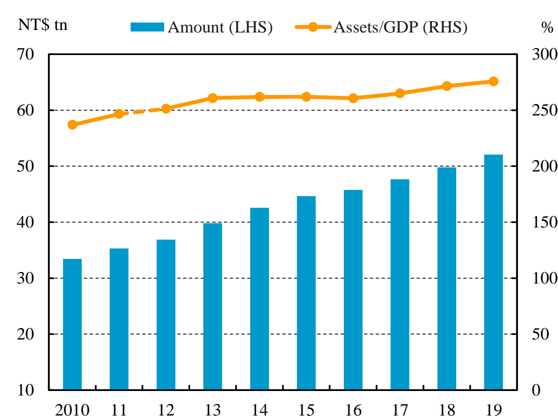
3.2 Financial institutions

3.2.1 Domestic banks

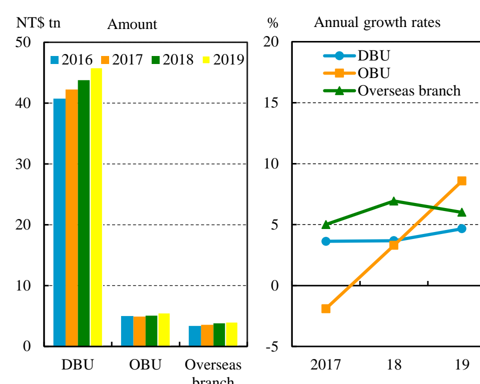
Owing to the growth in loans, the total assets of Taiwan's 37 domestic banks[49] continually expanded in 2019. Asset quality improved, and concentration in corporate loans decreased mildly while credit exposures to real estate loans increased slightly. Since prices in the real estate market remained oscillatory within a narrow range, credit risk related to real estate prices should be continuously monitored. Moreover, the estimated value at risk (VaR) of market risk exposures increased but liquidity risk remained moderate owing to ample funds in the banking system. While domestic banks posted higher profits in 2019 than the previous year, the average capital adequacy ratio increased and showed satisfactory capacity to bear losses.

Chart 3.17 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.

Chart 3.18 Total assets of domestic banks by sectors



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

Total assets kept growing

The total assets of domestic banks kept growing and reached NT$52.06 trillion at the end of 2019, equivalent to 275.47% of annual GDP (Chart 3.17). The annual growth rate of the total assets slightly rose to 4.55%, mainly due to continuous growth in loans. Broken down by sector, the asset growth rates of domestic banking units (DBUs) and offshore banking units (OBUs) showed rising trends, and only the asset growth rate of overseas branches trended down[50] (Chart 3.18).

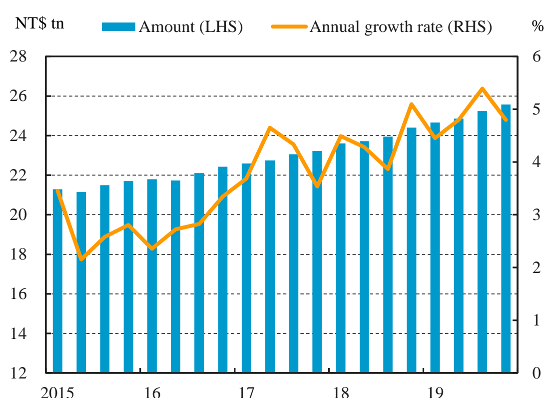
[49] Includes Agricultural Bank of Taiwan.
[50] Mainly because due from the Central Bank and commercial banks as well as interbank call loans of branches in the US and Hong Kong largely decreased.

Credit risk

Customer loans growth slowed

Customer loans granted by the DBUs of domestic banks stood at NT$25.57 trillion at the end of 2019, accounting for 49.12% of total assets, with the annual growth rate decreasing to 4.80% (Chart 3.19). Among them, the annual growth rate of household borrowing slightly rose to 5.77% owing to a steady increase in mortgage loan demand. Corporate loans growth slowed, with the annual growth rate declining to 3.72%. However, the annual growth rate of government loans rose to 4.50% mainly because of a lower base period in the previous year.

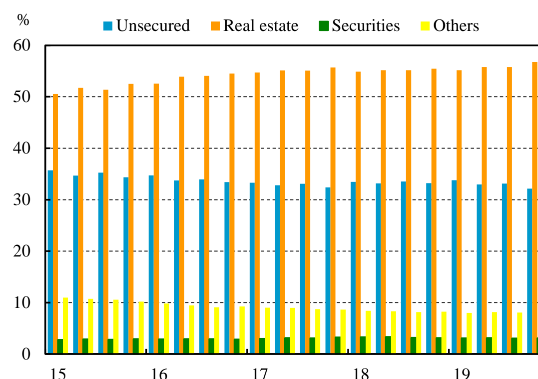
Chart 3.19 Outstanding loans in domestic banks



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

Both credit concentration and the share of real estate-secured credit increased slightly

Chart 3.20 Credit by type of collateral in domestic banks



Source: CBC.

At the end of 2019, real estate loans granted by the DBUs of domestic banks[51] amounted to NT$9.56 trillion and accounted for a share of 37.38% of total loans, reflecting a marginally increasing concentration in credit exposure to real estate loans. Moreover, real estate-secured credit granted by domestic banks aggregated NT$17.79 trillion, accounting for 56.77% of total credit,[52] also higher than that of the previous year (Chart 3.20).

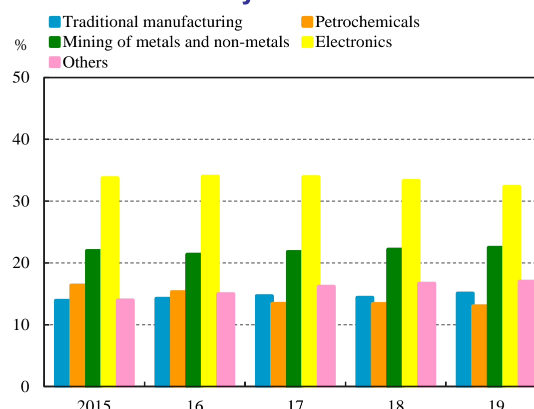
In 2019, the trading volume in the housing market grew and housing prices trended upwards. Nonetheless, the pressure stemming from unsold new residential properties remained a concern. In addition, owing to the COVID-19 outbreak in early 2020, housing market sentiment turned conservative. Banks should continue to pay close attention to real estate related credit risks.

[51] Real estate loans include house-purchasing loans, house-repairing loans and construction loans.
[52] The term "credit" herein includes loans, guarantee payments receivable, and acceptances receivable.

Credit concentration in corporate loans slightly diminished

For the DBUs of domestic banks, corporate loans stood at NT$11.09 trillion at the end of 2019, of which loans to the manufacturing sector registered NT$4.28 trillion and accounted for the largest share of 38.64%. Within the manufacturing sector,[53] the largest proportion of loans was for the electronics industry, which stood at NT$1.39 trillion and accounted for 32.38%, slightly decreasing over the previous year. This reflected that the credit concentration of corporate loans had mildly reduced (Chart 3.21).

