III. Financial system assessment

3.1 Financial markets

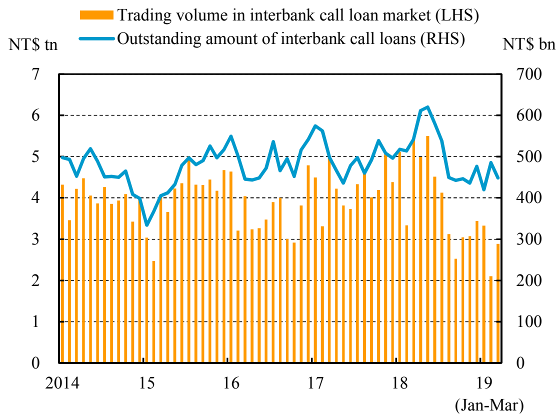
With respect to money and bond markets in 2018, the interbank call loan market and the primary bill market contracted after expanding. The outstanding amount of bond issuance continued escalating, while the turnover rate of outright transactions in the secondary bond market decreased and hit a new low. In the same period, short-term market rates remained at a low level, while long-term rates fluctuated with a downward trend. As for stock markets, stock prices remained high and fluctuated before trending downward; however, they rebounded markedly in 2019 Q1. In the FX market, the NT dollar exchange rate against the US dollar fluctuated with a downward trend, and its volatility remained relatively stable.

3.1.1 Money and bond markets

Interbank call loan market contracted after expanding

In the first half of 2018, the average daily outstanding amount and the trading volume of interbank call loans increased by 12.33% and 17.59% year on year, respectively. The main reason was that the proceeds from net selling of domestic securities by foreign investors weren't remitted outwards promptly and instead those funds were provided as interbank call loans by the custodian banks. Nevertheless, in the second half of 2018, money markets tightened marginally, which decreased banks' willingness to provide call loans. This, together with a decreasing turnover rate of call loans reflecting longer loan tenor, led the trading volume of interbank call loans to decrease markedly by 27.22% year on year. In 2019 Q1, the outstanding amount and the trading volume of interbank call loans continued to stay at a low level (Chart 3.1).

Chart 3.1 Interbank call loan market



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

Outstanding amount of bill issuance increased while the secondary bill market remained on an upward growth path

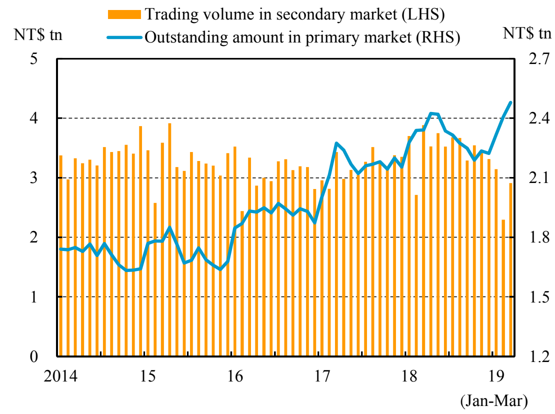
In 2018, although the outstanding amount of bill issuance in the primary market decreased after increasing, it reached NT$2.22 trillion at the end of the year, increasing by 3.18% year on year, owing to the expansion of CP issuance. In 2019 Q1, the outstanding amount of bill issuance rebounded because of increases in CP and treasury bill issuance (Chart 3.2).

Regarding the secondary bill market, the trading volume increased by 9.68% year on year and amounted to NT$42.04 trillion in 2018 owing to the expanded issuance of CP. The trading volume reversed to decrease in 2019 Q1 (Chart 3.2).

Bond issuance expanded continually, but the turnover rates of outright transactions hit a new low

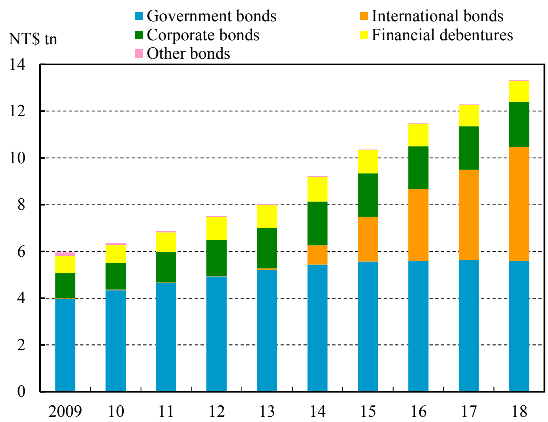
At the end of 2018, the outstanding amount of bond issuance stood at NT$13.33 trillion and increased by 8.41% year on year, mainly driven by significant growth of international bond issuance.[36] However, owing to the fact that the Legislative Yuan passed the amendemnt of *Insurance Act* that authorized FSC to impose a limit on the amount of international bond investments by insurance companies, the momentum of their issuance has cooled down from April 2018 onwards. In addition, the

Chart 3.2 Primary and secondary bill markets



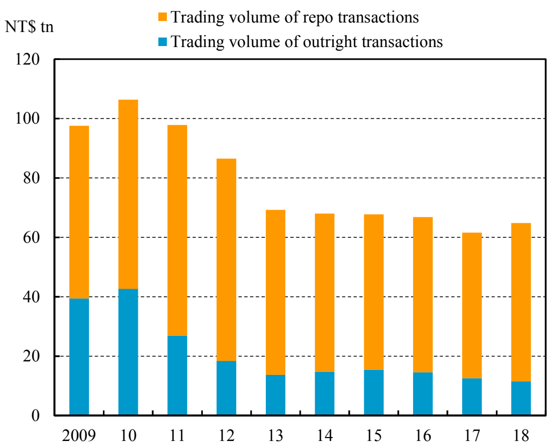
Sources: CBC and FSC.

Chart 3.3 Total amount of bonds outstanding in the primary market



Note: Other bonds include beneficiary securities and foreign bonds.
Source: FSC.

Chart 3.4 Outright and repo transactions in the bond market



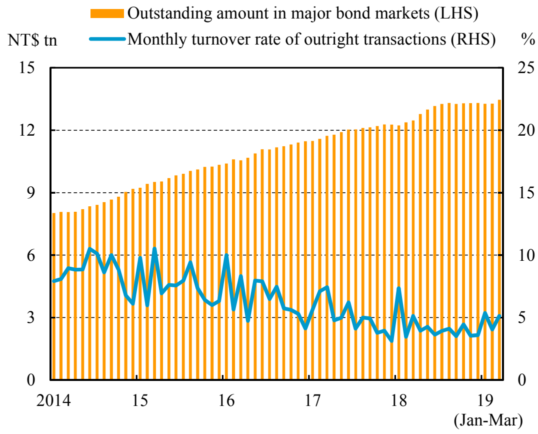
Source: CBC.

36 International bonds refer to bonds denominated in foreign currencies and issued in Taiwan by domestic and overseas issuers.

outstanding amount of corporate bond issuance increased by 3.68% year on year because interest rates stabilized at a low level, and this attracted corporates to increase bond issuance for the purpose of fund raising. In the meantime, the outstanding amount of government bond issuance decreased by 0.6% year on year because of the implementation of regular issuance and debt management by the government (Chart 3.3).

In the secondary bond market, trading volume increased by 5.26% year on year to NT$64.82 trillion (Chart 3.4), among which the trading volume of repo transactions increased, while that of outright transactions diminished further. The monthly turnover rate of major bonds in the secondary market also declined in 2018 to a record low of 4.25%, but slightly rebounded in 2019 Q1 (Chart 3.5).

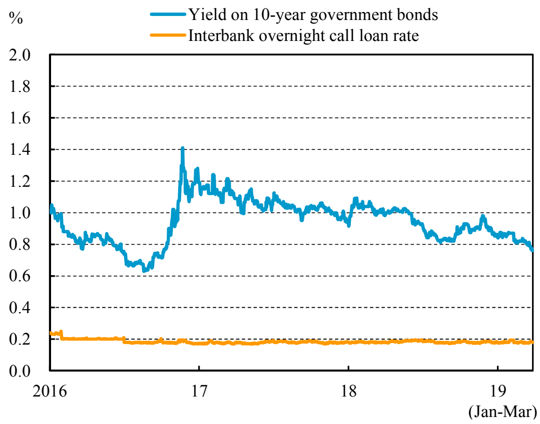
Chart 3.5 Outstanding amount in major bond markets and monthly turnover rate



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

Source: FSC.

Chart 3.6 10-year government bond yield and interbank overnight rate



Source: Bloomberg.

Short-term market rates remained at a low level, while long-term market rates fluctuated with a downward trend

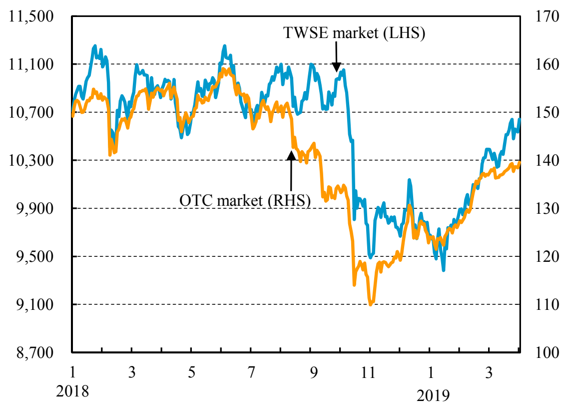
In 2018, owing to sustained ample funds in financial markets, the interbank overnight call loan rate remained at a low level (Chart 3.6). As for long-term market rates, 10-year government bond yields, driven by greater demand for hedging, dipped consecutively from June and reached a two-year low of 0.8115% on August 15 before rebounding marginally. However, from mid-December, the yields followed the downward trend of US government bond yields and fell again (Chart 3.6). Considering that 10-year government bond yields have dropped to a relatively low level recently and the possibility for them to rebound in the future increased, interest rate risks related to bond investments are still high and warrant close attention.

3.1.2 Equity markets

Stock indices slumped after experiencing fluctuations at a high level in 2018, but rebounded strongly in 2019 Q1

The TAIEX of the TWSE market fluctuated at a high level around 10,000 in the first three quarters of 2018. However, induced by a slump in international stocks and massive net selling by foreign investors in Asian emerging markets, the TAIEX plunged below 10,000 from October onwards, and registered 9,727 at the end of the year, posting a decrease of 8.60% year on year (Chart 3.7). In 2019 Q1, the stock index rebounded and reached 10,641 at the end of March. Nevertheless, affected by intensified US-China trade tensions, international stock markets tumbled and led to a fall in the TWSE market in early May. The Taipei Exchange Capitalization Weighted Stock Index (TPEx) of the OTC market closely tracked the movements of the TAIEX, but with amplified volatility (Chart 3.7).

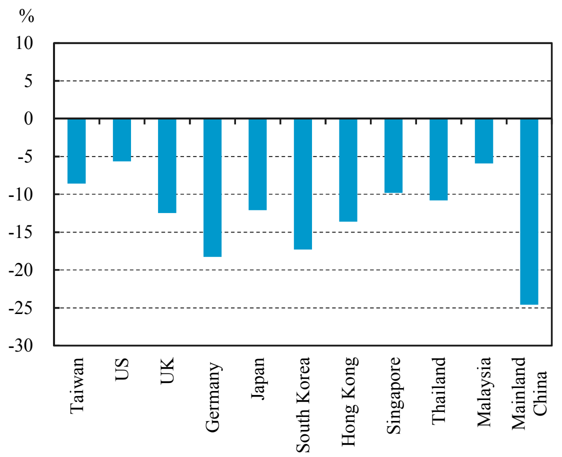
Chart 3.7 Taiwan's stock market indices



Sources: TWSE and TPEx.

As for major stock markets around the world, all of them experienced drops in 2018, with the TAIEX falling slightly more than the major indices in the US and Malaysia (Chart 3.8).

Chart 3.8 Major stock market performance



Notes: 1. Figures are for 2018.
2. Market performance is based on TWSE Weighted Index for Taiwan, DJIA Index for the US, FTSE-100 Index for the UK, DAX Index for Germany, NK-225 Index for Japan, KOSPI Index for South Korea, Hang Seng Index for Hong Kong, Straits Times Index for Singapore, SET Index for Thailand, Kuala Lumpur Composite Index for Malaysia, and SSE Composite Index for Mainland China.

Source: TWSE.

In the first half of 2018, volatility in the TWSE and the OTC markets rose sharply and then dropped. However, affected by the significant fall in international stock markets in October, volatility of the two markets surged and registered 21.29% and 27.05%, respectively, at the end of 2018. In 2019 Q1, the TWSE and the OTC markets stabilized and their volatility decreased to 12.21% and 10.12%, respectively, at the end of March (Chart 3.9).

Annual turnover rates increased

Trading volumes in both the TWSE and the OTC markets were boosted in 2018, induced by the day trading transaction tax being cut by half. The annual turnover rates in terms of trading value in both markets rose to 92.55% and 250.78%, respectively (Chart 3.10). However, the annual turnover rates in the TWSE and the OTC markets declined to 67.52% and 220.18%, respectively, in 2019 Q1, owing to less trading days.

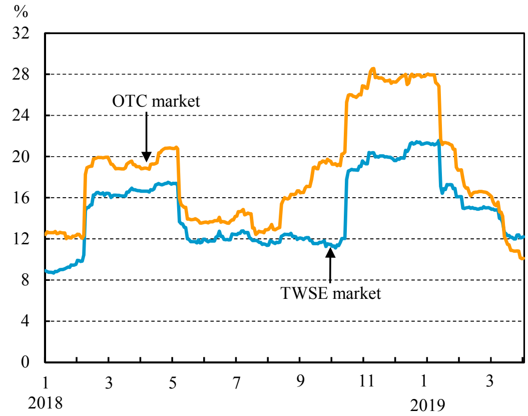
Compared to major stock markets around the world, the annual turnover rate of the TWSE market was still higher than those in the UK, Hong Kong, Singapore, and Malaysia (Chart 3.11).

