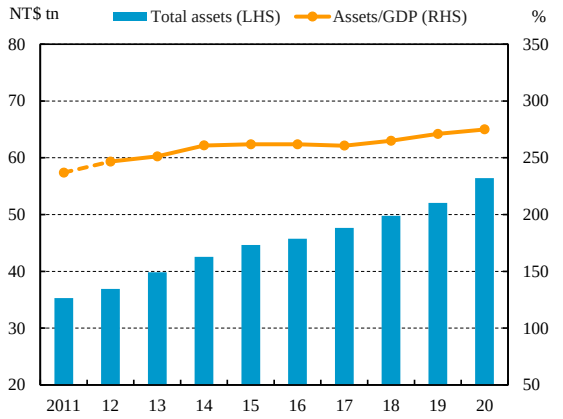
3.2 Financial institutions

3.2.1 Domestic banks

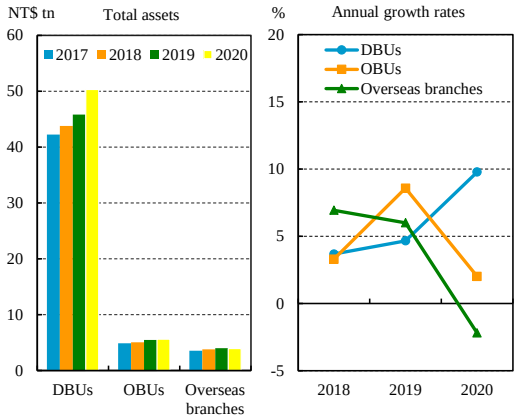
Owing to the growth in loans, the total assets of domestic banks[39] continually expanded in 2020. Asset quality remained sound and exposures to Mainland China continuously decreased, while concentration in corporate loans and loans related to real estate increased slightly. The estimated value at risk (VaR) of market risk exposures increased, but the impacts of market risk on capital adequacy ratios were limited. Liquidity in the banking system was ample, with overall liquidity risk remaining relatively low. Although profitability of domestic banks decreased in 2020, the average capital adequacy ratio increased, indicating satisfactory capacity to bear losses.

Chart 3.16 Total assets of domestic banks



Note: Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
Sources: CBC and DGBAS.

Chart 3.17 Total assets of domestic banks by sector



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

Total assets grew apace

The total assets of domestic banks kept growing and reached NT$56.4 trillion at the end of 2020, equivalent to 285.24% of annual GDP (Chart 3.16). The annual growth rate of the total assets rose at a faster pace of 8.35%, mainly driven by a greater increase in loans by domestic banking units (DBUs). Broken down by sector, the annual asset growth rate of DBUs steadily rose to 9.78% on the back of loan growth. However, those of offshore banking units (OBUs) and overseas branches trended down instead or even slipped into negative territory as their loan policies turned conservative in view of increasing credit defaults (Chart 3.17).

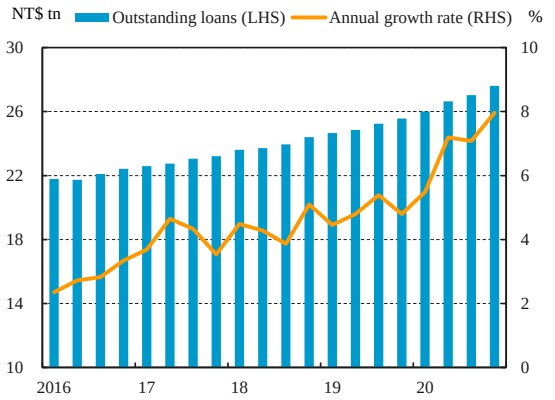
[39] Includes Agricultural Bank of Taiwan but not Rakuten International Commercial Bank because the latter launched internal operations on December 30, 2020 and officially opened for business on January 19, 2021.

Credit risk

Customer loans growth accelerated

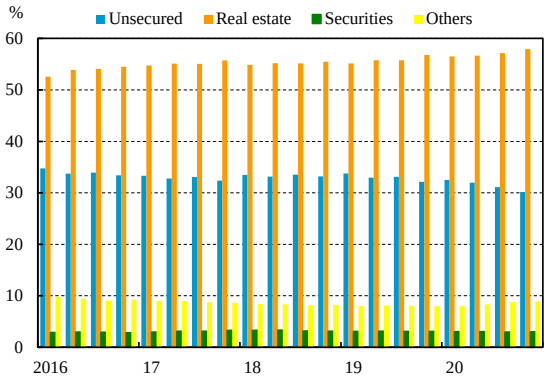
Customer loans[40] granted by the DBUs of domestic banks stood at NT$27.61 trillion at the end of 2020, accounting for 48.95% of total assets, with the annual growth rate increasing to 7.96% (Chart 3.18). Among them, the annual growth rate of household borrowing rose to 8.99% owing to an increase in mortgage loan demand. The annual growth rate of corporate loans rose to 6.38%, largely driven by rising demand for purchasing offices and production plants as well as the extension of relief loans to SMEs. The annual growth rate of government loans also rose to 11.25% mainly because of the implementation of relief and revitalization measures by the government.