Chart 3.21 Exposure to the manufacturing sector by domestic banks

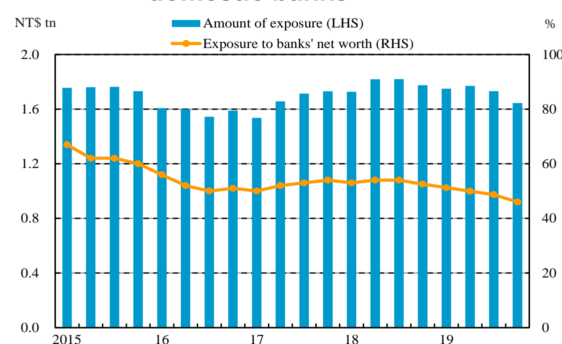


Notes: 1. Exposure to each sector = loans to each sector/loans to the whole manufacturing sector.
2. Exposures of OBUs and overseas branches were excluded.
Source: CBC.

Exposures to Mainland China decreased, but potential risks increased

At the end of 2019, the exposures of domestic banks to Mainland China stood at NT$1.65 trillion, decreasing by NT$129.9 billion or 7.32% from a year earlier. The ratio of the exposures to banks' net worth fell to a new low of 46% (Chart 3.22).

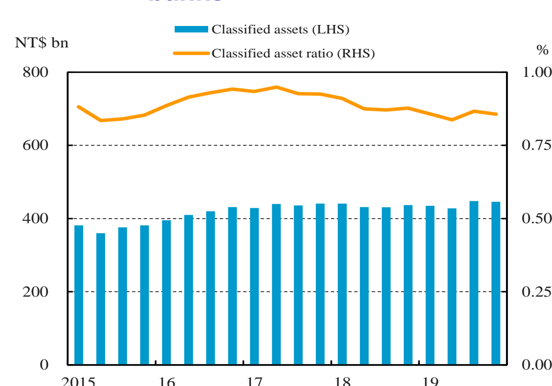
Chart 3.22 Exposures to Mainland China by domestic banks



Source: FSC.

In recent years, economic growth of Mainland China has slowed significantly and the debt of the non-financial sector has expanded rapidly. The COVID-19 outbreak in early 2020 made a major impact on the economy and finance in Mainland China, and potential risks increased. Given the high trade interconnectedness of the two sides across the Strait, changes in Mainland China's economic conditions would

Chart 3.23 Classified assets of domestic banks



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

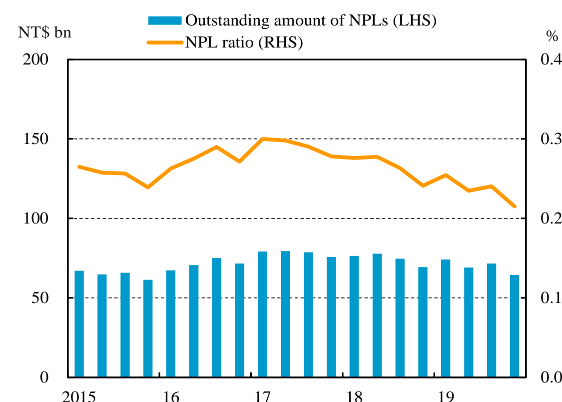
[53] Loans to the manufacturing sector are divided into five categories by industry, including: (1) electronics, (2) mining of metals and non-metals, (3) petrochemicals, (4) traditional manufacturing, and (5) others.

have a greater impact on Taiwan. Therefore, domestic banks should closely monitor the developments in Mainland China's economic and financial conditions and prudently manage the risks of such exposures.

Asset quality improved

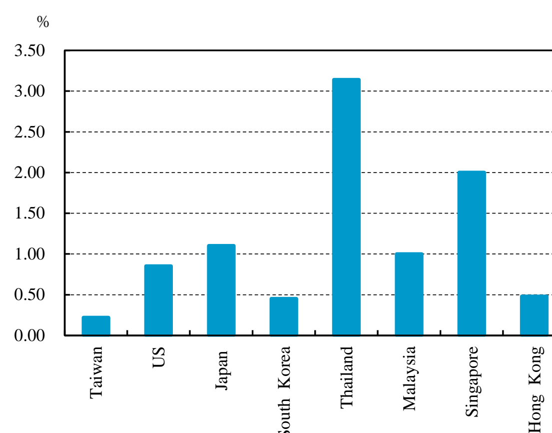
Outstanding classified assets[54] of domestic banks stood at NT$445.9 billion at the end of 2019, increasing by 2.08% from a year earlier. Owing to a greater rise in total assets, the average classified asset ratio saw a slight decline to 0.86% (Chart 3.23), showing that the asset quality of domestic banks improved. Although the expected losses of classified assets[55] slightly increased to NT$58.5 billion, they only accounted for 12.60% of loss provisions, indicating that domestic banks had sufficient provisions to cover expected losses.

Chart 3.24 NPLs of domestic banks



Note: Excludes interbank loans.
Source: CBC.

Chart 3.25 NPL ratios of banks in selected countries



Note: Figure for Japan is end-September 2019 data, while the others are end-December 2019 data.
Sources: CBC, FDIC, FSA, FSS, BOT, BNM, MAS and HKMA.

The outstanding NPLs of domestic banks registered NT$64.5 billion at the end of 2019, decreasing by 7.08% from the previous year. The average NPL ratio decreased to a historical low of 0.22% (Chart 3.24), and was much lower than those in the US and neighboring Asian countries (Chart 3.25).

At the end of 2019, owing to the continued increase in provisions and the decrease in NPLs, the loan coverage ratio and the NPL coverage ratio rose to 1.4% and 650.3%, respectively (Chart 3.26). This indicates that the overall capability of domestic banks to cope with potential loan losses has improved.

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[54] 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.

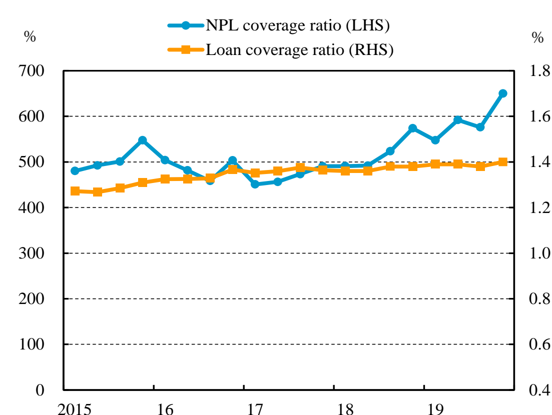
[55] Loss herein refers to the losses from loans, acceptances, guarantees, credit cards, and factoring without recourse.

Market risk

Estimated value-at-risk for market risk exposures increased

At the end of 2019, the net position of interest rate sensitive 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,[56] the estimated total VaR for market risk exposures of domestic banks stood at NT$132 billion at the end of 2019, up by NT$15.8 billion or 13.6% compared to a year earlier. Among them, the interest rate and equities VaR increased by 13.53% and 27.96%, respectively. The main reasons were larger positions of debt and equity securities and uncertainty[57] surrounding the developments of the US-China trade dispute, which increased volatility in debt and equity markets. On the other hand, the FX VaR exposures decreased by 16.67%, owing to reductions in their net positions (Table 3.1).

Chart 3.26 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.

Table 3.1 Market risks in domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2018	End-Dec. 2019	Changes	
				Amount	pps; %
Foreign exchange	Net position	195.5	173.5	-22.0	-11.25
	VaR	4.2	3.5	-0.7	-16.67
	VaR/net position (%)	2.15	2.02		-0.13
Interest rate	Net position	1,796.0	1,957.2	161.2	8.98
	VaR	102.7	116.6	13.9	13.53
	VaR/net position (%)	5.72	5.96		0.24
Equities	Net position	63.1	86.8	23.7	37.56
	VaR	9.3	11.9	2.6	27.96
	VaR/net position (%)	14.74	13.71		-1.03
Total VaR		116.2	132	15.8	13.60

Source: CBC.