3.1.3 FX market

The NT dollar exchange rate oscillated along a depreciating path, while the trading volume of the FX market increased

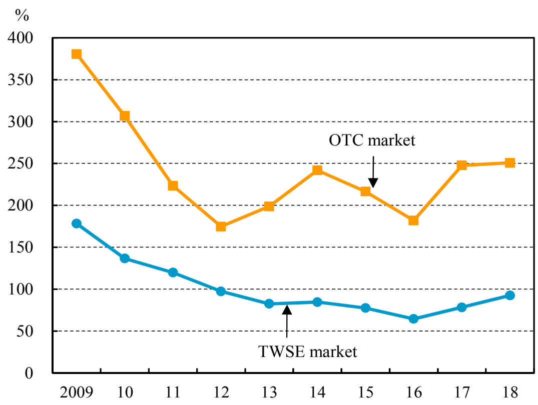
In 2018 Q1, the NT dollar exchange rate appreciated against the US dollar and later on fluctuated within a narrow range. From April onwards, owing to the US-China trade dispute and interest rate hikes by the Fed, the NT dollar exchange rate reversed to depreciate and stood at 30.733 at the end of

Chart 3.9 Stock price volatility in Taiwan's markets



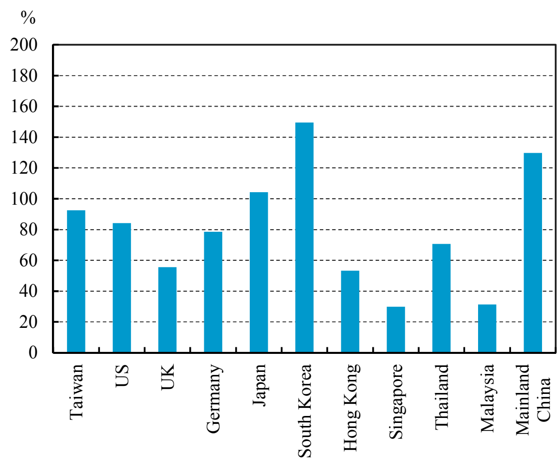
Note: Volatility refers to the annualized standard deviation of 60-day daily index returns.
Sources: TWSE, TPEx and CBC.

Chart 3.10 Annual turnover rates in Taiwan's stock markets



Sources: TWSE and TPEx.

Chart 3.11 Turnover rates in major stock markets



Note: Figures refer to accumulated turnover rates in 2018.
Source: TWSE.

2018, an annual depreciation of 2.88%. In the beginning of 2019, owing to market expectations of the Fed suspending interest rate rises, the NT dollar exchange rate was relatively stable against the US dollar and stood at 30.825 at the end of March (Chart 3.12). However, intensified US-China trade tensions in early May led to the depreciation of most emerging Asian currencies including the NT dollar, which turned to depreciate against the US dollar and weakened through 31.

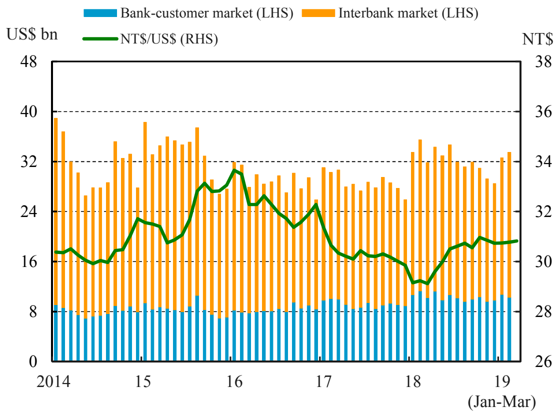
The NT dollar against the US dollar depreciated by 2.88% in 2018, lower than the renminbi and the Korean won, and continued to depreciate by 0.30% in 2019 Q1 (Chart 3.13). However, it still appreciated by 3.36%, 1.34%, and 1.22% against the British pound, the euro, and the Korean won, respectively, but depreciated by 4.83% against the Japanese yen in 2018 (Chart 3.14).

In 2018, the average daily trading volume in Taiwan's FX market rose by 12.37% to US$32.2 billion, compared to US$28.7 billion a year earlier, primarily because of an increase in the interbank market (Chart 3.12).

NT dollar exchange rate volatility remained relatively stable

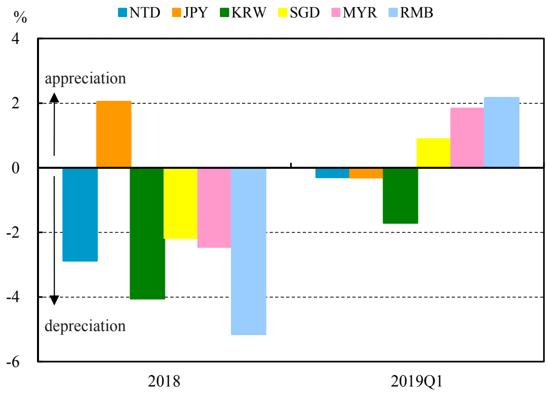
Volatility in the NT dollar exchange rate against the US dollar shifted between 1.43% and 4.97% and registered an annual average of 3.16% in 2018, before moving

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



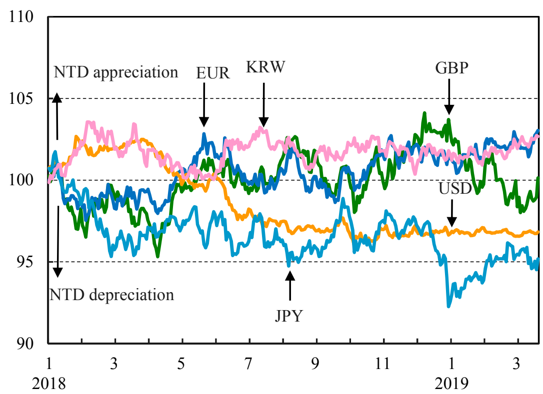
Notes: 1. Trading volume is the monthly average of daily data, while exchange rate is end-of-period data.
2. The latest data for trading volume are as of February 2019.
Source: CBC.

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



Source: CBC.

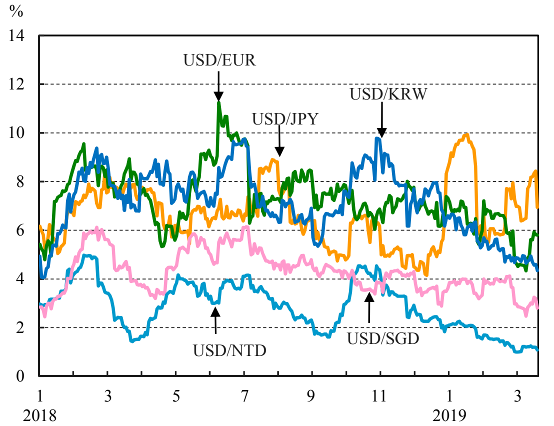
Chart 3.14 Movements of NT dollar exchange rate against key international currencies



Note: December 29, 2017 = 100.
Source: CBC.

between 0.99% and 2.26% during 2019 Q1. Compared to major currencies such as the Japanese yen, the euro, the Korean won, and the Singapore dollar, the NT dollar exchange rate has been relatively stable against the US dollar (Chart 3.15).

Chart 3.15 Exchange rate volatility of various currencies versus the US dollar



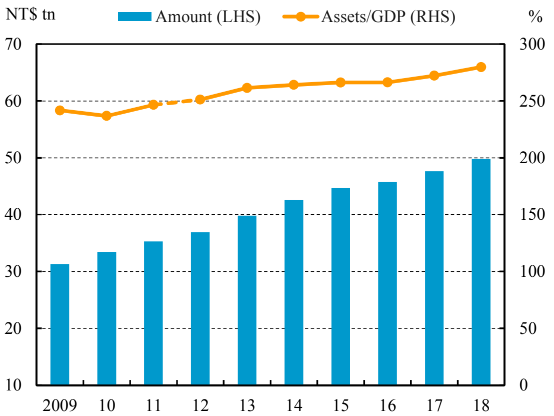
Note: Volatility refers to the annualized standard deviation of 20-day daily returns.
Source: CBC.

3.2 Financial institutions

3.2.1 Domestic banks

The total assets of Taiwan's 38 domestic banks[37] continually expanded in 2018, owing to growth in loans. Asset quality improved, and concentration in corporate loans as well as credit exposures to real estate loans slightly decreased. However, considering the conservative outlook for the real estate market, banks should prudently monitor and control related credit risks. Moreover, the estimated value at risk (VaR) of market risk exposures ascended, but liquidity risk remained moderate thanks to ample funds in the banking system. While domestic banks posted considerably higher profits in 2018 than the previous year, the average capital adequacy ratio remained the same and revealed satisfactory capacity to bear losses.

Chart 3.16 Total assets of domestic banks



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

Total assets kept growing

The total assets of domestic banks kept growing and reached NT$49.79 trillion at the end of 2018, equivalent to 279.84% of annual GDP (Chart 3.16). The annual growth rate of the total assets also rose to 4.50% due to the substantial increase in loans. Broken down by sector, the asset growth rates of domestic banking units (DBUs), offshore banking units (OBUs), and overseas branches all showed rising trends, with the growth

[37] Includes Agricultural Bank of Taiwan.

rate of OBUs exhibiting a remarkable rebound (Chart 3.17).

Credit risk

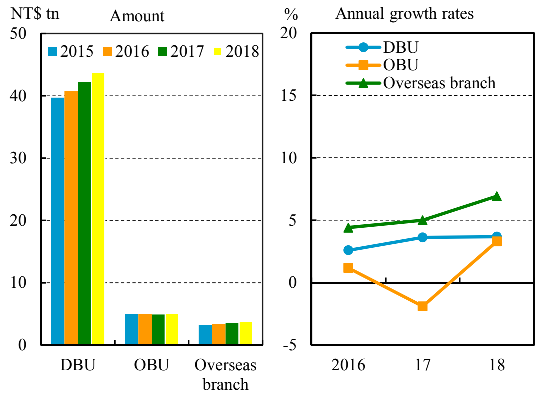
Customer loans kept on rising

Customer loans granted by the DBUs of domestic banks stood at NT$24.40 trillion at the end of 2018, accounting for 49.01% of total assets, with the annual growth rate increasing to 5.10% (Chart 3.18). Among them, the annual growth rate of household borrowing slightly rose to 5.58% owing to steady growth in mortgage loan demand. The growth rate of corporate loans also expanded to 5.51%. However, government loans showed a negative growth rate of -1.86% mainly because of less financing demand from the government as a result of increased tax revenues.

Credit concentration and the share of real estate-secured credit both slightly descended

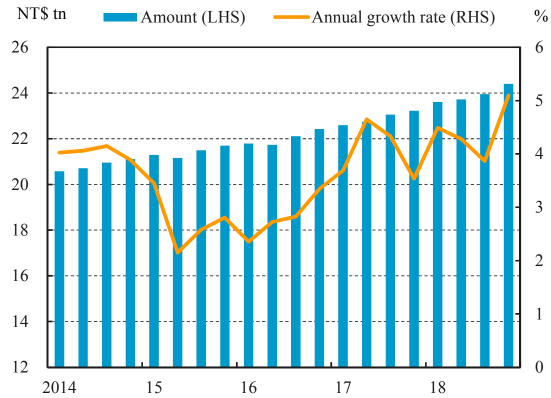
At the end of 2018, real estate loans granted by the DBUs of domestic banks amounted to NT$8.91 trillion and accounted for a share of 36.51% of total loans, which was a little lower than that of the previous year. It reflected marginally decreasing concentration in credit exposure to real estate loans. Moreover, real estate-secured credit granted by domestic banks aggregated NT$16.71 trillion, accounting for 55.46% of total credit,[38] slightly less than that of the previous year (Chart 3.19). Since

Chart 3.17 Total assets of domestic banks by sectors



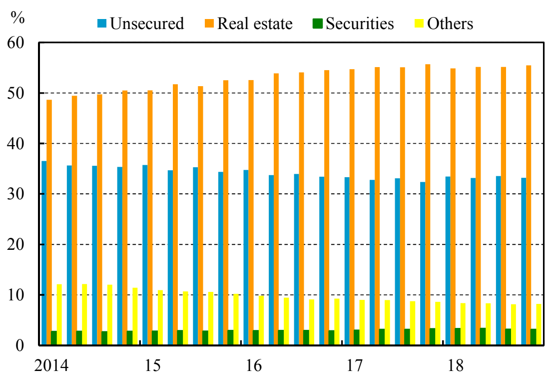
Note: Figures for total assets are inclusive of interbranch transactions.
Source: CBC.

Chart 3.18 Outstanding loans in domestic banks



Note: Loans of OBUs and overseas branches are excluded.
Source: CBC.

Chart 3.19 Credit by type of collateral in domestic banks



Source: CBC.

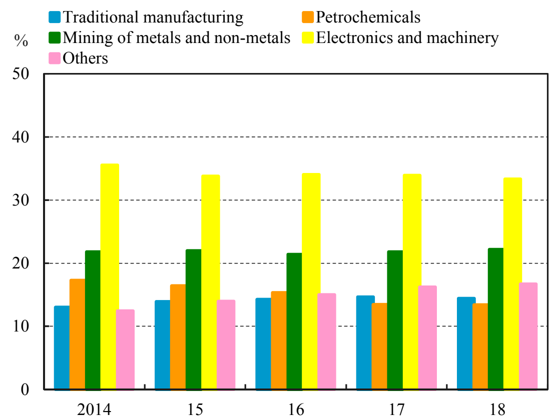
[38] The term "credit" herein includes loans, guarantee payments receivable, and acceptances receivable.

domestic housing prices stayed high and unsold new residential properties might put more pressure on the market, the outlook for the real estate market remained conservative. Banks should continue to pay close attention to real estate related credit risks.

Credit concentration in corporate loans slightly diminished

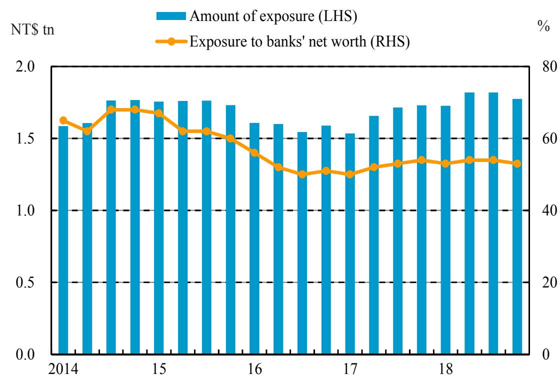
For the DBUs of domestic banks, corporate loans stood at NT$10.69 trillion at the end of 2018, of which loans to the manufacturing sector registered NT$4.21 trillion and accounted for the largest share of 39.39%. Within the manufacturing sector,[39] loans to the electronics industry contributed 33.31%, the largest, but decreasing, share of the total, reflecting that credit concentration to the electronics sector had mildly diminished (Chart 3.20).

Chart 3.20 Exposure to the manufacturing sector by domestic banks



Notes: 1. Exposure to each sector = loans to each sector/loans to the whole manufacturing sector.
2. Exposures of OBUs and overseas branches were excluded.
Source: CBC.

Chart 3.21 Exposures to Mainland China by domestic banks



Source: FSC.

Exposures to Mainland China increased, but the ratio of the exposures to banks' net worth slightly decreased

At the end of 2018, the exposures of domestic banks to Mainland China increased by 2.55% year on year and stood at NT$1.78 trillion. However, the ratio of the exposures to banks' net worth slightly decreased to 53% (Chart 3.21), much lower than the highest point of 69% in 2014.

