank. The trading volume of bills in the secondary market rose, although the outstanding amount in the primary market decreased slightly. In the bond market, the trading volume in the secondary market remained low, while the outstanding amount in the primary market continued to increase. Short-term market rates remained relatively stable at low levels, while long-term market rates fluctuated, closely following the movement of US government bond yields. With regard to the stock markets, stock indices trended up, while volatility fluctuated over the same period. In the foreign exchange market, the NT dollar exchange rate against the US dollar turned to depreciation after appreciating but remained relatively stable.

#### 3.1.1 Money and bond markets

##### *Trading volume of interbank call loans initially expanded but then decreased*

In the first half of 2014, the average daily outstanding amount and the trading volume of interbank call loans increased remarkably by 42.15% and 58.13% year on year, respectively. The main reasons behind this were continued funding surpluses in the interbank call loan market, significant variations in fund levels across banks, and a lower base in the previous year. In the second half of the year, the outstanding amount and trading volume of interbank call loans decreased as a number of financial institutions adjusted their funding strategies for call loans (e.g., taking into account capital

**Chart 3.1 Interbank call loan market**



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

adequacy). Later, the figures continued to stay low in January and February 2015, but turned higher in March of the same year (Chart 3.1).

**Bill issuance in the primary market slightly fell, but trading volume in the secondary market increased**

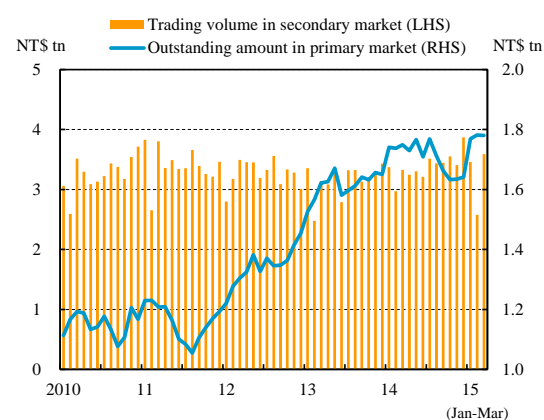
The outstanding amount of bill issuance at the end of 2014 fell by NT\$9 billion or 0.54% year on year. Affected by treasury liquidity management, the outstanding amount of treasury bills decreased by NT\$84.6 billion or 39.41%. Meanwhile, the outstanding amount of negotiable certificates of deposit (NCDs) also contracted by NT\$32.1 billion or 13.83%. On the contrary, the outstanding amount of commercial paper increased by NT\$107.6 billion or 8.98% compared to the previous year. The main reason behind this was that some state-owned enterprises (such as CPC Corporation) and large private enterprises raised funds through commercial paper issuance, encouraged by the fact that short-term market rates remained at low levels. In March 2015, the outstanding amount of bill issuance turned higher and reached a recent high record (Chart 3.2).

The trading volume in the secondary bill market rose by 7.72% year on year in 2014, as expanded issuance of commercial paper and ample market liquidity<sup>52</sup> met the increasing needs of financial institutions and private enterprises for bill investments. In 2015 Q1, the trading volume roughly remained at a high level, except for a decrease in February owing to seasonal factors (Chart 3.2).

**Bond issuance in the primary market expanded, but the turnover of outright transactions in the secondary market remained at a lower level**

At the end of 2014, the outstanding amount of bond issuance ascended by 14.80% year on year, with foreign currency-denominated international bonds<sup>53</sup> accounting for the highest growth of 12.75 times. The reasons were mainly that the FSC significantly simplified steps

**Chart 3.2 Primary and secondary bill markets**



Sources: CBC and FSC.

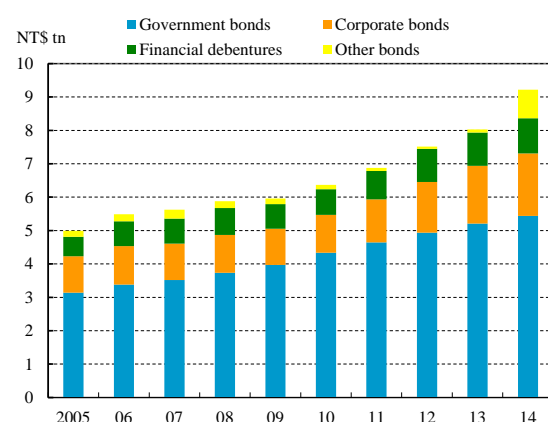
<sup>52</sup> The proportion of commercial paper to the total trading volume in the secondary bill market is over 80%. As a result, it has considerable influence on changes in the trading volume.

<sup>53</sup> Bonds denominated in foreign currencies offered and issued in Taiwan by domestic and overseas issuers are called "International Bonds". Bonds denominated in renminbi (RMB) are specifically called "Formosa bonds."

for issuing international bonds. It also relaxed related regulations, exempting the international bonds invested by insurers from the cap on their overseas investment from June onwards. These measures, in turn, attracted many domestic and foreign enterprises and financial institutions to issue international bonds for the purpose of fund raising. As for corporate bonds, the Fed's exit from its asset purchases and the expectation of the Fed's interest rate rise in near future spurred enterprises' willingness to issue more corporate bonds. As a result, the outstanding amount of corporate bond in 2014 increased by 8.01% over the previous year. Meanwhile, the outstanding amount of financial debentures also increased by 5.94% over the previous year as banks sought to reinforce capital adequacy and boost merger momentum. The corresponding figure for government bonds revealed a growth rate of 4.43% over the same period, a slight increase owing to ongoing policy implementation for regular and moderate issuance of government bonds (Chart 3.3).

In 2014, the risk for short swing trading increased, affected by the tapering of the Fed's asset purchases alongside an increase in the expectation of interest rate hikes. This, together with excessive concentration of bonds held in the market, resulted in a slight contraction in outright transactions in the secondary market throughout the year (Chart 3.4). In 2015 Q1, the monthly turnover ratio roughly remained flat after descending to a lower level of 5.71% in December 2014 (Chart 3.5).

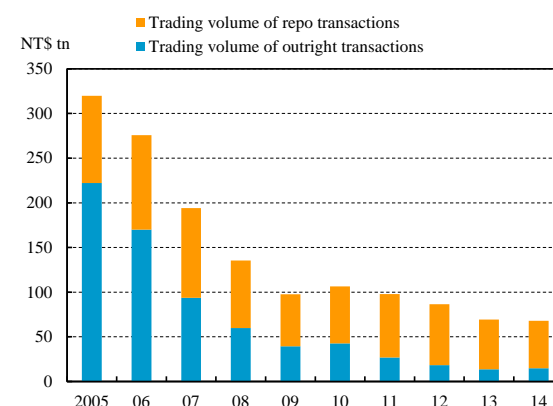
**Chart 3.3 Outstanding amount of bond issuance in the primary market**



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 9.3% at the end of 2014. Among them, international bonds accounted for 96.16% of the other bonds.

Source: FSC.

**Chart 3.4 Outright and repo transactions in the bond market**



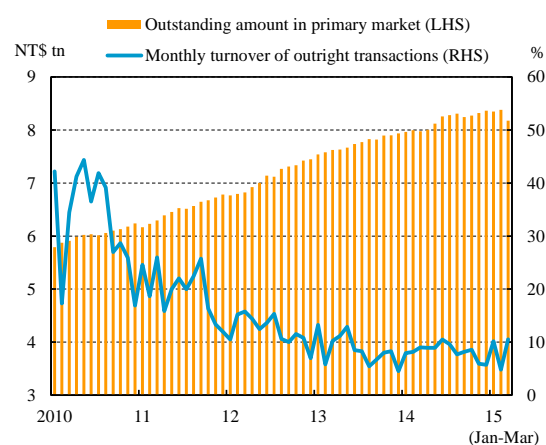
Source: CBC.

**Short-term market rates stabilized, while long-term market rates mostly fluctuated along with those of US government bonds**

As for short-term market rates, in 2014, the CBC's decision to keep policy rates unchanged, coupled with market liquidity standing at an appropriate level, helped the yield on 90-day commercial paper to remain broadly stable at around 0.83% in the first three quarters. However, in the fourth quarter, owing to seasonal factors, short-term market rates slightly rose. In 2015 Q1, the figure remained relatively stable within the lower range.

The trend of long-term market rates closely tracked the movement of US government bond yields. In 2014 Q1, international capital flowed into the US to hedge the risks of geopolitical tension in Ukraine. As a result, yield on Taiwan's 10-year government bonds dipped along with falling US government bond yields. Afterwards, the yield on Taiwan government bonds trended up and then fluctuated from June onwards owing to a marked recovery in the domestic economy. Furthermore, from the middle of September onwards, rising expectation of a Fed interest rate hike in near future drove up the yield on Taiwan government bonds. However, in 2014 Q4, a tumble in international oil prices alleviated inflationary pressures. This, coupled with bullish global bond markets in response to the successive implementation of monetary easing by several major economies, led to a drop in the yield on Taiwan government bonds. Subsequently, in 2015 Q1, the yield on Taiwan government bonds also went up and then dropped, tracking the movement of US government bond yields (Chart 3.6).

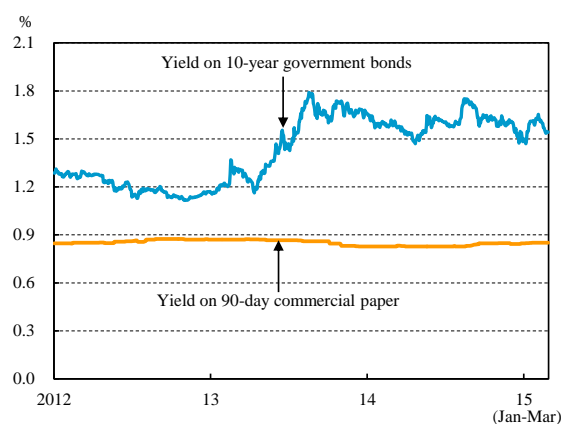
**Chart 3.5 Outstanding amount and turnover in primary bond market**



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**



Source: Bloomberg.

### 3.1.2 Equity markets

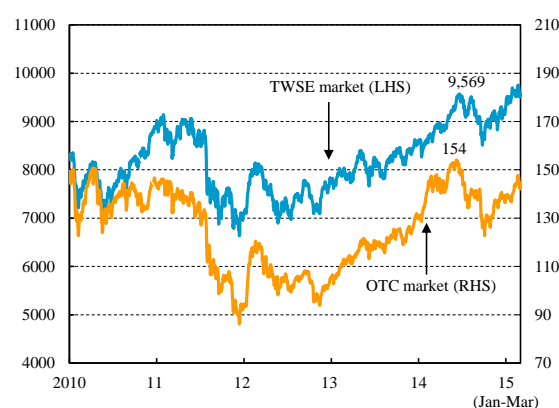
#### *Stock indices trended up gradually amid heavy volatility*

Both the TWSE and the OTC markets performed better in 2014 than in 2013. In the first half of 2014, spurred by global economic recovery, continuous revenue increases of the electronics industry, and the FSC's new measure to allow two-way day trading, juridical investors recorded net buying and led the TAIEX of the TWSE market on an upward path to hit a year high of 9,569 on 15 July. However, subdued by the Kaohsiung gas explosion incident and a series of food security scandals, the TAIEX dipped to 8,513 on 17 October. Afterwards, owing to the rise in US stock indices and net buying by foreign investors, the TAIEX rebounded and registered 9,307 at the end of 2014, an increase of 8.08% year on year. In early 2015, the FSC announced a program to boost securities markets, including easing the daily price up/down limit to 10%, and US stock indices kept hitting new highs during the same period. Against this backdrop, the TAIEX continued to trend up and reached 9,586 at end-March, increasing by 3.00% from the end of 2014 (Chart 3.7).

Taiwan's Taipei Exchange Capitalization Weighted Stock Index, the OTC market index, closely tracked the movements of the TAIEX, hitting an annual high of 154 in early July after trending up from the beginning of 2014, and closed at 140 at end-December, with an annual rise of 8.34%. The index climbed further in 2015 Q1 and reached 144 at the end of March (Chart 3.7).

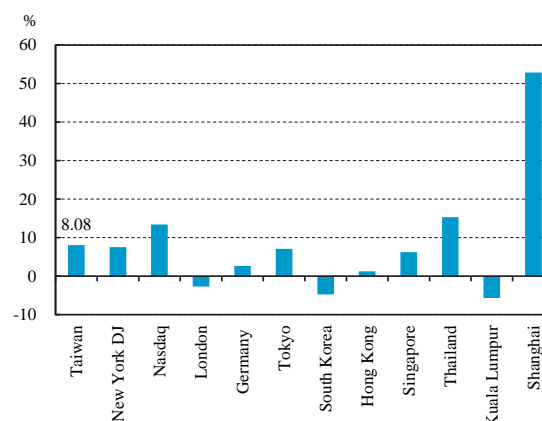
Comparing major stock markets around the world, most markets showed positive performances in 2014 except for the stock indices of London, South Korea and Kuala

**Chart 3.7 Taiwan's stock market indices**



Sources: TWSE and TPEx.

**Chart 3.8 Comparison of major stock market performances**



Notes: 1. Figures are for 2014.

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

Source: TWSE.

Lumpur, and the Shanghai Composite Index outperformed others with an annual rise of 52.87%. The TAIEX climbed by 8.08% year on year (Chart 3.8).

Broken down by sector, the index for the electronics industry in the TWSE market performed relatively well, thanks to robust demand growth in semiconductor, panel, and cellphone related products. The semiconductor industry index performed the best, with an annual rise of 29.63%.

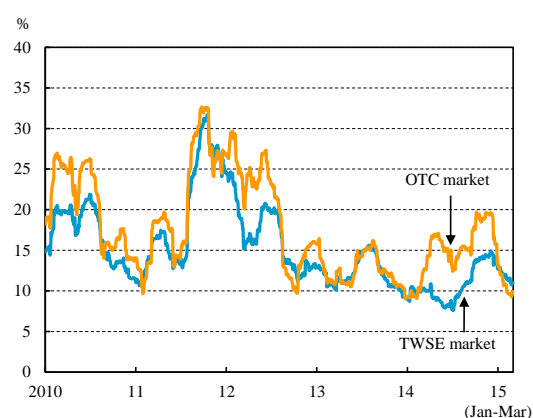
In 2014, volatility in the TWSE market amplified after an initial down trend, while that in the OTC market rose; volatility in those two markets stood at 14.51% and 18.94% respectively at the end of December. At the beginning of 2015, volatility in the TWSE and the OTC markets trended downward as the local stock indices rebounded and stabilized, standing at 10.99% and 9.91%, respectively, at the end of March (Chart 3.9).

**Annual turnover ratio expanded slightly in the TWSE market while that in the OTC market rose for the second consecutive year**

The TWSE market experienced an expansion in trading in 2014, with the average monthly trading value registering NT\$1.82 trillion, a rise of 15.61% year on year, while its turnover ratio in terms of trading value rebounded to 84.63%. However, trading in the OTC market showed a better performance. Its average monthly trading value reached NT\$530 billion in 2014, an increase of 57.68% year on year, and the annual turnover ratio continuously rose to 241.92% (Chart 3.10).

Comparing major stock markets around the world, the annual turnover ratios in Shanghai and

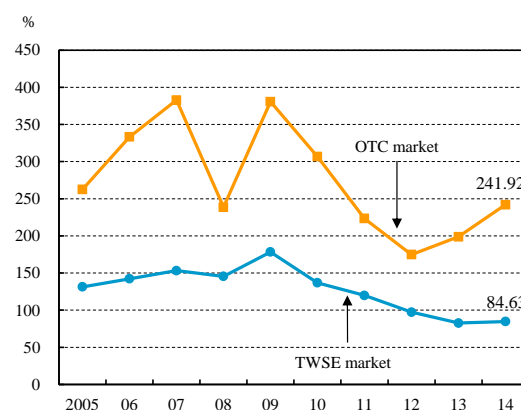
**Chart 3.9 Stock price volatility in Taiwan's markets**



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

Sources: TWSE, TPEx, and CBC.

**Chart 3.10 Annual turnover ratios in Taiwan's stock markets**



Sources: TWSE and TPEx.



Tokyo ranked among the highest in 2014, 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, Thailand and Kuala Lumpur (Chart 3.11).

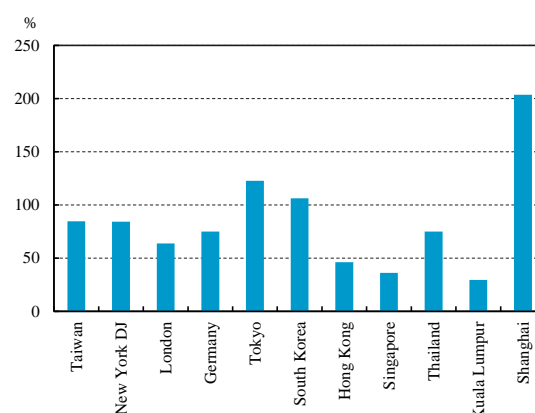
### 3.1.3 Foreign exchange market

#### *The NT dollar exchange rate reversed from appreciation to depreciation and the trading volume increased*

The NT dollar exchange rate appreciated against the US dollar since 2014 Q2, reaching a yearly high of 29.905 on 2 July, owing to an increase in net foreign capital inflows. Thereafter, the Fed ended its asset purchase program, known as QE, at the end of October and the ECB and the BOJ introduced further monetary easing, leading the US dollar to appreciate and the NT dollar exchange rate to hit a yearly low of 31.815 on 24 December. At the end of 2014, the NT dollar exchange rate reversed to appreciate marginally and stood at 31.718, with annual depreciation of 5.57%. In early 2015, the NT dollar exchange rate fluctuated within a narrow range and rose to 31.401 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 5.57% was higher than the Korean won's 3.26%, the Singapore dollar's 4.36% and renminbi's 2.42% in 2014. At the end of March 2015, the NT dollar appreciated slightly by 1.01% compared to the end of the previous year, while the Japanese yen, Korean won, Singapore dollar and Malaysian ringgit all displayed depreciating trends (Chart 3.13).

**Chart 3.11 Comparison of turnover ratios in major stock markets**

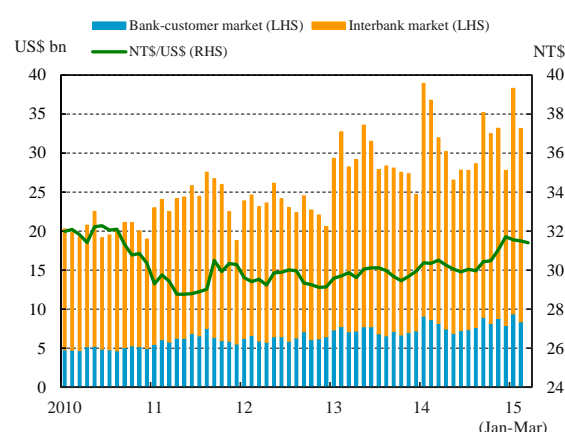


Notes: 1. Figures refer to accumulated turnover ratios in 2014.