[56] For more details about the Bank's VaR model, please see CBC (2016), *Financial Stability Report*, Box 2, May. In 2019, the Bank calibrated the VaR model for evaluating market risk VaR, and retrospectively adjusted the data at the end of 2018.

[57] The situation of the US-China trade war in 2019 alternated between moderate and intensive. The first phase of the US-China trade deal was not reached until mid-December 2019.

From early 2020 onward, the spread of COVID-19 and inability of oil-producing nations to reach an agreement on reduction in oil output caused global stocks to plunge and oil prices to crash, sharply increasing the volatility in financial markets. As a result, market risk surged. Accordingly, future developments of the financial market and its possible impacts should be carefully watched.

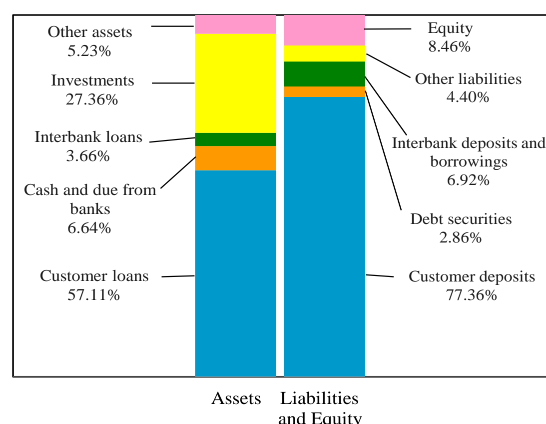
The impacts of market risk on capital adequacy ratios were limited

According to the estimation mentioned above, the total VaR would lead to a decrease of 0.22 pps in the average capital adequacy ratio of domestic banks, causing the ratio to drop from the current 14.07% to 13.85%. Nevertheless, it would still be higher than the statutory minimum of 10.5%.

Liquidity risk

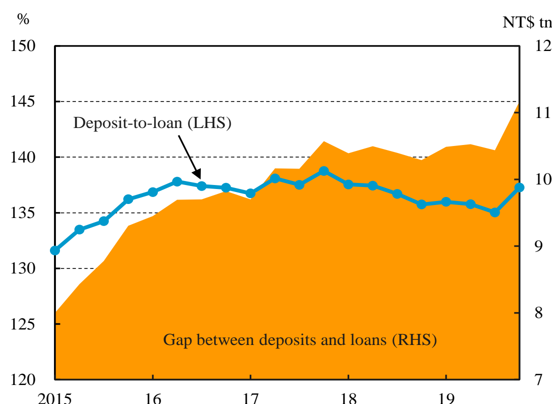
Liquidity in the banking system remained ample

Chart 3.27 Asset/liability structure of domestic banks



Notes: 1. Figures are as of end-December 2019.
2. Equity includes loss provisions. Interbank deposits include deposits with the CBC.
Source: CBC.

Chart 3.28 Deposit-to-loan ratio of domestic banks



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

The assets and liabilities structure of domestic banks remained roughly unchanged in 2019. For the sources of funds, relatively stable customer deposits still made up the largest share of 77.36% of the total, while for the uses of funds, customer loans accounted for the biggest share of 57.11% (Chart 3.27). The average deposit-to-loan ratio of domestic banks rose to 137.27%, and the funding surplus (i.e., deposits exceeding loans) increased to NT$11.17 trillion. The overall liquidity of domestic banks remained abundant (Chart 3.28).

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 2019 and stood at 31.61% in December (Chart 3.29). Looking at the components [58] of liquid reserves in December 2019, Tier 1 liquid reserves, mainly consisting of CDs issued by the Bank, accounted for 84.01% of the total. The quality of liquid assets held by domestic banks remained satisfactory.

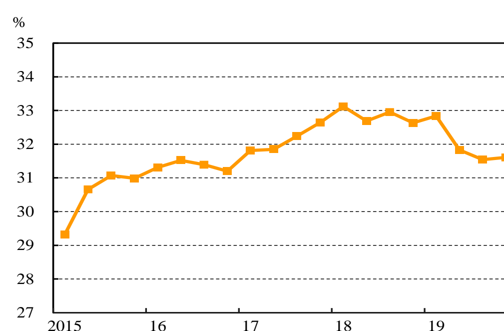
Moreover, the average liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) of domestic banks were 135% and 133%, respectively, at the end of 2019, implying that the overall liquidity risk of domestic banks was relatively low.

Profitability

Profitability increased significantly

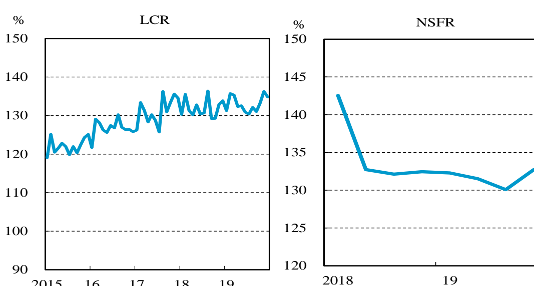
In 2019, the net income before tax of domestic banks rose to NT$362.1 billion, significantly increasing by 7.94% year on year and reaching a 10 year high (Chart 3.31). The rise was mainly caused by an increase in investment revenue. The average ROE and ROA of domestic banks went up to 9.49% and 0.70% (Chart 3.32), indicating an improvement in

Chart 3.29 Liquid reserve ratio of domestic banks



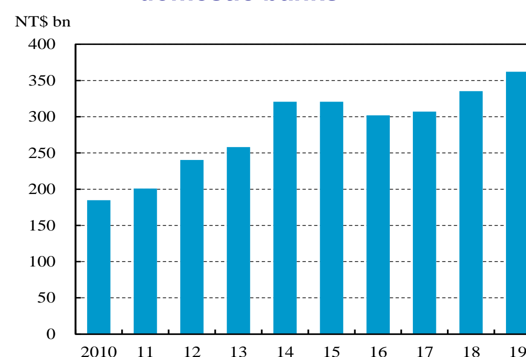
Note: Figures are the average daily data in the last month of each quarter.
Source: CBC.

Chart 3.30 LCR and NSFR of domestic banks



Notes: 1. LCR and NSFR were implemented from 2015 and 2018 onwards, respectively.
2. LCR is reported on a monthly basis; NSFR is reported on a quarterly basis.
Source: CBC.

Chart 3.31 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.

[58] According to the *Directions for Auditing Liquidity of Financial Institutions*, liquid reserve assets can be classified as: (1) excess reserves, net lending to financial institutions in the call loan market, re-deposits at designated banks with a maturity not exceeding one year, CDs issued by the Bank, government bonds and treasury bills; (2) negotiable certificates of deposit issued by banks, banker's acceptances, commercial paper, commercial acceptances, bank debentures, corporate bonds, NTD-denominated bonds issued in Taiwan by international financial organizations and foreign issuers and (3) other assets as approved by the Bank.

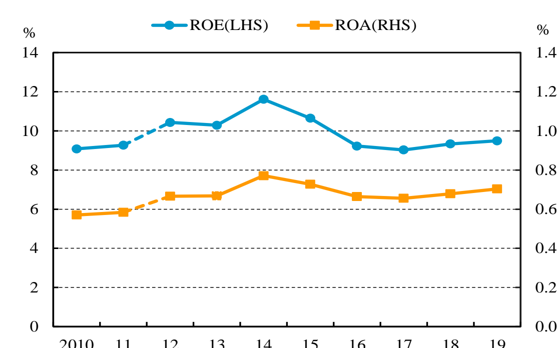
profitability. Compared to selected Asia-Pacific economies, the average ROE and ROA of domestic banks were only higher than those of South Korea and lagged behind those of most other countries (Chart 3.33).