Considering that spillover risks stemming from a looming hard landing in Mainland China could possibly pose a greater impact on Taiwan's economic and financial conditions, domestic banks should closely monitor changes in Mainland China's economic and financial

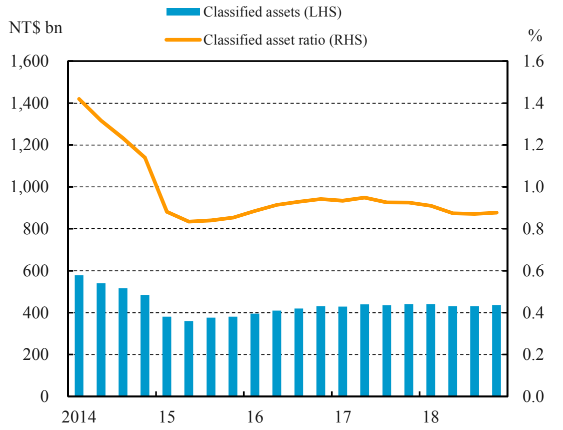
[39] Loans to the manufacturing sector are divided into five categories by industry, including: (1) electronics, (2) mining of metals and non-metals, (3) petrochemicals, (4) traditional manufacturing, and (5) others.

conditions and prudently manage the risk of such exposures.

Asset quality improved

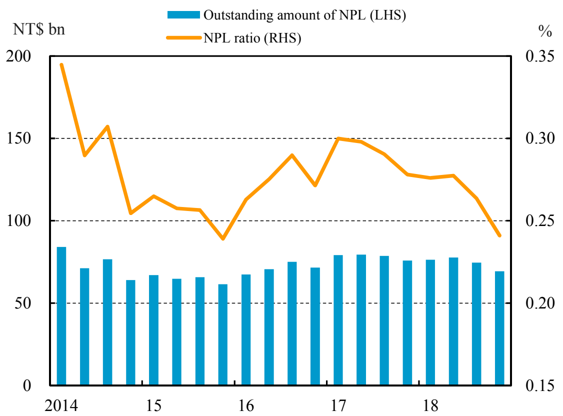
Outstanding classified assets[40] of domestic banks stood at NT$437 billion at the end of 2018, decreasing by 0.91% from a year earlier. The average classified asset ratio also saw a decline to 0.88% (Chart 3.22). Both revealed that the asset quality of domestic banks improved. Although the expected losses of classified assets[41] slightly increased to NT$57.7 billion, it only accounted for 13.11% of loss provisions, indicating that domestic banks had sufficient provisions to cover expected losses.

Chart 3.22 Classified assets of domestic banks



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

Chart 3.23 NPL of domestic banks



Note: Excludes interbank loans.
Source: CBC.

Furthermore, the outstanding NPLs of domestic banks registered NT$69.4 billion at the end of 2018, decreasing by 8.52% from the previous year. Correspondingly, the average NPL ratio decreased to a recent low of 0.24% (Chart 3.23), and was much lower than those in the US and neighboring Asian countries (Chart 3.24). Among 38 domestic banks, almost all had NPL ratios less than 0.5%, except for one with a slightly higher ratio. In terms of borrowers, the NPL ratio for individual loans marginally decreased to 0.24%, while that for corporate loans continued to decline to 0.26%.

[40] Assets of domestic banks are broken down into five categories: normal, special mention, substandard, doubtful and loss. The term "classified assets" herein includes all assets classified as the latter four categories.
[41] Loss herein refers to the losses from loans, acceptances, guarantees, credit cards, and factoring without recourse.

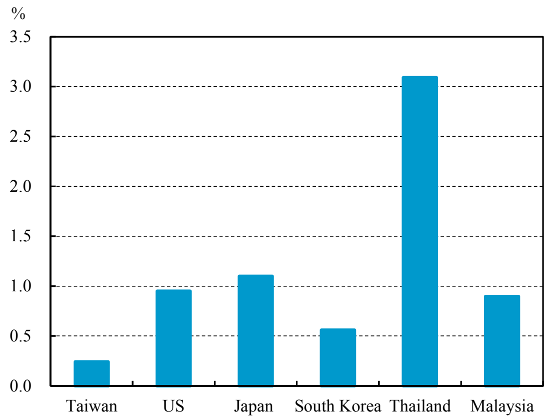
At the end of 2018, owing to the continual increase in provisions and the decrease in NPLs, the loan coverage ratio and the NPL coverage ratio rose to 1.38% and 573.67%, respectively (Chart 3.25). The capability of domestic banks to cope with potential loan losses improved.

Market risk

Estimated value-at-risk for market risk exposures increased

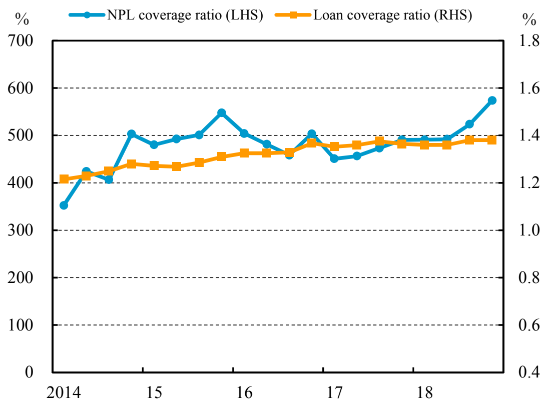
At the end of 2018, the net position of debt securities accounted for the largest share of total market risk exposures of domestic banks, followed by the net positions of FX and of equity securities. Based on the Bank's VaR model,[42] the estimated total VaR for market risk exposures of domestic banks stood at NT$119.4 billion at the end of 2018, down by NT$8.8 billion or 7.96% compared to a year earlier (Table 3.1). Among them, the interest rate VaR increased by 10.67%. The main reason was that the US government bond yields oscillated, triggering higher volatility in Taiwan government bond yields. On the other hand, the FX and equities VaR exposures decreased by 14.29% and 3.1%, respectively, owing to reductions in their net positions (Table 3.1).

Chart 3.24 NPL ratios of banks in selected countries



Note: Figure for Japan is end-September 2018 data, while the others are end-December 2018 data.
Sources: CBC, FDIC, FSA, FSS, BOT and BNM.

Chart 3.25 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.

However, the US-China trade negotiation uncertainty, an accelerated economic slowdown in Mainland China and the Brexit deadlock may spur global financial market volatility, which could pose higher market risk to domestic banks and thus warrants close attention.

[42] For more details about the Bank's VaR model, please see CBC (2016), *Financial Stability Report*, Box 2, May. In 2018, the Bank calibrated the VaR model for evaluating market risk VaR, and retrospectively adjusted the data at the end of 2017.

Table 3.1 Market risks in domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2017	End-Dec. 2018	Changes	
				Amount	PP;%
Foreign exchange	Net position	223.5	195.5	-28.0	-12.53
	VaR	4.9	4.2	-0.7	-14.29
	VaR/net position (%)	2.19	2.15		-0.04
Interest rate	Net position	1,799.0	1,796.0	-3.0	-0.17
	VaR	92.8	102.7	9.9	10.67
	VaR/net position (%)	5.16	5.72		0.56
Equities	Net position	59.8	50.5	-9.3	-15.55
	VaR	12.9	12.5	-0.4	-3.10
	VaR/net position (%)	21.57	24.75		3.18
Total VaR		110.6	119.4	8.8	7.96

Note: PP = percentage point.
Source: CBC.

The impacts of market risk on capital adequacy ratios were slight

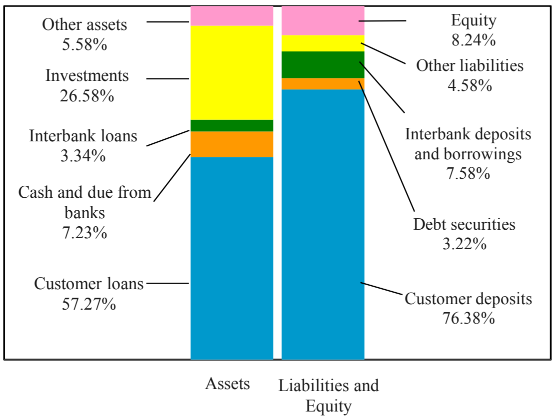
According to the estimation mentioned above, the total VaR would lead to a decrease of 0.22 percentage points in the average capital adequacy ratio of domestic banks and cause the ratio to drop from the current 13.99% to 13.77%. Nevertheless, it would still be higher than the statutory minimum of 9.875% in 2018.

Liquidity risk

Liquidity in the banking system remained ample

The assets and liabilities structure of domestic banks remained roughly unchanged in 2018. For the sources of funds, relatively stable customer deposits still made up the largest share of 76.38% of the total, while for the uses of funds, customer loans accounted for the biggest share of 57.27% (Chart 3.26). The average deposit-to-loan ratio of domestic banks declined to 135.75%, and the funding

Chart 3.26 Asset/liability structure of domestic banks



Notes: 1. Figures are as of end-December 2018.
2. Equity includes loss provisions. Interbank deposits include deposits with the CBC.
Source: CBC.

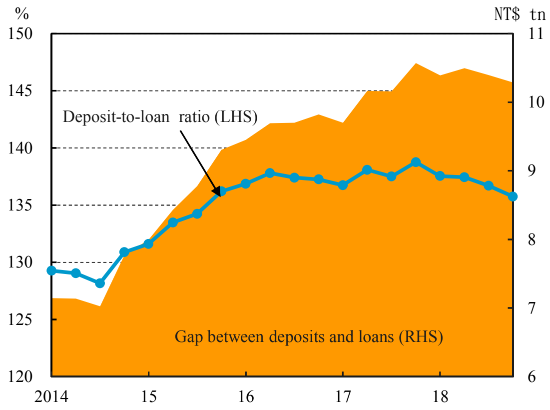
surplus (i.e., deposits exceeding loans) also reduced to NT$10.29 trillion. However, the overall liquidity of domestic banks remained abundant (Chart 3.27).

Overall liquidity risk remained relatively low

The average NT dollar liquid reserve ratio of domestic banks was well above the statutory minimum of 10% in every month of 2018 and stood at 32.63% in December (Chart 3.28). Looking at the components of liquid reserves in December 2018, Tier 1 liquid reserves, mainly consisting of certificates of deposit issued by the Bank, accounted for 83.88% of the total. The quality of liquid assets held by domestic banks remained satisfactory.

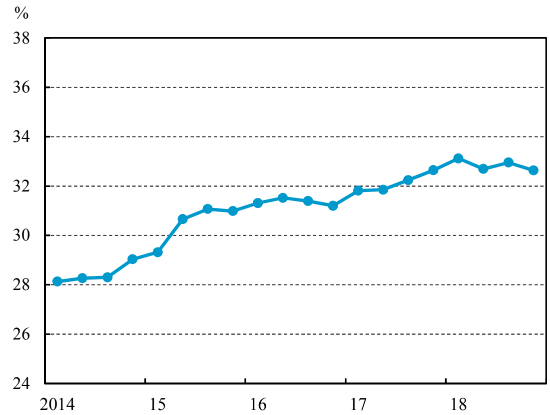
Moreover, the average liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) of domestic banks were 134% and 132%, respectively, at the end of 2018, and all banks met the minimum LCR and NSFR requirements in 2018.[43] Therefore, the overall liquidity risk of domestic banks was relatively low.

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.

43 The minimum LCR requirement for domestic banks was 90% in 2018, except for O-Bank with a minimum requirement of 60%; the minimum NSFR requirement for domestic banks was 100% in 2018. Banks that receive FSC approval after the FSC has consulted with the Central Bank are not subject to either of the requirements.

Profitability

Profitability increased significantly

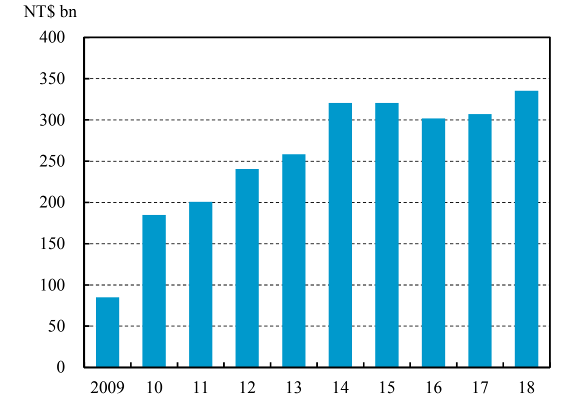
In 2018, the net income before tax of domestic banks rose to NT$335.4 billion, significantly increasing by 9.26% year on year and reaching a 10 year high (Chart 3.29). The rise was mainly caused by growth in net interest revenues. The average ROE and ROA of domestic banks increased to 9.34% and 0.68% (Chart 3.30). Compared to selected Asia-Pacific economies, the average ROE of domestic banks was higher than those of Thailand and South Korea; however, the average ROA still lagged behind those of most other countries (Chart 3.31).

All domestic banks were profitable in 2018. Among them, 12 banks achieved a profitable ROE of 10% or more and four banks had ROAs above the international standard of 1% (Chart 3.32). Most domestic banks performed better than that of the previous year.

Factors that might affect future profitability

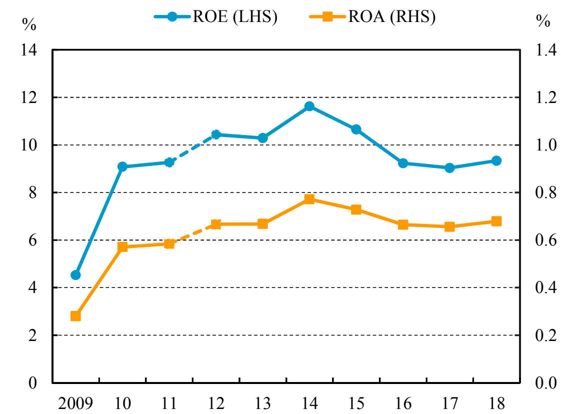
Profitability of domestic banks increased in 2018. In addition, the interest rate spread between deposits and loans of domestic banks rebounded to 1.35 percentage points in 2018 Q4 (Chart 3.33), helping to support future net interest revenues of domestic banks. Nevertheless, the challenges facing future profitability included: (1) decreasing capital expenditures of corporates caused by uncertainties surrounding US-China trade

Chart 3.29 Net income before tax of domestic banks



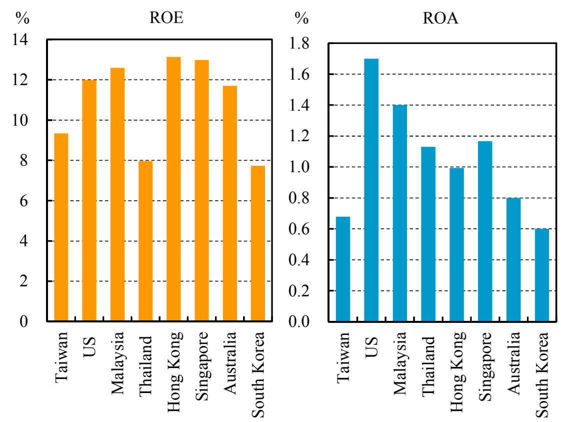
Note: Figures from 2012 forward are on the TIFRSs basis. Figures of prior years are on the ROC GAAP basis (same as all charts in this section).
Source: CBC.

