# IV. Financial sectors

## 4.1 Financial markets

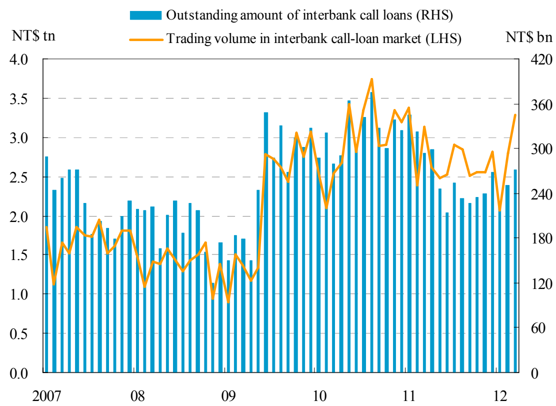
In 2011, trading volume contracted in both the interbank call-loan and bond markets, while trading volume trended upwards in the bills market. The yield spread between long-term and short-term rates still remained at a low level. As for the domestic stock markets, stock indices trended downward after reaching record highs in the first half of 2011, and volatility sharply increased before falling back. In the foreign exchange market, the NT dollar exchange rate against the US dollar reversed from appreciation to depreciation, but remained relatively stable compared to the exchange rates of other major currencies; moreover, trading volume increased gradually.

### *4.1.1 Money and bond markets*

#### *Trading volume contracted in interbank call loans*

In 2011, the average monthly trading volume of interbank call loans declined by 7.85% year on year, and the average daily outstanding amount also declined by 17.55% over the previous year. The reason was primarily because the CBC significantly raised the reserve requirement ratio for the NT dollar demand deposits of foreign investors,[52] leading to a significant decline in the trading volume of interbank call loans provided by foreign banks which serve as custodian banks for foreign portfolio investors. In 2012 Q1, the trading volume of

**Chart 4.1 Interbank call-loan market**




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

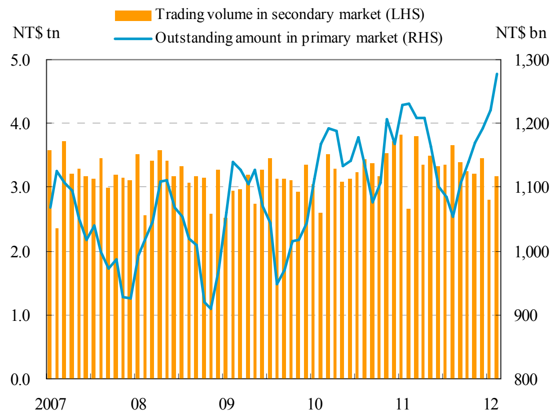
[52] The Special Reserve Requirement for New Taiwan Dollar Demand Deposits as amended on 30 December 2010 requires that financial institutions shall set aside reserves for the NTD demand deposits of overseas Chinese and foreign nationals, foreign institutional investors and Mainland Chinese investors effective from 1 January 2011. The reserve requirement ratio shall be 90 percent for the portion of the aforementioned demand deposits balance exceeding the outstanding balance of 30 December 2010, and 25 percent for the portion not exceeding the 30 December 2010 level. Both are higher than the general demand deposits reserve ratio of 9.775%.

interbank call loans descended markedly in January owing to the Chinese Lunar New Year holidays, and then rebounded from February onwards (Chart 4.1).

### *Trading volume in the primary and secondary bills markets rebounded*

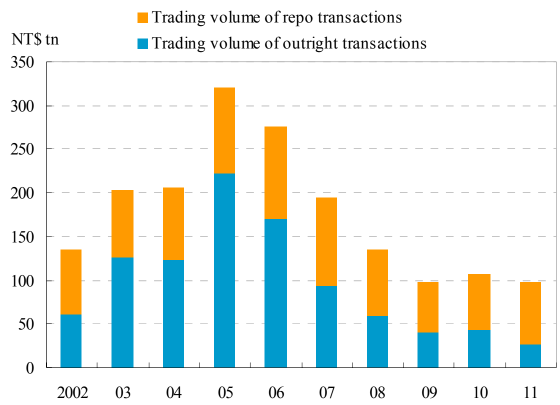
In the first three quarters of 2011, the outstanding amount of bills issuance saw a declining trend in the primary bills market, though it reversed to a rising trend from September onwards. The reason was primarily because the buildup of economic downside risks in the second half of 2011 caused the CBC to stop raising policy rates in the third quarter of the year. As a result, bond traders adjusted to adopt an active strategy based on the expectation of dropping market rates, leading to an apparent upsurge in the underwriting of commercial paper and extension of bills positions. Therefore, the outstanding amount of bills issuance at the end of 2011 rose by 2.16% year on year. Broken down by instruments, the outstanding issuance amount of certificates of deposit at the end of 2011 increased by 15.45% and commercial paper rose by 7.60%, while that of treasury bills declined by 24.9%. Moreover, in the first two months of 2012, the outstanding amount of bills issuance remained high, reflecting a rebound in the primary bills market.