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

Source: TWSE.

**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.

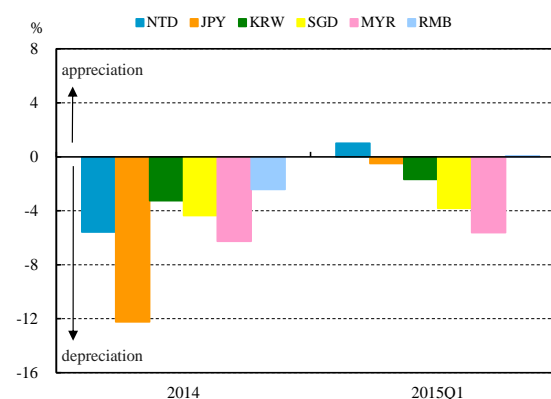
2. The latest data for trading volume is as of February 2015.

Source: CBC.

As for the NT dollar against other key international currencies, the Japanese yen continued to depreciate, so the NT dollar appreciated against the yen by 7.59% in 2014. Meanwhile, the NT dollar also appreciated by 7.10% and 0.29% against the euro and the British pound, respectively, but depreciated by 2.40% against the Korean won over the same period (Chart 3.14).

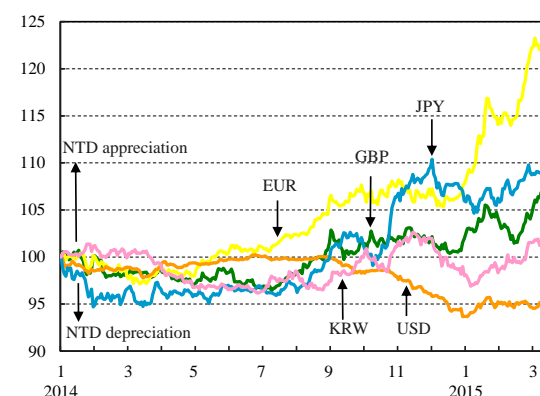
In 2014, owing to greater domestic and international capital movements, the transactions in the foreign exchange market became more active than a year earlier. The average daily trading volume of the foreign exchange market reached US\$31.5 billion, increasing by 8.27% compared to US\$29 billion a year earlier, primarily because 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 74.44% of the total in 2014, while the retail bank-customer market made up a 25.56% share. As for types of transactions, foreign exchange swaps accounted for the largest share of 42.78% of the total, followed by spot trading with 36.52%.

**Chart 3.13 Exchange rate changes of major Asian currencies against the US dollar**



Source: CBC.

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



Note: 2 January 2014 = 100.

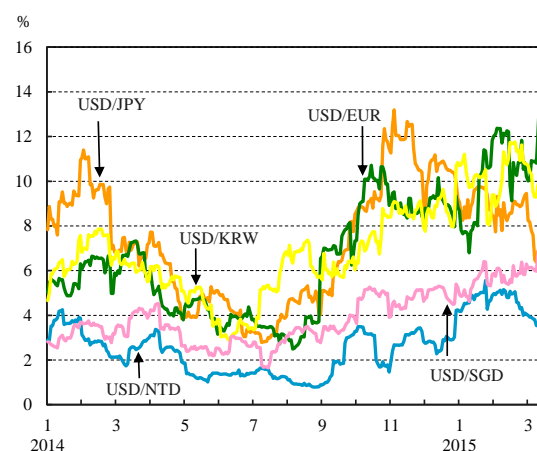
Source: CBC.

### **NT dollar exchange rate volatility remained relatively stable**

Volatility in the NT dollar exchange rate against the US dollar fluctuated between 0.79% and 4.25% in 2014, and registered an annual average of 2.22%. In early 2015, central banks in Europe, Mainland China and South Korea set off a wave of monetary policy easing and interest-rate reduction. In addition, the SNB's announcement to abandon the Swiss franc's cap against the euro, coupled with the introduction of negative interest rates in several

countries,<sup>54</sup> induced international capital inflows into Asia, leading to greater fluctuations in financial markets. Volatility in the NT dollar exchange rate against the US dollar was thus affected and rose to around 5%, before gradually trending downwards. From 2014 onwards, the NT dollar exchange rate was relatively stable compared to 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 3.15 Exchange rate volatility of various currencies versus the US dollar**



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

Source: CBC.

<sup>54</sup> ECB cut rates into negative territory in June 2014, followed by SNB and Sweden's Riksbank in January and February 2015, respectively.

**Box 4****Development and prospects of international bond market in Taiwan**

International bonds are foreign currency-denominated bonds issued in Taiwan by domestic and foreign issuers and listed on the Taipei Exchange, while those denominated in RMB are called Formosa bonds. International bond issuance helps domestic issuers to finance with foreign currencies, enhances the international competitiveness of Taiwan's financial industry by allowing foreign issuers to participate in local bond markets, and provides more investment opportunities for ample local liquidity. This box introduces the development and prospects of Taiwan's international bond market, as well as its potential impacts on local bond markets.

***1. The development of the international bond market***

The development of the international bond market can be divided into the following three stages:

**1.1 Initial stage (2006 - October 2012)**

- (1) Allowing qualified domestic and foreign corporations<sup>1</sup> to issue international bonds denominated in foreign currencies, except for RMB, subject to credit rating requirements of issuers or issued bonds and approvals from the FSC and the CBC.
- (2) In this stage, the aforementioned measures set the foundation of the international bond market.

**1.2 Warming-up stage (November 2012 - May 2014)**

- (1) Opening up Formosa bond issuance, setting up a cross-strait currency clearing mechanism, and permitting DBUs to conduct RMB business, and including RMB in the foreign currency clearing platform. All these measures opened a new era of Taiwan's offshore RMB market.
- (2) Implementing multi-tier regulation on international bond investors, which significantly relaxed requirements for foreign currency bonds sold to qualified institutional investors, such as issuer qualifications, issuance procedures and registration documentation. For bonds sold to the general public, related regulations remain the same to protect financial consumers.
- (3) Permitting certain Chinese corporations<sup>2</sup> to issue RMB-denominated corporate bonds in Taiwan that are only allowed to be sold to qualified institutional investors.

### 1.3 Flourishing stage (June 2014 - present)

- (1) Amending the *Insurance Law* on 4 June 2014 to exclude international bonds from overseas investment by insurance companies, which is subject to a ceiling of 45% of a company's fund.
- (2) Expanding the scope of eligible professional investors to enlarge the investor base. In addition to qualified institutional investors such as banks, securities firms and insurance companies, any corporate entity or individual that meets the requirements regarding financial strength or professional expertise<sup>3</sup> can also qualify as a professional investor to invest in international bonds.

## 2. Current conditions of the international bond market

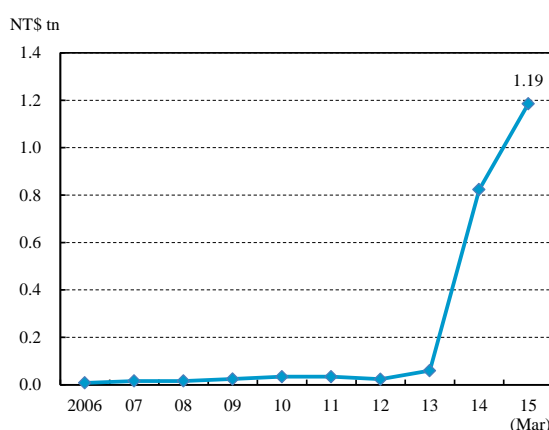
In recent years, the international bond market has become more active with tremendous growth in issuance and trading volume.

### 2.1 Primary market

Subject to the prevailing macroeconomic environment, related regulations and issuance procedures, the issuance of international bonds experienced six years of limited growth since 2006 (Chart B4.1). However, the market started to warm up in 2013 and showed an enormous expansion in 2014, with its issuance surpassing that of government bonds for the first time.

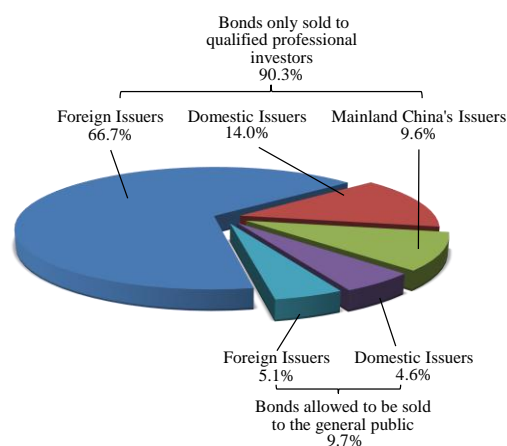
Further analysis of the market during the period from 2006 to March 2015 shows international bonds that were only sold to qualified professional investors accounted for 90.3% of total issuance, while those sold to the general public only accounted for 9.7% of the total

**Chart B4.1 International bond issuance in Taiwan**



Note: All currencies are converted into NTD.  
Source: FSC.

**Chart B4.2 Components of international bond market**



Note: Figures are from 2006 to March 2015.  
Source: CBC.

(Chart B4.2). As for the type of issuers, 71.8% of bonds were issued by foreign corporations, followed by 18.6% by domestic corporations, while bonds issued by Chinese banks only accounted for 9.6% because of their late entry to the market (Chart B4.2). Regarding type of investors, insurance companies were the largest investors in USD and RMB bonds, accounting for 93.1% and 44.8%, respectively, during the period from January 2014 to March 2015 (Table B4.1).

## 2.2 Secondary market

In recent years, the secondary market for international bonds shared the same trend with the primary market. Its trading volume reached NT\$698.3 billion in 2014, significantly growing by 22.3 times compared to its value in 2013 (Chart B4.3).

## 3. The effects of international bond issuance on the local government bond market

The recent takeoff of international bond issuance indicates great progress in Taiwan's bond market. However, its massive issuance might have adverse impacts to some degree on the local government bond market.

### 3.1 The investments of insurance companies gradually shifted from government bonds to international bonds

Because USD-denominated long-term international bonds have higher yields than local government bonds with the same maturity, coupled with the exclusion of international bond investments from the regulatory foreign investment ceiling, insurance companies

**Table B4.1 International bond issuance by investor type**

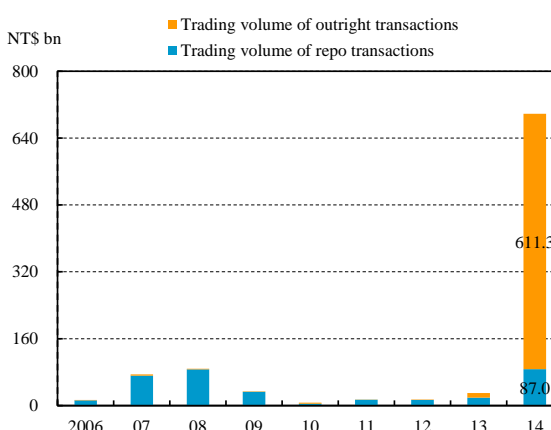
Investors		Insurance companies	Banks	Securities firms	Foreign enterprises	Others	Total
Currencies	US\$ bn	27.7	0.3	0.2	0.8	0.8	29.8
	%	93.1	1.0	0.8	2.6	2.5	100.0
CNY	RMB bn	14.6	9.1	5.9	1.7	1.3	32.6
	%	44.8	27.8	18.0	5.3	4.1	100.0

Notes: 1. Figures are from January 2014 to March 2015.

2. Figures for USD denominated bonds exclude US\$0.3 billion of convertible bonds.

Source: CBC.

**Chart B4.3 Trading volume of international bond market**



Note: All currencies are converted into NTD.

Source: FSC.

increased their investments in international bonds and became the largest investors in the market (Table B4.1). Conversely, the ratios of government bond bidding and holding by insurance companies gradually diminished.

### **3.2 The bidding willingness of government bond dealers might be affected**

The relatively high yields of international bonds could undermine the bidding willingness of government bond dealers. For example, the ratio of bidding to auction amount of 20-year long-term government bonds saw a decreasing trend from September 2014 onwards.

### **4. Future prospects and possible actions**

- (1) As foreign issuers remain interested in issuing Formosa bonds in Taiwan, it is expected that the international bond market still has room to grow, depending on the policy of total issuance limitation on Formosa bonds set by the financial authority.
- (2) Considering the opaque financial statements of Chinese private corporations, the financial authority should take prudent measures on the issuing of Formosa bonds in Taiwan, as well as enhancing financial transparency of those corporations and conducting related risk controls.
- (3) International bond issuance could provide more business opportunities for domestic financial industry. Nevertheless, its impacts on the local government bond market warrant close attention.

Notes: 1. Foreign issuers should meet certain qualifications, such as being listed corporations and branches or subsidiaries of foreign banks.

2. They include state policy banks, state-owned commercial banks and joint stock commercial banks, as well as their overseas branches and subsidiaries.

3. This refers to corporations and funds with assets over NT\$50 million, or individuals with assets over NT\$30 million and sufficient financial knowledge and trading experiences.

Sources: 1. Kao Chin-yi (2013), *The development opportunities and prospect of international bond market in Taiwan*, Securities and Futures Monthly, August.

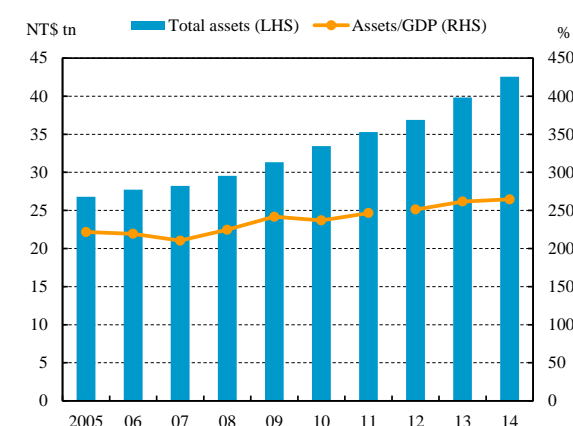
2. Zhou Zi-Fu and Zeng Bao-Ci (2013), *The development and prospect of Formosa Bonds*, Securities and Futures Monthly, August.

## 3.2 Financial institutions

### 3.2.1 Domestic banks

In 2014, the total assets of domestic banks<sup>55</sup> accumulated continuously mainly because of increasing loans. Asset quality improved and the sector concentration of corporate loans declined continuously. The concentration of credit exposure in real estate loans remained broadly unchanged; nevertheless, the trading volume of real estate contracted and the price of real estate gradually decreased. Banks should take prudent actions to address potentially mounting credit risks. The estimated VaR of overall market risk exposures of domestic banks rose but had limited influence on their capital adequacy. Moreover, liquidity risk was moderate thanks to ample liquidity in the banking system. The profitability of domestic banks reached a record high in 2014, while the average capital adequacy ratio also rose. This revealed that the capacity of domestic banks to bear losses was satisfactory.

**Chart 3.16 Total assets of domestic banks**



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

### *Total assets increased continually*

The total assets of domestic banks kept increasing and reached NT\$42.56 trillion at the end of 2014, equivalent to 264.62% of annual GDP (Chart 3.16). The annual growth rate of total assets decreased slightly to 6.86% from 7.95% a year earlier.

### *Credit risk*

#### *Customer loans saw stable growth*

In 2014, customer loans were the major source of credit risk for domestic banks. Outstanding loans of their domestic banking units (DBUs)<sup>56</sup> stood at NT\$21.11 trillion at the end of 2014,

<sup>55</sup> The 40 domestic banks referred to in this section include the Agricultural Bank of Taiwan.

<sup>56</sup> The term “domestic banking units” 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.



accounting for 49.59% of total assets, with the annual growth rate increasing to 3.89% from 2.90% a year earlier (Chart 3.17).

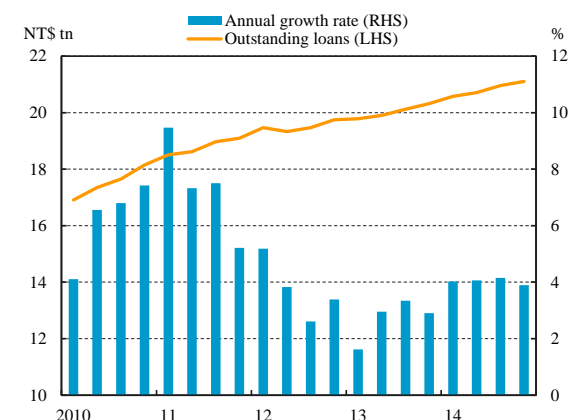
In terms of borrowers of loans extended by domestic banks' DBUs, at the end of 2014, the annual growth rate of corporate loans increased slightly to 3.1% from 2.51% a year earlier, and the annual growth rate of individual loans recorded 5.93%, which was about the same as the previous year. The annual growth rate of loans to government agencies was -2.64%, because an increase in government tax revenues and the outstandings of government bond issuance<sup>57</sup> caused a decrease in demand for bank borrowing.

***Concentration of credit exposure in real estate loans held steady, but the ratio of real estate-secured credit ascended***

Outstanding real estate loans<sup>58</sup> granted by DBUs of domestic banks amounted to NT\$7.73 trillion, accounting for 36.58% of total loans at the end of 2014. The ratio held steady, about the same as in the previous year.

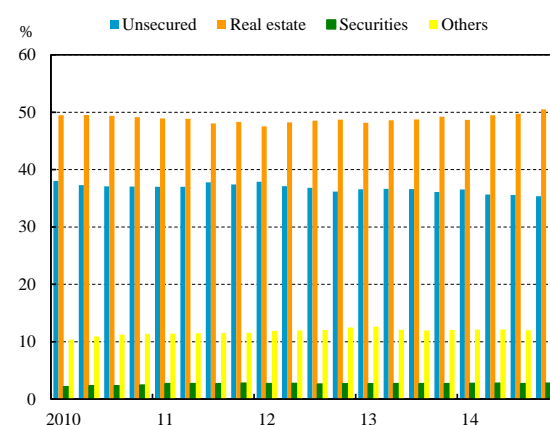
Because the government continuously implemented targeted prudential measures toward real estate loans and banks' loan policy turned more conservative in recent years, the concentration of credit exposure in real estate loans has gradually improved compared to the 38.66% figure recorded at the end of June 2010. However, the total real estate-secured credit granted by domestic banks reached NT\$13.25 trillion, accounting for 50.48% of total credit,<sup>59</sup> an increase of 1.28 percentage points over the previous year (Chart 3.18).

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



Source: CBC.