All 37 domestic banks were profitable in 2019. Among them, 11 banks achieved a profitable ROE of 10% or more and four banks had ROAs above the international standard of 1% (Chart 3.34). ROE and ROA of most domestic banks showed better performance than those of the previous year.

Factors that might affect future profitability

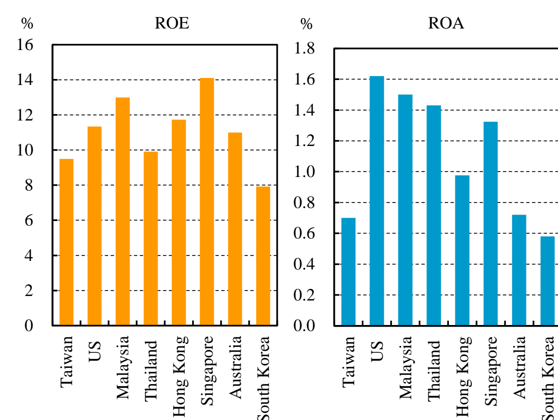
Although profitability of domestic banks increased in 2019, the interest rate spread between their deposits and loans fell to 1.32 pps from the previous year (Chart 3.35) owing to the increase in large low-rate loans offered to government-owned and private enterprises by some banks. The decline in interest rate spread could impair future profit growth momentum of domestic banks. In addition, other challenges facing future profitability include: (1) weaker debt-service capacity of COVID-19-affected industries might lead to higher default rates, which erodes banks' profitability; (2) interest rate cuts by the US, the UK, South Korea and the Bank could further reduce the interest rate spread between NTD- and foreign currency-denominated deposits and loans and affect banks' future profitability; and (3) BigTechs, which rely on their broad customer bases and advanced technological capabilities to provide innovative financial services, have not yet

Chart 3.32 ROE & ROA of domestic banks



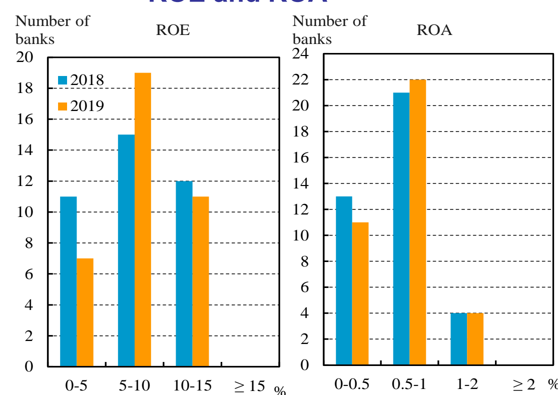
Notes: 1. ROE = net income before tax/average equity.
2. ROA = net income before tax/average total assets.
Source: CBC.

Chart 3.33 ROEs and ROAs of banks in selected economies



Note: Figures are 2019 data.
Sources: CBC, FDIC, BNM, BOT, APRA, FSS and IMF.

Chart 3.34 Domestic banks classified by ROE and ROA



Source: CBC.

posed a serious threat to domestic banks or impacted financial stability; however, relevant authorities should still pay attention to their development and propose timely supervision response measures (Box 2).

Capital adequacy

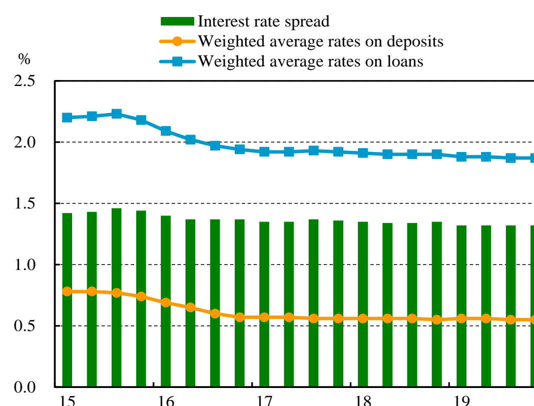
Capital ratios trended upward

In 2019 Q2, owing to seasonal factors such as cash dividends declared and paid, the average capital ratios of domestic banks declined slightly. Afterwards, boosted by capital injections with cash and the revaluation of land, issuance of subordinated debts, and accumulated earnings, all capital ratios rebounded. As a result, at the end of 2019, the average common equity ratio, Tier 1 capital ratio, and capital adequacy ratio of domestic banks reached 11.32%, 12.08%, and 14.07% (Chart 3.36), respectively, all above their ratios a year before. However, compared to some Asia-Pacific economies, Taiwan's banking industry had relatively lower capital levels (Chart 3.37).

Further broken down by components of regulatory capital, common equity Tier 1 (CET 1) capital, featuring the best loss-bearing capacity, accounted for 80.48% of eligible capital. This showed that the capital quality of domestic banks was satisfactory.

Moreover, at the end of 2019, the average leverage ratio of domestic banks stood at 6.71%, higher than 6.56% a year before, indicating financial leverage remained sound.

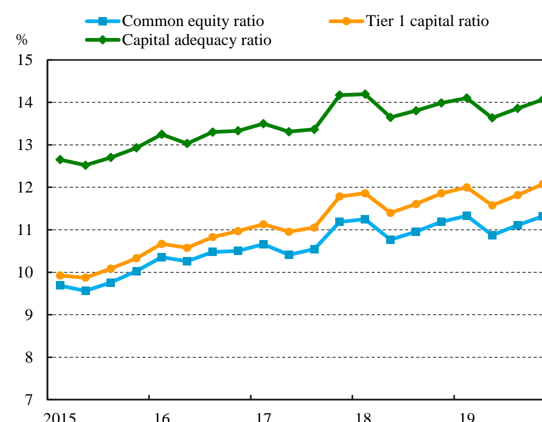
Chart 3.35 Interest rate spread of domestic banks



Notes: 1. Interest rate spread = weighted average interest rates on loan - 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.

Chart 3.36 Capital ratios of domestic banks



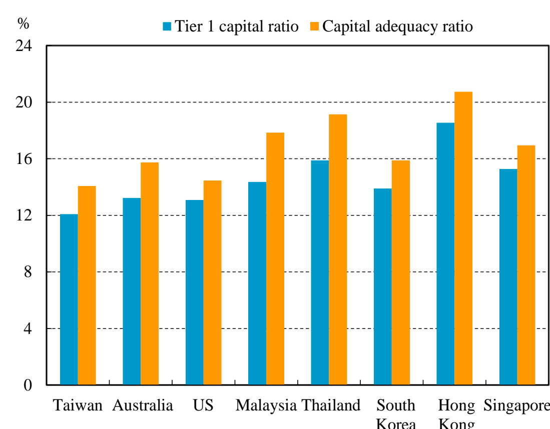
Notes: 1. Common equity ratio = common equity Tier 1 capital/risk-weighted assets.
2. Tier 1 capital ratio = Tier 1 capital/risk-weighted assets.
3. Capital adequacy ratio = eligible capital/risk-weighted assets.

Source: CBC.