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.

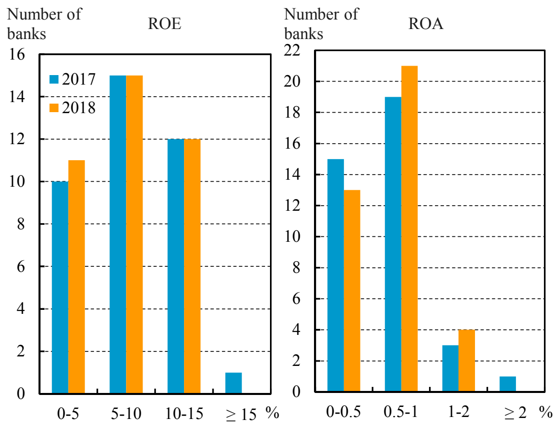
Chart 3.31 ROEs and ROAs of banks in selected economies



Note: Figures are 2018 data.
Sources: CBC, FDIC, BNM, BOT, APRA, FSS and IMF.

tensions leading to lower funding demand; (2) rising economic and financial risks of Mainland China affecting exposures of domestic banks, boosting loan loss provisions; (3) compliance costs of domestic banks remaining high as a result of banks reinforcing their AML/CFT regulatory compliance programs. Though the implementaion of RegTech might help to contain compliance costs, related risks still need to be appropriately managed (Box 2).

Chart 3.32 Domestic banks classified by ROE and ROA

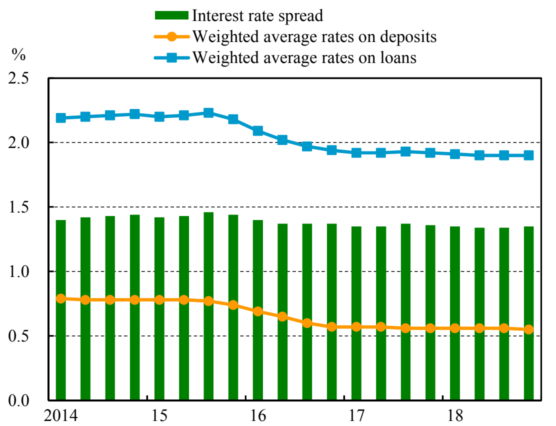


Source: CBC.

Capital adequacy

Capital ratios leveled off

Chart 3.33 Interest rate spread of domestic banks



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.

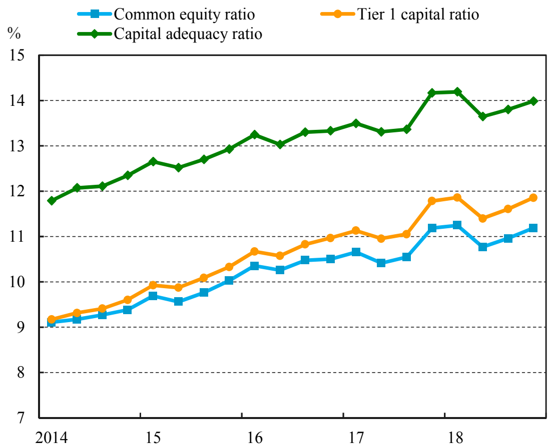
The average capital ratios of domestic banks declined slightly in 2018 Q2 owing to seasonal factors such as cash dividends declared and paid. Afterwards, with capital injection, accumulated earnings, and issuance of eligible capital instruments, all capital ratios rebounded. The average common equity ratio, Tier 1 capital ratio, and capital adequacy ratio of domestic banks registered 11.19%, 11.86%, and 13.99%, respectively, at the end of 2018 (Chart 3.34), almost equivalent to those ratios a year before. However, compared to some Asia-Pacific economies, Taiwan’s banking industry had relatively lower capital levels (Chart 3.35).

Further broken down by components of regulatory capital, common equity Tier 1 capital, which features the best loss-bearing capacity, accounted for 79.98% of eligible capital. This showed that the capital quality of domestic banks was satisfactory.

All domestic banks had capital ratios higher than the statutory minimum and leverage ratios higher than the international standard

At the end of 2018, the common equity ratios, Tier 1 capital ratios, and capital adequacy ratios for all domestic banks remained above the statutory minimum requirements[44] for 2018 (Chart 3.36). The average leverage ratio of domestic banks at the end of 2018 stood at 6.56%, higher than a year before and well above the international standard of 3%. It indicated domestic banks maintained sound financial leverage.

Chart 3.34 Capital ratios of domestic banks

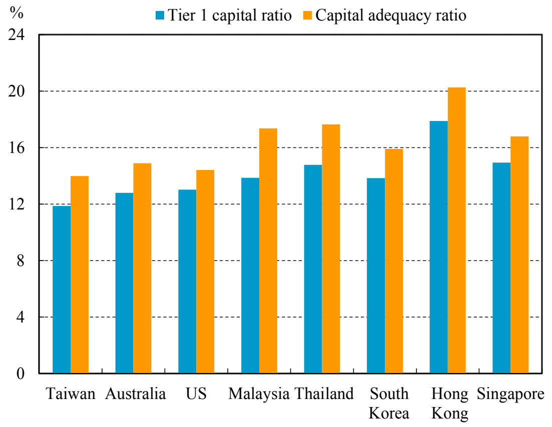


Notes: 1. Common equity ratio = common equity Tier 1 capital/risk-weighted assets.
2. Tier 1 capital ratio = Tier 1 capital/risk-weighted assets.
3. Capital adequacy ratio = eligible capital/risk-weighted assets.
Source: CBC.

Credit ratings

BICRA remained steady but BSI/MPI slightly decreased

Chart 3.35 Capital ratios of banking industry in selected economies



Note: Figures are as of the end of 2018.
Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA and IMF.

Standard & Poor's kept Taiwan's Banking Industry Country Risk Assessment (BICRA)[45] unchanged at Group 4 with moderate risk. Compared to other Asian economies, the risk level of Taiwan's banking system was the same as that of Malaysia, but much lower than those of Mainland China, Thailand, the Philippines and Indonesia. Moreover, the assessment of Taiwan's banking system by Fitch Ratings' Banking System Indicator/Macro-Prudential Indicator (BSI/MPI)[46] was downgraded from bbb/1 to bbb/2

[44] The statutory minimum capital requirements of domestic banks for 2018 and 2019 onwards are as follows:

Ratios	2018	2019 onwards
Common equity ratio (%)	6.375	7.0
Tier 1 capital ratio (%)	7.875	8.5
Capital adequacy ratio (%)	9.875	10.5

[45] BICRA is scored on a scale from 1 to 10, ranging from the lowest-risk (group 1) to the highest-risk (group 10), which indicates the assessment results by Standard & Poor's of economic and industry risks of a country's banking system.

[46] Fitch Ratings assesses banking system vulnerability with two complementary measures, the BSI and the MPI. These two indicators are brought together in a Systemic Risk Matrix. The BSI represents banking system strength on a scale from aa, a, bbb, bb/b to ccc/cc/c. The MPI indicates the vulnerability of the macro environment on a scale from 1 to 3.

because the credit to GDP ratio increased by more than 5 percentage points for two consecutive years[47] (Table 3.2).

All domestic banks received ratings by credit rating agencies at the end of 2018. The weighted average credit rating index[48] went up slightly compared to the previous year owing to the upgrading of two banks (Chart 3.37).

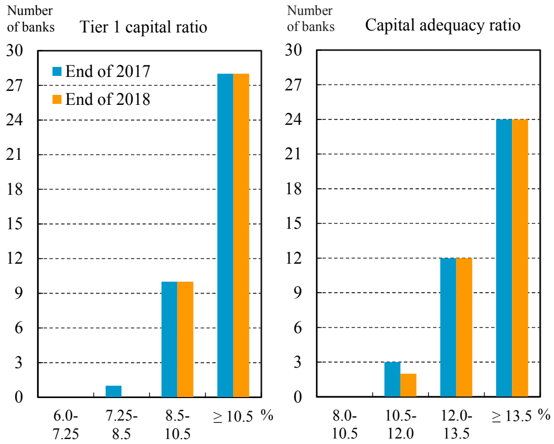
Rating outlooks for almost all domestic banks remained stable or positive

Almost all domestic banks maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) and none had credit ratings lower than twBB/BB(twn) at the end of 2018 (Chart 3.38). Only two banks received negative rating outlooks, while rating outlooks for the other 36 banks remained stable or positive.

3.2.2 Life insurance companies

In 2018, total assets of life insurance companies continued their rapid growth, and overall credit ratings held stable. However, their average RBC ratio descended, pretax income declined year on year due to an increase in hedging costs, and the industry still faced higher equity risk.

Chart 3.36 Domestic banks classified by capital ratios



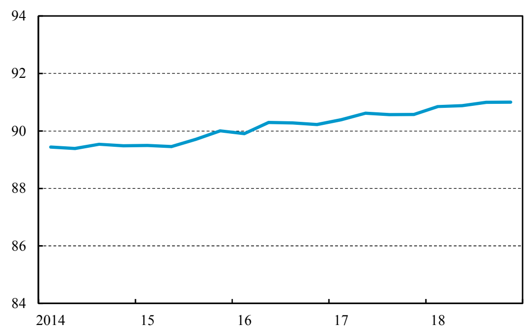
Note: At the end of 2018, the number of domestic banks decreased from 39 a year before to 38.
Source: CBC.

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard & Poor's		Fitch	
	BICRA		BSI/MPI	
	2018/2	2019/2	2018/3	2019/4
Hong Kong	2	2	a/3	a/3
Singapore	2	2	aa/2	aa/2
Japan	2	2	a/1	a/2
South Korea	3	3	a/1	a/1
Taiwan	**4**	**4**	**bbb/1**	**bbb/2**
Malaysia	4	4	bbb/1	bbb/1
Mainland China	6	6	bb/1	bb/1
Thailand	6	6	bbb/1	bbb/1
Philippines	7	6	bb/1	bb/1
Indonesia	7	7	bb/1	bb/1

Sources: Standard & Poor's and Fitch Ratings.

Chart 3.37 Credit rating index of domestic banks



Sources: Taiwan Ratings Corporation, Fitch Ratings and CBC.

47 Banks' credit to GDP ratio increased by 7.8 and 5.6 percentage points relative to prior year in 2017 and 2018, respectively, while the growth rate has slowed down in 2018.

48 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.

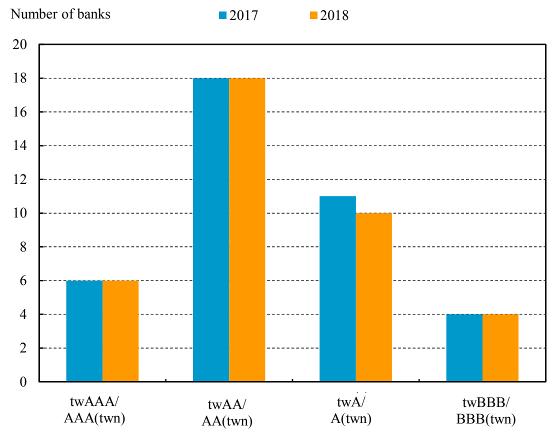
Assets maintained fast growth

The total assets of life insurance companies continued growing and reached NT$26.32 trillion at the end of 2018, equivalent to 147.92% of annual GDP (Chart 3.39). The annual growth rate of total assets decreased to 7.58%, which was still at a high level. The top three companies in terms of assets made up a combined market share of 55.49%. The market structure of the life insurance industry remained roughly unchanged in 2018.

Foreign portfolio investments remained the primary usage of funds

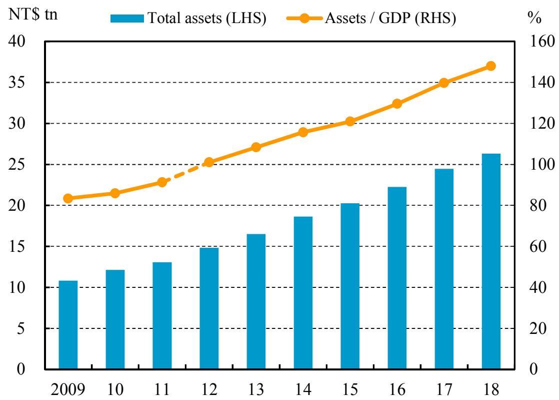
In terms of the usage of funds of life insurance companies, foreign portfolios accounted for 62.31% at the end of 2018, the largest share of total assets, whereas the share of domestic securities investments continued to drop to 16.81%. As for their sources of funds, insurance liabilities accounted for 86.22%, the primary share of total liabilities and equity, while the share of equity decreased markedly to 4.14% owing to strongly expanding unrealized investment losses (Chart 3.40). Overall, financial leverage of life insurance companies rose significantly.

Chart 3.38 Number of domestic banks classified by credit ratings



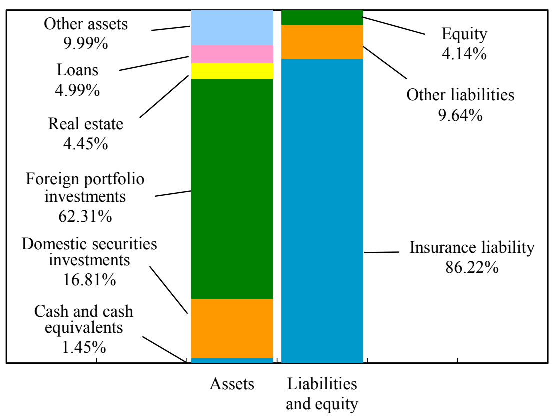
Notes: 1. End-of-period figures.
2. The number of domestic banks decreased from 39 in 2017 to 38 in 2018.
Sources: Taiwan Ratings Corporation and Fitch Ratings.

Chart 3.39 Total assets of life insurance companies



Note: Figures from 2012 forward are on the TIFRSs basis. Figures of prior years are on the ROC GAAP basis.
Sources: FSC and DGBAS.

Chart 3.40 Asset/liability structure of life insurance companies



Note: Figures are as of the end of 2018.
Source: FSC.

Pretax income declined sharply

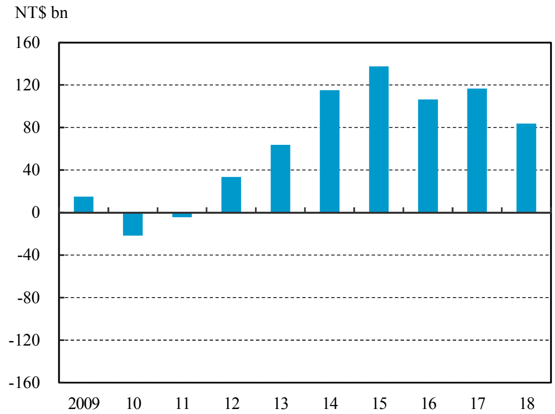
Life insurance companies reported net income before tax of NT$83.7 billion in 2018, decreasing dramatically by 28.22% year on year (Chart 3.41). This was chiefly driven by growth in hedging costs and an increase in non-operating losses on disposal of assets. Therefore, the average ROE and ROA dropped to 6.82% and 0.33%, respectively (Chart 3.42), indicating weakened profitability.