**Chart 3.18 Credit by type of collateral in domestic banks**



Note: End-of-period figures.

Source: CBC.

<sup>57</sup> Total net tax revenues and outstanding of government bonds in 2014 increased by NT\$142.0 billion (7.74%) and NT\$230.7 billion (4.43%), respectively, over the previous year.

<sup>58</sup> The term "real estate loans" herein refers to house-purchase loans, house-refurbishment loans and construction loans.

<sup>59</sup> The term "credit" herein includes loans, guarantee payments receivable and acceptances receivable.

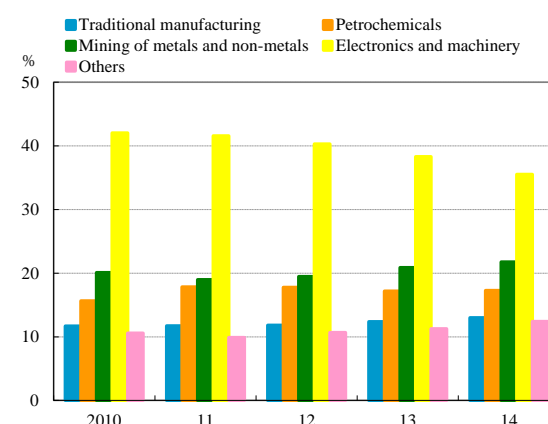
With the trading volume of real estate contracting, as well as emerging signs of a slight decline in house prices, banks should cautiously adjust their loan policy and strengthen risk control mechanisms to address potentially mounting credit risks.

### *Credit concentration of corporate loans continually declined*

Outstanding corporate loans of DBUs of domestic banks stood at NT\$9.35 trillion at the end of 2014, while loans to the manufacturing sector registered NT\$3.85 trillion and accounted for the largest share of 41.20% of the total. Within the manufacturing sector,<sup>60</sup> the largest proportion of loans was for the electronics industry, which stood at NT\$1.37 trillion and accounted for 35.53% of the total loans to the whole manufacturing sector. However, in recent years, the ratio has gradually declined (Chart 3.19), and the credit concentration of corporate loans has decreased.

Outstanding corporate loans to small and medium enterprises (SMEs) by domestic banks steadily expanded to NT\$5.19 trillion at the end of 2014, increasing by NT\$408.2 billion or 8.54% over the previous year (Chart 3.20). The ratio of these loans to outstanding corporate loans has also ascended each year and reached a ten-year high of 55.49% at the end of 2014, indicating good results as banks expanded SME lending in line with government policy while ensuring proper risk control. Along with 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 by 4.30% from year-end 2013 to reach NT\$867.9 billion at the end of 2014, and the guarantee coverage ratio

**Chart 3.19 Exposure to the manufacturing sector by domestic banks**

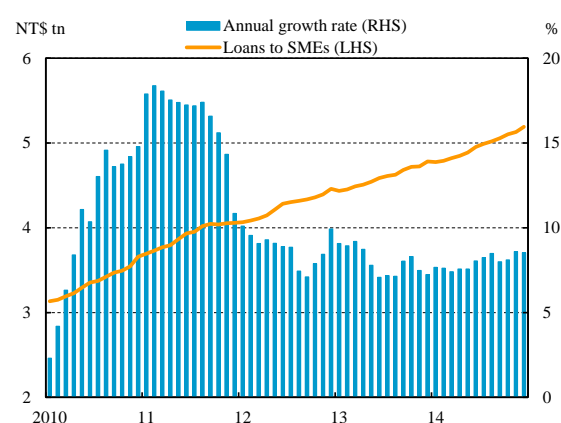


Notes: 1. End-of-period figures.

2. Exposure to each sector = loans to each sector / loans to the whole manufacturing sector.

Source: CBC.

**Chart 3.20 Loans to SMEs by domestic banks**



Source: CBC.

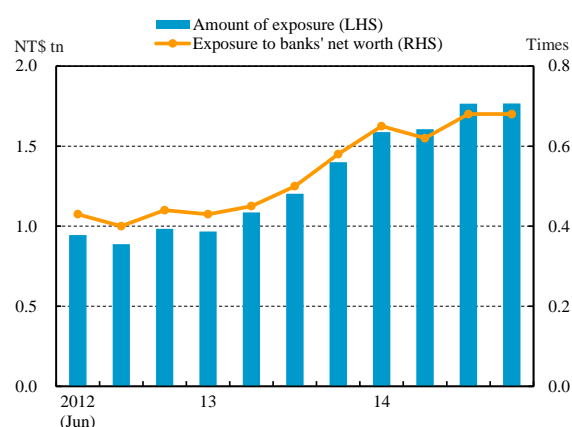
<sup>60</sup> Loans to the manufacturing sector are divided into five categories by industry, including: (1) electronics, (2) mining of metals and non-metals, (3) petrochemicals, (4) traditional manufacturing, and (5) others.

also increased to 78.75%. These statistics all point to the favorable conditions for SMEs to acquire necessary funds.

***Exposure to Mainland China grew continually in the first three quarters, but turned to decline in the fourth quarter***

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, and interbank loans/deposits (hereafter statutory exposure)<sup>61</sup> extended by a domestic bank to customers in Mainland China should not exceed 100% of the bank's net worth as of the end of the preceding fiscal year. In the first three quarters of 2014, the aggregate amount of such exposure of all domestic banks continuously increased, but reversed to a decline in the fourth quarter. At the end of 2014, the aggregate amount stood at NT\$1.77 trillion, or 68% as a percentage of banks' net worth, higher than 58% a year earlier (Chart 3.21). However, it was still within the statutory limit and no domestic bank exceeded the limit.

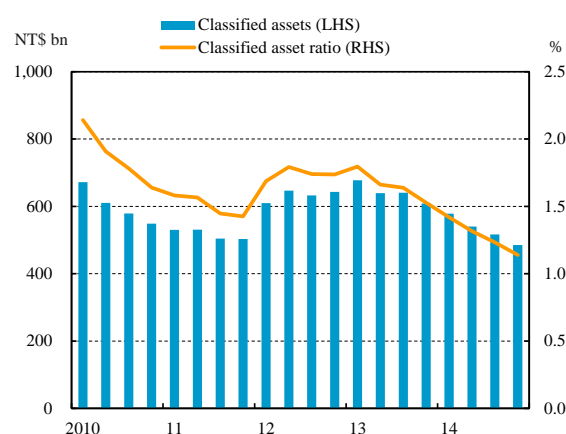
**Chart 3.21 Exposure to Mainland China by domestic banks**



Note: FSC implemented calculation method of statutory exposure in Mainland area since April 2012.

Source: CBC.

**Chart 3.22 Classified assets of domestic banks**



Note: Classified asset ratio = classified assets / total assets.

Source: CBC.

In addition to reinforcing target examination and risk control practices for credit exposure of domestic banks to customers in Mainland China, the FSC implemented the following measures in response to increasing credit risks in recent years:<sup>62</sup> (1) strengthening due

<sup>61</sup> Statutory exposure refers to aggregate exposure, but excludes: (1) short-term trade financing within one year; (2) credits and investments backed by guarantees or collateral which are fully secured outside Mainland China. Moreover, specific interbank loans/deposits with remaining maturity less than three months and the underlying counterparty rated at investment-grade are weighted with 20% of the aggregate amount of exposures.

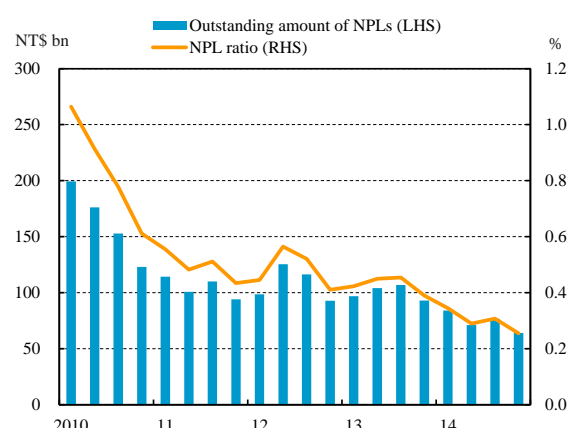
<sup>62</sup> The balance of NPLs and NPL ratio of Mainland Chinese commercial banks kept growing. Furthermore, several Mainland Chinese enterprises defaulted in the second half of 2014.

deligence audits on transaction authenticity of short-term trade financing by domestic banks, which is exempted from the statutory exposures; (2) bringing the full amount of interbank loans/deposits into the calculation of the statutory exposure limit in Mainland China, because such short-term interbank loans/deposits are shorter than three months but are expected to be extended after they are due, causing the loans/deposits period to exceed three months; and (3) requiring domestic banks to meet the requirement that minimum loan loss provisions and guaranteed reserves shall be at least 1.5% of the outstanding credit to customers in Mainland China by the end of 2015. Accordingly, domestic banks should cautiously monitor economic and financial conditions in Mainland China, as well as prudently controlling their exposures to customers in Mainland China.

### *Asset quality improved continuously*

Outstanding classified assets<sup>63</sup> and the average classified asset ratio of domestic banks stood at NT\$485.0 billion and 1.14% at the end of 2014, decreasing by 20.29% and 0.39 percentage points, respectively, over the previous year (Chart 3.22). Meanwhile, expected losses of classified assets<sup>64</sup> also contracted by NT\$26.7 billion or 33.23% from a year earlier to NT\$53.6 billion, while the ratio of expected losses to loan loss provisions was only 14.49%, indicating sufficient provisions to cover expected losses.

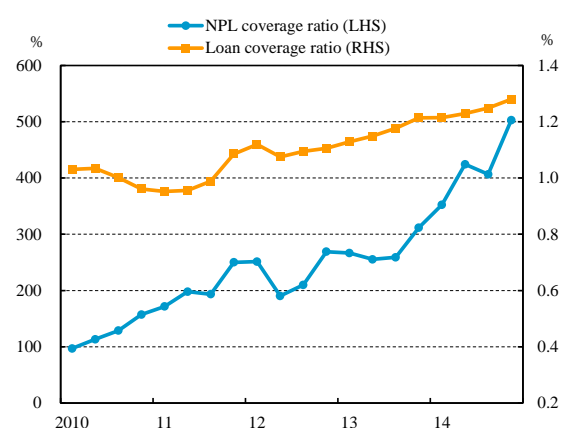
**Chart 3.23 NPL ratio of domestic banks**



Note: Excludes interbank loans.

Source: CBC.

**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.

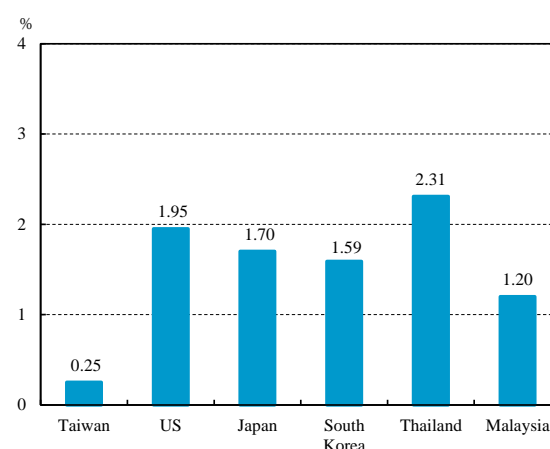
Source: CBC.

<sup>63</sup> 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.

<sup>64</sup> Loss herein refers to the losses from loans, acceptances, guarantees, credit cards, and factoring without recourse.

The outstanding NPLs of domestic banks registered NT\$64.0 billion at the end of 2014, decreasing by 31.15% year on year, owing to write-offs and retrieval of NPLs. The average NPL ratio fell to a record low of 0.25% (Chart 3.23). With the decrease in NPLs and the increase in provisions, the NPL coverage ratio and the loan coverage ratio rose to 502.87% and 1.28%, respectively, at the end of 2014 (Chart 3.24). Among the 40 domestic banks, all had NPL ratios of less than 1%, except for one with a ratio between 1% and 1.5%, at the end of 2014. Compared to the US and neighboring Asian countries, the average NPL ratio of domestic banks in Taiwan was much lower (Chart 3.25).

**Chart 3.25 NPL ratios of banks in selected countries**



Note: Figures for Japan and South Korea are end-September 2014 data, while the others are end-December 2014 data.  
Sources: CBC, FDIC, FSA, FSS, BOT and BNM.

## 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 at the end of 2014, followed by the net positions of equity securities and of foreign exchange. Using market data as of March 2015, the estimated total VaR calculated by the CBC's market risk model<sup>65</sup> for foreign exchange, interest rate and equity exposures of domestic banks stood at NT\$291.8 billion at the end of 2014, ascending by NT\$28.1 billion or 10.66% compared to the figure a year earlier. Among market risks, interest rate VaR increased by 7.59% as the yields on Taiwan's government bonds trended upward, following a rise in US government bond yields supported by better performance of the economy and improved employment as well as the Fed's QE exit. Equity and foreign exchange VaRs also increased owing to a rise in the volatility of the stock and foreign exchange markets caused by the divergence in the monetary policies of advanced countries (Table 3.1).

<sup>65</sup> 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 27 March 2015).

**Table 3.1 Market risks of domestic banks**

Unit: NT\$ bn

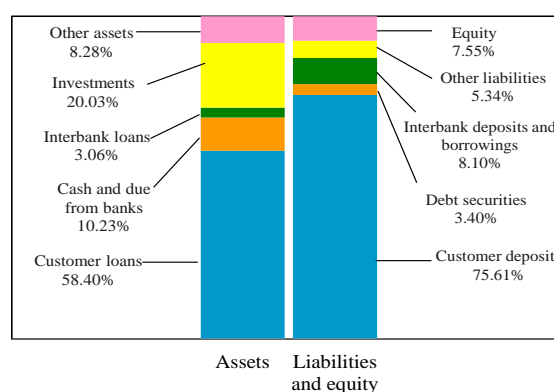
Types of risk	Items	End-Dec. 2013	End-Dec. 2014	Changes	
				Amount	PP ; %
Foreign exchange	Net position	79.9	78.4	-1.5	-1.88
	VaR	1.6	2.3	0.7	43.75
	VaR / net position (%)	2.00	2.93		0.93
Interest rate	Net position	6,723.7	7,033.2	309.5	4.60
	VaR	237.2	255.2	18.0	7.59
	VaR / net position (%)	3.53	3.63		0.10
Equities	Net position	597.4	709.2	111.8	18.71
	VaR	24.9	34.3	9.4	37.75
	VaR / net position (%)	4.17	4.84		0.67
Total VaR		263.7	291.8	28.1	10.66

Note: PP = percentage point.

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 1.21 percentage points in the average capital adequacy ratio of domestic banks and induce a drop in the ratio from the current 12.34% to 11.13%. Nevertheless, it would still be higher than the statutory minimum of 8%.

**Chart 3.26 Asset/liability structure of domestic banks**

Notes: 1. Figures are as of end-December 2014.

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

Source: CBC.

## **Liquidity risk**

### *Liquidity in the banking system remained ample*

The structure of assets and liabilities for domestic banks roughly remained unchanged in 2014. As for the sources of funds, relatively stable customer deposits still made up the largest share of 75.61% of the total, followed by interbank deposits and borrowings at 8.10%, while

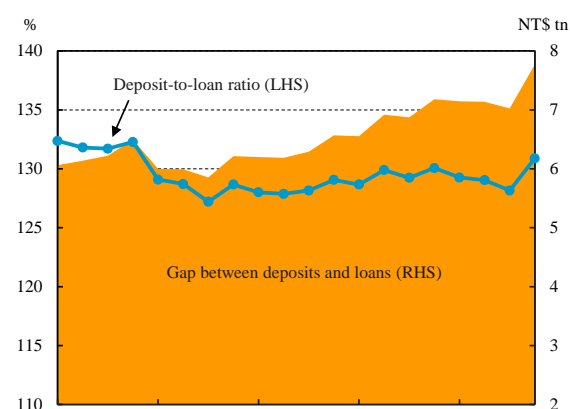
debt securities issues contributed a mere 3.40%. Regarding the uses of funds, customer loans accounted for the biggest share of 58.40%, followed by securities investments at 20.03%, while cash and due from banks accounted for 10.23% (Chart 3.26).

Given that the increase in deposits slightly exceeded that in loans in 2014, the average deposit-to-loan ratio of domestic banks rose to 130.89%. The funding surplus (i.e., deposits exceeding loans) also expanded to NT\$7.77 trillion, indicating that the overall liquidity in domestic banks remained abundant (Chart 3.27).

### *Overall liquidity risk was moderate*

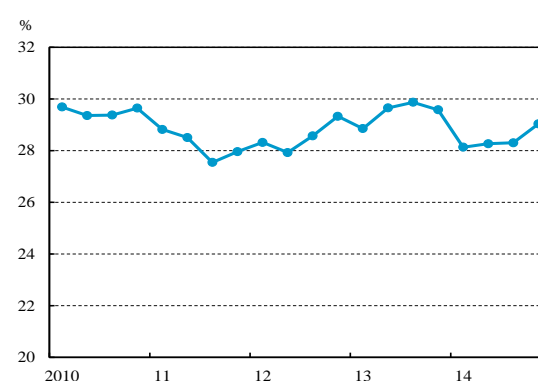
The average NT dollar liquid reserve ratio of domestic banks was well above the statutory minimum of 10% in every month of 2014 and stood at 29.04% in December, a slight decrease of 0.54 percentage points year on year (Chart 3.28), while the ratio of domestic banks was each higher than 15%. Looking at the components of liquid reserves in December 2014, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the CBC, accounted for 87.01% of the total, while Tier 2 and other reserves accounted for a total of 12.99%. 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.



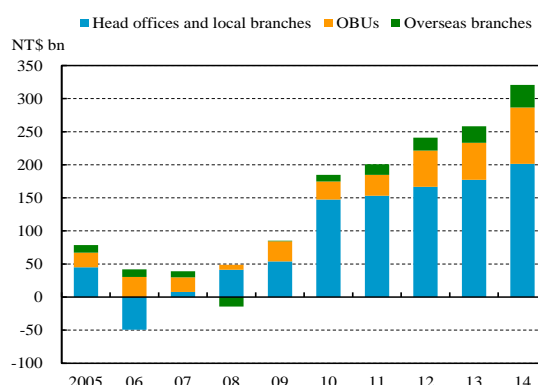
## Profitability

*Benefiting from the notable profit growth of OBUs and overseas branches, banks recorded historical high profits for 2014*

The aggregate net income before tax of domestic banks reached a historical high of NT\$320.7 billion in 2014, increasing by NT\$62.5 billion or 24.19% year on year. The average ROE and ROA also rose to new highs of 11.62% and 0.77%, respectively, showing significant improvement in business performance (Charts 3.29 and 3.30). Compared to selected neighboring Asia-Pacific economies, the ROAs of domestic banks still lagged behind (Chart 3.31).