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

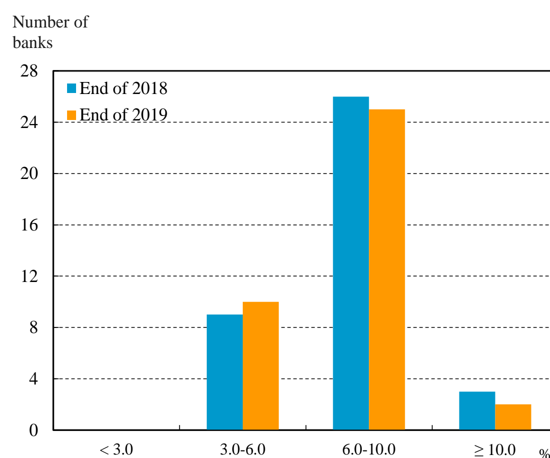
The common equity ratios, Tier 1 capital ratios, and capital adequacy ratios at the end of 2019 for all domestic banks remained above the statutory minimum requirements (7.0%, 8.5%, and 10.5%, respectively). Leverage ratios of all domestic banks were also above the 3% statutory standard (Chart 3.38).

Chart 3.37 Capital ratios of banking industry in selected economies



Note: Figures are as of the end of 2019.
Sources: CBC, APRA, FDIC, BNM, BOT, FSS and IMF.

Chart 3.38 Distribution of domestic banks' leverage ratios



Notes: 1. Leverage ratio = Tier 1 capital/total exposures.
2. At the end of 2019, the number of domestic banks decreased from 38 a year before to 37.
Source: CBC.

Credit ratings

Average credit rating level further enhanced

Of the overall risk assessments of Taiwan's banking system made by credit rating agencies, Standard & Poor's kept Taiwan's Banking Industry Country Risk Assessment (BICRA) [59] unchanged at Group 4 with moderate risk. Compared to other Asian economies, the risk level of Taiwan's banking system was higher than Hong Kong, Singapore, Japan and South Korea, 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)[60] also remained unchanged at level bbb/2 (Table 3.2).

[59] 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.

[60] 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 aaa, aa, a, bbb, bb, b, ccc, cc, c and f. The MPI indicates the vulnerability of the macro environment on a scale from 1, 2, 2* and 3.

All domestic banks received ratings by credit rating agencies[61] at the end of 2019. The weighted average credit rating index[62] went up slightly compared to the previous year owing to rating upgrades of five banks (Chart 3.39).

Rating outlooks for almost all domestic banks remained stable

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 2019 (Chart 3.40). Only one bank received a negative rating outlook, while rating outlooks for the other 36 banks remained stable.

3.2.2 Life insurance companies

In 2019, total assets of life insurance companies continued their rapid growth, while overall credit ratings held stable. Meanwhile, the average RBC ratio further improved and pretax income increased year on year. However, life insurance companies still faced higher reinvestment risk and equity risk.

Assets maintained fast growth

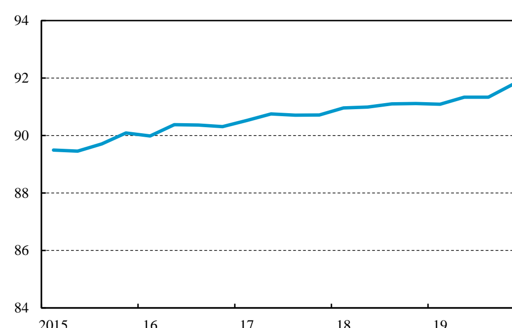
The total assets of life insurance companies reached NT$29.39 trillion at the end of 2019,

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard & Poor's		Fitch	
	BICRA		BSI/MPI	
	2019/2	2020/2	2019/4	2019/10
Hong Kong	2	2	a/3	a/2
Singapore	2	2	aa/2	aa/2
Japan	2	3	a/2	a/2
South Korea	3	3	a/1	a/1
Taiwan	**4**	**4**	**bbb/2**	**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	6	5	bb/1	bb/1
Indonesia	7	6	bb/1	bb/1

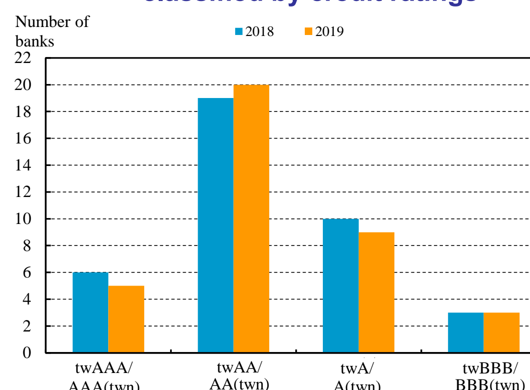
Sources: Standard & Poor's and Fitch Ratings.

Chart 3.39 Credit rating index of domestic banks



Sources: Taiwan Ratings Corporation, Fitch Ratings and CBC.

Chart 3.40 Number of domestic banks classified by credit ratings



Notes: 1. End-of-period figures.
2. The number of domestic banks decreased from 38 in 2018 to 37 in 2019.

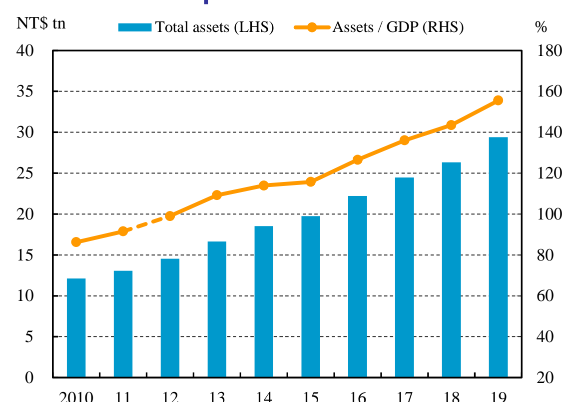
Sources: Taiwan Ratings Corporation and Fitch Ratings.

[61] As of the end of 2019, 27 of Taiwan's domestic banks received long-term issuer ratings from Taiwan Ratings, higher than the number of those with national long-term ratings from Fitch Ratings. Therefore, this section is based primarily on the Taiwan Ratings' ratings (tw~), and secondarily on Fitch Ratings' ratings (~twn).

[62] 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.

equivalent to 155.53% of annual GDP (Chart 3.41). The annual growth rate of total assets increased to 11.67%, maintaining a rapid pace of growth. The top three companies in terms of assets made up a combined market share of 55.30%. The market structure of the life insurance industry remained roughly unchanged in 2019.

Chart 3.41 Total assets of life insurance companies

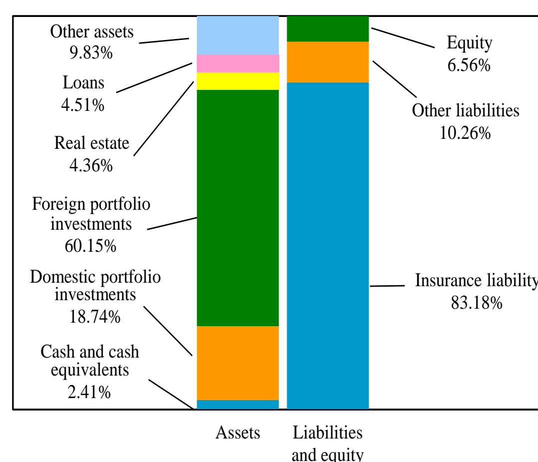


Note: Figures from 2012 forward are on the TIFRSs basis; figures of prior years are on the ROC GAAP basis.
Sources: FSC and DGBAS.