**Chart 4.2 Primary and secondary bills markets**




Sources: CBC and FSC.

**Chart 4.3 Outright and repo transactions in the bond market**




Source: CBC.

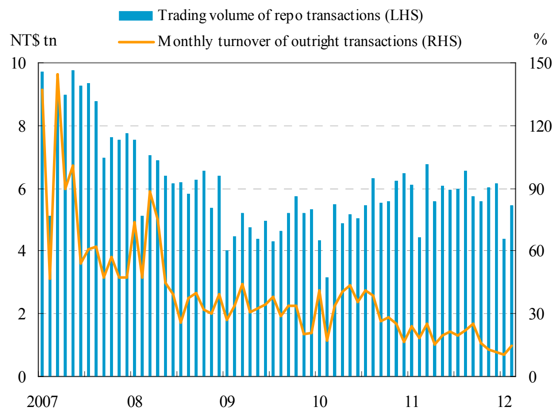
As for the secondary bills market, its trading volume,[53] affected by an increase in the issuance of commercial paper and certificates of deposit, rose by 4.25% year on year in 2011 (Chart 4.2). After a remarkable decline in January 2012 affected by the Chinese Lunar New Year holidays, the trading volume soared from February onwards.

[53] Source: FSC.

### *Trading volume in the bond market continued to decline, while yield spread ranged at a low level*

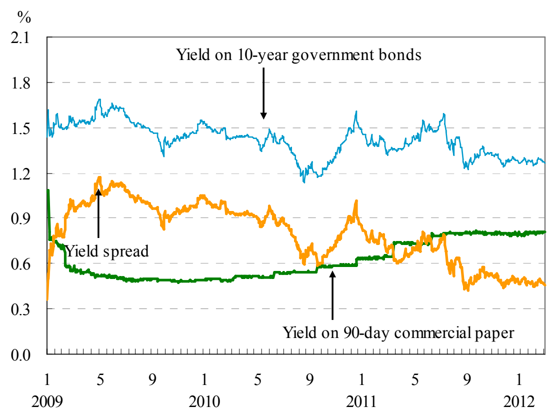
In 2011, the bond market was still sluggish, and trading volume declined by 8.00% year on year. Of the components, outright transactions dropped significantly by 37.03%, while repo transactions increased by 11.44% (Chart 4.3). Outright transactions were sluggish owing to ample liquidity and less bonds being traded in the market. From October onwards, affected by the looming prospect of future interest rate cuts and bond traders' lack of willingness to trade by the end of the year, outright transactions dropped significantly and their monthly turnover ratio fell to a trough of 11.75% in December 2011, a ten-year low. In early 2012, the outright turnover ratio descended to a remarkable low of 10.30% in January owing to the Chinese Lunar New Year holidays, but reversed to increase in February (Chart 4.4). It is expected that the trading volume of outright transactions will remain at a low level in 2012.

**Chart 4.4 Bond transactions and turnover**




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

**Chart 4.5 Yield spread**




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

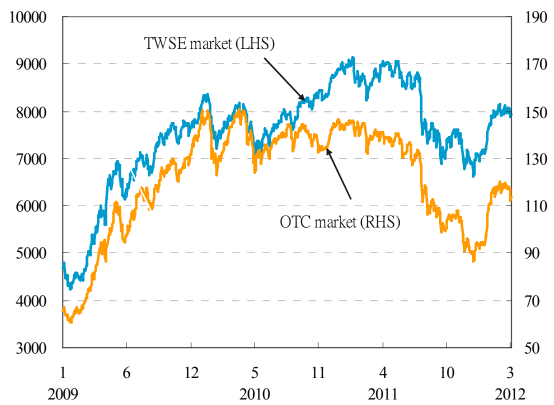
In the first half of 2011, following the CBC's two policy rate rises, short-term market rates and government bond yields both climbed. However, from August onwards, capital inflows into the bond market in the wake of the European sovereign debt crisis led to financial market turmoil as government bond yields declined to annual lows. This resulted in a shrinkage in yield spread between short-term and long-term rates down to 42 basis points in late September, though yield spread widened afterwards for a short time. In March 2012, the same yield spread remained at a low level of only 46 basis points (Chart 4.5).