The main reason for the increase in profits, other than a substantial rise in net interest income and fee income, was recognition of a NT\$14.8 billion gain from a bargain purchase<sup>66</sup> by CTBC Bank as a result of acquisition activity in June 2014. Excluding the influence of that one-time gain, annual profits still increased by NT\$47.7 billion or 18.46% year on year. Among them, offshore banking units (OBUs) and overseas branches' net income before tax in 2014 grew by 52.74% and 36.10%, respectively, combining to contribute 37% of total profit, rising significantly from 31% a year earlier (Chart 3.32).

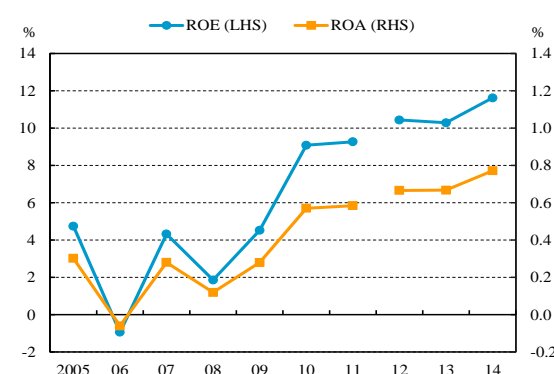
**Chart 3.29 Net income before tax of domestic banks**



Note: Figures from 2012 forward are on the TIFRSs basis, while those of prior years are on the ROC GAAP basis (same in all charts in this section).

Source: CBC.

**Chart 3.30 ROE & ROA of domestic banks**

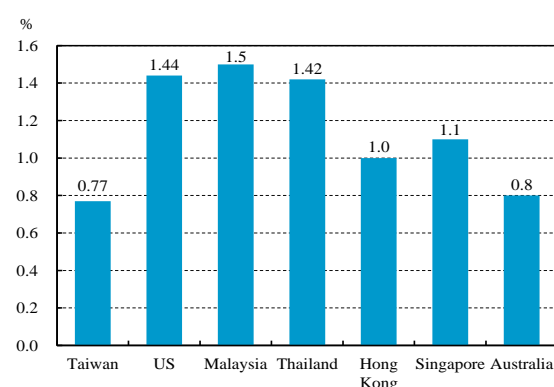


Notes: 1. ROE = net income before tax / average equity.

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

Source: CBC.

**Chart 3.31 Comparison of ROAs of banks in selected economies**



Note: Figures are as of 2014.

Sources: CBC, FDIC, BNM, BOT, APRA and IMF.

<sup>66</sup> In accordance with IFRS 3, an acquirer is required to measure the difference between the consideration transferred and the net identifiable assets at acquisition-date fair values of the acquiree in a business combination. If the difference is positive, that will be recognized as goodwill. If the difference is negative, the acquirer records a gain from a bargain purchase and that gain is treated as current period profit.



In 2014, seven domestic banks achieved profitable ROEs of 15% or more, increasing from four banks in 2013; the number of domestic banks whose ROAs reached the international standard of 1% increased to ten (Chart 3.33). In addition, the ROEs of 26 banks, and ROAs of 28 banks increased compared to the previous year.

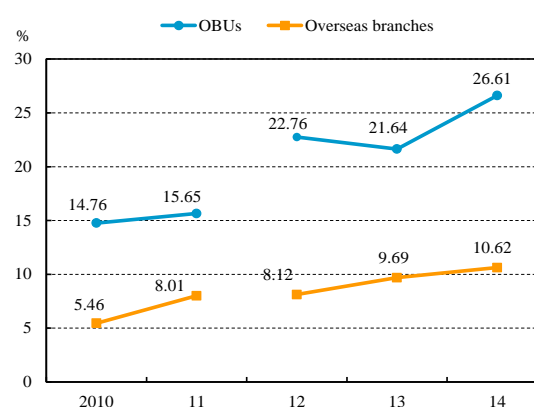
### *Net operating income grew substantially*

Total net operating income of domestic banks registered NT\$730.8 billion in 2014, increasing by NT\$88.5 billion or 13.78% year on year, mainly owing to marked growth in net interest income and fee income. Analyzed by income component, net interest income increased by NT\$42 billion year on year; the annual growth rate also expanded from 3.49% a year earlier to 10.73% in 2014. Net fee income rose by NT\$15.9 billion or 11.77%, supported by growth in the wealth management business. Moreover, net gains on financial instruments increased by NT\$9.2 billion or 9.74%, driven by an increase in valuation gains (Chart 3.34).

### *Operating costs increased by a relatively smaller margin*

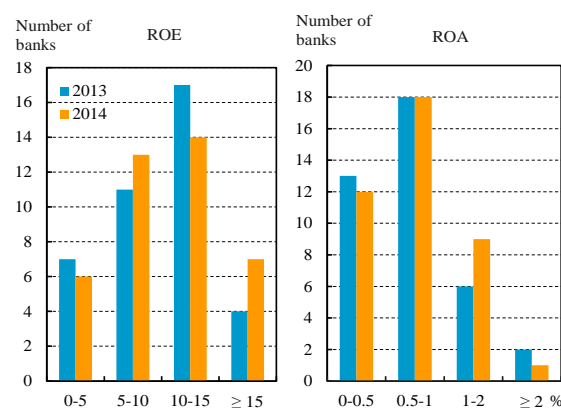
The operating costs of domestic banks registered NT\$410.1 billion in 2014, rising by NT\$26 billion or 6.78% compared to the previous year. Among them, non-interest expenses<sup>67</sup> increased by NT\$27.3 billion or 8.06% and accounted for an increasing share of 89% of total operating costs, owing to the rise in employee benefits expenses and other operating and management expenses. Meanwhile, provisions for loan losses and guarantee reserves decreased by NT\$1.3 billion or 2.94% year on year, mainly owing to a higher base of 2013

**Chart 3.32 Profit contributions of OBUs and overseas branches**



Note: Overseas branches include branches in Mainland China.  
Source: CBC.

**Chart 3.33 Distribution of ROEs and ROAs of domestic banks**



Source: CBC.

<sup>67</sup> Non-interest expenses include employee benefits expenses, depreciation and amortization expenses, and other operating and management expenses.

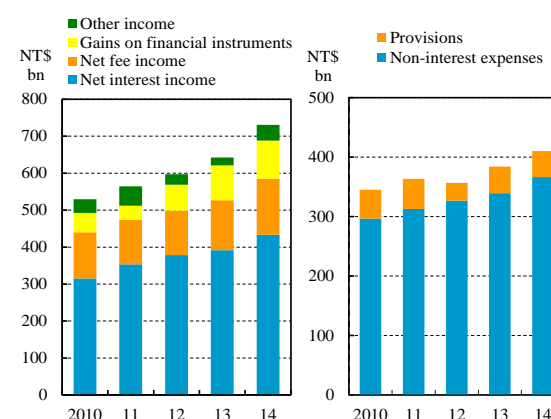
resulting from the requirement by the FSC in 2013 to raise the ratio of provisions from 0.5% to 1% of the balance of normal credit assets (excluding assets that represent claims against the central and local governments in Taiwan), leading to a marked increase in provisions (Chart 3.34).

### *Factors that might affect future profitability*

Driven by a rise in the interest rates of new loans for house purchases, the interest rate spread between deposits and loans gradually rebounded to 1.44 percentage points in 2014 Q4 (Chart 3.35). The rise in the spread was helpful in boosting domestic banks' profitability.

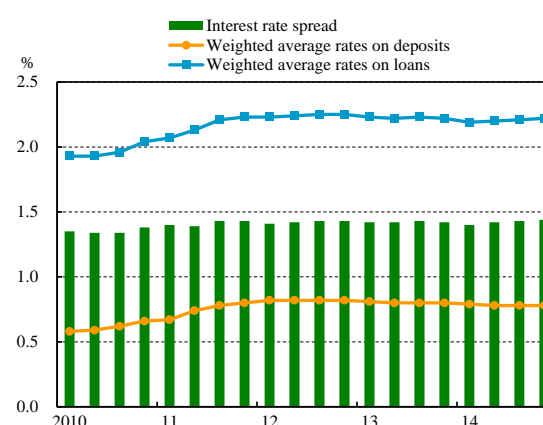
In order to enhance the risk-bearing capacity of banks, in December 2014, the FSC required that domestic banks have to maintain a provision ratio of at least 1.5% against loans for home purchase, refurbishment, or construction by the end of 2016. Some large private banks had already achieved the 1.5% provision ratio at the end of 2014, and the other banks still have a two-year buffer period to increase provisions. Moreover, in April 2015, the FSC required that the ratio of loan loss provisions and guarantee reserves to the balance of normal credit assets extended to customers in Mainland China by domestic banks (including short-term trade financing) has to reach at least 1.5% by the end of 2015. Nevertheless, both of the requirements are estimated to have a limited impact on overall profits.

**Chart 3.34 Composition of incomes and costs of domestic banks**



Source: CBC.

**Chart 3.35 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.

## Capital adequacy

### Capital ratios trend upward

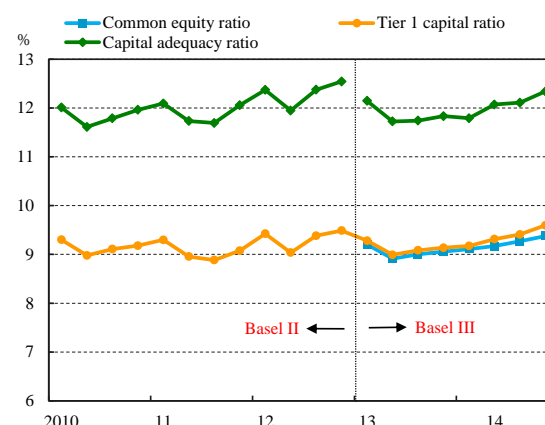
In the first quarter of 2014, the average capital ratio of domestic banks declined slightly as risk-weighted assets accumulated at a faster pace. From Q2 onwards, as a result of capital injection and accumulated earnings as well as the issuance of Basel III-compliant subordinated debt, the average common equity ratio, Tier 1 capital ratio and capital adequacy ratio rose and stood at 9.38%, 9.60% and 12.34% at the end of 2014, respectively, from 9.06%, 9.14% and 11.83% a year earlier (Chart 3.36). However, compared to some neighboring Asia-Pacific economies, domestic banks in Taiwan had lower Tier 1 capital ratios (Chart 3.37).

Further breaking down the components of regulatory capital, common equity Tier 1 capital, which features the best loss-bearing capacity, accounted for 76.00% of eligible capital, while non-common equity Tier 1 capital and Tier 2 capital registered only 1.77% and 22.23%, respectively, at the end of 2014. It showed that the capital quality of domestic banks was satisfactory.

### *The capital levels of all domestic banks were higher than the 2014 statutory minimum*

At the end of 2014, the common equity ratios, Tier 1 capital ratios and capital adequacy ratios for all domestic banks remained above the statutory minimum requirements for 2014 (4%, 5.5% and 8.0%) and those for 2015 (4.5%, 6.0% and 8.0%). Compared to the end of the previous year, the number of banks with Tier 1 capital ratios higher than 8.5% significantly

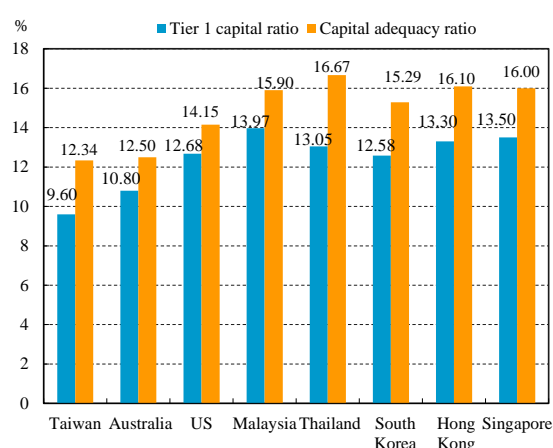
Chart 3.36 Capital ratio of domestic banks



- Notes: 1. Figures from 2013 forward are based on Basel III, while prior years are based on Basel II.  
 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 3.37 Comparison of capital ratios in selected economies



Note: Figures for Hong Kong, South Korea and Singapore are as of end-September 2014; others are as of the end of 2014.

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

increased, indicating that most banks have been improving their capital quality and level in order to meet Basel III standards<sup>68</sup> or to increase their merger and acquisition momentum (Chart 3.38).

### *Some banks faced pressure to raise their capital levels*

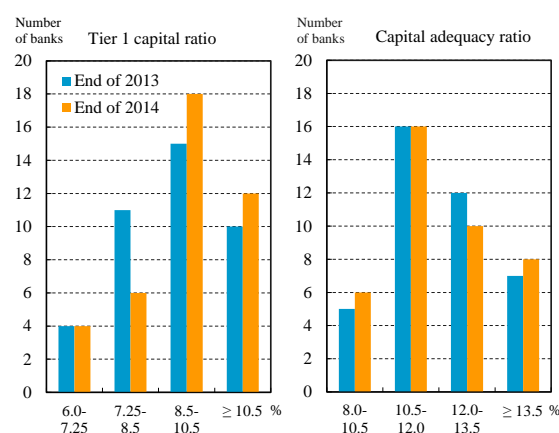
Even though the capital ratios of all banks at the end of 2014 met the minimum standards for 2015, some banks, particularly state-owned banks and small private banks, might not fulfill all minimum capital requirements effective from 2016 onwards and thus face pressure to raise their capital levels. Such banks should actively reinforce their capital adequacy via seasoned equity offerings, accumulating earnings, issuing subordinated debts, and adjusting asset structures to raise their capital ratios gradually.

### *Credit ratings*

#### *Average credit rating level remained stable*

With respect to the overall risk assessments of Taiwan's banking system made by credit rating

**Chart 3.38 Number of domestic banks classified by capital ratios**



Source: CBC.

**Table 3.2 Systemic risk indicators for the banking system**

Banking System	Standard and Poor's		Fitch	
	BICRA		BSI/MPI	
	2014/2	2015/2	2014/2	2015/2
Hong Kong	2	2	a/3	a/3
Singapore	2	2	aa/2	aa/2
Japan	2	2	a/1	a/1
South Korea	3	3	bbb/1	bbb/1
<b>Taiwan</b>	<b>4</b>	<b>4</b>	<b>bbb/1</b>	<b>bbb/1</b>
Malaysia	4	4	bbb/1	bbb/1
Mainland China	5	5	bb/3	bb/3
Thailand	6	6	bbb/1	bbb/1
Indonesia	7	7	bb/3	bb/2
Philippines	7	7	bb/1	bb/1

Sources: Standard and Poor's and Fitch Ratings.

<sup>68</sup> 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
Tier1 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

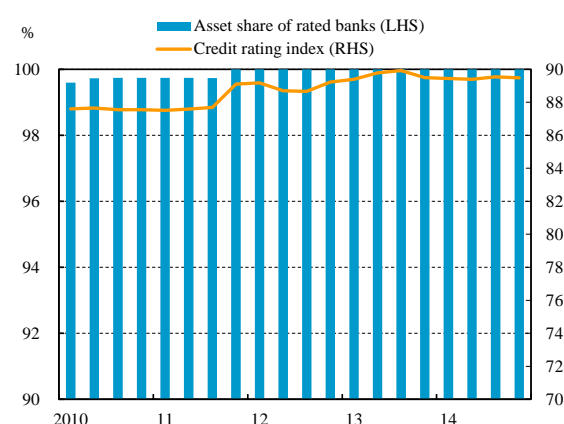
agencies, Standard & Poor's Banking Industry Country Risk Assessment (BICRA)<sup>69</sup> maintained Taiwan's BICRA unchanged at Group 4. Compared to other Asian economies, the risk of Taiwan's banking industry was higher than those of Hong Kong, Singapore, Japan, and South Korea, about the same as that of Malaysia, but much lower than those of Mainland China, Thailand, Indonesia and the Philippines. The assessment of Taiwan's banking system evaluated by Fitch Ratings' Banking System Indicator/ Macro-Prudential Indicator (BSI/MPI)<sup>70</sup> also remained unchanged at level bbb/1 (Table 3.2).

As for the rating results<sup>71</sup> released by credit rating agencies, the credit rating index<sup>72</sup> of domestic banks descended slightly in 2014 (Chart 3.39), because one bank, whose parent company was downgraded by Standard & Poor's, received a rating downgrade from twAAA to twAA+.

### Rating outlooks remained stable

All domestic banks were rated by credit rating agencies for 2014. Most of them maintained credit ratings of twAA/twA (Taiwan

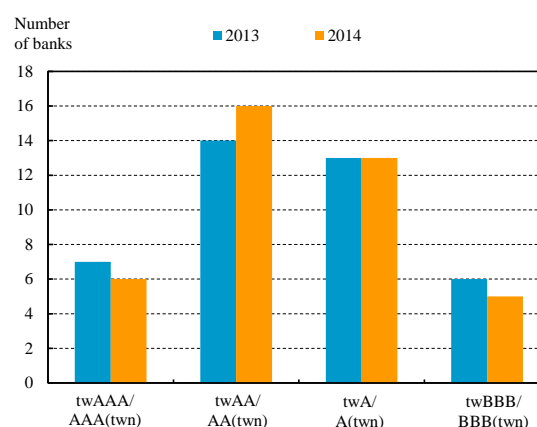
**Chart 3.39 Credit rating indices of rated domestic banks**



Note: End-of-period figures.

Sources: Taiwan Ratings Corporation, Fitch Ratings, and CBC.

**Chart 3.40 Number of domestic banks classified by credit ratings**



Note: End-of-period figures.

Sources: Taiwan Ratings Corporation and Fitch Ratings.

<sup>69</sup> 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.

<sup>70</sup> 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.

<sup>71</sup> As of the end of 2014, 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' ratings (~twn).

<sup>72</sup> 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.

Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2014, and none had credit ratings lower than twBB/BB(twn) (Chart 3.40). The results were similar to those received the previous year. Regarding rating outlooks, while three banks turned negative in 2014,<sup>73</sup> the other 37 banks remained stable or positive.