Foreign portfolio investments remained the primary usage of funds

In terms of the usage of funds of life insurance companies, foreign portfolios accounted for 60.15% at the end of 2019, the largest share of total assets, whereas the share of domestic securities investments rose to 18.74%. As for their sources of funds, insurance liabilities accounted for 83.18%, the primary share of total liabilities and equity, while the share of equity increased markedly to 6.56% owing to a strong expansion of unrealized investment profits (Chart 3.42).

Chart 3.42 Asset/liability structure of life insurance companies



Note: Figures are as of the end of 2019.
Source: FSC.

Pretax income increased significantly

Life insurance companies reported net income before tax of NT$154.6 billion in 2019, a substantial year-on-year increase of 84.74% (Chart 3.43). This was chiefly driven by growth in gains from financial assets or financial liabilities at fair value through profit and loss. Therefore, the average ROE and ROA strengthened to 10.24% and 0.55%, respectively (Chart 3.44), indicating improved profitability.

Average RBC ratio further increased

In 2019, capital levels of life insurance companies rose because of increases in profits and unrealized investment gains. As a result, the average RBC ratio rose to 292.54% at the end of the year (Chart 3.45). Among individual companies, there were 13 companies with RBC ratios

over 300%. No company had an RBC ratio below the statutory minimum of 200% (Chart 3.46). Furthermore, the average equity to asset ratio rose significantly to 7.10% at the end of 2019 (Chart 3.47), and all life insurance companies held the ratio above 3%.[63]

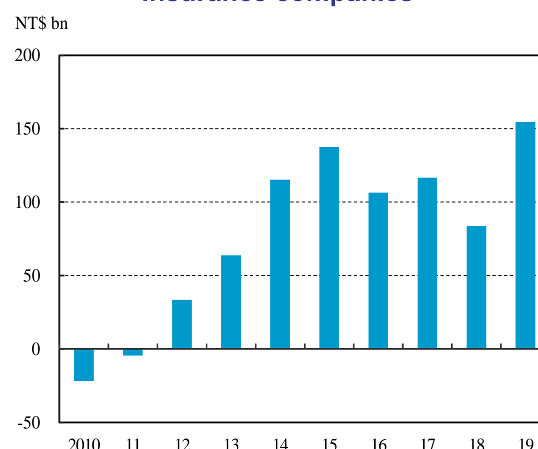
Overall credit ratings remained stable[64]

In 2019, 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, with the ratings of the top three companies in terms of assets holding at twAA+. Moreover, the prospects of most companies were rated with a positive or stable outlook.

Foreign portfolio positions expanded with higher reinvestment risk and equity risk

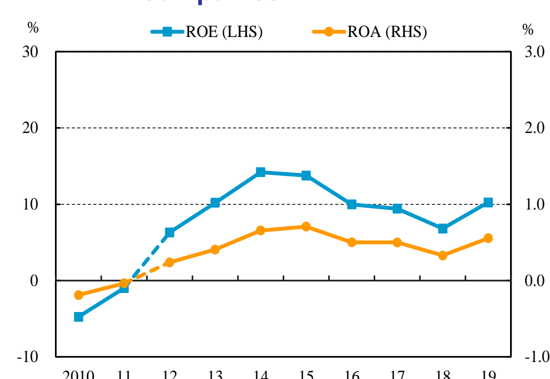
Foreign portfolio positions of life insurance companies grew continually and reached NT$17.68 trillion at the end of 2019, of which more than 90% was invested in USD-denominated financial products. With regard to FX risk, life insurance companies actively used derivative financial instruments and accelerated the accumulation of FX valuation reserves

Chart 3.43 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 3.44 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.

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[63] The FSC amended the *Regulations Governing Capital Adequacy of Insurance Companies* on December 4, 2019, effective from April 1, 2020. In addition to serious capital inadequacy when the equity of an insurance company is less than zero, new classifications of capital adequacy ratios relating to the equity to asset ratio (the owner's equity divided by total assets excluding separate accounts for investment-linked insurance specified in the financial report audited by a certified public accountant) were added as follows:
(1) Inadequate capital: The equity to asset ratio of an insurance company is less than 3% in both of the most recent two periods and more than 2% in at least one period.
(2) Significantly inadequate capital: The equity to asset ratio of an insurance company for both of the most recent two periods is less than 2% and more than zero.

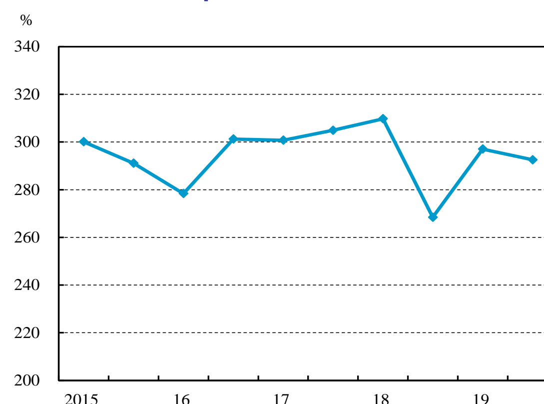
[64] The majority of rated life insurance companies received issuer ratings from the Taiwan Ratings Corp.; therefore, this section is based primarily on the Taiwan Ratings' rating (tw~), and secondarily on the ratings by other credit rating agencies.

according to a relevant regulation so as to mitigate the impact of FX rate fluctuations. However, since their open FX positions remained high, and the NT dollar turned to appreciate against the US dollar in April 2020, the FX risk for life insurance companies still warrants close attention.

Furthermore, NTD-denominated bond exchange-traded fund (ETF) investments of life insurance companies are excluded from the amounts subject to the overseas investment ceiling. Given that the net asset value of ETFs would be affected by the FX volatility of underlying overseas investments, NTD-denominated bond ETFs still carry potential FX risk. In the recent year, investment in ETFs grew rapidly and reached NT$1.3 trillion at the end of 2019. Considering that life insurance companies investing in NTD-denominated bond ETFs could face FX risk, the FSC imposed a rule adding an additional FX risk capital charge of 6.61% on NTD-denominated bond ETFs when calculating the RBC ratio. In addition, in December 2019, the FSC required that the credit ratings of underlying bond holdings of ETFs invested in by life insurance companies should be not lower than BBB-, a rule aiming to prevent insurance companies from trying to evade investment limits by investing in massive amounts of bond ETFs tracking high-yield bonds or junk bonds.

In the foreign portfolio of insurance companies, securities investments constituted the largest share, of which about 90% was invested in bills and bonds and 10% in

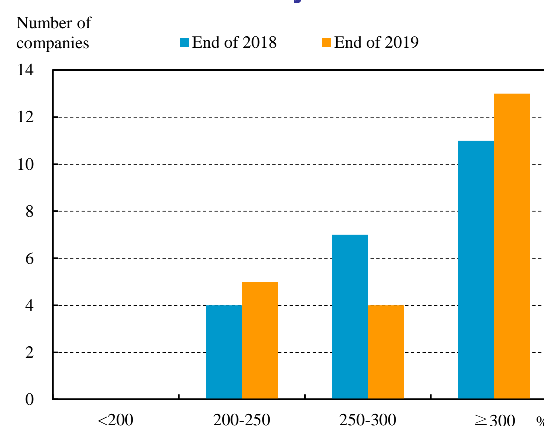
Chart 3.45 RBC ratio of life insurance companies



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

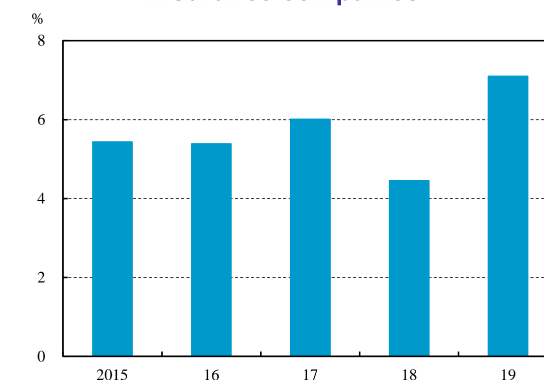
Source: FSC.