In 2018, the comprehensive income of life insurance companies was NT$-500.7 billion, mainly owing to the substantial increase in unrealized losses on financial assets. However, it has greatly improved on the back of improving global financial markets in 2019 Q1. In addition, the International Financial Reporting Standard 17 (IFRS 17) *Insurance Contracts* is expected to be introduced into Taiwan for implementation in 2025 at the earliest. Life insurance companies could, therefore, face severe financial impairments and capital raising pressures. In response, the FSC has required life insurance companies to strengthen their financial health in order to relieve the impact of the introduction of the IFRS 17.

Average RBC ratio decreased

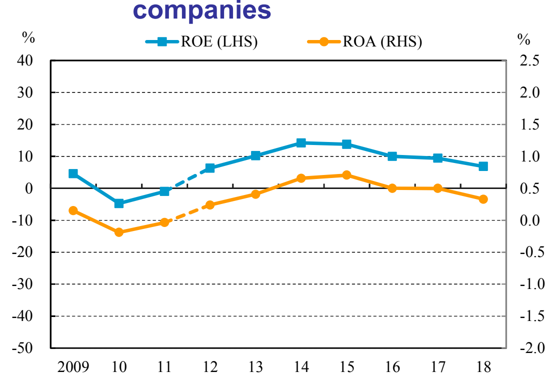
In 2018, capital levels of life insurance companies declined because of a greater decrease in equity. As a result, the average RBC ratio dropped to 268.43% at the end of the year (Chart 3.43). By individual company,

Chart 3.41 Net income before tax of life insurance companies



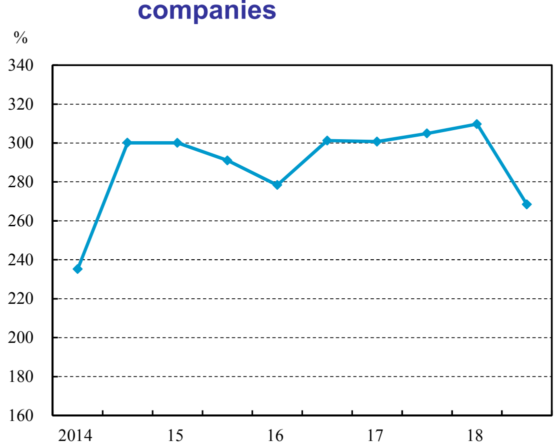
Note: Figures from 2012 forward are on the TIFRSs basis. Figures of prior years are on the ROC GAAP basis.
Source: FSC.

Chart 3.42 ROE & ROA of life insurance companies



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

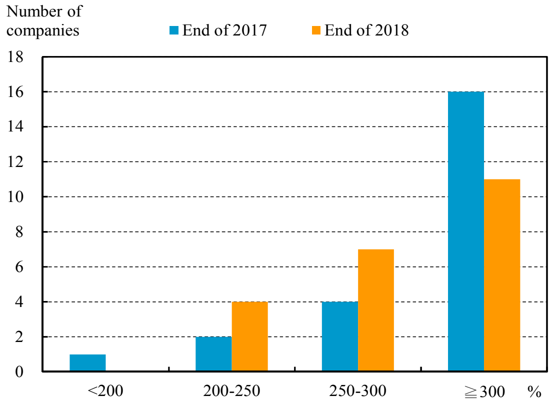
Chart 3.43 RBC ratio of life insurance companies



Notes: 1. RBC ratio = regulatory capital/risk-based capital.
2. Figures are exclusive of life insurance companies in receivership.
Source: FSC.

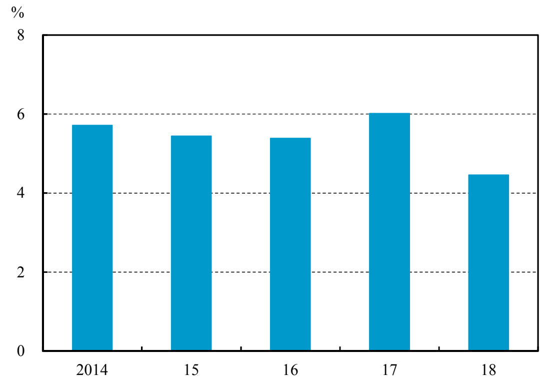
there were 11 companies with RBC ratios over 300%. No company had an RBC ratio below the statutory minimum of 200% (Chart 3.44). Furthermore, the equity to asset ratio decreased markedly to 4.46% at the end of 2018 (Chart 3.45) but rebounded significantly in 2019 Q1.

Chart 3.44 Life insurance companies classified by RBC ratios



Note: The number of life insurance companies decreased to 22 as of the end of 2018 from 23 registered at the end of the previous year.
Source: FSC.

Chart 3.45 Equity/Asset ratios of life insurance companies



Note: Assets are exclusive of separated account products assets.
Source: FSC.

Overall credit ratings remained stable[49]

In 2018, credit ratings among the 11 life insurance companies remained stable. As of the end of the year, all rated life insurance companies maintained credit ratings above twA or its equivalent, while the rating of the top three companies in terms of assets held at twAA+. Moreover, most companies received positive or stable credit outlooks.

Foreign portfolio positions expanded with increasing FX hedging cost and higher equity risk

Foreign portfolio positions of life insurance companies grew continually and reached NT$16.40 trillion in 2018. Life insurance companies also actively used derivative financial instruments to mitigate the impact of FX rate fluctuations. However, FX hedging costs substantially increased owing to consecutive interest rate hikes by the Fed. In January 2019, the FSC amended the applicable regulations and raised the required ratio of FX valuation reserves,[50] which could help life insurance companies manage FX risk flexibly and lower hedging costs. Nonetheless, life insurance companies should monitor the changes in global as well as domestic financial conditions and review their FX hedging strategies in a timely manner so as to alleviate the impacts of rising hedging costs on their profits.

[49] The majority of rated life insurance companies received issuer ratings from Taiwan Ratings; therefore, this section is based primarily on the Taiwan Ratings' rating (tw~), and secondarily on other ratings.
[50] See Section 4.2 "Measures undertaken by the FSC to maintain financial stability."

Furthermore, because the FSC imposed a limit[51] on the amount of international bond investments by insurance companies, such investments slowed down. On the other hand, NTD-denominated bond ETF investments of life insurance companies, excluded from the amounts subject to the overseas investment ceiling, grew rapidly and exceeded NT$500 billion at the end of March 2019. Nevertheless, considering that the net asset value of ETFs is affected by the FX volatility of underlying overseas investment targets, FX risk is still embedded within NTD-denominated bond ETF investments[52] and warrants close attention.

Regarding interest rate risk, US government bond yields moved downward significantly in 2019 Q1, which would help increase the value of bond investments. However, considering that recent volatility in global stock markets exacerbated and the US-China trade dispute heated up, equity risk remained high. Therefore, life insurance companies should prudently control related risks.

3.2.3 Bills finance companies

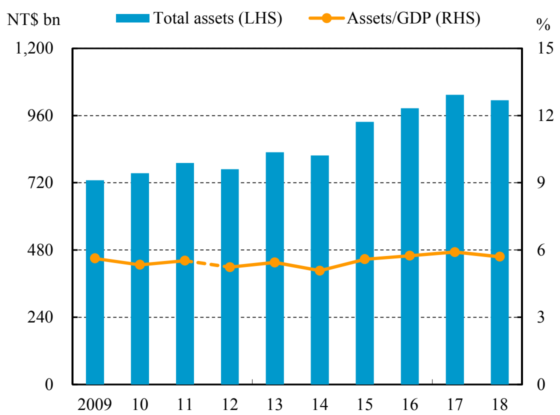
The total assets of bills finance companies contracted marginally in 2018, while the guarantee business expanded and credit asset quality remained sound. However, their profitability weakened and the average capital adequacy ratio declined slightly, while liquidity risk rose.

Total assets contracted marginally

In 2018, mainly owing to the decrease in negotiable certificates of deposit investments, the total assets of bills finance companies decreased by 1.92% and stood at NT$1,014 billion at the end of the year, equivalent to 5.70% of annual GDP (Chart 3.46).

With respect to the asset and liability structure of bills finance companies, bill and bond investments constituted the largest share of 94.45% of total assets as of the end of 2018, the same as the figure recorded a year earlier.

Chart 3.46 Total assets of bills finance companies

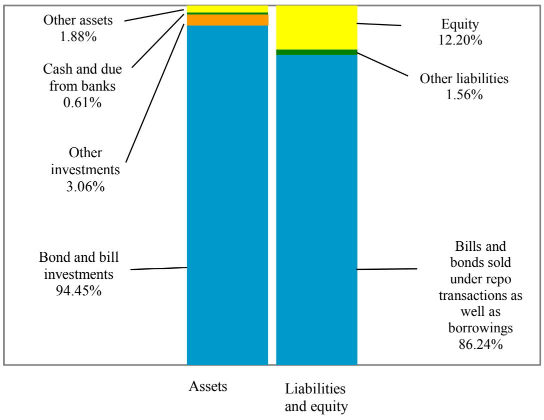


Note: Figures from 2012 forward are on the TIFRSs basis. Figures of prior years are on the ROC GAAP basis.
Sources: CBC and DGBAS.

51 See Section 4.2 "Measures undertaken by the FSC to maintain financial stability."
52 Life insurance companies invested in NTD-denominated bond ETFs, which could face FX risk, interest rate risk and insufficient liquidity when such investments were made by a single or minority of life insurance companies. The FSC already planned to revise RBC calculations about FX risk of bond ETFs so as to reasonably reflect the capital charge. In addition, the FSC required securities investment trust companies to develop investor diversification mechanisms when issuing bond ETFs in order to ensure sound market development.

On the liability side, bills and bonds sold under repo transactions as well as borrowings accounted for the primary share of 86.24% of total assets, less than the figure recorded in the previous year. Meanwhile, equity only accounted for 12.2% (Chart 3.47). The asset and liability structure remained roughly unchanged.

Chart 3.47 Asset/liability structure of bills finance companies

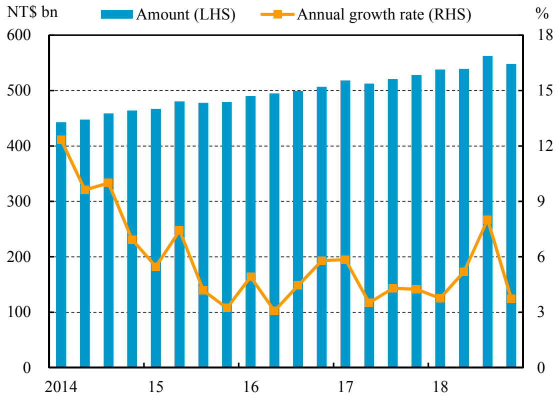


Note: Figures are as of the end of 2018.
Sources: CBC and FSC.

Credit risk increased moderately

Guarantee liabilities expanded and the share of credit secured by real estate trended up

Chart 3.48 Outstanding CP guaranteed by bills finance companies



Source: CBC.

Owing to rising funding demand of corporates in money markets spurred by low short-term market rates, CP guaranteed by bills finance companies registered NT$547.5 billion at the end of 2018, increasing by 3.73% year on year (Chart 3.48). Meanwhile, the average multiple of guarantee liabilities to equity slightly decreased to 4.78 times because of a greater increase in equity. In addition, such multiple of each company was still below the regulatory ceiling of 5 or 5.5 times.

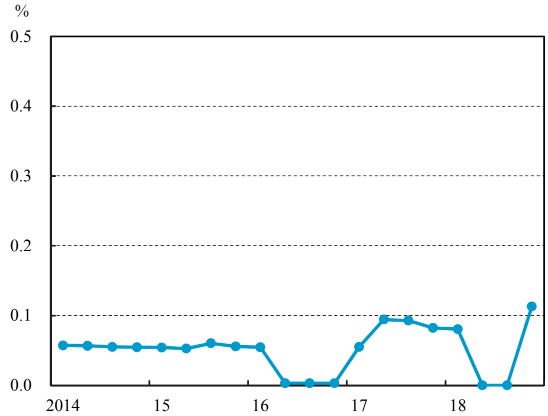
At the end of 2018, guarantees granted to the real estate and construction industries and credit secured by real estate increased to 30.32% and 38.71%, respectively, of total credit of bills finance companies. Both ratios remained at high levels. As the outlook for the domestic housing market remains conservative, bills finance companies should closely monitor the impacts of housing market trends on the quality of related credit and reinforce their capacity to cope with the changes in the real estate cycle.[53]

[53] To strengthen credit risk bearing capacity, the FSC raised the minimum credit loss reserve ratio of guarantees granted to the real estate industry by bills finance companies to 1.5% in March 2019. The bills finance companies should meet this minimum requirement from the end of 2021 onwards.

Credit quality remained sound

The credit quality of bills finance companies remained sound in 2018, as the non-performing credit ratio rose marginally to a still-low level of 0.11% at the end of the year (Chart 3.49). Moreover, the credit loss reserves to non-performing credit ratio stood at 12.08 times, reflecting sufficient reserves to cover potential credit losses.

Chart 3.49 Non-performing credit ratio of bills finance companies

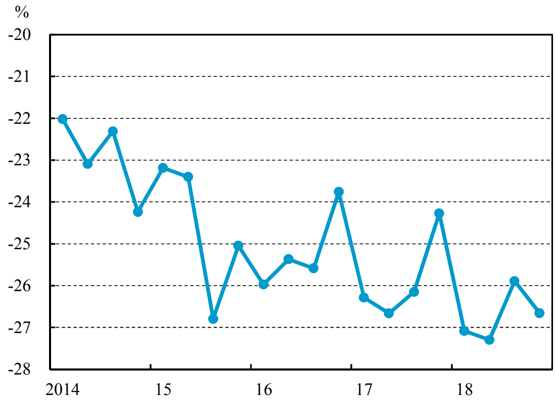


Note: Non-performing credit ratio = non-performing credit/(overdue guarantee advances + guarantees).
Source: CBC.

Liquidity risk rose

Bills finance companies still faced a significant maturity mismatch between assets and liabilities, as more than 90% of their assets were invested in bills and bonds, 43.77% of which were long-term bonds. In addition, more than 80% of their liabilities were from short-term interbank call loans and repo transactions. In addition, the 0-30 day maturity gap to total assets denominated in NTD worsened to -26.66%, reflecting a higher liquidity risk in bills finance companies[54] (Chart 3.50).