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.

The share of real estate-secured credit continuously increased

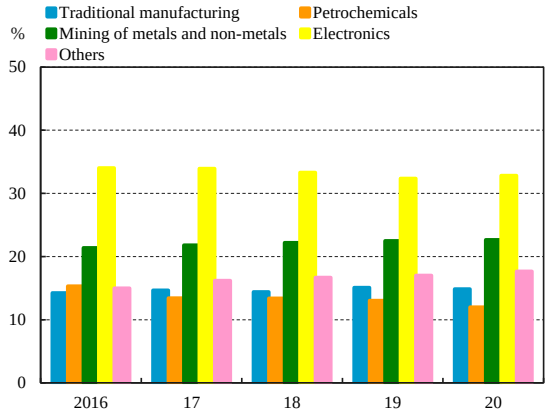
At the end of 2020, real estate-secured credit granted by domestic banks aggregated NT$19.29 trillion, accounting for 57.94% of total credit,[41] with an increase of 1.16 pps over the previous year (Chart 3.19). In view of continued housing market buoyancy, theBank and the relevant government ministries and agencies introduced a series of measures from December 2020 onwards to foster a sound real estate market. However, real estate related credit risks warrant continuous monitoring as the above-mentioned measures will need some time before showing results.

[40] The term "customer loans" herein refers to discounts, overdrafts, other loans, and import bills purchased. It excludes export bills purchased, non-accrual loans and interbank loans.
[41] The term "credit" herein includes loans, guarantee payments receivable, and acceptances receivable.

Credit concentration in corporate loans slightly increased

For the DBUs of domestic banks, corporate loans stood at NT$11.79 trillion at the end of 2020, of which loans to the manufacturing sector accounted for the largest share at 37.40%. Within the manufacturing sector,[42] the largest proportion of loans was in the electronics industry with a share of 32.81% that slightly increased over the previous year. This reflected that credit concentration of corporate loans mildly rose (Chart 3.20).

Chart 3.20 Exposure to the manufacturing sector by domestic banks



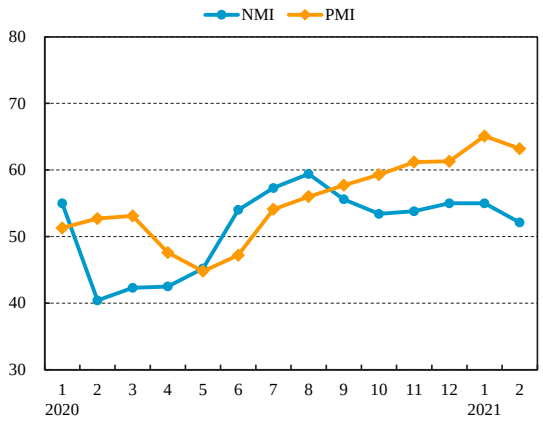
Notes: 1. Exposure to each sector = loans to each sector/loans to the whole manufacturing sector.
2. Exposures of OBUs and overseas branches were excluded.

Source: CBC.

The impact of the COVID-19 pandemic on banks' credit quality should be closely monitored

From the second half of 2020 onwards, with the COVID-19 pandemic easing worldwilde and vaccination accelerating in major countries, domestic economic activity gradually recovered. Taiwan's Purchasing Managers' Index (PMI) and Non-Manufacturing Index (NMI) entered into the expansion zone (Chart 3.21), reflecting an abatement in the pandemic's impact on domestic industries. Nonetheless, as the current pandemic still raises concerns over the outlook of foreign and domestic economic growth, the impact therefrom on banks' credit quality should be closely monitored.

Chart 3.21 Taiwan's PMI and NMI



Source: CIER.

Exposures to Mainland China continued to decrease, but potential risks remained high

At the end of 2020, the exposures of domestic banks to Mainland China stood at NT$1.51 trillion, decreasing by NT$136.6 billion or 8.30% from a year earlier mainly owing to a

[42] 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.