### 3.2.2 Life insurance companies

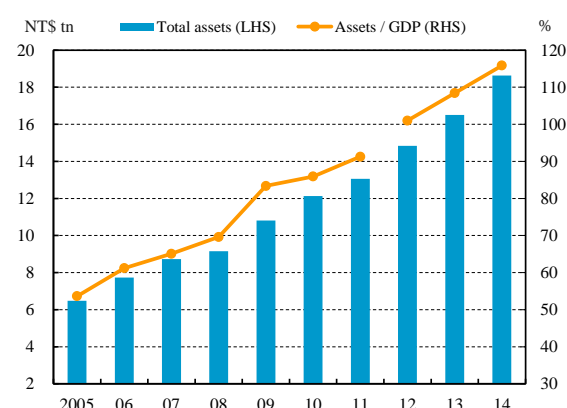
In 2014, the total assets of life insurance companies grew quickly, and their profitability registered a record high, showing an improvement in operating performance. At the end of 2014, the average RBC ratio of life insurance companies rose significantly. However, the financial strength of a few companies needs to be bolstered as soon as possible.

#### Assets grew rapidly

The total assets of life insurance companies grew continually and reached NT\$18.64 trillion at the end of 2014, equivalent to 115.86% of annual GDP (Chart 3.41). The annual growth rate of total assets rose to 12.93% at the end of 2014, picking up rapidly from 11.24% a year earlier.

At the end of 2014, 23 domestic life insurance companies<sup>74</sup> held a 98.56% market share by assets, four of which were foreign affiliates holding a 2.71% market share, while four foreign life insurance companies held the remaining 1.44% of total assets. The top three companies in terms of assets held a combined

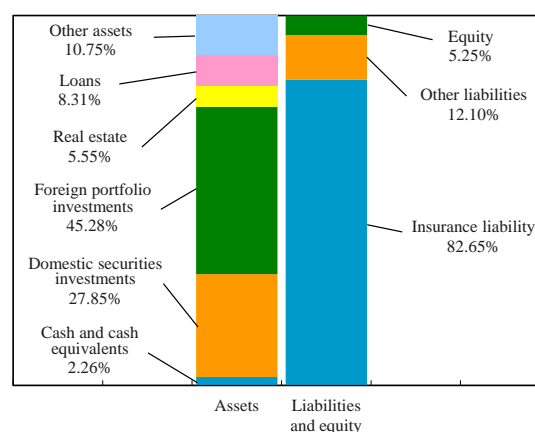
**Chart 3.41 Total assets of life insurance companies**



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

Sources: FSC and DGBAS.

**Chart 3.42 Asset/liability structure of life insurance companies**



Note: Figures are end-December 2014 data.

Source: FSC.

<sup>73</sup> The reasons for the three banks receiving negative rating outlooks were: (1) a negative rating outlook of one bank's parent company; (2) expansion of one bank's loan portfolio at a pace faster than the sector average putting pressure on its already below-par capitalization; and (3) fast growth of one bank's business and limited internal capital causing its loss-absorption ability to be worse than its peers.

<sup>74</sup> Foreign affiliates included.

market share of 55.34%, revealing a slight increase of 1.37 percentage points year on year. The market structure of the life insurance industry roughly remained unchanged in 2014.

### Foreign portfolio investments held the largest share

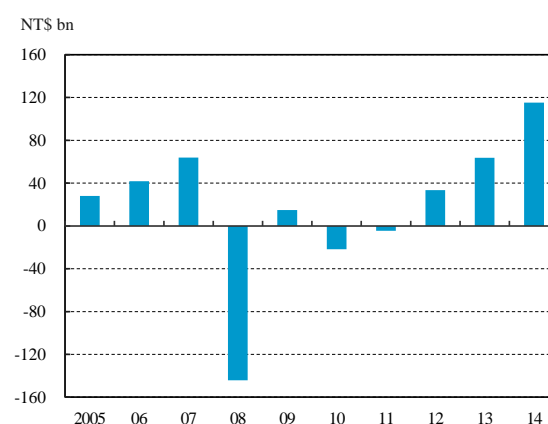
The funds of life insurance companies at the end of 2014 were chiefly invested in foreign portfolios and domestic securities. The share of foreign portfolio investments rose to 45.28%, benefiting from the amendment of the *Insurance Act* that excludes foreign currency-denominated international bonds from the amount subject to the overseas investment ceiling. The share of domestic securities investments dipped to 27.85%. As for the sources of funds, insurance liability accounted for the largest share of 82.65%, and equity rose to a share of 5.25% owing to the huge expansion of unrealized gains on available-for-sale financial assets as well as operating profits, reflecting an improved financial leverage of life insurance companies (Chart 3.42).

### Net income registered a record high

Life insurance companies reported a record-high net income before tax of NT\$115 billion in 2014, a year-on-year increase of NT\$51 billion or 80.65% (Chart 3.43). This was mainly driven by huge foreign exchange gains derived from the depreciation of the NT dollar, as well as incremental expansion of interest income and realized gains on available-for-sale financial assets spurred by continuous growth and adjustments of bond and bill investments.

During the same period, average ROE and ROA were 14.20% and 0.66%, respectively, much

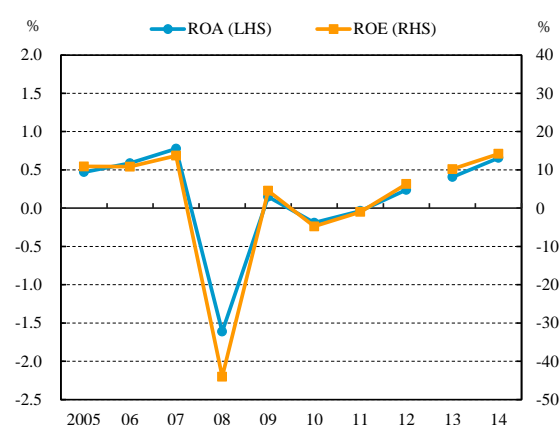
**Chart 3.43 Net income before tax of life insurance companies**



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

Source: FSC.

**Chart 3.44 ROE & ROA of life insurance companies**



Notes: 1. Figures from 2012 forward 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.



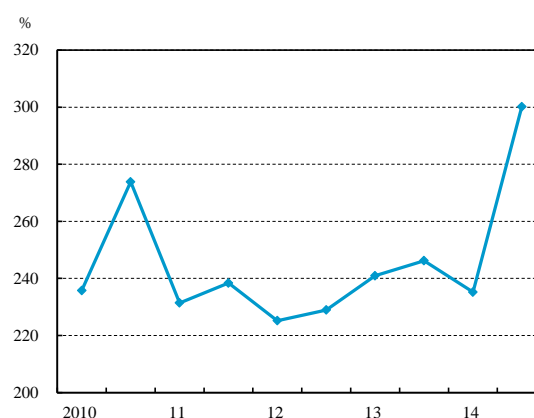
higher than 10.20% and 0.41% in 2013 (Chart 3.44). Among all 27 insurance companies, nine companies posted better profits and achieved ROEs of 10% or more, three more than that of the previous year. However, there were 11 companies who still suffered losses, three less than the number a year earlier.

### Average RBC ratio recorded an eight-year high

Although greater investment portfolios bolstered the amount of RBC, the FSC's measure to lower the coefficient for foreign portfolio investments, as well as introducing the new risk capital calculation formula regarding foreign exchange risk as an independent risk factor, limited RBC growth. Furthermore, the industry earned healthy profits and the FSC loosened the regulation to allow more unrealized gains on investment property to be included in regulatory capital, resulting in the significant increase of regulatory capital. Consequently, the average RBC ratio rose to 300.12% at the end of 2014 (excluding Singfor and Global Life Insurance Companies, which were under receivership), from 246.22% a year before, posting an eight-year high (Chart 3.45).

By individual company, there were 16 companies with RBC ratios over 300%, four more than the figure of the previous year. Moreover, the number of companies below 200% decreased to two (Figure for end-2014 is exclusive of the two life insurance companies under receivership, Chart 3.46), whose combined assets accounted for 0.61% of the total. Although the share is low, the financial structure of those companies needs to be improved as soon as possible.

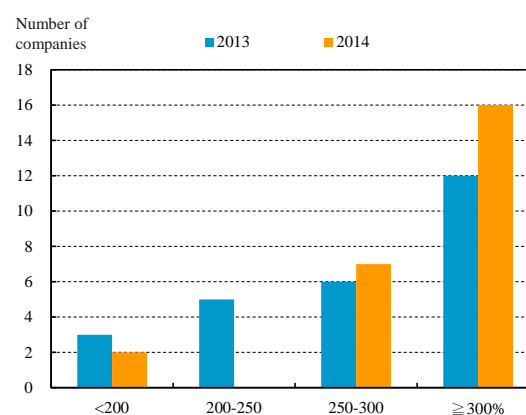
**Chart 3.45 RBC ratio of life insurance companies**



Notes: 1. RBC ratio = regulatory capital / risk-based capital.  
2. Kuo Hua Life Insurance Company, which was taken into receivership by the Taiwan Insurance Guaranty Fund in August 2009 and merged into TransGlobe Life Insurance Company in March 2013, is excluded from figures from 2010 onwards. Figure for end-2014 is exclusive of Singfor and Global Life Insurance companies.

Source: FSC.

**Chart 3.46 Number of life insurance companies classified by RBC ratios**



Notes: 1. End-of-period figures.  
2. Figure for 2014 is exclusive of Singfor and Global Life Insurance Companies.

Source: FSC.



Because of poor management, RBC ratios below the statutory minimum, and consecutive quarters of negative net worth, Singfor and Global Life Insurance companies were taken into receivership by the Taiwan Insurance Guaranty Fund on 13 August 2014 and sold by tender to Cathay Life Insurance Co. on 23 March 2015. This is deemed beneficial to safeguarding the interests of insured parties and sustaining financial stability.

### ***Overall credit ratings kept stable, with most obtaining stable credit outlooks<sup>75</sup>***

None of the 11 life insurance companies rated by Taiwan Ratings or Fitch Ratings received credit rating adjustments in 2014. As of the end of December, all rated insurance companies maintained credit ratings above twA or its equivalent, while the three biggest insurance companies by assets were all rated twAA+, showing strong capability to fulfill all financial commitments. As for the credit outlook, all received stable credit outlooks, except for CTBC Life Insurance Co., which received a negative credit outlook because financial support from its affiliated company CTBC Bank might suffer owing to a weakening financial structure.<sup>76</sup>

### ***Life insurance companies should undertake prudential risk management of securities investments***

The usable funds of life insurance companies continued accumulating in recent years and therefore propelled great expansion of securities investments. Of them, foreign portfolio investments had the largest growth rate because of insufficient supply of other domestic long-term investment instruments and the relaxation of related regulations. While the efficiency of fund usage could be improved through greater foreign portfolio investments, it is inevitable to incur higher foreign exchange risk. In addition, some bond and bill investments are classified as fair value through profit or loss financial assets or available-for-sale financial assets, the fair value and investment returns of which are susceptible to interest rate fluctuations. It is likely that discrepancies in GDP growth rates will continue to cause monetary policy divergence around the globe. In particular, the Fed signaled that it might raise the federal funds rate in the forthcoming future, putting upward pressure on both yield curves for US and Taiwan government bonds. In response to rising interest rate risk, insurance companies with huge securities investments should undertake prudential risk management hereafter.

<sup>75</sup> As most life insurance companies were rated by Taiwan Ratings, the analysis in this section focuses primarily on the opinions of Taiwan Ratings. Other rating agencies' opinions are also taken into consideration, though.

<sup>76</sup> Cathay Life Insurance Co. was placed on Watch Negative by Taiwan Ratings on 25 March 2015. The main reason behind this was that the company's heightened foreign exchange risk together with the proposed acquisitions of Singfor and Global Life Insurance Companies with negative net worth will likely weaken its earnings and capital.

### 3.2.3 Bills finance companies

The total assets of bills finance companies decreased slightly in 2014. However, profitability increased in the same year and the quality of credit assets remained sound, yet the liquidity risk and long-term interest rate risk stayed high. The average capital adequacy ratio of bills finance companies increased slightly, while the ratio of each company stayed well above the statutory minimum.

#### Total assets decreased slightly

The total assets of bills finance companies stood at NT\$818.1 billion, a figure equivalent to 5.09% of annual GDP, at the end of 2014, decreasing by 1.32% year on year owing to the decline in short-term bill positions (Chart 3.47).

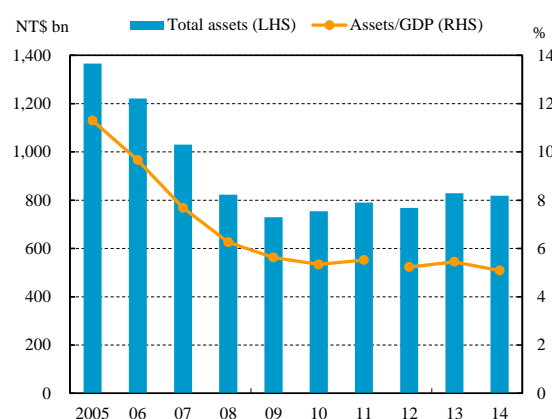
In terms of the asset and liability structure at the end of 2014, bond and bill investments constituted 93.31% of total assets, a decrease of 1.26 percentage points year on year. On the liability side, bills and bonds sold under repo transactions as well as borrowings accounted for 84.80% of total assets, while equity only accounted for 13.68% of total assets (Chart 3.48).

#### Credit risks

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

The outstanding guarantees business undertaken by bills finance companies registered NT\$463.7 billion at the end of 2014, an increase of NT\$30 billion or 6.92% year on year

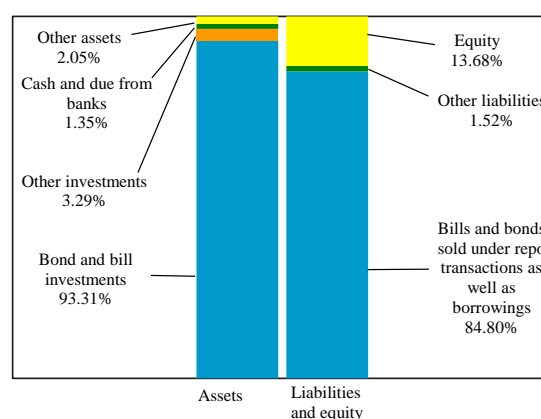
Chart 3.47 Total assets of bills finance companies



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

Sources: CBC and DGBAS.

Chart 3.48 Asset/liability structure of bills finance companies



Note: Figures are end-December 2014 data.

Sources: CBC and FSC.

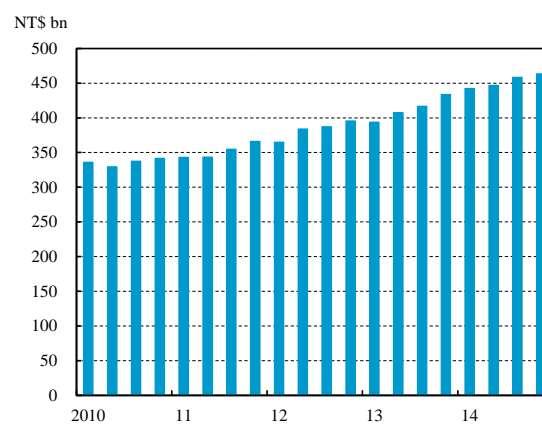
(Chart 3.49). The rise was mainly because of the increased issuance of commercial paper by private corporations for short-term funding amid the domestic economic recovery and low interest rates in the bill market, as well as a higher guarantees ceiling raised from 5 times equity to 5.5 times for companies with regulatory capital ratios of 13% or higher after the FSC amended related regulations in July 2014. As a result, the average multiple of outstanding guarantees to equity of bills finance companies rose to 4.58 times at the end of 2014, compared to 4.38 times a year before. However, each bills finance company still conformed to the regulatory ceiling.<sup>77</sup>

Guarantees granted to the real estate and construction industries and the credits secured by real estate accounted for 26.03% and 30.37%, respectively, of total credits of bills finance companies, showing an upward trend. It is advisable for bills finance companies to closely monitor such credit risks against a backdrop of contracting transaction volume and moderating prices in the housing market.

### ***Credit quality remained sound***

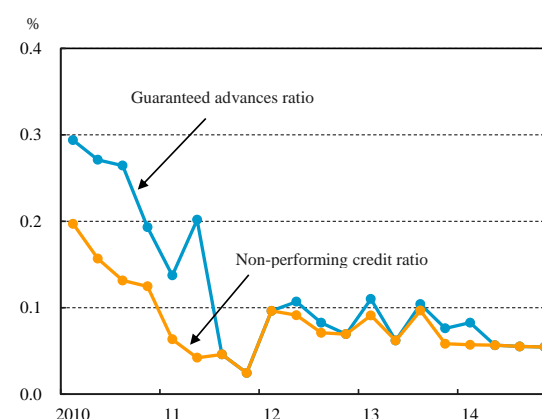
At the end of 2014, the average guaranteed advances ratio and the non-performing credit ratio of bills finance companies both stayed at 0.05%, reflecting sound credit quality (Chart 3.50). At the same time, both the ratios of credit loss reserves to total guaranteed advances and to non-performing credits were 3,091.70%, indicating that the reserves set aside were significantly sufficient to cover potential credit losses.

**Chart 3.49 Outstanding commercial paper guarantees of bills finance companies**



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

**Chart 3.50 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.

<sup>77</sup> The FSC amended the *Ceiling on the Total Amounts of the Short-term Bills Guarantee and Endorsement Conducted by Bills Finance Companies* on 18 July 2014, stipulating that the ratio of outstanding commercial paper guaranteed to equity for a bills finance company should not exceed 1, 3, 4, 5 or 5.5 times, respectively, depending on the level of its capital adequacy ratio of below 10%, above 10% but below 11%, above 11% but below 12%, above 12% but below 13%, or above 13%.