Chart 3.50 0-30 day maturity gap ratio of bills finance companies



Note: 0-30 day maturity gap ratio = net NTD cash flow within 0-30 days/total assets denominated in NTD.
Source: CBC.

The major liabilities[55] to equity ratio decreased to 7.64 times at the end of 2018, and the multiple of each company remained below the regulatory ceilings of ten or twelve times, indicating an improvement in financial leverage.

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[54] To strengthen liquidity risk management of bills finance company, the Bills Finance Association introduced a self-disciplinary rule in February 2019, prescribing that bills finance companies should establish a mechanism to control the 0-30 day maturity gap of NTD cash flow and develop an emergency plan.

[55] Major liabilities include call loans, repo transactions as well as issuance of corporate bonds and CP.

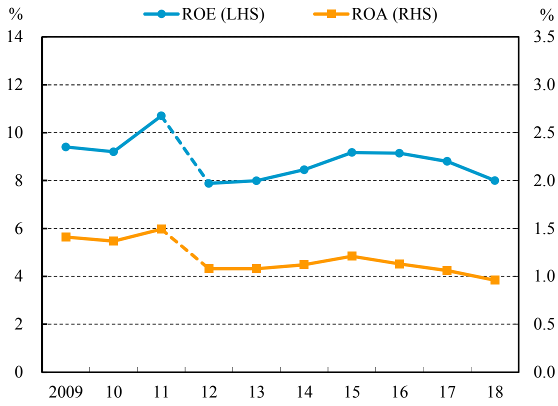
Profitability weakened

Bills finance companies posted a net income before tax of NT$9.7 billion in 2018, a decrease of 7% year on year. The decline was mainly driven by an increase in the yielding costs of bond investments and a higher base period resulting from a substantial amount of lawsuit settlement income in the previous year. The average ROE and ROA fell to 8% and 0.96%, respectively, reflecting weakening profitability (Chart 3.51).

Average capital adequacy ratio slightly declined

Owing to a greater increase in risk assets, the average Tier 1 capital ratio and the capital adequacy ratio of bills finance companies slightly descended to 13.47% and 13.63%, respectively, at the end of 2018 (Chart 3.52). However, the capital adequacy ratio for each company remained well above the statutory minimum of 8%.

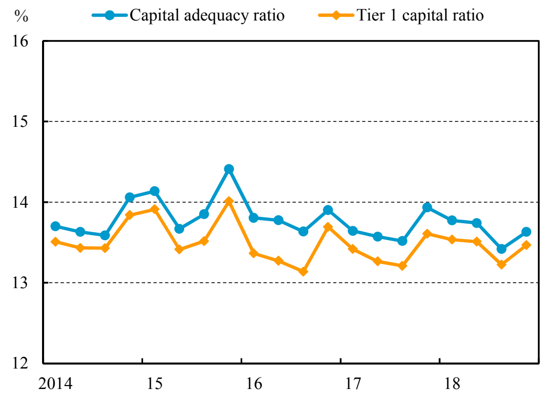
Chart 3.51 ROE & ROA of bills finance companies



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

Chart 3.52 Average capital adequacy ratios of bills finance companies



Source: CBC.

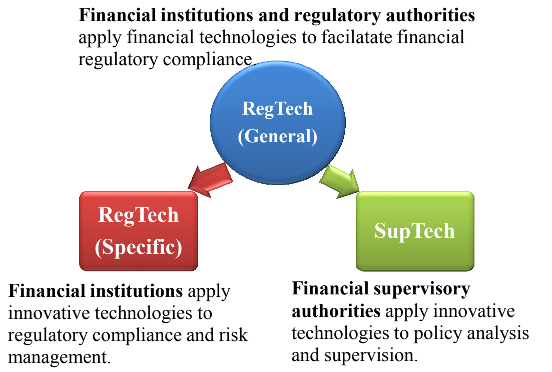
Box 2
RegTech development and applications by domestic banks

After the 2008 global financial crisis, increasingly stringent and radically changing financial regulations in most countries have led to increases in the number of financial institutions having enormous fines imposed on them for breaking regulations. Moreover, the surging cost of regulatory compliance and risk management have imposed a heavy burden on financial institutions' operations.[1] Recently, with the rise of RegTech, a growing number of financial institutions have applied new technologies to enhance compliance efficiency. This box first explores current development and application of RegTech by domestic banks and then analyzes the potential risks arising from the application of RegTech and caveats that warrant attention.

1. Definition of RegTech

"RegTech" is the combination of "regulatory" and "technology". Generally, the Institute of International Finance (IIF) defines RegTech as "the use of new technologies to solve regulatory and compliance requirements more effectively and efficiently."[2] Specifically, RegTech and SupTech refer to the application of innovative technologies by financial institutions and supervisory authorities for regulatory compliance and risk management as well as policy analysis and supervision, respectively (Chart B2.1).[3]

Chart B2.1 Differences between RegTech and SupTech



Source: CBC.

In Taiwan, the Financial Supervisory Commission defines RegTech as follows: Financial institutions use information technologies to broadly collect information regarding various countries' financial regulatory systems and regulatory requirements and to provide analysis and management tools, so as to help the automated compliance processes to lower operational risk.[4]

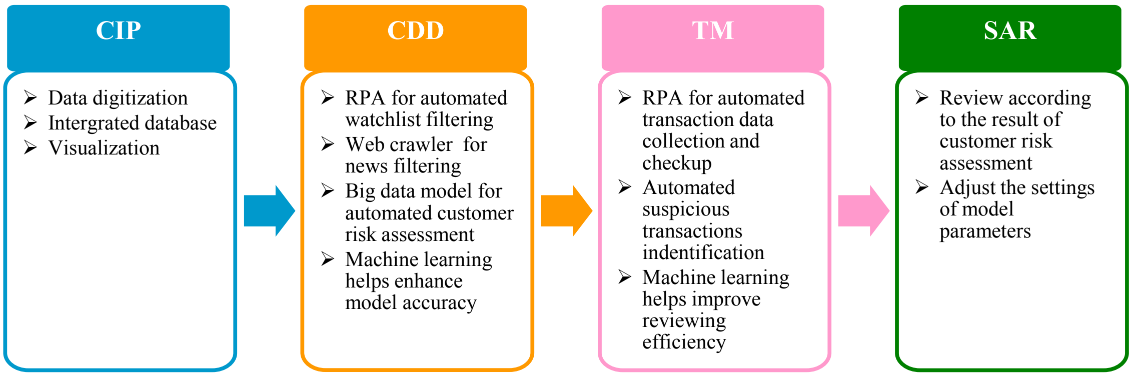
2. RegTech development and applications by domestic banks

Many financial institutions around the world have broadly applied information technologies, such as artificial intelligence, big data, blockchain and machine learning, to regulatory compliance, risk management, transaction monitoring and customer identification programs (CIPs). Regarding technological development for RegTech, domestic banks focus primarily on database applications, such as the construction of process automation and big data models. The application of RegTech mainly includes AML/CFT, regulatory compliance, internal audit/control and risk management. Among them, AML/CFT are more well-developed by domestic banks. RegTech development and applications by domestic banks are summarized as follows.

2.1 AML/CFT

In view of increasingly stricter AML/CFT requirements by regulatory authorities and the fact that the manual examination process in know your customer (KYC) and transaction monitoring is costly and prone to omission, the application of robotic process automation (RPA) and big data models could help enhance AML/CFT efficiency. Accordingly, domestic banks actively apply RegTech to AML/CFT processes (Chart B2.2).

Chart B2.2 RegTech applications on AML/CFT processes



Source: CBC.

(1) CIP: Customer information digitization can enhance CIP efficiency and effectiveness by building up a complete KYC database and visualizing manually unrecognizable data, such as customer relationships and cash flow networks.

(2) Customer due diligence (CDD): RPA system can import sanction lists into the database for automated comparison. Also, a web crawler can automatically collect and analyze public information to enhance the efficiency of the CDD process. By combining the internal and external KYC information mentioned above, banks can assess customer risk level through models, and then apply corresponding customer reviewing and monitoring processes accordingly.

(3) Transactions monitoring (TM): An RPA system gathers historical transaction data of customers and their counterparties to identify suspicious transactions by means of data comparison so as to support the transaction review.

(4) Suspicious activity reporting (SAR): The parameters for the types of risks will be determined according to the assessment of the degree of customers' risks. With these parameters, automated transaction monitoring processes can help achieve consistency of reviewing procedures and increase the accuracy of SAR.

2.2 Other applications

(1) Compliance management platform: The platform provides a database that integrates the internal rules and external regulations to instantly update information for consultation. In addition, the platform can automatically track the follow-up work of the relevant business units in response to regulation changes and enhance the efficiency of compliance management.

(2) Automated examinations for regulatory reports: The system can automatically perform cross-table and intertemporal examinations and identify related items within regulatory reports through formula exploration.

(3) Computer-aided audit tools: Auditors can screen high-risk or abnormal behavior cases through the system prior to conducting on-site audits so as to enhance audit efficiency; meanwhile, the complete audit trails will be kept in the system.

(4) Credit risk models: The models would integrate different aspects of customer information, such as personal profile, payment behavior, and debt burden, and then use statistical analytical methods to measure customers' default risk as a reference benchmark for credit evaluation and loan approval.

3. Risks and caveats of RegTech applications

The potential risks arising from the application of RegTech and caveats that warrant attention are shown as follows:

(1) Software bugs in the system: Before the system goes online, system design and parameter settings should be carefully tested. Continuous monitoring and problem analysis for instant debugging are essential to prevent wrong trading trend or behavior type.

(2) Over-reliance on the system may result in misjudgment: Professional judgment and high awareness are needed to avoid over-reliance on the system, which may result in misjudgment.

(3) Incomplete database and poor data quality: Embedded self-examination mechanism is required to lower the possibilities of error or meaningless data input, which may lead

to a failure or “garbage in, garbage out” result.

(4) Cyber security and personal information leakage: Popularity of cloud technology and change of data access type may increase the risks of cyber security and personal information leakage. Therefore, cyber security management and personal information protection should be reinforced with software and hardware tools.

4. Conclusions

An international trend is visible in developing the application of RegTech, and a growing number of domestic banks have been promoting its development. To evaluate the costs and benefits of RegTech, banks should properly respond to the risks arising from the application of RegTech to avoid missteps or violation of regulations.

Moreover, the application of RegTech can reduce certain manpower needs, which could change the content and type of work for existing staff. To effectively utilize human resources, banks should strengthen capacity building programs to train their staff, shift the streamlined human resources towards improving the interaction between banks and customers, and conduct activities and services which could create higher value.

Notes: 1. According to IIF (2015), JPMorgan Chase added 13,000 employees from 2012-14 to support regulatory compliance and control, at a cost of US$2 billion. In 2014, JPMorgan Chase spent a combined US$600 million on regulatory and control technology. In the same year, Deutsche Bank and UBS spent an additional €1.3 billion and US$900 million on new regulatory requirements, respectively (Institute of International Finance (2015), “REGTECH: Exploring Solutions for Regulatory Challenges,” October).

2. Institute of International Finance (2016), “RegTech in Financial Services: Technology Solutions for Compliance and Reporting,” March.

3. UK Government Office for Science (2015), “FinTech Futures: the UK as a World Leader in Financial Technologies,” March; Toronto Centre (2017), “FinTech, RegTech and SupTech: What They Mean for Financial Supervision,” August; BIS (2018), “Innovative Technology in Financial Supervision (SupTech) – the Experience of Early Users,” *FSI Insights on Policy Implementation* No 9, July.

4. Financial Supervisory Commission (2016), “FinTech Development Strategy White Paper,” May.

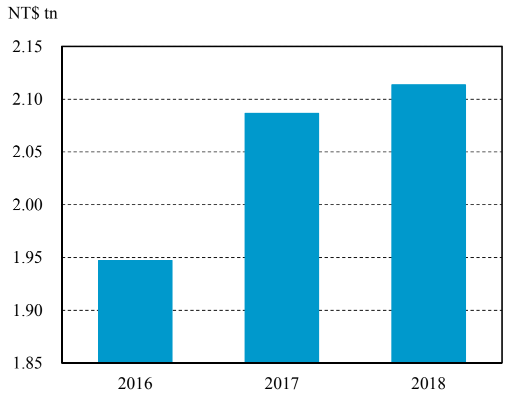
3.3 Financial infrastructure

3.3.1 Payment and settlement systems

Overview of the CIFS's operation

The CIFS serves as the hub of Taiwan's interbank funds transfer and settlement system. The CIFS deals with large-value interbank funds transfers, interbank funding, and funds settlements in financial markets. Moreover, it also provides interbank final settlement services to each clearing institution, such as domestic securities, bills, bonds and retail payments. In 2018, the daily average amount of funds transferred via the CIFS was about NT$2.11 trillion (Chart 3.53).

Chart 3.53 Daily average amount of funds transferred via the CIFS



Source: CBC.

Payment transactions related to daily life are mainly conducted through the retail payment systems of the FISC, the National Credit Card Center (NCCC), and the Taiwan Clearing House (TCH). The trading value of these major systems in 2018 registered NT$212.89 trillion in the FISC, NT$18.99 trillion in the TCH and NT$2.96 trillion in the NCCC. Among them, the amount of funds processed by the FISC's Interbank Financial Information System (FIS) was the largest.

The fast retail payment[56] system in Taiwan was developed very early. Since 1987, financial institutions have conducted real-time settlement through the Bank's Interbank Funds Transfer Guarantee Special Account (Guarantee Account[57]). By linking the FIS with the Guarantee Account, all financial institutions (including community financial institutions) constitute a connected framework to provide the general public 24-hour real-time interbank withdrawal and transfer services (Chart 3.54). Some advanced economies, such as Japan, Hong Kong and Canada, have just

[56] According to the BIS, "fast payment" is defined as a payment in which the transmission of the payment message and the availability of "final" funds to the payee occur in real time or near-real time on as near to a 24-hour and seven-day basis as possible.

[57] The Guarantee Account is a pool account opened by financial institutions in the Central Bank. The account stores the settlement funds required for banks to conduct interbank transactions. When people make interbank withdrawals or transfers, the Interbank Financial Information System of FISC immediately uses the funds in the Guarantee Account to handle the account settlement of interbank fund transfers.

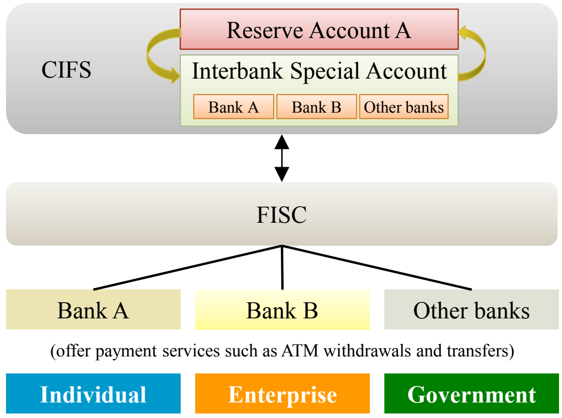
begun developing fast retail payment systems in recent years.