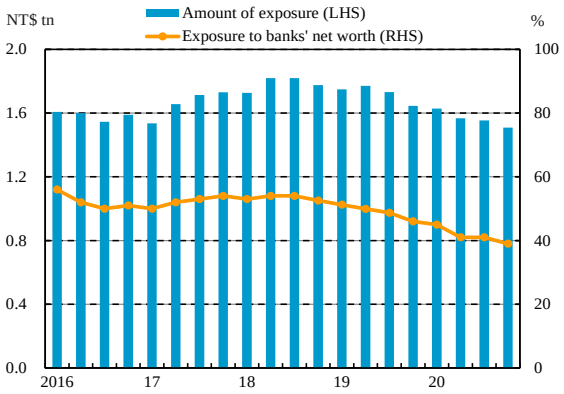
decline in the credit granted. The ratio of the exposures to banks' net worth continued to fall to a new low of 39% (Chart 3.22), far below the highest ratio of 69% in 2014.

Considering that spillovers of risk deriving from Mainland China would have a greater impact on Taiwan, coupled with weakening credit quality of local borrowers recently, 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 was satisfactory, but still faced uncertainties

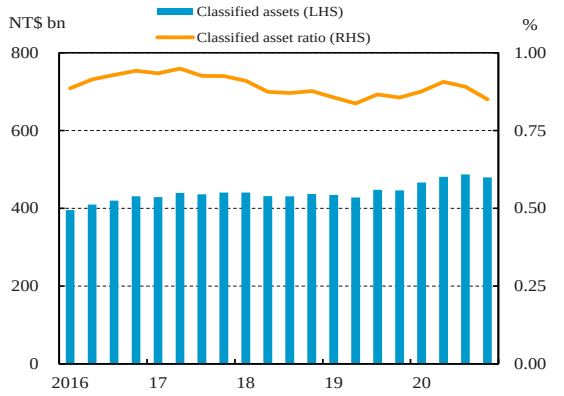
Owing to weakened debt-servicing capacity of overseas borrowers, outstanding classified assets[43] of domestic banks increased by 7.59% from a year earlier and stood at NT$479.7 billion at the end of 2020. However, owing to a greater rise in total assets, the average classified asset ratio stood at 0.85%, slightly decreasing by 0.01 pps compared to the end of 2019 (Chart 3.23), showing that the asset quality of domestic banks was satisfactory. Meanwhile, the expected losses of classified assets[44] decreased by NT$6.6 billion from a year earlier to NT$51.9 billion, accounting for 10.77% of loss provisions, indicating that domestic banks had sufficient provisions to cover expected losses.

Chart 3.22 Exposures to Mainland China of domestic banks



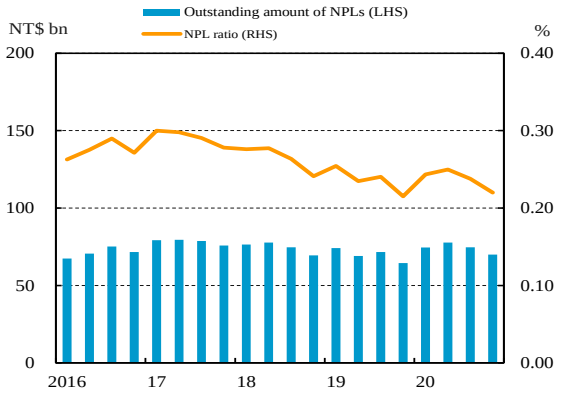
Source: FSC.

Chart 3.23 Classified assets of domestic banks



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

Chart 3.24 NPLs of domestic banks



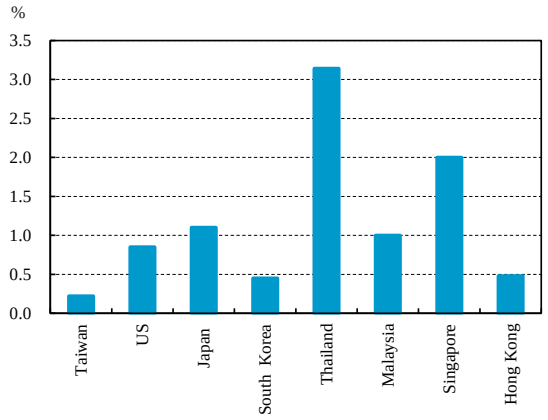
Note: Excludes interbank loans.
Source: CBC.

[43] 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.
[44] Loss herein refers to the losses from loans, acceptances, guarantees, credit cards, and factoring without recourse.