## 4.1.2 Equity markets

### Stock indices trended down after hitting new highs, while volatility dropped after sharp increases

The Taiwan Stock Exchange Weighted Index (TAIEX) of the Taiwan Stock Exchange (TWSE) market hit a new high of 9,145 in late January 2011, spurred by the robust performance of the US stock market and massive net buying by foreign investors. However, the TAIEX dropped to a first-quarter low of 8,235 on 15 March, owing to the repatriation of foreign capital arising from political and economic turmoil in several countries and the earthquake in Japan. Afterwards, it fluctuated within a narrow range. From August onwards, driven by the spillover effects of the European sovereign debt crisis, a revision of America's long-term credit rating from stable to negative and the slower-than-expected global economic recovery, coupled with the net stock selling by foreign investors,[54] the TAIEX resumed its downward trend and dipped to an annual low of 6,633 on 19 December. It rebounded to 7,072 at the end of December, decreasing by 21.18% year on year. In the beginning of 2012, the brighter outlook for European and US recoveries caused major stock markets around the world to soar. Furthermore, investor confidence was restored and foreign investors resumed net buying positions as uncertainties receded with the end of the presidential election in Taiwan. This propelled the TAIEX to soar up to 7,933 at the end of March 2012, an increase of 12.17% from the end of December 2011. Meanwhile, Taiwan's GreTai Securities Market (GTSM) Index of the over-the-counter (OTC) market closely tracked the movements of the TAIEX, hitting a high of 146 in January before skidding to 94 at year-end 2011. This represented an annual decrease of 34.78%. Similarly, the figure climbed to 114 at the end of March 2012, an increase of 20.98% from the end of 2011[55] (Chart 4.6).

**Chart 4.6 Taiwan stock market indices**




Sources: TWSE and GTSM.

Compared to major stock markets around the world, most markets showed negative performance in 2011 except for New York's Dow Jones and Kuala Lumpur's Composite Index. The fall of the TAIEX approximately

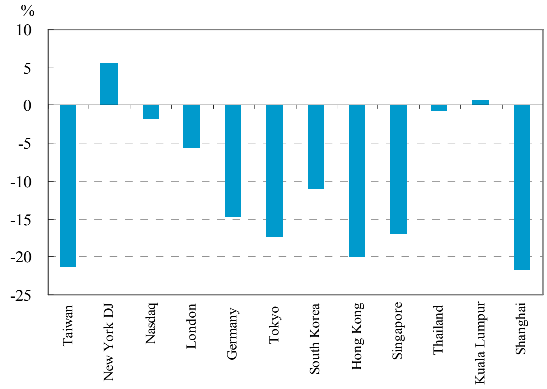
54 In August 2011, foreign investors (foreign institutional investors, overseas Chinese, and foreign individual investors) were net sellers of NT$190.3 billion worth of securities in Taiwan, with the net selling amount reaching a new high for a single month since May 2010.

55 In April 2012, the TAIEX reversed its upward trend and closed at 7,502 by the end of the month, owing to the reintroduction of a stock trading income tax and greater concerns over the European sovereign debt crisis. The index's increase narrowed to 6.08% over the previous year-end. Correspondingly, the GTSM index fell to 106 in April 2012, a rise of only 12.78% compared to the end of 2011.

equaled those of the stock indices of Hong Kong and Shanghai (Chart 4.7).

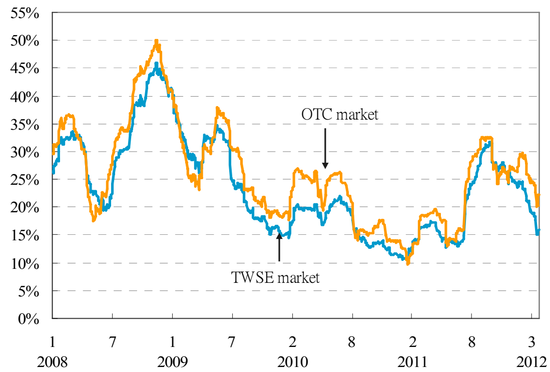
Broken down by sectors, most sector indices in the TWSE market tumbled in 2011, except the Cement, Food, Rubber and Automobile Industry indices which maintained positive performances. Among these indices, the Rubber Index performed the best and increased by 10.16% due to a rise in aggregate demand from Mainland China and the magnification of overall manufacturing capacity. By contrast, the Optoelectrical Industry Index performed the poorest, with a drop of 50.56% throughout the year. This reflected notable losses in the TFT-LCD and the light-emitting diode (LED) industries. In 2012 Q1, most indices, excluding the Oil, Gas and Electricity Industry Index, entered bullish territory following the upward trend of the TAIEX. The Automobile Index outperformed others, with a rise of 34.63%. Additionally, the Optoelectrical Industry Index reversed its downward trend and surged by 20.26%, thanks to the brightening industry outlook.