In terms of transaction security, the FISC, entrusted by the FSC, is responsible for the operation of the Financial Information Sharing and Analysis Center (F-ISAC), with the objective to maintain the security of financial transactions via the establishment of a joint financial defense system for InfoSec with financial institutions.

Overview of electronic retail payment transactions

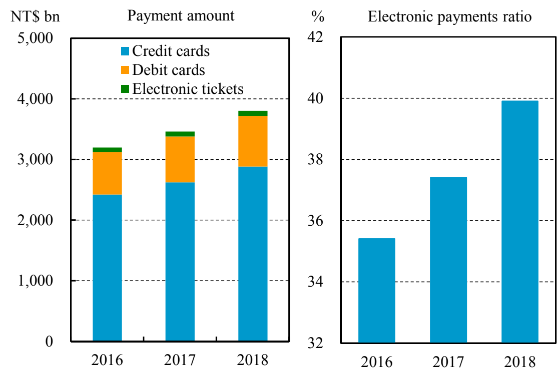
Over the years, domestic banks and non-bank payment companies have been dedicated to providing diverse and convenient electronic payment instruments for the public to carry out interbank remittances, transfers, bill/tax payments, retail payments and other payments. In terms of consumption expenditure, the public mostly use card-based payments. Among them, the payment amount by credit cards accounts for the largest share, followed by debit cards and electronic stored value cards. The total trading value registered NT$3.80 trillion in 2018, which accounted for 39.95% of total private consumption expenditure (Chart 3.55).

Chart 3.54 Operating framework of domestic fast retail payment system



Source: CBC.

Chart 3.55 Growth of electronic payments



Note: Electronic payment ratio refers to the ratio of the trading value of card-based payment to private consumption expenditure.
Sources: CBC, FSC, FISC and DGBAS.

In view of the potential development in mobile payments, since 2017 the National Development Council (NDC) has initiated a cross-ministerial mobile payment mechanism with three themes for promotion, namely building a sound mobile payment environment, expanding the mobile payment coverage, and increasing consumer mobile payment experience, to boost growth of the mobile payment industry and achieve a 90% mobile payment penetration rate[58] by 2025. According to the data collected by the Bank

[58] The penetration rate of mobile payments refers to the ratio of mobile payment users to mobile device users.

from twenty domestic banks, the trading value of mobile payments has grown rapidly since 2017 Q4, registering 120% growth[59] year on year.

As for QR code payment, standardized QR codes, promoted by the FISC and state-owned banks, have allowed consumers to transfer or pay bills/taxes with debit cards or credit cards by scanning QR codes. Currently, the FISC is actively expanding the use of QR codes in versatile types/sites of applications, which integrate more than 4,000 kinds of bills/taxes that can be paid by scanning those codes. Furthermore, it cooperates with large chain stores to provide more convenient payment services, which is expected to bolster trading momentum in the future.

Continue to strengthen the infrastructure of retail payments

In order to help financial institutions keep sufficient interbank settlement funds, the Bank raised the ceiling on the amount of financial institutions' end-of-day balances in the Guarantee Account to be counted as part of the required reserves in January 2019, to promote the smooth operation of overall retail payment infrastructure. The Bank also continues to pay attention to international development trends and urges the FISC to improve its infrastructure, such as lowering processing fees for small-value ATM interbank funds transfers and establishing an inter-agency sharing platform for electronic payments and electronic stored value cards. Moreover, the tiered preferential measures for ATM interbank transfer processing fees were implemented in April 2019 so as to provide the public with a safe, efficient, convenient and low-cost service and to deepen financial inclusion (Box 3).

3.3.2 Providing incentives for financial institution mergers

To provide a friendly legal environment for M&As and strengthen the competitiveness of local financial institutions, in November 2018, the FSC amended regulations relating to the merger of financial holding companies and banks with the aim of encouraging mergers of financial institutions. This policy is applicable to all domestic financial holding companies or banks (applicants). Nevertheless, when it comes to hostile takeovers, only financial institutions without government shareholding management under the MOF can be the applicants or investees. The key points of this policy are as follows:

- The required shareholding ratio of initial investment was revised to be over 10%. However, the applicants have to ensure the merger will be completed within a specified

[59] The mobile payments in this survey included mobile credit cards, mobile debit cards and NFC/QR Code payments. The transaction value in 2018 Q4 was approximately NT$16.77 billion.

period of time (no longer than three years) and submit a follow-up plan for the sale of the purchased shares, which will be executed if the merger fails to be concluded on time.

- If the invested target financial institutions are public companies, the applicants should make enough initial investment through public tender offer within three months after being permitted by the FSC. If the applicants fail to complete the public tender offer as scheduled in the investment plan, they are not allowed to employ another public tender offer of the same invested financial institutions within one year.

- The applicant should obtain one of the following documents in the case of friendly takeover: (1) the board resolution of the invested financial institution showing no objection to the merger; (2) a signed agreement or contract with the insiders or related parties of the invested financial institution to acquire more than 25% of the shares. Those who meet certain criteria[60] are allowed to conduct hostile takeovers without submitting the aforementioned documents. Furthermore, these applicants are allowed to adopt a more flexible approach for capital charge during the merger process.

3.3.3 Paving way for the establishment of internet-only banks

In response to digitized business opportunities and with the aim of encouraging financial innovation and deepening financial inclusion, the FSC proposed a new policy for internet-only banks in April 2018, and subsequently amended relevant regulations to formulate qualification standards of applicants. The main standards include minimum paid-in-capital, scope of business, qualification of founders and directors, fit and proper requirements for major shareholders, supervision standards and physical presence, etc. The FSC has started to accept applications for setting up internet-only banks from November 16, 2018, to February 15, 2019, with a plan of issuing two licenses. As of the time of writing, the FSC received three applications and set up a panel including independent experts and scholars to review applications in a manner of fairness and justice. It is expected that the approval list will be announced by the end of July 2019.

In the future, internet-only banks are expected to draw support from their major shareholders' massive customer bases and technological advantages in e-commerce, telecommunications, or communication software, and to rapidly expand their businesses and make profits. However, owing to overbanking and the highly competitive environment in Taiwan, internet-only banks still will face some challenges in the future. In addition, internet-only

[60] According to the relevant regulations, the applicant should have four prerequisites in place, including adequate capital level, strong operational expertise, robust global expansion capability and sound corporate social responsibility.

banks will be exposed to various risks which are similar, but of a different nature, to those of traditional banks. Therefore, the competent authorities should ensure they comply with financial regulations and strengthen risk management so as to fulfill both goals of financial innovation and financial stability (Box 4).

3.3.4 Financial Technology Development in Taiwan

For the purposes of providing a friendly environment for financial technology development and encouraging the use of technology to develop innovative financial products and services, in July 2018, the FSC promulgated supporting measures pursuant to the *Financial Technology Development and Innovative Experimentation Act* in order to provide financial technology enterprises with necessary assistance, guidance, and counseling services. Recent highlights of related activities promoted by the FSC and other competent authorities are as follows:

Approving an innovative experimentation application

The FSC approved the first application case for FinTech innovative experiment on September 18, 2018. This innovative experiment, involving cross-industry cooperation between a domestic bank and a local telecom company, plans to conduct online lending and credit card businesses for new customers. Moreover, the second batch of application, approved on January 31, 2019, aimed to provide cross-border wire transfers for migrant workers.

Establishing the FinTechSpace

The FinTechSpace, established by the FSC and the TFSR, was inaugurated on September 18, 2018. It aims to create a FinTech ecosystem, cultivate FinTech talents and new ventures, and foster innovation in the domestic financial industry.

Organizing FinTech Taipei 2018

The TFSR, together with the Taiwan Academy of Banking and Finance, organized FinTech Taipei 2018 in December 2018. The expo provided a FinTech exchange platform, deepened financial cross-field collaborations, and was aimed at building FinTech Taipei as a brand through holding this iconic international FinTech conference.

3.3.5 Taiwan prepared for mutual evaluations by the APG

Taiwan has been complying with the international requirements governing AML/CFT set out by the Financial Action Task Force (FATF). However, the FATF successively amended regulations such as the 40 Recommendations and assessment methodology in recent years, which makes it more difficult and challenging for those undergoing national AML/CFT compliance.

To prepare for the third-round of APG mutual evaluations, recently Taiwan has actively implemented corresponding measures aimed at getting higher ratings in the aforementioned evaluations. Those measures included: establishing the "Anti-Money Laundering Office" to be fully in charge of reinforcing national-wide coordination of AML/CFT; amending regulations governing AML/CFT; and organizing assessment and evaluation meetings (Box 5).

3.3.6 FX regulation amendments

Relaxing FX regulations for banks

In order to promote development of the financial services industry in the context of financial globalization and liberalization, the Bank successively relaxed FX regulations for banks as follows:

- In order to conform with the amendments to the *Company Act* that eliminate the recognition system for foreign companies, in November 2018, the Bank revised the *Directions Governing Banking Enterprises for Operating Foreign Exchange Business*, relaxing the qualification criteria for trustors for NTD non-discretionary money trusts.
- In order to conform with the policy that the FSC opened the door for establishing the internet-only banks in February 2019, the Bank revised the *Regulations Governing Foreign Exchange Business of Banking Enterprises*, adding provisions relevant to the qualification criteria for internet-only banks to apply for approval to become authorized FX banks.
- In line with the amendments to the aforementioned regulations, the Bank concurrently revised directions related to application procedures for banks engaging in FX business with customers through electronic and communications equipment.

Relaxing FX regulations for bills finance companies

In response to deregulating foreign currency-denominated interest rate derivative business for bills finance companies, in November 2018, the Bank stipulated application procedures and matters of compliance for the headquarters of bills finance companies conducting the business of FX derivatives involving interest rates as a business entity.

Box 3
Continuously improving the retail payment infrastructure to deepen financial inclusion

Financial inclusion[1] has far-reaching effects on financial development and economic growth. Moreover, it contributes to not only the transmission of the central banks' monetary policy but also financial stability.[2] For quite some time, many countries have regarded it as an important objective of public policy. In recent years, technological innovation has changed the face of retail payment services, which has become a new focus for countries to promote financial inclusion.

1. Countries across the world have successively established fast retail payment systems, which has helped achieving the goal of financial inclusion

Technological innovation expands the depth and breadth of retail payment services, which contributes to achieving financial inclusion. Recently, countries across the globe have successively established fast retail payment systems featuring low cost, easy-to-use interfaces, safe transaction and rapid access to funds. The systems are expected to provide better payment services so that more individuals can be involved in the financial system. (Table B3.1).

Table B3.1 Features of development in international fast retail payment

Features of development	Measures taken
Low cost	• Replacing ATM with online or mobile banking services to reduce setup and maintenance costs • Non-bank payment service providers to join the payment market, providing convenient and low-cost payment services through mobile applications
Easy-to-use interface; safe transaction	• Developing standardized QR Codes • Transferring with mobile phone numbers or email addresses in place of bank account numbers • Intergrating more trading information to provide additional value-added services (such as tracing cash flows)
Rapid access to funds	Adopting pre-funding to provide settlement funds, which is expected to help achieve 24-hour real time gross settlement and allow customers to instantly obtain and employ funds

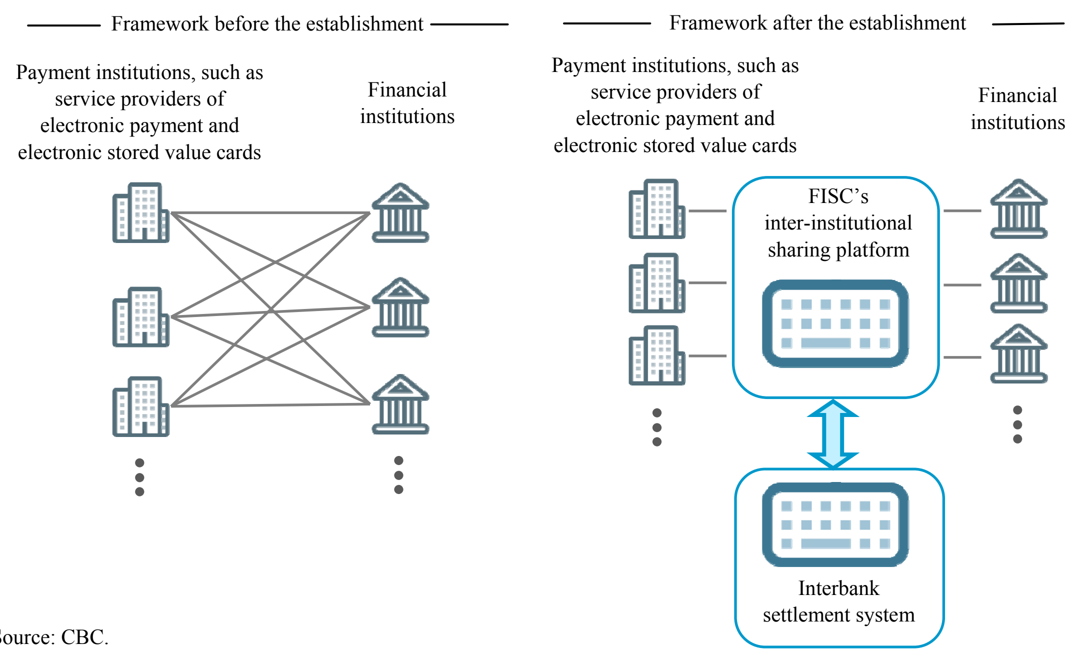
Source: CBC.

2. Continuing to improve the retail payment infrastructure and deepen financial inclusion

With the advent of the mobile payment era, banks are actively promoting various mobile banking services. Meanwhile, non-bank electronic payment institutions (EPIs) are also actively providing consumers with multiple payment options through mobile applications. The Bank continues to urge the Financial Information Service Co., Ltd. (FISC) to improve the retail payment infrastructure to deepen financial inclusion. For example, tiered preferential measures for ATM interbank transfer fees were introduced in April 2019.

In addition, under the current direct network connection model, EPIs connect directly with one or more banks, while their customers are connected to different banks' accounts to settle online payments through the electronic payment platforms. With an increase in EPIs, the above-mentioned operation could become more sophisticated and fuel concern over security of data and transaction processing. In response, the FISC has developed standardized QR Codes and integrated the front-end trading interface. Furthermore, the exchange of post-transaction messages can be conducted immediately through the inter-institutional sharing platform established by the FISC (Chart B3.1). Those procedures, coupled with the transactions through the existing CBC Interbank Funds Transfer System (CFIS) at the back end, demonstrate the benefits of exchanging

Chart B3.1 The inter-institutional sharing platform



Source: CBC.

real-time transaction data at the front end and rapid fund settlement at the back end. Moreover, the inter-institutional sharing platform can solve the current problem of incompatibility between different EPIs. As a result, vendors could receive various types of payment from consumers by signing contracts with even just one acquiring institution.