Chart 3.46 Life insurance companies classified by RBC ratios



Source: FSC.

Chart 3.47 Equity to asset ratios of life insurance companies



Notes: 1. Equity is unaudited figures.
2. Assets are exclusive of the assets of investment-linked insurance products in separate accounts.

Source: FSC.

equities. With respect to bond investments, as the Fed and many central banks successively cut interest rates in response to the COVID-19 pandemic from the beginning of 2020, US government bond yields trended downwards, which would help increase the value of government bond and high-rating corporate bond investments. However, insurance companies faced reinvestment risk especially when massive amounts of international bonds were called back by their issuers.[65] Moreover, owing to a global stock market crash and international oil price plunge in March 2020, global financial market volatility increased dramatically. Therefore, investment risks related to equities and corporate bonds with ratings of BBB or below remained high.

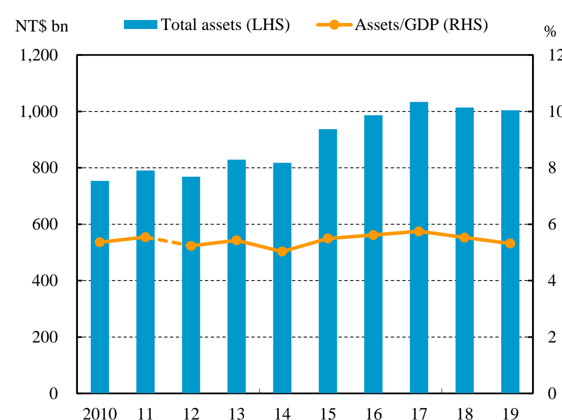
3.2.3 Bills finance companies

The total assets of bills finance companies contracted marginally in 2019. The guarantee business expanded and credit asset quality remained sound, while the impact of the COVID-19 pandemic on asset quality warrants attention. Profitability improved slightly, while the average capital adequacy ratio declined continually and liquidity risk remained high.

Total assets contracted successively

In 2019, mainly owing to the decrease in NCD investments, the total assets of bills finance companies decreased by 0.94% and stood at NT$1,004.6 billion at the end of the year, equivalent to 5.32% of annual GDP (Chart 3.48).

Chart 3.48 Total assets of bills finance companies

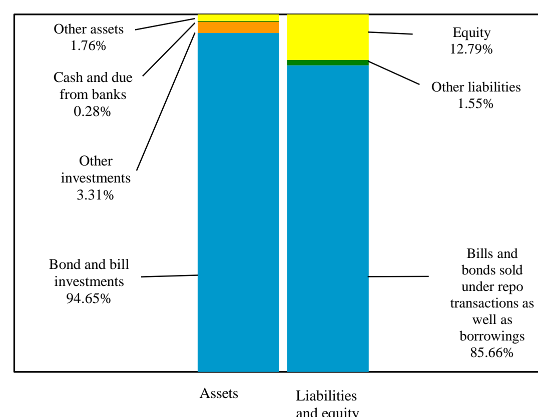


Note: Figures from 2012 forward are on the TIFRSs basis; figures of prior years are on the ROC GAAP basis.
Sources: CBC and DGBAS.

With respect to the asset and liability structure of bills finance companies, bill and bond investments constituted the largest share of 94.65% of total assets as of the end of 2019, an increase of 0.2 pps compared to a year earlier. On the liability side, bills and bonds sold under repo transactions as well as borrowings accounted for 85.66% of total

[65] The redemption amount of international bonds was US$11.9 billion and US$22.7 billion, respectively, in 2019 and the first four months of 2020. Although massive amounts of international bonds were called back by their issuers in the first four months of 2020, the amount of new issuance was still greater than that of redemption during this period. As a result, the outstanding amount of bond issuance expanded by US$3.3 billion. However, the interest rate of newly issued bonds was generally lower than those issued in the past.

assets, while equity only accounted for 12.79% (Chart 3.49). The asset and liability structure remained roughly unchanged.

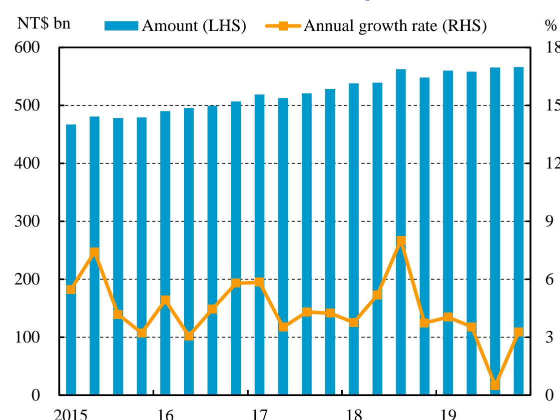


Note: Figures are as of the end of 2019.
Sources: CBC and FSC.

Credit risk

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

CP guaranteed by bills finance companies registered NT$565.4 billion at the end of 2019, increasing by 3.27% year on year (Chart 3.50), mainly because corporates increased CP issuance for fund raising as interest rates in the money market generally remained at a low level. Although the average ratio of guarantee liabilities to equity increased to 5.02 times, the ratio of each company remained below the regulatory ceiling of 5 or 5.5 times.[66]



Source: CBC.

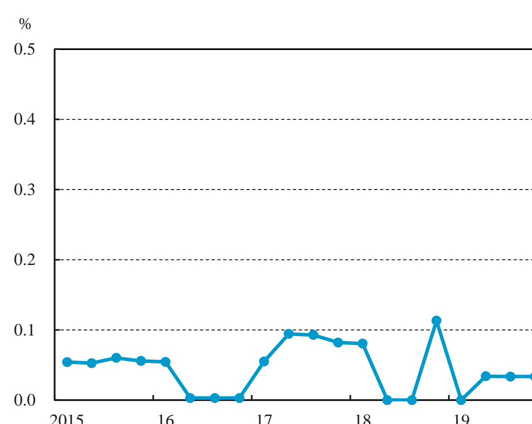
At the end of 2019, guarantees granted to the real estate and construction industries and credit secured by real estate increased to 30.34% and 41.47%, respectively, of total credit of bills finance companies. Both ratios remained at recent high levels. As pressures to reduce unsold residential properties remained and the COVID-19 pandemic induced more hesitation among real estate market participants, bills finance companies should closely monitor the impacts of housing market trends on the quality of mortgage-related credit and reinforce their capacity to cope with the changes in the real estate market cycle.

[66] According to the *Ceiling on the Total Amounts of the Short-term Bills Guarantee and Endorsement Conducted by Bills Finance Companies*, the ratio of outstanding commercial paper guaranteed to equity for a bills finance company should not exceed 1, 3, 4, 5 or 5.5 times, respectively, depending on the level of its capital adequacy ratio of below 10%, above 10% but below 11%, above 11% but below 12%, above 12% but below 13%, or above 13%.