The outstanding NPLs of domestic banks registered NT$69.9 billion at the end of 2020, increasing by 8.44% from the previous year. Owing to an increase in both NPLs and loans, the average NPL ratio remained at a historical low of 0.22% (Chart 3.24), much lower than those in the US and neighboring Asian countries (Chart 3.25). In addition, at the end of 2020, because of a greater rise in loans and NPLs, the loan coverage ratio and the NPL coverage ratio declined to 1.37% and 623.74% respectively from 1.40% and 650.30% a year earlier (Chart 3.26). Nevertheless, the capability of domestic banks to cope with potential loan losses remained satisfactory.

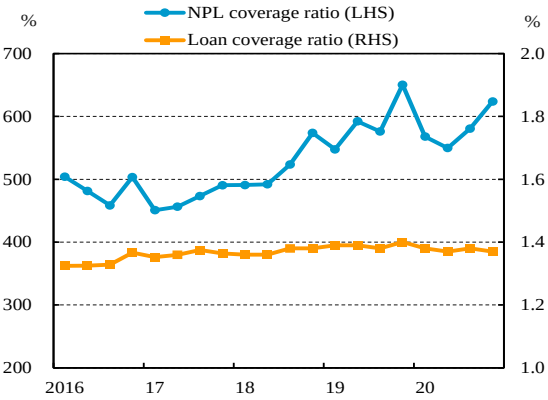
Almost all banks had NPL ratios of less than 0.5% at the end of 2020. In terms of borrowers, the NPL ratio for individual loans declined by 0.05 pps to 0.16% compared to the previous year. However, the NPL ratio for corporate loans, which were affected by the pandemic more significantly, rose by 0.02 pps to 0.27% over the same period. Among corporate loans, those to the wholesale & retail trade industry saw a drop in the NPL ratios, while the NPL ratios of loans to other industries mostly increased (Chart 3.27). Nevertheless, the overall NPL ratio stayed at a low level.

Chart 3.25 NPL ratios of banks in selected countries



Note: Figures for Japan and South Korea are end-September 2020 data, while the others are end-December 2020 data.
Sources: CBC, FDIC, FSA, FSS, BOT, BNM, MAS and HKMA.

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.

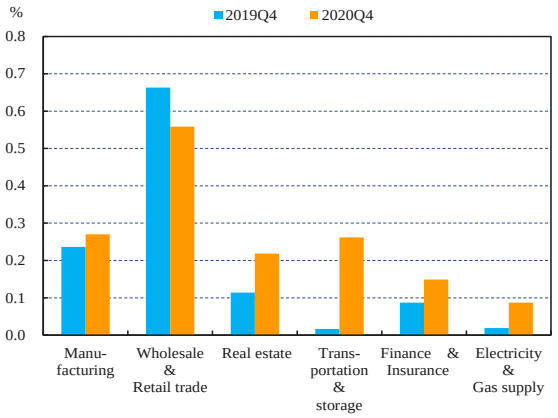
Considering that uncertainties surrounding the global pandemic outlook remained high, and the relief loans[45] extended by domestic banks in line with government policies will be withdrawn going forward, closely monitoring the above-mentioned impact on banks' credit quality is warranted.

[45] According to the statistics of the FSC, as of April 7, 2021, domestic banks provided relief loans with a total amount of NT$3.2 trillion.

Market risk

Estimated value-at-risk for market risk exposures increased

Chart 3.27 NPL ratios of domestic banks in selected industries



Note: Excludes interbank loans.
Source: JCIC.

Based on the Bank's VaR model,[46] the estimated total VaR for market risk exposures of domestic banks stood at NT$159.8 billion at the end of 2020, increasing by NT$27.8 billion or 21.06% compared to a year earlier. Among the market risk exposures, the interest rate VaR increased by 24.96% year on year in 2020. The main reasons were that bond market volatility surged because of the COVID-19 pandemic and the net position of debt securities increased. Meanwhile, the equities VaR decreased by 10.08%, reflecting reductions in the net position of equity securities. The FX VaR diminished by 2.86%, owing to decreasing volatility in the NT dollar exchange rate against the US dollar (Table 3.1).