**Chart 4.7 Comparison of major stock market performances**




Notes: 1. Figures are for 2011.
2. Taiwan's index is for the TWSE market.
Source: TWSE.

**Chart 4.8 Stock price volatility**




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

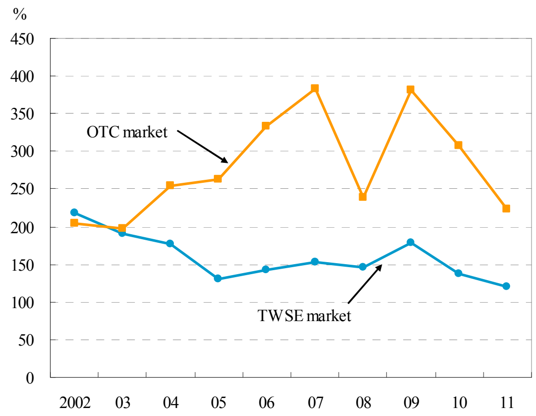
Equity market volatility settled at a low level in the first half of 2011. From the second half of the year, in response to sharp falls in the TWSE and OTC indices, volatility in the markets became amplified and reached annual highs in October, but then declined slightly to 24.95% and 27.03%, respectively, at the end of December. In 2012 Q1, the volatility in the TWSE and OTC markets trended downward as the local stock market gained stability, standing at 15.86% and 22.24%, respectively, at the end of March (Chart 4.8).

## *Annual turnover ratio hit a new low*

The TWSE and OTC markets were both sluggish in 2011. The average monthly trading value in the TWSE market was NT$2.18 trillion, a decrease of 7.16% year on year, while its annual turnover ratio in terms of trading value in the same year declined to 119.87%, touching a 10-year low. The transaction volume in the OTC market performed even more lethargically. The average monthly trading value was only NT$332.8 billion in 2011, a decrease of 29.12% year on year. Reflecting this, the annual turnover ratio of the OTC market significantly fell to 223.36%, registering a record low since 2004 (Chart 4.9). In January 2012, affected by the Chinese Lunar New Year holidays, the annual turnover ratios and monthly trading values in the TWSE and OTC markets followed a downward direction. However, the numbers witnessed a rebound in February as the local stock markets staged revivals.

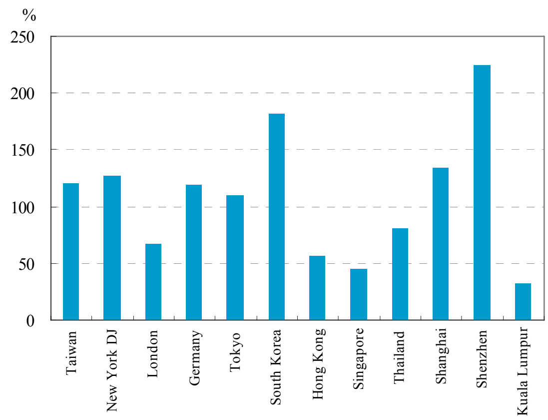
Compared to major stock markets around the world, the annual turnover ratio in the TWSE market in 2011 was lower than the stock markets in New York, South Korea, Shanghai and Shenzhen, while approximately equal to that in Germany, but higher than those in London, Tokyo, Hong Kong, Singapore, Thailand and Kuala Lumpur (Chart 4.10).

**Chart 4.9 Annual turnover ratios in Taiwan's stock markets**




Sources: TWSE and GTSM.

**Chart 4.10 Comparison of turnover ratios in major stock markets**




Notes: 1. Figures refer to accumulated turnover ratios in 2011.
2. Taiwan's figure is for the TWSE market.
Source: TWSE.