### Liquidity risk remained high

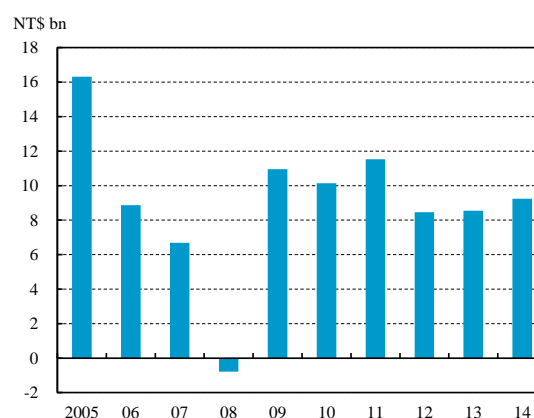
In 2014, bills finance companies still heavily relied on short-term interbank call loans and repo transactions as funding sources, while over 40% of funds went to long-term bond investments. The significant maturity mismatch between assets and liabilities showed bills finance companies still faced high liquidity risk. Moreover, the average multiple of major liabilities to equity at the end of 2014 dropped to 6.85 times, compared to 7.13 times a year before, owing to the 1.71% decrease of major liabilities in 2014. The multiples of each bills finance company were below the regulatory ceilings of ten or twelve times.<sup>78</sup>

### Profitability rose slightly

Bills finance companies posted a net income before tax of NT\$9.24 billion in 2014 (Chart 3.51), with an increase of NT\$0.69 billion or 8.12% year on year. Over the same period, average ROE and ROA registered 8.38% and 1.12%, respectively, both higher than the ratios of 7.90% and 1.07% posted in 2013 (Chart 3.52). The rise in income was mainly contributed to by increased commission

revenues as the companies actively undertook the commercial paper guarantees and underwriting businesses and by expanded income from high-yield non-government bond investments.<sup>79</sup> However, when the Fed raises interest rates, resulting in an upward trend in

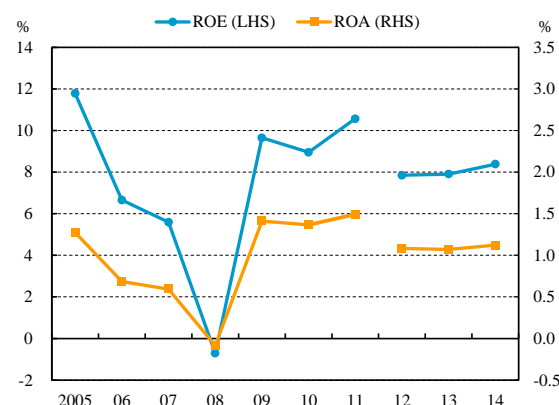
**Chart 3.51 Net income before tax of bills finance companies**



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

Source: CBC.

**Chart 3.52 ROE & ROA of bills finance companies**



Notes: 1. Figures from 2012 forward 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.

<sup>78</sup> According to the *Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses*, which aim to reduce the operating and liquidity risks of bills finance companies, the major liabilities of a bills finance company could not exceed six times, eight times or ten times its equity 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 additional two times its equity. As of the end of 2014, the capital adequacy ratio of each bills finance company was above 12%, so the ceilings were capped at ten times or twelve times for each one.

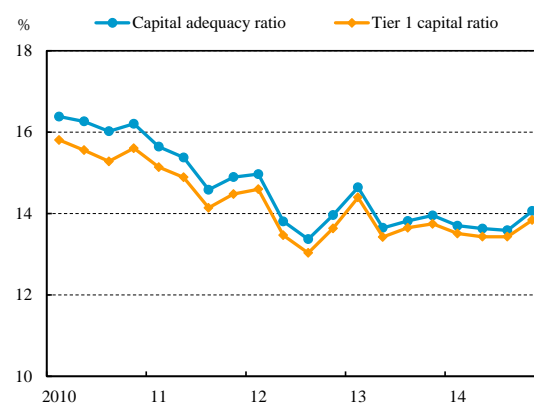
<sup>79</sup> Non-government bond investments, which comprise corporate bonds and bank debentures, rose to 59.84% of total assets at the end of 2014, compared to 56.30% a year before.

long-term interest rates, those bond positions may suffer evaluation losses that not only have the potential to erode equity but also could impact future profitability of bills finance companies. While facing higher interest rate risks, companies have taken response measures step by step to reduce possible adverse impacts (Box 5).

### **Average capital adequacy ratio rebounded**

The average capital adequacy ratio of bills finance companies registered 14.06% at the end of 2014, slightly higher than 13.95% of the previous year, while the Tier 1 capital ratio rebounded to 13.84% from 13.75% a year before, owing to the sharp contraction in non-guarantee commercial paper holdings with higher risk weights and the decrease in long-term equity investments.<sup>80</sup> Furthermore, the capital adequacy ratio for each bills finance company was higher than 13%, well above the statutory minimum of 8% (Chart 3.53).

**Chart 3.53 Capital adequacy ratios of bills finance companies**



Source: CBC.

<sup>80</sup> Long-term equity investments must be totally excluded from regulatory capital.

## Box 5

### The interest rate risk faced by bills finance companies and their response measures

The investments of bills finance companies in bills and bonds are mainly funded by repurchase (RP) transactions, call loans and other short-term borrowings. This operational model whereby short-term borrowing is used to finance long-term assets, with over 40% of assets allocated to bond investments, has caused a maturity mismatch between assets and liabilities and increased liquidity risk. In addition, bills finance companies may also face higher interest rate risks with long-term interest rates likely to go up in the future. This box explores the interest rate risk faced by bills finance companies in bond investments and their response measures.

#### 1. The bond investment strategies of bills finance companies

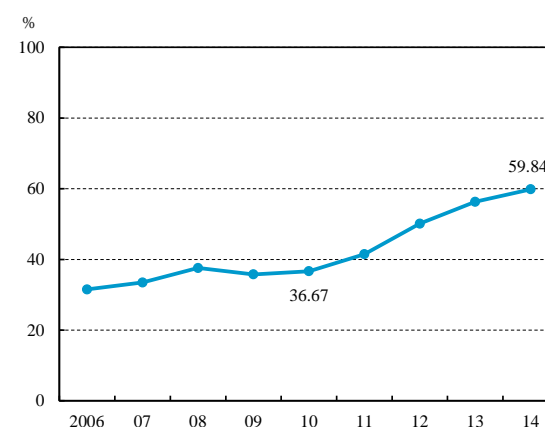
The bond investment strategies of bills finance companies can be mainly divided into “yielding” operations<sup>1</sup> and short-swing outright transactions, in which yielding operations account for a bulk of the total.

#### 1.1 Yielding operations

##### 1.1.1 The proportion of investment in non-government bonds trended up

The types of bonds held by bills finance companies comprise government bonds, corporate bonds and bank debentures. About 95% of the bond portfolios are booked as available-for-sale (AFS) financial assets for accounting purposes. To improve investment returns, there has been a gradual increase in the asset allocation to higher-yield corporate bonds, bank debentures and other non-government bonds since 2011 (Chart B5.1).

**Chart B5.1 The proportion of non-government bonds to total bond holdings**



Source: FSC.

##### 1.1.2 Bond balances and their duration stayed relatively low

In practice, the impact of rising interest rates on bond portfolios depends on the bond

balances and the length of duration. At the end of 2014, the bond balances held by bills finance companies and their average duration mostly remained relatively low and thus less susceptible to a rise in interest rates (Chart B5.2).

### 1.1.3 Yielding spreads gradually declined

AFS portfolios are mainly traded by way of RP so as to earn an interest spread through short-term financing for long-term assets. In recent years, despite little change in the trend of RP interest rates, yielding spreads gradually

narrowed and hence caused overall bond yields to slip. One of the main reasons is that higher-yield bonds purchased in earlier periods matured or were sold prior to maturity with a view to realizing a profit. Another important reason is that new bond portfolios were subsequently built up during the recent period of relatively low interest rates. For example, the yielding spread in 2014 was about 0.93 percentage points, markedly lower than 1.72 percentage points in 2010.

## 1.2 Short-swing outright transactions

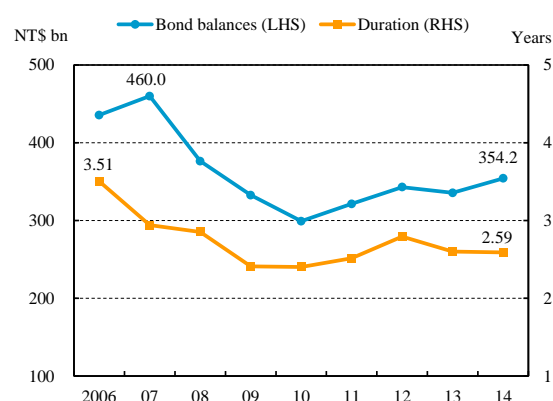
### 1.2.1 The trading positions for short-swing transactions remained low

The proportion of short-swing trading positions, which were measured at fair value through profit or loss in the balance sheet for the purpose of short-swing outright transactions to earn a price differential, was mostly lower than 5%. Therefore, such trading positions accounted for only a small fraction of total positions.

### 1.2.2 The willingness for short-swing trading decreased

In recent years, influenced by the US exit from its quantitative easing (QE) policies and the prospect that the Fed might raise interest rates, yields rebounded from the bottom. In addition, bonds tended to be held by a limited handful of financial institutions, resulting in less bonds being traded in the market. Consequently, the overall volume of outright bond transactions shrank and market quotations were often on and off. These factors

**Chart B5.2 Balances and average duration of bonds by bills finance companies**



Note: Duration is estimated based on the investment portfolios of three major bills finance companies in Taiwan.

Source: CBC.

have increased the risk of short-swing transactions and, in turn, most bills finance companies have decreased their short-swing outright transactions to reduce risks.

## ***2. The interest rate risk assessing mechanism of bills finance companies***

Bills finance companies generally make use of interest rate sensitivity analysis and stress tests to assess interest rate risk. The pertinent information shall be submitted to the board of directors and senior management as a reference to set operational strategies and risk appetite.

### **2.1 Interest rate sensitivity analysis**

The DV01 (dollar value of a basis point) method is the most commonly used by bills finance companies for bond interest rate sensitivity analysis. It measures the absolute value of the change in prices of overall bond positions for a one basis point change in yield.

### **2.2 Stress test of interest rate risk**

Although bills finance companies have not yet faced legal requirements to conduct stress tests, most of them implemented stress tests of interest rate risk spontaneously in view of strengthening interest rate risk management, and simulated possible impacts on their profits and losses and capital adequacy ratios under various stress scenarios. However, the stress scenarios set by some bills finance companies were not severe enough<sup>2</sup> and might not properly reflect the impacts of extreme events.

## ***3. Response measures to a possible rise in bond yields***

Bills finance companies commonly envisaged that short-term interest rates were expected to remain stable and would not rise sharply, but mid- and long-term interest rates may go up in the future. Accordingly, they have taken the following response measures to mitigate the interest rate risks to bond portfolios:

### **3.1 Response measures to AFS positions**

#### **3.1.1 Control of bond positions and duration, plus adoption of the strategy to step up bond positions in due course**

Currently, the average duration of bond holdings by bills finance companies is mostly less than three years, but it will gradually decrease as bonds mature over time. Bond positions will also decrease each year accordingly. Because of their consideration of yielding operations, bills finance companies still have unmet demand to build up their



bond positions. Consequently, they will control bond positions and duration while adopting a strategy of rebuilding bond positions step by step for risk mitigation.

### **3.1.2 Increase in asset allocation to non-government bonds**

The yields of corporate bonds and bank debentures are higher than those of government bonds. In view of liquidity, profitability and asset quality, bills finance companies may increase investments in higher-rated corporate bonds and bank debentures.

### **3.1.3 Diversifying sources of funds and reducing yielding costs**

Bills finance companies will actively expand their RP customer bases to include legal persons and natural persons, so as to diversify the channels of funding sources, increase funding flexibility and push down yielding costs.

## **3.2 Response measures in terms of trading positions**

Bill finance companies will focus on trading of benchmark bonds with the highest liquidity and strictly implement the trading principles of “stop loss” and “lock in gains.”

## **4. Conclusion**

- (1) Bills finance companies run bills and bond businesses over an extensive period of time. Their operational performance is highly sensitive to interest rate movements. In the situation that long-term interest rates may trend upward, they are poised to strengthen interest rate risk management. In the future, unless short- and long-term interest rates rise sharply and simultaneously, it is expected that they can respond well to address the impacts of interest rate risk.
- (2) Although some bills finance companies conducted stress tests of interest rate risk spontaneously, the stress scenarios they set were not severe enough and could not reflect the shock of extreme events. The competent authority can clearly lay down the requirements for stress tests implemented by bills finance companies, so as to urge them to strengthen risk management.
- (3) As bills finance companies increase their investments in non-government bonds, they should take prudent measures to deal with the relatively high credit risk posed by non-government bonds.

Notes: 1. “Yielding” refers to the trading strategy by use of long-term bond holdings to borrow short-term funds through a repurchase (RP) transaction with a dealer. The transaction allows the bond

holder to receive higher long-term yield rate and pay lower short-term RP interest rate. The gain from the interest spreads is called "yielding spread."

2. For example, under the stress scenario that bond yields rise by 25 basis points.

### 3.3 Financial infrastructure

#### 3.3.1 Payment and settlement systems

##### Overview of systemically important payment systems in 2014

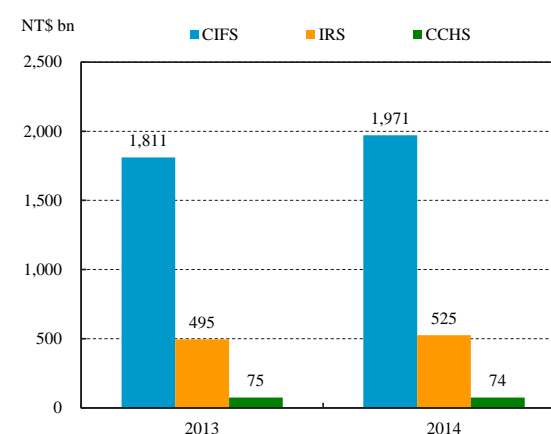
The daily average amount of funds transferred via the three SIPs,<sup>81</sup> which process domestic interbank payments, increased steadily compared to the previous year except for a slight decrease in the transaction value in the CCHS in 2014 (Chart 3.54). Among them, the CBC's CIFS, which handles large payments and the final settlement of interbank fund transfers, regularly functioned as the most important system, with the daily average amount of funds transferred reaching NT\$1.97 trillion.

In order to improve the efficiency of foreign currency clearing, the foreign currency clearing platform initiated by the CBC and established by the FISC was launched on 1 March 2013. The daily average amount of funds transferred via the platform rose substantially in 2014, with the average daily transaction values of US dollars and renminbi significantly increasing to US\$8 billion and RMB0.96 billion, respectively (Chart 3.55).

##### Continuously expanding functions of the foreign currency clearing platform

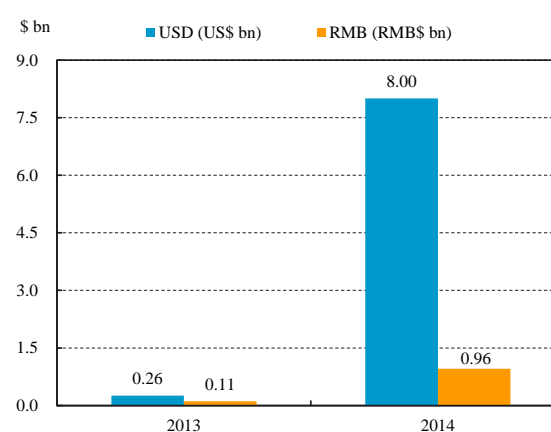
To improve financial payment systems, the CBC will continuously expand the functions of the foreign currency clearing platform. The platform currently provides domestic and cross-border (including cross-strait) foreign currency remittances services, including the US

Chart 3.54 Daily average amount of funds transferred via the three SIPs



Source: CBC.

Chart 3.55 Daily average amount of funds transferred via the foreign currency clearing platform



Source: CBC.

<sup>81</sup> See Note 11.

dollar, renminbi and Japanese yen, and is scheduled to launch domestic and cross-border euro remittances services in June 2015. From then on, the platform will provide PVP settlement for dual currency transaction, including the US dollar, renminbi, Japanese yen, euro and NT dollar. In addition, the platform is scheduled to set up a DVP mechanism for foreign currency-denominated bond and bill transactions in July 2015 (Table 3.3).

**Table 3.3 The functions of the foreign currency clearing platform**

Services provided by the platform		Effective date
1	Domestic US dollar remittances	1 March 2013
2	Inquiry service on banks' websites	15 April 2013
3	Domestic and cross-border (including cross-strait) renminbi remittances	30 September 2013
4	Cross-strait US dollar remittances	14 February 2014
5	PVP settlement for NTD/USD and RMB/USD transactions	17 February 2014
6	Liquidity-saving mechanism	30 July 2014
7	Domestic Japanese yen remittances	28 January 2015
8	Cross-border Japanese yen remittances	28 May 2015
9	Domestic and cross-border euro remittances	29 June 2015
10	DVP mechanism for foreign currency-denominated bonds and bills	28 July 2015

Note: Liquidity-saving mechanism refers to a mechanism of multilateral netting settlement which is based on a Real Time Gross Settlement (RTGS) mechanism, which can reduce liquidity demand for participating banks and enhance the efficiency of funds operation.

Source: CBC.

### **Assisting the development of electronic payment services**

Thanks to electronic technology development, several domestic banks and non-financial institutions started to provide new payment services through networks or electronic payment platforms. In order to promote the sound operations and development of EPIs, the FSC promulgated the *Act Governing Electronic Payment Institutions* (also known as the third-party payment act) on 4 February 2015, focusing on EPIs' electronic payment services. The CBC also amended regulations governing the deposit of reserves as well as foreign exchange declaration and settlement of EPIs to facilitate their operations.

With the enactment of the *Act Governing Electronic Payment Institutions*, EPIs are allowed to: (1) make and collect payments as an agent; (2) accept deposits as stored value funds in multi-currencies; and (3) transfer small amounts of funds between e-payment accounts.

Additionally, payment services for offline transactions via physical channels are also included (namely Online to Offline, O2O). EPIs offer diversified payment services, which strengthen the safety and convenience of transactions, bring momentum to the e-commerce market, and, in turn, stimulate economic development.

The deposits taken and the payments collected and made by EPIs as agents should be put into trust or under a full performance guarantee of a bank. The balance of stored value funds in NTD or foreign currencies deposited by each user shall not exceed an equivalent of NT\$50,000. Moreover, the amount of funds transferred between e-payment accounts of users shall not exceed an equivalent of NT\$50,000 for each transaction.

### **Strengthening oversight of mobile payment**

Mobile payment is a new means of retail payment which combine multiple payment instruments with mobile devices. Thanks to high smartphone usage, financial inclusion and an increasing demand for mobile services, mobile payment has developed rapidly in recent years. Consumers are able to make proximity payments or remote payments by merely installing related payment instruments<sup>82</sup> onto their mobile devices via smartphone applications (APPs). Mobile payments have the advantages of convenience and diversified application, but security is always a concern as transaction data must be transmitted by access devices that are connected to mobile communication networks. Consequently, a trusted services management (TSM) platform plays a central role in ensuring the security and privacy of financial and personal information.

Currently, there are two recognized models for TSM. One is Payment Service Provider (PSP) TSM and the other is Mobile Network Operator (MNO) TSM. The former is in charge of the management of payment instruments and the safeguard of financial security, while the latter, built by the telecommunication or information industry firms, is responsible for the management of smartphone secure elements. To promote financial security and enhance efficiency of operation, it is common to develop an interface providing connection between PSP TSM and MNO TSM deployment models. This enables an integration of a variety of applications offered by their corresponding service providers, so as to quickly install the APPs onto users' smartphones.