Table 3.1 Market risks in domestic banks

Unit: NT$ bn

Type of risk	Item	End-Dec. 2019	End-Dec. 2020	Changes	
				Amount	pps; %
Foreign exchange	Net position	173.5	201.8	28.3	16.31
	VaR	3.5	3.4	-0.1	-2.86
	VaR/net position (%)	2.02	1.68		-0.34
Interest rate	Net position	1,957.2	1,986.5	29.3	1.50
	VaR	116.6	145.7	29.1	24.96
	VaR/net position (%)	5.96	7.33		1.37
Equities	Net position	86.8	78.0	-8.8	-10.14
	VaR	11.9	10.7	-1.2	-10.08
	VaR/net position (%)	13.71	13.72		0.01
Total VaR		132.0	159.8	27.8	21.06

Source: CBC.

[46] For more details about the Bank's VaR model, please see CBC (2016), Box 2, *Financial Stability Report*.

From early 2021 onwards, boosted by optimism over a firming US economy and rising inflation expectations, US bond yields rose sharply, exacerbating volatilities in both bond and stock market prices. This could in turn increase the VaR for relevant exposures of domestic banks and thus warrants close attention.

The impacts of market risk on capital adequacy ratios were limited

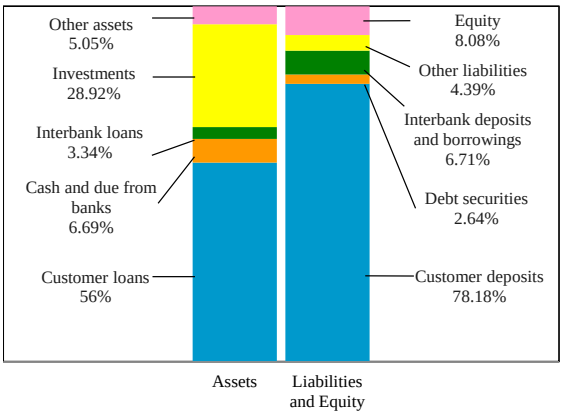
According to the estimation mentioned above, the total VaR would lead to a decrease of 0.44 pps[47] in the average capital adequacy ratio of domestic banks, causing the ratio to drop from the current 14.85% to 14.41%. Nevertheless, it would still be higher than the statutory minimum of 10.5%.

Liquidity risk

Liquidity in the banking system remained ample

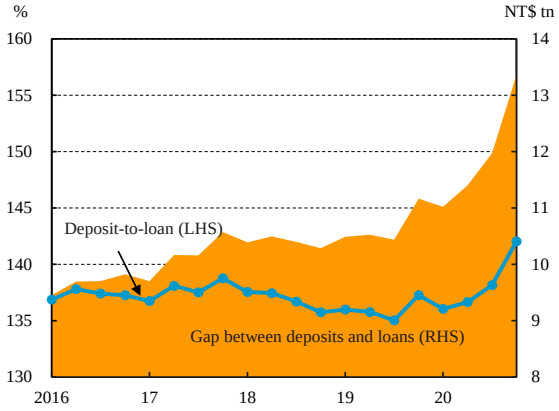
The asset and liability structure of domestic banks remained roughly unchanged in 2020. For the sources of funds, customer deposits, which tend to be relatively stable, still made up the largest share with 78.18% of the total, while for the uses of funds, customer loans accounted for the biggest share with 56% (Chart 3.28). At the end of 2020, the average deposit-to-loan ratio of domestic banks rose to 142.04%, and the funding surplus (i.e., deposits exceeding loans) increased to NT$13.36 trillion. The overall liquidity of domestic banks remained abundant (Chart 3.29).

Chart 3.28 Asset/liability structure of domestic banks



Notes: 1. Figures are as of end-December 2020.
2. Equity includes loss provisions. Interbank deposits include deposits with the CBC.
Source: CBC.

Chart 3.29 Deposit-to-loan ratio of domestic banks



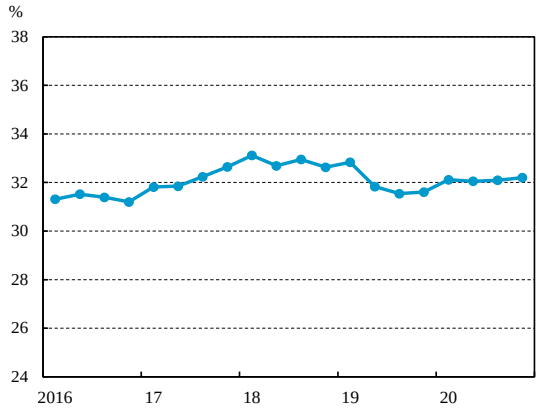
Note: Deposit-to-loan ratio = total deposits/total loans.
Source: CBC.