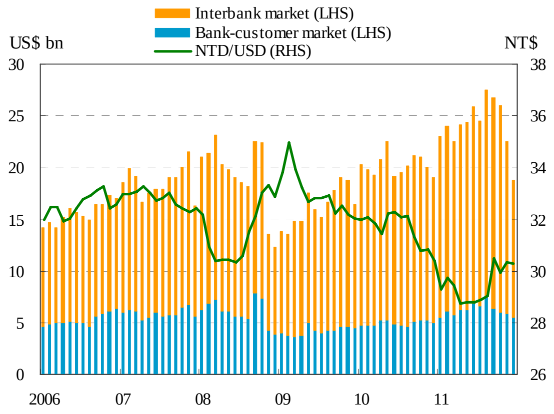
## 4.1.3 Foreign exchange market

### *NT dollar exchange rate reversed from appreciation to depreciation and foreign exchange trading volume increased gradually*

Due to quantitative easing in the US and foreign capital inflows, the NT dollar exchange rate kept appreciating in early 2011, reaching 29.1 against the US dollar on 9 February. Afterwards, it turned to a period of depreciation mainly owing to the increasing hedging needs for US dollars arising from global political and economic turmoil and the withdrawal of foreign capital from emerging markets. However, the NT dollar exchange rate reversed from depreciation to appreciation and reached an annual high of 28.632 in early May in virtue of a weak US dollar caused by the Standard and Poor's (S&P) revision of the long-term US credit rating outlook from stable to negative in April.

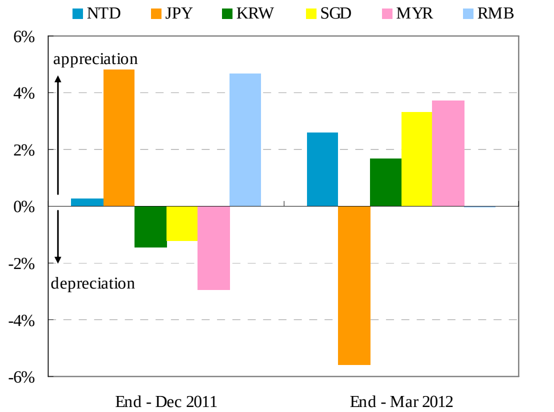
In the second half of 2011, with the massive repatriation of foreign capital alongside the hedging needs for US dollars caused by the worsening European sovereign debt crisis, the NT dollar exchange rate entered into a period of depreciation again and fell to a yearly low of 30.680 in early October, but then turned to appreciation and stood at 30.290 against the US dollar at the end of December (Chart 4.11). From early 2012, due to the weakening US dollar stemming from the European Union reaching a consensus on the Greek bailout, together with continued capital inflows by foreign investors and increasing sales of the US dollar by firms, the NT dollar exchange rate continued appreciating, reaching 29.530 against the US dollar at the end of March. Compared to other major currencies in Asia, the appreciation of the NT dollar against the US dollar was merely 0.26%, lower than the Japanese yen's 4.83% and the renminbi's 4.70%. Meanwhile, the Korean won, Singapore dollar and Malaysian ringgit depreciated by 1.48%, 1.22% and 2.94%, respectively (Chart 4.12).

**Chart 4.11 NTD/USD exchange rate and foreign exchange market trading volume**




Note: Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
Source: CBC.

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

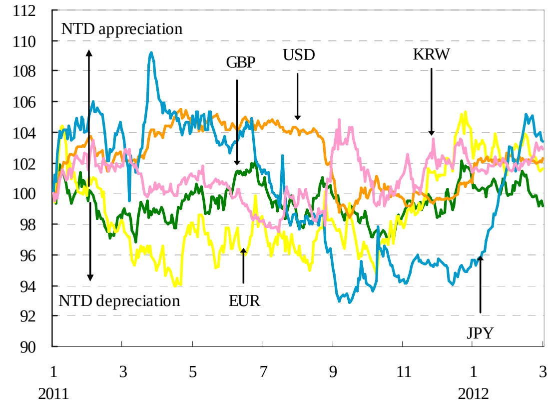



Note: Figures refer to exchange rates as of the end of 2011 and end-March 2012 compared to those as of the end of 2010 and 2011, respectively.
Source: CBC.

As for the NT dollar against other key international currencies, the value of the yen went up significantly as a result of the increasing hedging needs for international funds, and even though the Japanese government stepped in to intervene in the market, the effect was limited. As a result, the NT dollar depreciated against the yen by 4.37% year on year at the end of 2011. Conversely, the NT dollar appreciated by 0.73% and 3.54% against the British pound and the euro, respectively, over the same period; in addition, it appreciated by 1.76% against the Korean won (Chart 4.13).