Mobile payment has gradually accepted by the public in recent years. In response, a related report "Oversight Issues in Mobile Payments" published by the IMF in 2014 suggests that the national authorities should develop sound and effective oversight frameworks for new

<sup>82</sup> The related instruments include credit card, cash card, banking account or stored value account.

payment methods (e.g., mobile payments) by addressing issues such as a legal regime, financial integrity, fund safeguarding, operational resilience, and risk controls and access criteria in payment systems.

### 3.3.2 Implementation of liquidity coverage ratio in Taiwan

To reinforce banks' liquidity risk management, the Basel Committee on Banking Supervision (BCBS) published *Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring* in 2010, developing the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) as globally consistent liquidity indicators. With a view to strengthening the liquidity risk management of domestic banks and keeping in line with international standards, the FSC and the CBC jointly promulgated the *Standards Implementing the Liquidity Coverage Ratio of Banks*, which came into force on 1 January 2015. As for the NSFR, the FSC is currently drafting the regulation according to the latest publication of the BCBS. It is expected to be promulgated by the end of 2016 and become effective on 1 January 2018. The key points of Taiwan's LCR are as follows:

- The definition of LCR: LCR is calculated by dividing the stock of high quality liquidity assets (HQLA) by total net cash outflows over the next 30 calendar days. HQLA are the assets with high liquidity under stressed scenarios, such as cash, central bank reserves, government bonds and qualified securities, while net cash outflows refer to expected cash outflow netted of cash inflow within 30 calendar days under specific stressed scenarios.

$$\text{LCR} = \frac{\text{Stock of HQLA}}{\text{Total net cash outflows over the next 30 calendar days}} \times 100\%$$

- Statutory minimum standards: Same as international standards, the LCR of domestic banks should not be lower than 60% in 2015, while the minimum will increase by 10 percentage points each year during the transition period of 2016-2018 and be 100% from 2019. (Table 3.4)

**Table 3.4 Minimum LCR standards**

	1 January 2015	1 January 2016	1 January 2017	1 January 2018	1 January 2019
Commercial Banks	60%	70%	80%	90%	100%
Industrial Banks	60%				

Note: The business models of industrial banks are different from those of commercial banks, as they are not allowed to take retail deposits.  
Source: CBC.

- Reporting mechanism: Banks should calculate and report the LCR on a monthly basis,

and inform the FSC and the CBC immediately when the ratio falls below the statutory minimum.

- Exempted from application: Taiwan's branches of foreign banks are exempted from the LCR requirement. Moreover, banks which are taken over, ordered to suspend operations or liquidated by financial authorities, and The Export-Import Bank of The ROC, which is not a commercial bank and does not take deposits, are also excluded.

At the end of March 2015, the average LCR of all domestic banks was 121%, while the average ratios of state-owned banks and private banks were 112% and 162%, respectively. All banks met the minimum requirement of 60% in 2015.

### **3.3.3 Insurance companies were permitted to conduct offshore insurance business**

To expand the business scope of insurance companies and enhance the competitiveness of the domestic insurance industry, the *Offshore Banking Act* was amended and promulgated on 4 February 2015, to include insurance business in offshore finance. The related regulations and enforcement rules were issued in May. This amendment allows insurance companies to establish offshore insurance units (OIUs) to conduct offshore life and non-life insurance, reinsurance and other authorized business activities denominated in foreign currencies. It also provides tax exemption benefits for a period of ten years including the business income tax, the value-added tax, the stamp tax and the income tax withholding for OIUs. It will not only help the development of domestic insurance industries, create more financial jobs and in turn support economic growth, but also expand the insurance market towards internationalization, conducive to the establishment of Taiwan as an Asia-Pacific financial center.

The expected benefits of OIUs cover several aspects:

- Offering non-residents insurance products for wealth diversification and risk control, as well as providing one-stop shopping of financial services by consolidating the services and capacities of OBUs, offshore securities units (OSUs) and OIUs into a comprehensive platform.
- Taking advantage of the tax exemptions for OIUs to attract international reinsurance businesses, so as to bring in more professional knowhow and ideas of insurance product innovation, insurance underwriting and claims, and reinsurance operations.

- Promoting travel accident insurance for foreign travelers in Taiwan.

### **3.3.4 Local accounting principles to be fully in line with IFRSs from 2015 onwards for public companies**

The FSC has announced a two-phase timetable, starting 2013, for Taiwan's entities to adopt the IFRSs. The second-phase adopters, including unlisted public companies, credit cooperatives and credit card companies, have already been in compliance with the IFRSs since the beginning of 2015. As a result, the full convergence of local accounting principles and international standards will enhance business internationalization and improve transparency of financial reports of local companies.

Moreover, in January 2014, the FSC announced the Roadmap to Full Adoption of the Updated IFRSs to facilitate cross-country comparison of financial statements and narrow the differences between international standards and the current accounting treatments in Taiwan. According to the roadmap, from 2015 onwards, entities that adopted the 2010 version of the IFRSs should switch to the 2013 version (except for IFRS 9 *Financial Instruments*). The updated accounting principles which had significant impacts on corporations included IFRS 10 *Consolidated Financial Statements*, IFRS 11 *Joint Arrangements*, IFRS 12 *Disclosure of Interests in Other Entities*, and IFRS 13 *Fair Value Measurement*.

Furthermore, in July 2014, the International Accounting Standards Board (IASB) issued the final version of IFRS 9 *Financial Instruments* which will become effective on 1 January 2018. The new standard introduces an expected loss model instead of an incurred loss model for the recognition of expected credit losses, revises the classification and measurement of financial assets, and relaxes the application scope and criteria of hedge accounting. Among those, the expected loss model is believed to have the most significant impact on the financial industry. While the FSC is considering the timetable of the IFRS 9 adoption, financial institutions should take proper reactions as early as possible to mitigate possible impacts.



### ***3.3.5 The benchmark change of NTD financial contracts***

#### ***The most quoted benchmark for short-run interest rates in Taiwan was Thomson Reuters 6165 before the end of 2014***

Thomson Reuters 6165/51328,<sup>83</sup> the Taipei Interbank Offered Rate (TAIBOR) and the Taiwan Bills Index Rate (TAIBIR) were the three benchmarks for NTD short-term interest rates with active quotes. Among them, transactions quoted 6165 as the benchmark rate posted the highest trading volume, exceeding NT\$4 trillion each year before the end of 2014.

#### ***Financial institutions stopped providing quotes to 6165/51328 consecutively out of the consideration of quote risks***

Following the London Interbank Offered Rate (LIBOR) rigging scandal in November 2013, Thomson Reuters required the quoting financial institutions to sign agreements with the addition of an article that any damages or lawsuit losses incurred by the quotes would be fully borne by the quoting financial institutions. Considering the risks of offering the quotes, financial institutions stopped providing quotes to 6165/51328, resulting in insufficient representation of the benchmarks and a need to change quoted benchmarks for related financial contracts.

#### ***Financial authorities assisted in the change of interest rate benchmarks***

Before benchmark change, most quotes of NTD financial derivatives were referred to 6165, while the quotes referred to TAIBOR and TAIBIR were not active enough to become market benchmarks. To achieve a smoother process of benchmark change quoted in unexpired financial contracts and provide more options for market quotes, the FSC and the CBC, under the assistance of the Bankers Association and the Taiwan Depository & Clearing Corporation, took several measures in October 2014, such as asking financial institutions to provide NTD interest rate derivative quotes referred to TAIBOR or TAIBIR and requiring them to periodically report the timetables and the implementation of benchmark change to the FSC and the CBC.

<sup>83</sup> 6165/51328 were the interest rate benchmarks compiled and published by Thomson Reuters for the secondary and primary NTD bill markets.

### **Interest rate benchmark change went smoothly**

By the end of 2014, 99.49% of financial contracts that reference 6165/51328 had been converted into using TAIBOR or TAIBIR. Among those, more than 90% chose to use TAIBOR because the difference between quote values of 6165 and TAIBOR were very small, giving the benefit of reducing disputes between both parties in financial contracts. Most financial contracts not yet converted were syndicated loans. They were expected to complete the conversion after adding further articles into original contracts when interest rates reset before June 2015.

### **3.3.6 Gradual improvements in compensation schemes of financial institutions**

Compensation policies determined in terms of short-term performance but not taking into consideration long-term risks may endanger financial institutions and result in excessive risk taking, and was thought to be one of the major causes of the latest global financial crisis in 2007. To improve incentives derived from compensation schemes, the Financial Stability Board (FSB) and major countries such as the US and UK have respectively proposed compensation scheme reforms. These proposals require that a portion of the variable compensation of senior executives should be deferred to be paid in the future or be clawed back in the event of poor performance, and the compensation for salespersons should align with potential risks to avoid encouraging excessive risk taking.

In Taiwan, there were also several financial shocks mainly deriving from improper incentives relating to the compensation policies of financial institutions. Therefore, after consulting the above global financial reforms, the FSC has taken the following measures since 2009 to reinforce the compensation schemes of domestic financial institutions:

- Assigning the Bankers Association, in October 2009, to amend the *Corporate Governance Best-Practice Principles for Banks*, requiring that compensation payments of directors of the board, managers and salespersons should be based on future risk-adjusted performance, and significant proportions of the associated compensation should be deferred.
- Amending the *Securities and Exchange Act* in November 2010 to require all listed companies, including listed financial holding companies and banks, to set up compensation committees responsible for establishing and periodically reviewing compensation policies for directors and supervisors of the board and managers of the

companies.

- Supervising the Trust Association, in March 2011, to draft and issue the *Principles of Setting up and Assessment of Remuneration System in the Trust Industry*, requiring that the compensation of their salespersons should not completely come from variable payments, and should be deferred to be paid for a period of time and avoid directly linking to their performance.
- Amending the *Directions of Risk Management for Banks Conducting Financial Derivative Business* in April 2014, requiring that the remuneration and performance assessment of sales staff should not totally depend on the achievement of sale targets and should consider other non-financial indicators.

The aforementioned regulation and direction amendments for compensation practices throughout the financial service industry would help to improve incentive compensation schemes, so as to promote the sound operation of financial institutions and enhance customer protection in financial services.

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## IV. Measures to maintain financial stability

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In 2014, against a backdrop of moderate growth in the global and domestic economies and modest inflation, Taiwan's financial markets and infrastructure maintained smooth operations and sound development. Financial institutions' profitability strengthened, asset quality continued to improve simultaneously, and capital levels largely rose. As a whole, Taiwan's financial system remained stable.

As a result of uneven economic recovery and the divergence of monetary policies among major economies, international financial markets fluctuated significantly, which, in turn, heightened uncertainties over global economic recovery. Facing changes in global and domestic economic and financial conditions, especially slowing economic growth in Mainland China, expanding quantitative easing monetary policies by the ECB and the spillover effects likely induced by the US monetary policy normalization in the future, the CBC will continue to closely monitor the influence of these issues on the domestic economy and financial system and adopt appropriate monetary, credit and foreign exchange policies. Meanwhile, the FSC also continues to update 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

The CBC continued to approve new foreign exchange financial products prudently to foster a more diversified market, and to appropriately review and relax restrictions on foreign exchange business to allow financial institutions to expand their business scope. In addition, the CBC also implemented appropriate monetary, credit and foreign exchange policies to improve financial stability.

### ***4.1.1 Adopting appropriate monetary policies to cope with domestic and global economic and financial conditions***

#### ***Policy rates remained unchanged in 2014***

The uneven pace of economic recovery and the divergence of monetary policies in major economies resulted in greater fluctuations in international financial markets and heightened uncertainties over global economic recovery. Coupled with a negative domestic output gap and manageable inflation expectations, the CBC kept policy rates unchanged<sup>84</sup> in 2014 so as to maintain price and financial stability and promote economic growth.

#### ***Reserve money growth remained moderate***

The CBC accommodated financial markets with funds to keep liquidity at appropriate levels through open market operations. The total loans and investments of all monetary institutions steadily increased, growing respectively by 4.96% and 5.66% year on year in 2014, higher than the GDP growth rate of 3.74% in the same period, while the monetary aggregate M2 maintained growth within its targeted range. This indicated that market liquidity was sufficient to support economic activity.

#### ***The CBC will implement appropriate monetary policies and macro-prudential policy tools as needed***

The CBC will continue to closely monitor price conditions, the output gap, as well as changes in global and domestic economic and financial conditions, and undertake monetary policies and macro-prudential policy tools flexibly to achieve its statutory mandates.

### ***4.1.2 Continually implementing targeted prudential measures for real estate loans***

In order to prevent banks' funds from being used for housing and land speculation and urge financial institutions to control the risks associated with real estate loans, thereby protecting the rights of depositors and promoting financial stability, the CBC has continually implemented targeted macro-prudential measures against house-purchase loans in the designated Specific Areas, land collateralized loans and high-value house-purchase loans

<sup>84</sup> 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.

since June 2010. Since the implementation of these measures, concentration in real estate loans and loan-to-value (LTV) ratios have both declined, and mortgage interest rates have increased. The effort has come to fruition.

In view of the developments in the housing market and credit risk management of financial institutions, the CBC further amended the relevant regulations in June 2014, which included: (1) expanding the scopes of Specific Areas (adding four more districts in New Taipei City and another four in Taoyuan City); (2) requiring an additional LTV ratio cap of 50% on the third or more house-purchase loans taken out by natural persons, applicable to properties across the country; (3) revising the definition of high-value housing<sup>85</sup> and lowering its LTV ratio ceiling to 50%; (4) lowering the LTV ratio ceiling on house-purchase loans taken out by corporate legal entities to 50% for properties across the country. Moreover, to prevent borrowers from using banks' funds for industrial land speculation and to encourage the use of industrial land, the CBC called on banks to exercise rigorous self-discipline on land collateralized loans of idle land in industrial zones in February 2015, so as to urge banks to implement risk management of industrial land collateralized loans and assist industrial development in Taiwan (Box 3).

### ***4.1.3 Implementing a managed float regime to stabilize the NT dollar exchange rate***

#### ***Adopting 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 and move in a disorderly fashion with adverse implications that could destabilize the domestic economy and financial markets, will the CBC step in to adjust the market in a timely manner.

#### ***Maintaining an orderly foreign exchange market and improving its sound development***

The divergence of monetary policies in the US, Japan, the euro area, etc. since 2014 has resulted in rising uncertainties and volatility in international short-term capital movements.

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<sup>85</sup> The definition of high-price housing is revised to the appraised values or purchase prices of houses above NT\$70 million in Taipei City, above NT\$60 million in New Taipei City, and above NT\$40 million in other areas.

The CBC will continue to closely monitor their dynamics and influence on the NT dollar exchange rate. Should there be an inordinate inflow or outflow of capital, leading to the foreign exchange rate over-fluctuating, the CBC will undertake appropriate management measures to maintain an orderly foreign exchange market.

1. To prevent excessive volatility of the NT dollar exchange rate from endangering financial stability, the CBC implements the Real Time Reporting System for Large-Amount Foreign Exchange Transactions to monitor the latest transaction information in the foreign exchange market.
2. The CBC urges authorized foreign exchange banks to strengthen their foreign exchange rate-associated risk management in order to mitigate the risk exposures of individual banks and systemic risks of the whole market.
3. The CBC strengthens targeted examinations on foreign exchange businesses and forward transactions to ensure they are undertaken for real demand purposes, in order to restrain foreign exchange speculation and maintain discipline in the foreign exchange market.
4. To avoid interruption in the market from foreign speculative funds, the CBC requires authorized foreign exchange banks to follow the sum of position limits for NTD non-delivery forwards (NDF) and foreign exchange options such that the combined amount may not exceed one-fifth of the total position limit.

## **4.2 Measures undertaken by the FSC to maintain financial stability**

From 2014 onwards, the FSC launched several policy measures to facilitate financial development and deregulation, such as relaxing business restrictions on OBUs, opening up the establishment of OSUs and OIUs, as well as promoting the Financial Import Substitution Program, the Digital Financial Environment Building Program and the program to boost securities markets, etc. Concurrently, the FSC has continued to strengthen financial supervision to maintain financial stability.

### **4.2.1 Continually adopting related supervisory measures on real estate loans**

From 2011 onwards, the FSC has required banks with high credit concentration in housing

loans or construction loans<sup>86</sup> to undertake control measures and set aside additional provisions for loan losses, as well as lifting the risk weights of housing loans for non-self-use properties from 45% to 100% in April 2011. Moreover, from 2014 onwards, the FSC continuously adopted additional supervisory measures, which included : (1) requiring domestic banks to conduct stress tests in May 2014, based on adverse scenarios of falling house prices, rising interest rates and declining borrowers' incomes,<sup>87</sup> to assess banks' loss absorption abilities;<sup>88</sup> (2) strengthening the identification of self-use residential loans according to the one-person-one-house principle; (3) requiring banks to raise loss provision ratios of housing loans and construction loans to 1.5% or more before the end of 2016.

## 4.2.2 Strengthening banks' risk controls over exposures to Mainland China

In addition to current risk limit requirements,<sup>89</sup> the FSC further undertook the following measures since 2014 to enhance banks' risk controls over exposures to Mainland China:

1. Requiring banks to conduct stress tests of risk exposures to Mainland China based on unified stress scenarios<sup>90</sup> to assess banks' loss absorption abilities.<sup>91</sup>
2. Adopting five more measures at the end of 2014, namely (1) reinforcing on-site examinations of banks' credit risk management related to exposures to Mainland China; (2) urging banks to formulate measures regarding claims protection suited to local

<sup>86</sup> The concentration levels for real estate loans are advised to stay below the standards as follows:

Regulated loans to total	Top ten banks on real estate loans	Other banks
Housing loans / total loans	30%	40%
Construction loans / total loans	10%	15%
Real estate loans / total loans	70%	

<sup>87</sup> The minor scenario assumes a 20% drop in house prices and one percentage point increase in the interest rate; while the severe scenario assumes a 30% drop in house prices and two percentage point rise in the interest rate. Both scenarios additionally assume a decrease in borrowers' incomes.

<sup>88</sup> The stress test results showed that potential losses under the minor and serious scenarios were NT\$37.4 billion and NT\$73.8 billion, respectively, which could result in average capital adequacy ratios falling to 11.71% and 11.56%, respectively. However, the ratios of all banks were still above the regulatory minimum of 8%.

<sup>89</sup> Current regulatory risk limits of banks' exposures to Mainland China include: (1) the cumulative allocated operating capital of a Taiwanese bank's branch in the Mainland Area combined with its total amount of investment in the Mainland Area shall not exceed 15 percent of the bank's net worth; as for a Taiwanese financial holding company, the total amount of investment in the Mainland Area shall not exceed 10 percent of its net worth; (2) the aggregate amount of credit that third-area branches and OBUs of a Taiwanese bank may extend in the Mainland Area shall not exceed 30 percent of its net assets; (3) the aggregate amount of credit, investment and interbank loans and deposits of a Taiwanese bank's business activities in the Mainland Area shall not exceed 100 percent of the bank's net worth as of the end of the preceding fiscal year.