[47] Domestic banks had already set aside capital for market risk in accordance with relevant regulations. To avoid double counting, the impacts of market risk on the capital adequacy ratio herein were capital shortfalls after considering the aforementioned capital.

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 2020 and stood at 32.20% in December (Chart 3.30). Looking at the components [48] of liquid reserves in December 2020, Tier 1 liquid reserves, mainly consisting of CDs issued by the Bank, accounted for 82.74% of the total. The quality of liquid assets held by domestic banks remained satisfactory.

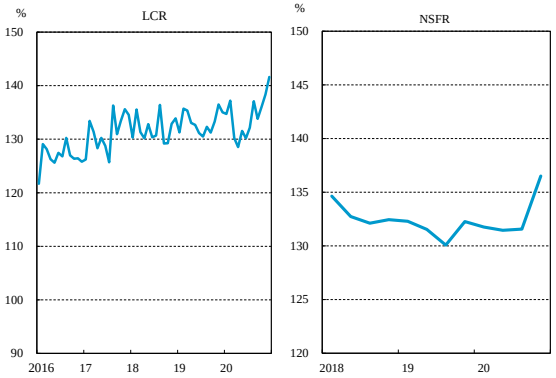
Chart 3.30 Liquid reserve ratio of domestic banks



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

Moreover, the average liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) of domestic banks rose to 142% and 137%, respectively, at the end of 2020 (Chart 3.31). Meanhwhile, all banks met the minimum LCR and NSFR requirements in 2020, indicating that the overall liquidity risk of domestic banks was relatively low.

Chart 3.31 LCR and NSFR of domestic banks



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

Risks of LIBOR cessation

To avoid undue market disruption caused by an unexpected cessation of LIBOR, the UK regulatory authority announced that it would no longer require banks to submit LIBOR settings from January 2022 onwards. The forthcoming cessation of the LIBOR settings and the transition of interest rate benchmarks posed challenges for financial markets.

Being a participant in the global financial market, the Taiwanese banking industry has widely used LIBOR in their daily operations. In response to LIBOR cessation, the Bank and the FSC successively implemented various measures from February 2020 onwards with the aim of

[48] 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.

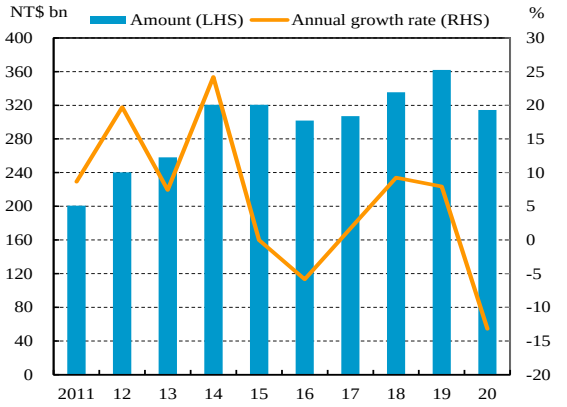
urging banks to carefully assess the associated risks and address them appropriately. Although most banks established dedicated committees or task forces to actively address this issue, they are advised to carefully make and execute LIBOR transition plans and carry out the transition process as soon as possible so as to reduce potential risks arising from LIBOR cessation (Box 3).

Profitability

Profitability declined

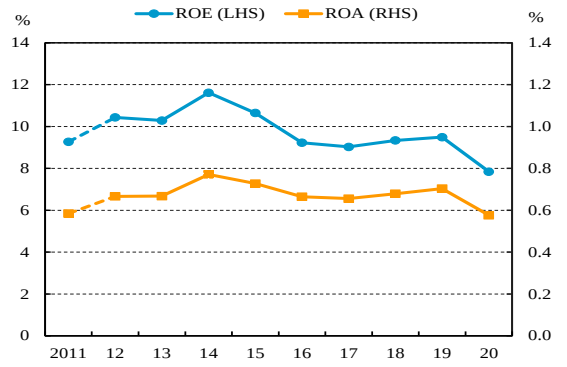
In 2020, the net income before tax of domestic banks fell to NT$314.3 billion, significantly decreasing by NT$47.8 billion or 13.19% year on year, the sharpest fall in 10 years (Chart 3.32). The contraction was mainly caused by a decrease in profits from investment such as equities and financial derivatives, as well as an increase in loan loss provisions for their overseas branches. The average ROE and ROA of domestic banks went down to 7.84% and 0.58% from the 9.49% and the 0.70% of the previous year (Chart 3.33), respectively, indicating a deterioration in profitability. Compared to other economies, the average ROE of domestic banks was higher than those of the US, Thailand, South Korea, and Japan. However, the average ROA of domestic banks still lagged behind those of many other countries, outperforming just a few ones such as South Korea and Japan (Chart 3.34).