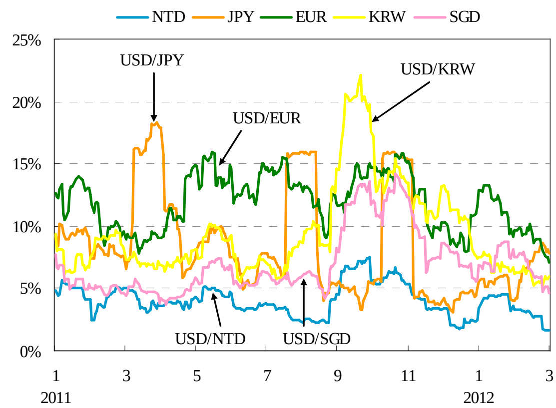
Owing to continued export growth and relatively large international capital movements, the foreign exchange market became more active in 2011 as the average daily trading volume registered US$24.2 billion, increasing by 19.46% year on year (Chart 4.11). A breakdown by counterparties shows that the average daily trading volume in the interbank market accounted for 74.27% of the total in 2011, while the retail bank-customer market made up a 25.73% share. As for types of transactions, spot trading accounted for 42.80% of the total, followed by foreign exchange swaps with 40.82%.

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




Note: 3 January 2011 = 100.
Source: CBC.

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




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

### *NT dollar exchange rate volatility leveled off after an upward trend and remained relatively stable compared to other currencies*

The volatility in the NT dollar exchange rate against the US dollar fluctuated between 3% and 5% in the first half of 2011, and then intensified from September and peaked at 7.47% in the middle of October. However, the volatility moderated at the end of the year and registered an annual average of 4.25%. In early 2012, the volatility in the NT dollar exchange rate against the US dollar continued its downward trend and fell below 2% during the first quarter of the year, thus pushing the quarterly average volatility over the same period down to a much milder figure of 3.14% (Chart 4.14).

The CBC adopts a managed floating exchange rate regime, where in principle the exchange rate is determined by supply and demand in the foreign exchange market. If the market is disrupted by seasonal or irregular factors (e.g. large inflows or outflows of short-term capital), causing the exchange rate to become excessively volatile, the CBC may step in to maintain an orderly foreign exchange market. Though the volatility in the NT dollar exchange rate against the US dollar temporarily increased in 2011, the NT dollar exchange rate was relatively stable compared to the volatility in the exchange rates of major currencies such as the Japanese yen, euro, Korean won and Singapore dollar against the US dollar (Chart 4.14).

# 4.2 Financial institutions

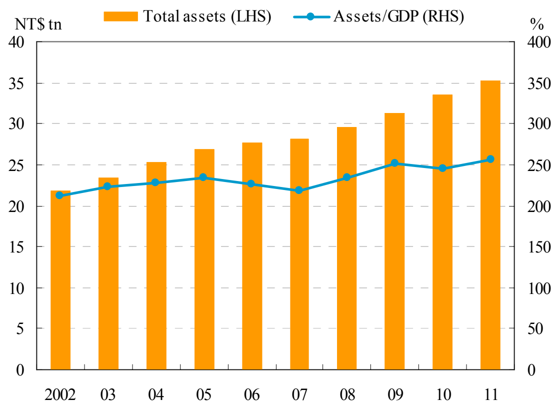
## 4.2.1 Domestic banks

In 2011, the total assets of domestic banks continually accumulated; however, the annual loan growth rate moderated. Asset quality remained satisfactory and credit risk concentration declined slightly; nevertheless, credit exposure concentrated in the real estate market remains high. The estimated VaR for market risk exposures of domestic banks had limited influence on their capital adequacy. Meanwhile, liquidity risk was moderate as the banking system benefited from ample liquidity. The profitability of domestic banks amplified sharply with a sustained improvement in capital adequacy in 2011, strengthening the capability of domestic banks to bear risks.

### Total assets continually accumulated

The total assets of domestic banks kept growing and reached NT$35.3 trillion at the end of 2011, equivalent to 256.79% of annual GDP (Chart 4.15), while the annual growth rate of total assets decreased to 5.53% from 6.73% a year earlier. The main reason behind this was a decline in the outstanding amount of due from banks and interbank borrowings.

**Chart 4.15 Total assets of domestic banks**




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

### Credit risk

#### *Customer loan growth slowed*

Customer loans were the major source of credit risks for domestic banks. Outstanding loans of the local business units of domestic