Non-performing credit ratio remained low, but impacts of the pandemic on credit quality warrant close attention

The credit quality of bills finance companies remained sound in 2019, as the non-performing credit ratio declined to 0.03% at the end of the year (Chart 3.51). Moreover, the credit loss reserves to non-performing credit ratio stood at 40.38 times, reflecting sufficient reserves to cover potential credit losses. However, a global flare-up of the COVID-19 pandemic not only disrupted supply chains and weakened demand for some domestic manufacturers but also severely damaged transportation, retail, tourism, and hospitality industries. This could have a negative impact on credit quality of bills finance companies and thus warrants close attention.

Chart 3.51 Non-performing credit ratio of bills finance companies

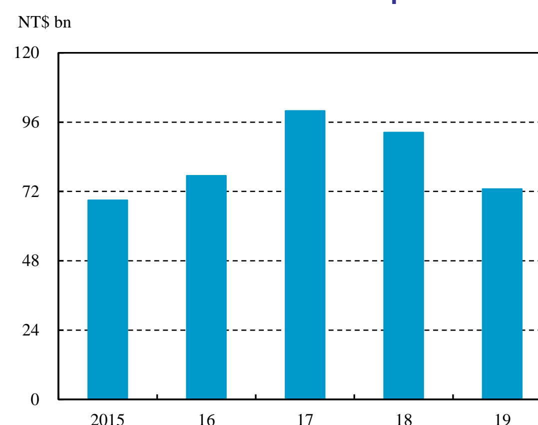


Note: Non-performing credit ratio = non-performing credit/(overdue guarantee advances + guarantees).
Source: CBC.

Non-guarantee CP investment reduced continually, but its potential credit risk warrants concern

The outstanding amount of non-guarantee CP investment by bills finance companies stood at NT$72.9 billion at the end of 2019, decreasing by 21.21% year on year (Chart 3.52). Although each company's ratio of non-guarantee CP investment to equity remained below the regulatory ceiling of 2 times,[67] bills finance companies should continue to pay attention to the potential credit risk.

Chart 3.52 Non-guarantee CP investments of bills finance companies



Source: CBC.

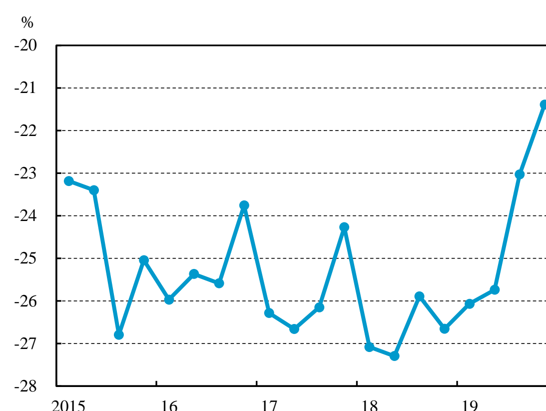
[67] According to the *Self-disciplinary Rule Governing Non-guarantee Commercial Paper Business Conducted by the Members of Bills Finance Association*, the ratio of outstanding non-guarantee CP investment to equity for a bills finance company should not exceed 2 times.

Liquidity risk remained high

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, 46.34% of which were long-term bonds. In addition, more than 80% of their liabilities were from short-term interbank call loans and repo transactions. Nevertheless, their 0-30 day maturity gap to total assets denominated in NTD shrunk to -21.39% from the -26.66% of the previous year (Chart 3.53), reflecting a decreasing but still high liquidity risk in bills finance companies.[68]

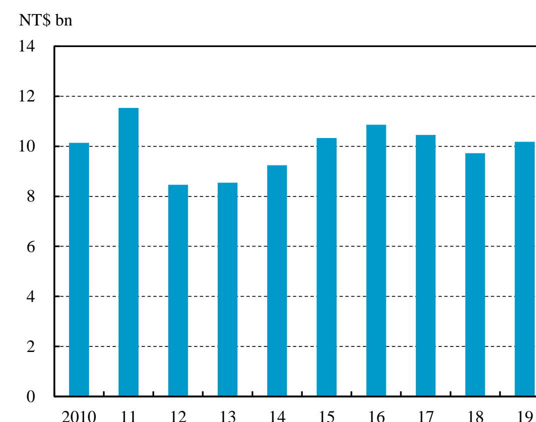
Major liabilities[69] stood at 7.64 times as much as equity stood at the end of 2019, remaining at the same level as the previous year. This, coupled with the fact that the ratio for each company stayed below the regulatory ceilings,[70] indicated a stabilized financial leverage.

Chart 3.53 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.

Chart 3.54 Net income before tax of bills finance companies



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

[68] According to the *Self-disciplinary Rule Governing Liquidity Risk Management of Bills Finance Companies*, bills finance companies should establish a mechanism to limit the 0-30 day maturity gap of NTD cash flow and develop an emergency plan in order to strengthen liquidity risk management.

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

[70] According to the *Directions for Ceilings on the Total Amounts of the Major Liabilities and Reverse Repo Transactions Conducted by Bills Houses*, which aim to reduce the operating and liquidity risks of bills finance companies, the major liabilities of a bills finance company could not exceed six times, eight times or ten times its equity depending on the level of its capital adequacy ratio of below 10%, above 10% but below 12%, or above 12%. If a bills finance company is a subsidiary of a financial holding company or its bank shareholder meets safe and sound criteria, the ceiling will be raised by an additional two times its equity. As of the end of 2019, the capital adequacy ratio of each bills finance company was above 12%, so the ceilings were capped at ten times or twelve times for each company.

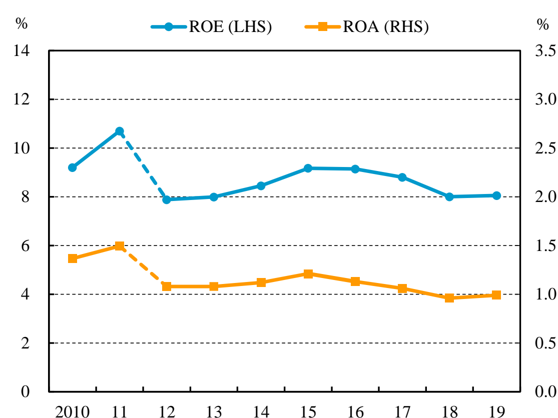
Profitability enhanced slightly

Bills finance companies posted a net income before tax of NT$10.2 billion in 2019, an increase of 4.71% year on year (Chart 3.54), mainly owing to an increase in gains from sales of bond investments. The average ROE and ROA roses lightly to 8.05% and 0.99% (Chart 3.55), respectively, reflecting slightly enhanced profitability.

Average capital adequacy ratio declined continually

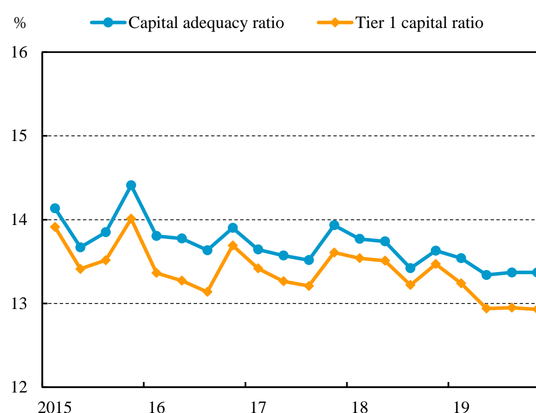
The average tier 1 capital ratio and the capital adequacy ratio of bills finance companies were 12.93% and 13.37%, respectively, at the end of 2019, both lower than those of the previous year (Chart 3.56). However, the capital adequacy ratio for each company remained well above the statutory minimum of 8%.

Chart 3.55 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 3.56 Average capital adequacy ratios of bills finance companies



Source: CBC.