<sup>90</sup> The minor scenarios were 7% Mainland China GDP growth, 2.5% non-performing loan ratio and a one percentage point interest rate rise; the severe scenarios were 5.5% Mainland China GDP growth, 4% nonperforming loan ratio and a 2.5 percentage point interest rate rise.

<sup>91</sup> The stress test results showed that potential losses under the minor and severe scenarios were approximately NT\$34.4 billion and NT\$72.9 billion, respectively, with average capital adequacy ratios falling to 12% and 11.85%, respectively. The ratios for all banks under stress scenarios were above the regulatory minimum of 8%.



conditions; (3) asking banks to prudently review overseas credit policies; (4) taking the performance of credit risk management into consideration for approving or rejecting a bank's application for establishing an overseas branch; (5) enhancing related regulatory reports and requiring the Central Deposit Insurance Corporation (CDIC) and the Joint Credit Information Center (JCIC) to help monitoring credit risks in Mainland China.

3. In April 2015, the FSC further adopted the following measures: (1) requiring banks to sufficiently verify the authenticity of related documents of short-term trade financing; (2) asking banks' audit departments to conduct internal audits on the authenticity of short-term trade financing, which should otherwise be counted into exposure to Mainland China; (3) including new interbank loans/deposits, of which the maturity is extended to more than 3 months, into the calculation of exposure to Mainland China; (4) increasing the regulatory loss provision ratio of performing credit assets exposed to Mainland China to at least 1.5% by the end of 2015. The FSC will review the effectiveness of the first three aforementioned measures at the end of 2015.

#### **4.2.3 Establishing an exit mechanism in the insurance industry and strengthening the functions of the Taiwan Insurance Guaranty Fund**

1. In February 2015, the FSC amended the *Insurance Act*, establishing a prompt corrective action mechanism for the insurance industry. The amendment classifies insurance companies by RBC ratio into four tiers, including capital adequate (RBC ratio above 200%), capital inadequate (RBC ratio above 150% but under 200%), capital obviously inadequate (RBC ratio above 50% but under 150%), and capital seriously inadequate (RBC ratio under 50% or negative equity), and requires the FSC to adopt different supervisory measures for companies in each tier. For those companies classified as "capital seriously inadequate," the FSC should take them over, close them down or dissolve them within a limited period (90 days), so as to enhance supervision on and establish an exit mechanism for the insurance industry.
2. In order to strengthen the functions of the Taiwan Insurance Guaranty Fund (TIGF) and improve the operations of the exit mechanism for insurers, the FSC amended the *Regulations Governing Organization and Management of Insurance Guaranty Fund* and the *Regulations Governing the Conservatorship and Receivership of Insurance Enterprises* in November 2014. They provide the TIGF with claim rights over its advance funds on behalf of a troubled insurer, regulate the duties of receiver and rehabilitator,

require the TIGF to establish a risk management division, and initiate a transitory insurance mechanism if necessary. In addition, to urge insurers to mitigate business risks and implement differential supervision, the FSC released rules in April 2014 to adopt a risk-based contribution regime that requires insurers to contribute to the TIGF based on risk assessment results.

#### 4.2.4 Other supervisory measures

1. To better safeguard the interests of financial consumers, the FSC amended the *Financial Consumer Protection Act* in February 2015 to augment the responsibilities of financial institutions on the sale of financial products and services, as well as expanding the scope of consumer claims for compensation.<sup>92</sup> In addition, the FSC revised the *Banking Act* to cap the interest rate of cash cards and the revolving interest rate of credit cards both at 15%, with a view to effectively reducing the interest burden of card holders.
2. In view of the inadequate implementation of know-your-customer practices, product suitability assessment and full disclosure of risks when conducting complex financial derivatives businesses, the Bankers Association revised related self-discipline guidelines in June 2014. Moreover, the FSC amended the *Directions for Banks Conducting Financial Derivatives Business* in December 2014, to strengthen banks' risk management and customer protection regarding complex and high-risk products. The amendments also require banks to improve review procedures for launching new types of products and reinforce employee compensation programs and product suitability rules, so as to facilitate the sound development of the derivatives business.
3. To enhance regulatory compliance of financial institutions, the FSC revised related regulations on internal audits and internal controls of financial holding companies, banks and insurance companies in August 2014. It reinforces the independence and obligations of compliance divisions, empowers chief compliance officers to sign off on any plans for launching a new product or business and evaluate compliance performance of each division, and upgrades the position of the chief compliance officers.
4. The FSC strives to continuously improve corporate governance of listed companies,

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<sup>92</sup> For example, when financial institutions violate regulations and invade the rights of financial consumers, the competent authority may impose enforcements, such as warning, suspension of product sales or revoking business licenses, depending on how serious the violation is. In addition, for those seriously violating regulations, the competent authority may fine them up to an unlimited amount within the scope of gains from the violation. Moreover, to prevent salespersons at financial institutions from improperly selling financial products and services, the amendment also requires that salespersons' remuneration programs and the selling of new, complex and high-risk products should get approval from the board of directors. This helps to raise more attention and enhance responsibility of executives of financial institutions to financial consumer protection.

which includes: (1) supervising the Corporate Governance Center of the TWSE to build a corporate governance evaluation system in March 2014 and releasing the outcome of the first evaluation in April 2015; (2) requiring certain listed companies such as food makers, chemical manufacturers, banks, insurance companies and other qualified companies to compile and disclose corporate social responsibility (CSR) reports by the end of June or December 2015.

## Appendix: Financial soundness indicators

Table 1: Domestic Banks

Unit: %

Items	Year (end of year )	2009	2010	2011	2012	2013	2014
<b>Earnings and profitability</b>							
Return on assets (ROA)		0.28	0.57	0.58	0.67	0.67	0.77
Return on equity (ROE)		4.52	9.08	9.27	10.44	10.29	11.62
Net interest income to gross income		59.54	59.52	62.61	63.37	60.97	59.34
Non-interest expenses to gross income		59.81	55.99	55.44	54.71	52.81	50.15
Gains and losses on financial instruments to gross income		16.43	9.93	6.92	11.74	14.63	14.11
Employee benefits expenses to non-interest expenses		57.56	57.67	57.71	59.66	59.32	57.50
Spread between lending and deposit rates (basis points)		1.22	1.36	1.41	1.42	1.42	1.42
<b>Asset quality</b>							
Non-performing loans to total loans		1.15	0.61	0.43	0.41	0.39	0.25
Provision coverage ratio		90.35	157.32	250.08	269.07	311.65	502.87
<b>Capital adequacy</b>							
Regulatory capital to risk-weighted assets		11.83	11.96	12.06	12.54	11.83	12.34
Tier 1 capital to risk-weighted assets		9.03	9.18	9.08	9.49	9.14	9.60
Common equity Tier 1 capital to risk-weighted assets		-	-	-	-	9.06	9.38
Capital to total assets		6.25	6.31	6.29	6.59	6.60	6.85
Non-performing loans net of provisions to capital		6.39	2.92	-0.38	-0.82	-3.24	-3.86
<b>Liquidity</b>							
Customer deposits to total loans		133.13	132.28	128.66	129.06	130.06	130.89
Liquid assets to total assets		15.20	10.46	11.05	9.77	13.40	13.17
Liquid assets to short-term liabilities		20.98	14.65	15.67	14.00	18.42	18.32

Table 1 : Domestic Banks (cont.)

Unit: %

Items \ Year (end of year )	2009	2010	2011	2012	2013	2014
<b>Credit risk concentration</b>						
Household loans to total loans	46.41	46.67	46.06	46.36	47.73	48.67
Corporate loans to total loans	43.26	43.66	44.91	44.82	44.65	44.32
Large exposures to capital	R 73.05	R 66.91	R 67.57	R 60.60	R 52.40	42.21
Gross asset positions in financial derivatives to capital	8.17	8.54	7.57	5.84	6.79	15.61
Gross liability positions in financial derivatives to capital	8.44	10.02	7.05	6.11	8.09	15.53
<b>Sensitivity to market risk</b>						
Net open position in foreign exchange to capital	2.43	2.72	2.71	2.91	3.04	2.69
Foreign-currency-denominated loans to total loans	16.22	16.28	18.14	R 18.10	R 19.90	21.22
Net open position in equities to capital	25.69	24.48	R 24.25	22.13	22.71	24.33
Foreign-currency-denominated liabilities to total liabilities	19.48	20.31	21.65	21.84	27.01	29.01

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" from 2013 are on the Basel III basis.

4. Figures for "Large exposures" are revised to the total amount of credit to the first 20 private enterprises at domestic banks after integration.

5. Figures with "R" are revised data.

Table 2: Non-financial Corporate Sector

Units: %, times

Items \ Year (end of year )	2009	2010	2011	2012	2013	2014
<b>Total liabilities to equity</b>						
TWSE-listed companies	90.26	94.49	104.22	110.61	R 105.35	101.77
OTC-listed companies	78.18	89.41	83.03	87.95	R 81.22	76.76
<b>Return on equity</b>						
TWSE-listed companies	10.14	16.12	10.99	10.45	R 14.06	14.78
OTC-listed companies	6.95	13.77	8.97	6.91	R 9.92	12.21
<b>Net income before interest and tax / interest expenses (times)</b>						
TWSE-listed companies	9.83	19.40	11.32	8.55	R 13.11	13.38
OTC-listed companies	7.62	13.74	10.59	6.75	R 11.12	14.50

Notes: 1. Data of TWSE-listed and OTC-listed companies are from TEJ.

2. Figures for listed companies are consolidated financial data; prior to 2011 are under ROC GAAP, while from 2012 are under TIFRSs.

3. Figures with "R" are revised data.

**Table 3: Household Sector**

Unit: %

Items	Year (end of year )	2009	2010	2011	2012	2013	2014
Household borrowing to GDP		R 81.60	R 79.11	R 79.38	R 80.09	R 82.51	82.76
Borrowing service and principal payments to gross disposable income		R 39.17	R 38.46	R 39.34	R 39.21	R 41.97	44.02

Notes: 1. Figures for “gross disposable income” is net household disposable income before deducting rent and interest expenses.

2. Figure of gross disposable income for 2014 is a CBC estimate.

3. Historical GDP and gross disposable income prior to 2013 are both revised by the comprehensive revision of the national accounts.

4. Figures with “R” are revised data.

**Table 4: Real Estate Market**

Unit: index, %

Items	Year (end of year )	2009	2010	2011	2012	2013	2014
Land price index		R 81.30	R 85.90	R 90.86	R 96.32	R 105.76	115.04
Residential real estate loans to total loans		30.57	29.99	28.64	28.21	27.91	26.80
Commercial real estate loans to total loans		12.47	13.25	13.70	14.14	14.26	14.05

Notes: 1. The land price index is published semiannually, and the reference dates are the end of March and September, respectively, while these figures are based on end-September data every year (March 2013 = 100).

2. Figures with “R” are revised data.

**Table 5: Market Liquidity**

Unit: %

Items	Year (end of year )	2009	2010	2011	2012	2013	2014
The turnover ratio of trading value in stock market		178.28	136.74	119.87	97.33	82.64	84.63
The monthly average turnover ratio in bond market		32.13	32.95	19.73	12.26	8.59	8.26

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

2. The monthly average turnover ratio in bond market is the average figure of the period.

# Explanatory notes:

## Compilation of financial soundness indicators

### I. General notes

*To facilitate international comparison, most items listed in “Appendix: Financial Soundness Indicators” are compiled in accordance with the “Financial Soundness Indicators: Compilation Guide” issued by the IMF. However, a few indicators are not used for analysis in this report owing 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 2014 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, Bank Sinopac, E. Sun Commercial Bank, KGI Bank, DBS Bank (Taiwan) Ltd., 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 in 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 before 2012, while the daily average of total assets since 2013.

### **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 before 2012, while the daily average of equity since 2013.

### **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 the last 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 = (non-performing loans - specific loan provisions) / capital
  - Non-performing loans: same as 1.2.1.
  - Specific loan provisions: the minimum provision that a bank should allocate in accordance with Article 5 of *Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing / Non-accrual Loans*.
  - Capital: same as 1.3.4.

## 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 assets 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 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 the 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, and current transfers receipts less current taxes on income and wealth and other current transfers expenditures (net disposable income) plus expenses of interest and rent.

## 4. Real estate market indicators

### 4.1 Land price index

This indicator is to analyze the price movements 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, and the reference dates are the end of March and September, respectively.

### 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 the monthly turnover ratio in terms of trading value within the 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

<b>ABS</b>	Australian Bureau of Statistics
<b>AFS</b>	Available-for-sale
<b>ANIE</b>	Asian Newly Industrialized Economies
<b>APPs</b>	Applications
<b>APRA</b>	Australian Prudential Regulation Authority
<b>ASEAN</b>	Association of South East Asian Nations
<b>BCBS</b>	Basel Committee on Banking Supervision
<b>BICRA</b>	Banking Industry Country Risk Assessment
<b>BIS</b>	Bank for International Settlements
<b>BNM</b>	Bank Negara Malaysia
<b>BOJ</b>	Bank of Japan
<b>BOK</b>	Bank of Korea
<b>BOT</b>	Bank of Thailand; Bank of Taiwan
<b>BSI</b>	Banking System Indicator
<b>CAD</b>	Canadian dollar
<b>CBC</b>	Central Bank of the Republic of China (Taiwan)
<b>CCHS</b>	Check Clearing House System
<b>CDIC</b>	Central Deposit Insurance Corporation
<b>CHF</b>	Swiss Franc dollar
<b>CIFS</b>	CBC Interbank Funds-Transfer System
<b>CPI</b>	Consumer price index
<b>CPPCC</b>	Chinese People's Political Consultative Conference
<b>CSR</b>	Corporate social responsibility
<b>DBUs</b>	Domestic banking units
<b>DGBAS</b>	Directorate-General of Budget, Accounting and Statistics of the Executive Yuan
<b>DVP</b>	Delivery-versus-payment

<b>ECB</b>	European Central Bank
<b>EIA</b>	Energy Information Administration
<b>EIU</b>	Economist Intelligence Unit
<b>EPIs</b>	Electronic Payment Institutions
<b>ETFs</b>	Exchange-traded funds
<b>EU</b>	European Union
<b>FDIC</b>	Federal Deposit Insurance Corporation
<b>Fed</b>	Federal Reserve System
<b>FISC</b>	Financial Information Service Co.
<b>FSA</b>	Financial Services Agency, Japan
<b>FSB</b>	Financial Stability Board
<b>FSC</b>	Financial Supervisory Commission
<b>FSIs</b>	Financial soundness indicators
<b>FSS</b>	Financial Supervisory Service, South Korea
<b>FX</b>	Foreign exchange
<b>GAAP</b>	Generally accepted accounting principles
<b>GBP</b>	British Pound dollar
<b>GDP</b>	Gross domestic product
<b>GPD</b>	Generalized Pareto distribution
<b>HKMA</b>	Hong Kong Monetary Authority
<b>HQLA</b>	High-quality liquidity assets
<b>IASB</b>	International Accounting Standards Board
<b>IEA</b>	International Energy Agency
<b>IFRSs</b>	International Financial Reporting Standards
<b>IMF</b>	International Monetary Fund
<b>IRS</b>	Interbank Remittance System
<b>JCIC</b>	Joint Credit Information Center
<b>JPY</b>	Japanese Yen
<b>KRW</b>	Korean Won
<b>LCR</b>	Liquidity coverage ratio
<b>LIBOR</b>	London Interbank Offered Rate
<b>LTV</b>	Loan-to-value
<b>MAS</b>	Monetary Authority of Singapore



<b>MLF</b>	Medium-term Lending Facility
<b>MNO</b>	Mobile Network Operator
<b>MOF</b>	Ministry of Finance
<b>MOI</b>	Ministry of Interior
<b>MPI</b>	Macro-prudential indicator
<b>MYR</b>	Malaysian Ringgit dollar
<b>NATO</b>	North Atlantic Treaty Organization
<b>NBER</b>	National Bureau of Economic Research
<b>NCDs</b>	Negotiable Certificates of Deposit
<b>NDF</b>	Non-Delivery Forward
<b>NPC</b>	National People's Congress
<b>NPL</b>	Non-performing loan
<b>NSFR</b>	Net stable funding ratio
<b>NTD</b>	New Taiwan dollar
<b>O2O</b>	Online to Offline
<b>OBUs</b>	Offshore banking units
<b>OIUs</b>	Offshore insurance units
<b>OPEC</b>	Organization of the Petroleum Exporting Countries
<b>OSUs</b>	Offshore securities units
<b>OTC</b>	Over-the-counter
<b>PBC</b>	People's Bank of China
<b>PP</b>	Percentage Point
<b>PPI</b>	Producer price index
<b>PSP</b>	Payment Service Provider
<b>PVP</b>	Payment-versus-payment
<b>QE</b>	Quantitative easing
<b>QQE</b>	Quantitative and qualitative monetary easing
<b>RBC</b>	Risk-based capital
<b>RMB</b>	Renminbi
<b>ROA</b>	Return on assets
<b>ROE</b>	Return on equity
<b>RP</b>	Repurchase
<b>RRR</b>	Reserve requirement rate

<b>RS</b>	Reverse repurchase
<b>RTGS</b>	Real time gross settlement systems
<b>S&amp;P</b>	Standard and Poor's
<b>SEK</b>	Swedish Krona dollar
<b>SGD</b>	Singapore dollar
<b>SHIBOR</b>	Shanghai Interbank Offered Rate
<b>SIPSs</b>	Systemically Important Payment Systems
<b>SLO</b>	Short-term liquidity operations
<b>SMEG</b>	Small and Medium Enterprise Credit Guarantee Fund of Taiwan
<b>SMEs</b>	Small- and medium-sized enterprises
<b>SNB</b>	Swiss National Bank
<b>TAIBIR</b>	Taiwan Bills Index Rate
<b>TAIBOR</b>	Taipei Interbank Offered Rate
<b>TAIEX</b>	Taiwan Stock Exchange Weighted Index
<b>TEJ</b>	Taiwan Economic Journal Co., Ltd
<b>TIFRSs</b>	Taiwan-IFRSs
<b>TIGF</b>	Taiwan Insurance Guaranty Fund
<b>TPEx</b>	Taipei Exchange
<b>TSM</b>	Trusted Services Management
<b>TWSE</b>	Taiwan Stock Exchange
<b>USD</b>	US dollar
<b>VaR</b>	Value at Risk
<b>WPI</b>	Wholesale price index
<b>WTI</b>	West Texas Intermediate

# Financial Stability Report

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