Chart 3.32 Net income before tax of domestic banks



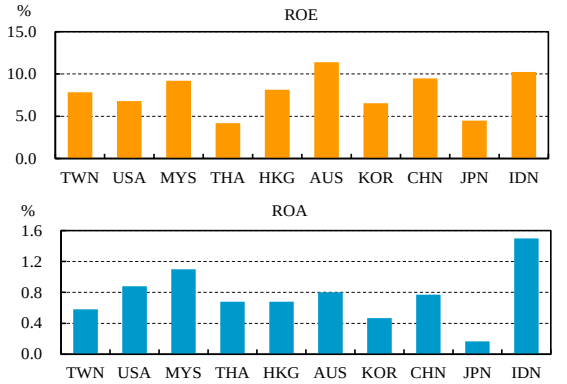
Note: Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
Source: CBC.

Chart 3.33 ROE & ROA of domestic banks



Notes: 1. ROE = net income before tax/average equity.
2. ROA = net income before tax/average assets.
3. Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
Source: CBC.

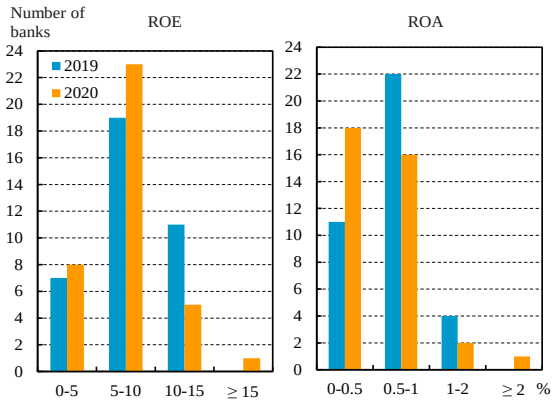
Chart 3.34 ROEs and ROAs of banks in selected economies



Note: Figures for Japan are 2020 Q3 data, others are 2020 Q4 data.
Sources: CBC, FDIC, BNM, BOT, APRA, FSS and IMF.

All domestic banks were profitable in 2020. Among them, only six banks achieved a profitable ROE of 10% or more, decreasing from 11 banks in 2019. Meanwhile, the number of banks with ROAs above the international standard of 1% also saw a decrease from four to three (Chart 3.35). In 2020, the number of banks with higher ROEs and ROAs than the previous year were down to 11 and seven, respectively.

Chart 3.35 Domestic banks classified by ROE and ROA

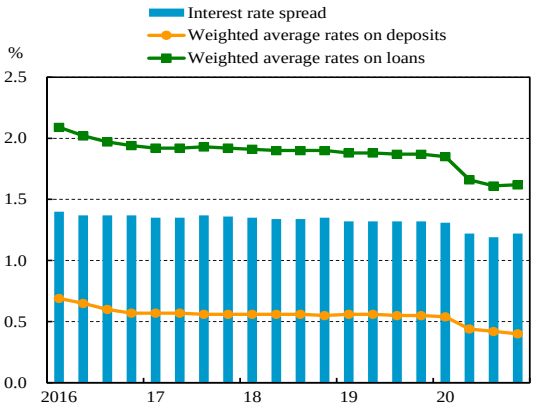


Source: CBC.

Factors that might affect future profitability

The impact of the COVID-19 pandemic resulted in the decline in domestic banks' profits in 2020. The uncertainties around future profitability warrant close attention, including: (1) the rising financial vulnerabilities of distressed firms and individuals after the withdrawl of the Taiwan's government's financial relief measures, which could weaken banks' asset quality and thus undermine their profits; and (2) the average interest rate spread between deposits and loans of domestic banks sliding to a low of 1.19 pps in 2020 Q3 (chart 3.36). This, together with accommodative monetary policy stances expected to be continued by major economies, will affect those domestic banks with net interest income as a major revenue resource and dampen growth momentum for their future profits.

Chart 3.36 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.