3. The Bank raised the ceiling on the amount of financial institutions' end-of-day balances in the Interbank Funds Transfer Guarantee Special Account (Guarantee Account) to be counted as part of the required reserves so as to facilitate smooth operation of the payment infrastructure

As the volume of e-commerce and online transactions continues to expand, the average end-of-day balances in the Guarantee Account of the Bank have increased from approximately NT$20 billion in the early period to NT$50 billion or so in 2018, meeting the needs of interbank transactions during non-business hours such as night time and holidays. In order to allow financial institutions to deposit sufficient settlement funds and facilitate smooth operation of the overall retail payment infrastructure, the Bank has raised the ceiling on the amount of financial institutions' end-of-day balances in the Guarantee Account to be counted as part of the required reserves from 4% to 8 %, which became effective from January 4, 2019 onwards. Financial institutions are permitted to retain more funds in the Guarantee Account so as to provide a wider range of payment services.

Notes: 1. According to the definition of the World Bank, financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way.

2. Mehrotra, Aaron and James Yetman (2015), "Financial Inclusion – Issues for Central Banks," *BIS Quarterly Review*, March; Irving Fisher Committee (2016), "Measures of Financial Inclusion – A Central Bank Perspective," *IFC Report*, June.

Box 4
The development of internet-only banks in Taiwan

Responding to digitized business opportunities, as well as aiming to encourage financial innovation and deepening financial inclusion, the FSC announced the policy to open the door for the establishment of internet-only banks in April 2018 and subsequently amended relevant regulations. As internet-only banks have different business models from traditional banks, they may give rise to distinct risks and supervision issues, and their impacts on the domestic financial system and financial consumer rights merit further attention.

1. International trends of internet-only banks

Internet-only banks usually refer to banks without physical branches which provide all financial services through internet or mobile channels, but the definitions are slightly different in various countries. In recent years, the significantly rising penetration rates of online banking provided a good opportunity for the development of internet-only banks. After the Security First Network Bank, the world's first internet-only bank, was established in the United States in 1995, a number of internet-only banks were set up around the world.

In general, there are two business models adopted by internet-only banks. One is providing financial services at preferential prices and enhancing customer experience by using new technology so as to attract customers. Many internet-only banks in European countries and America adopted this model. The other is taking the advantages of solid business networks and massive customer bases from major shareholders of e-commerce, telecommunications, communication software, retail corporations or financial holding companies, to establish a complete ecosystem by integrating product, financial, and information flows from various industries. This model can be represented by internet-only banks in Asian countries.

The same as traditional banks, internet-only banks also face strategic, credit, market, operational, liquidity, and reputational risks. However, since internet-only banks purely rely on internet or mobile channels to provide financial services, the features of the risks they face are somewhat different from those faced by traditional banks.[1] In particular, they should enhance the management of liquidity risk, operational risk (including customer data protection), and reputational risk. Moreover, potential risks of internet-only banks related to money laundering, consumer protection, and using non-traditional data (such as social networking data) for credit review should also be closely monitored.

In the countries with internet-only banks among other kinds of banks, there is no significant difference in supervion standards between internet-only banks and traditional commercial banks. Usually, supervisors in these countries do not formulate special supervisory regulations for internet-only banks but mainly follow the *Core Principles for Effective Banking Supervision*[2] and apply the same supervisory rules as for traditional commercial banks.

2. The development of internet-only banks in Taiwan

2.1 The FSC planned to accept the establishment of two internet-only banks

In April 2018, the FSC proposed a new policy for internet-only bank establishment and accordingly amended relevant regulations governing commercial bank establishment to stipulate the application requirements of internet-only bank establishment. The key requirements include minimum paid-in-capital, scope of business, qualification requirements of founders and directors, fit and proper requirement for major shareholders, supervision standards, and physical presence, etc. (Table B4.1). The FSC planned to issue only two licenses for internet-only banks to properly mitigate competitive pressures in the banking sector.[3]

The FSC also set up four categories of evaluation criteria for the applications, including financial capabilities (10%), fit and proper qualities of founders with shareholdings over 10% and of major senior managers (20%), business model feasibility (40%), and management mechanism appropriateness (30%). Among them, business model feasibility has the highest weighting.

Table B4.1 Main requirements for internet-only bank establishment in Taiwan

Items	Main requirements
Minimum paid-in-capital	• NT$10 billion (the same as required for setting up a commercial bank).
Scope of business	• Same business scope as a commercial bank. • Allowed to apply for money trust, credit card and electronic payment businesses upon application.
Qualification requirements of founders	• More than 40% of paid-in-capital should be subscribed for by the founders of financial institutions (financial holding companies, banks, insurance companies or securities firms), and at least one of the founders should be a bank or a financial holding company whose shareholding should exceed 25%. • A foreign financial institution can be the founder. • Non-financial founders who have the financial technology, e-commerce or telecommunication capabilities and are capable of offering a successful business model may subscribe for more than 10% of the

	paid-in capital.
Qualification requirements of board directors	• More than half of the directors should meet professional requirements in banking, financial technology, e-commerce or telecommunication businesses. • At least one of the board directors should meet professional requirements in financial technology, e-commerce or telecommunication businesses.
Fit and proper requirements for major shareholders	• Major shareholders should meet the requirements of integrity, honesty, and no regulation violation, and can reasonably explain the interested relationships with the banks. • Major shareholders should not have disqualifying conditions for persons in charge of banks.
Supervisory standards	• Subject to the same regulations and supervisory requirements governing incumbent commercial banks; required to join the government deposit insurance scheme.
Branch locations	• The absence of physical branches, except for the head office and the customer service center.

Source: FSC.

2.2 Three groups applied for the licenses of internet-only banks

Currently, three groups with different competitive advantages applied for the licenses of internet-only banks, including Line Commercial Bank, Next Commercial Bank, and Rakuten International Commercial Bank. A look at the background of the founders showed that all applicants employ similar business models to that of Japan, South Korea and Mainland China, seek to expand their customer bases and businesses as fast as possible with the help of their major shareholders that possess massive customer bases in the fields of e-commerce, telecommunications, and communication software.

In order to evaluate applications in a manner of fairness and justice, the FSC stipulated a piece of regulation in February 2019 to set up an evaluation panel comprising external experts and scholars and representatives from the FSC. It was expected that the approval list would be announced by the end of July 2019.

2.3 Taiwan is in a good position to accommodate internet-only banking businesses, but still faces some challenges

High internet and smartphone penetration rates put Taiwan in a good position to develop online banking services. The implementation of a financial regulatory sandbox also provides internet-only banks good opportunities to employ new technology to provide financial services. In addition, massive customer bases of all applicants also are conductive to rapidly expanding business after the internet-only banks are established.

However, owing to high financial inclusion, overbanking and the highly competitive environment in Taiwan, internet-only banks are still confronted with some challenges regarding attracting customers and making profits. Furthermore, difficulty in recruiting suitable senior managers and collecting the necessary big data, as well as making enough profits to cover the high costs of information system development and database maintenance in the short term, also pose challenges to their future operations.

3. Conclusion

Drawing from the business models of internationally renowned internet-only banks, the authorities found that security, efficiency, innovation, and optimized customer experience were important factors to attract customers and earn their trust. In the future, in order to effectively improve profitability, Taiwan's internet-only banks can take advantage of internet and financial technology innovation and cooperate with their major shareholders or strategic partners to produce synergies. Meanwhile, they should strengthen risk management, especially risk controls over liquidity, information security and regulatory compliance, to facilitate sound operation.

In order to fulfill both goals of financial innovation and financial stability, the competent authorities should ensure regulatory compliance of internet-only banks and strengthen risk monitoring of their operations. The authorities should also formulate relevant rules for internet-only banks based on supervisory standards and international experience. In addition, the Bank will prudently assess the impacts of internet-only banks on monetary, credit and foreign exchange policies, as well as financial stability, and take appropriate actions to address potential liquidity risks.

Notes: 1. BCBS (2018), "Sound Practices: Implications of Fintech Developments for Banks and Bank Supervisors," February.
2. BCBS (2012), "Core Principles for Effective Banking Supervision," September. Core principle 4 stipulates that a bank which is licensed and subjected to supervision can accept deposits.
3. The FSC had initially planned to issue two new licenses for the three applicants. However, considering that they all had different business models and target customers, the FSC eventually announced in July 2019 that all three companies were granted approval to set up internet-only banks.

Box 5
Taiwan's preparations for mutual evaluations by the Asia/Pacific Group on Money Laundering (APG)

APG mutual evaluations mainly involve two interrelated components for technical compliance (framework of laws) and effectiveness (outcomes achieved). The evaluations require not only the implementation of comprehensive regulations governing anti-money laundering and combating the financing of terrorism (AML/CFT), but also the delivery of the achievements of the program. If the assessment outcomes fail to meet the standard, national reputation and international financial business could be affected. Therefore, so as to prepare for the third-round APG mutual evaluations in 2018, ministries and departments under Taiwan's cabinet actively implemented the following measures.

1. Establishing an institution fully in charge of reinforcing the national coordination of AML/CFT

In March 2017, the Executive Yuan (Taiwan's cabinet) established the "Anti-Money Laundering Office." Its main missions are to coordinate and execute duties relevant to AML/CFT policies and guidelines within Taiwan, and to promote the preparatory tasks for national AML/CFT risk assessment and the aforementioned mutual evaluations.

2. Amending related regulations

To achieve compliance with the requirements set out in the 40 Recommendations of the Financial Action Task Force (FATF), Taiwan has continued to amend relevant regulations governing AML/CFT. Accordingly, financial supervisory authorities have also conducted several amendments to meet the requirements. The main amendments are shown as follows.

2.1 Laws

(1) Amending the Money Laundering Control Act

For the purpose of complying with international standards, bolstering anti-money laundering systems, increasing transparency in money flows and constructing a suspicious transactions reporting mechanism, the *Money Laundering Control Act* was substantially revised in December 2016 and enacted in June 2017. The *Act* was revised again in November 2018 to avoid disputes and to be more in line with international regulations.

(2) Enacting the *Counter-Terrorism Financing Act*

Following the United Nation's international convention in connection with the prevention of terrorist financing (TF) and FATF's 40 Recommendations, the *Counter-Terrorism Financing Act* was enacted in July 2016. The *Act* was amended in November 2018 to ensure that targeted financial sanctions are fully implemented.

2.2 Regulations applied to the financial sector

(1) Promulgation of the Regulations Governing Anti-Money Laundering of Financial Institutions

Authorized by Articles 7 to 10 of the *Money Laundering Control Act*, the FSC enacted and amended the *Regulations Governing Anti-Money Laundering of Financial Institutions* in June 2017 and November 2018, respectively. The *Act* primarily required that financial institutions comply with the related provisions in undertaking customer (including beneficial owners) due diligence, record keeping, and reporting of large amount cash transactions, as well as suspicious money laundering or TF transactions

(2) Introducing regulations governing financial institutions' AML/CFT internal control and auditing systems

According to Article 6 of the *Money Laundering Control Act*, the FSC changed the directions governing internal control systems into regulations on the banking sector's internal audit and internal control system of AML/CFT in November 2018. Moreover, the FSC enacted regulations governing AML/CFT of the securities, futures, and insurance industries. Additionally, with the aim of urging financial institutions to comply with AML/CFT regulations, the FSC has been promoting public awareness and conducted risk-based targeted examinations.[1]

2.3 Others

The Bureau of Agricultural Finance, Council of Agriculture, also promulgated regulations governing AML/CFT of agricultural financial institutions. The Bank enabled further improvements of the AML/CFT rules by amending regulations governing foreign exchange business handled by foreign currency exchange counters and banks. Furthermore, the Bank conducted risk-based on-site reviews targeting foreign currency exchange counters, along with information integrity reviews of foreign currency remitters and beneficiaries.

3. Organizing a series of assessment or evaluation meetings

Taiwan's AML Office fully cooperated with the public and private sectors to complete a *Technical Compliance Report* and an *Effectiveness Compliance Report* in May and July 2018, respectively. The reports were submitted to the APG for mutual evaluations. In addition, the AML Office has actively organized the following assessment or evaluation meetings.

3.1 National Money Laundering/Terrorist Financing (ML/TF) Risk Assessment Procedure Meetings

From June 2017 onwards, the AML Office successively held four large-scale National ML/TF Risk Assessment Procedure Meetings and published the first *National Money Laundering and Terrorist Financing Risk Assessment Report* in May 2018. The report not only met the requirements specified in the FATF's 40 Recommendations but also helped the development of more effective AML/CFT policies in Taiwan.

3.2 Mock mutual evaluation meetings

The AML Office conducted mock mutual evaluation meetings in December 2017 and April 2018, in which foreign consultants were appointed as mock assessors to simulate possible situations faced when answering questions. These meetings were aimed not only at promoting the related participants of assessed sectors to become familiar with on-site evaluations but also helping the Office identify potential deficiencies or weaknesses of the relevant regulations and measures.

3.3 APG on-site evaluation meetings

Three APG on-site evaluation meetings have been held and are summarized in Table B5.1.

Table B5.1 Summary of the APG on-site evaluation meetings

Date	Title	Summary
August 28-31, 2018	Preparatory meeting	The meeting included two-way communication discussions about three reports (such as *Technical Compliance Report*) proposed by the AML Office, as well as the procedure and administrative details of the on-site evaluation meeting to be held in November 2018.
November 5-16, 2018	On-site evaluation meeting	Thanks to great support and investment by the government, the preliminary results of a mutual evaluation highly attested to the significant progress in Taiwan's AML/CFT.
March 18-21, 2019	Face-to-face meeting	All the participants from different authorities were able to actively explain and reply to the deficiencies proposed by the assessment team so as to mitigate the deficiencies.

Source: CBC.

4. Taiwan actively strives to achieve a higher evaluation rating in the 2019 APG annual meeting

In accordance with the APG mutual evaluation description, Taiwan's mutual evaluation report, revised after the face-to-face meeting, will be submitted to the APG annual meeting in 2019. After further discussion and confirmation, the aforementioned report will be concluded. Against this backdrop, the foremost task of Taiwan's delegation is to plan and formulate measures to achieve higher ratings of some evaluation items so as to receive better evaluation results. Nevertheless, since countries such as the US, Canada, Australia and New Zealand are known for carrying out rigorous assessments in the annual meeting of the international FSRB (FATF-style regional body), Taiwan is likely to face demanding challenges, which warrants preemptive measures.

Note: 1. The content includes evaluating financial institutions' risk profiles, conducting more frequent and detailed examinations according to risk ratings, and carrying out diverse targeted examinations, etc.