Capital adequacy

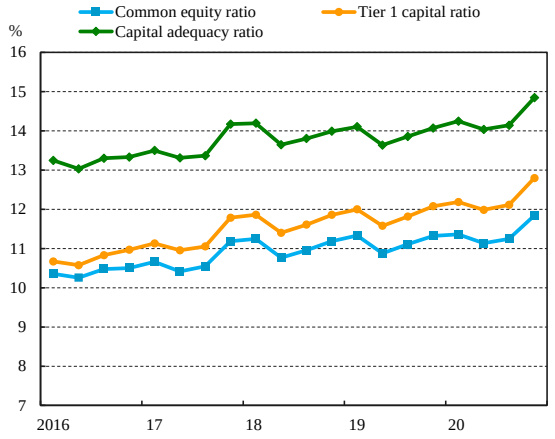
Capital ratios trended up significantly

In 2020, underpinned by accumulated earnings, and captial injections with cash or the issuance of subordinated debt by several banks, the requlatory capital of domestic banks increased. Moreover, some banks assigned lower risk weights to their real-estate exposures with the early adoption of the LTV approach [49] under Basel III in 2020 Q4, leading to a reduction in their risk-weighted assets. As a result, the average common equity ratio, Tier 1 capital ratio, and capital adequacy ratio of domestic banks reached 11.84%, 12.79%, and 14.84% (Chart 3.37), respectively, at the end of 2020, all above those ratios a year before. However, compared to some Asia-Pacific economies, Taiwan's banking industry had relatively lower capital levels (Chart 3.38).

Further broken down by component of regulatory capital, common equity Tier 1 (CET 1) capital, featuring the best loss-bearing capacity, accounted for 79.77% of eligible capital. This showed that the capital quality of domestic banks was satisfactory.

Moreover, at the end of 2020, the average leverage ratio of domestic banks stood at 6.82%, higher than 6.71% a year before and also above the 3% statutory standard, indicating that financial leverage remained sound.

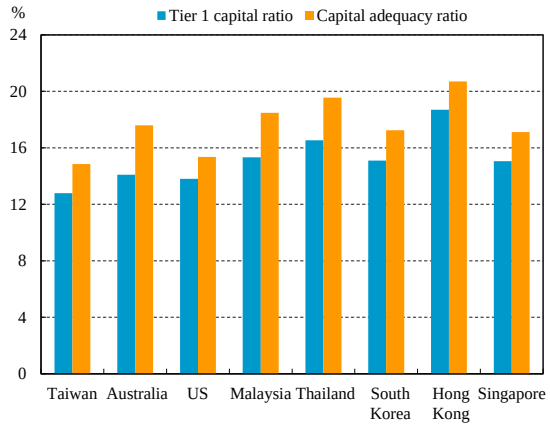
Chart 3.37 Capital ratios of domestic banks



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.

Chart 3.38 Capital ratios of banking industry in selected economies



Note: Figures for Singapore are end-September 2020 data, while the others are end-December 2020 data.

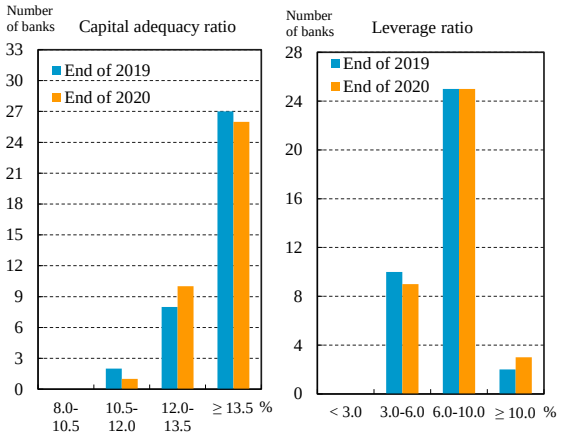
Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA and MAS.

[49] Regarding banks' adoption of the new version of the LTV approach in assessing their real estate exposures, please refer to Chapter 3 for more details.

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

At the end of 2020, the capital ratios of six domestic systemically important banks (D-SIBs), including CTBC Bank, Cathay United Bank, Taipei Fubon Commercial Bank, Mega International Commercial Bank, Taiwan Cooperative Bank, and First Bank, and non-D-SIBs were all above the relavant FSC statutory minimum standards or additional capital buffer requirements [50] (Chart 3.39). Leverage ratios of all domestic banks were also above the 3% statutory standard (Chart 3.39).

Chart 3.39 Distribution of domestic banks' capital adequacy ratios and leverage ratios



Note: Leverage ratio = Tier 1 capital/total exposures.
Source: CBC.

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard & Poor's		Fitch	
	BICRA		BSI/MPI	
	2020/2	2021/2	2019/10	2020/8
Singapore	2	2	aa/2	aa/1
Hong Kong	2	2	a/2	a/2
Japan	3	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
Philippines	5	5	bb/1	bb/1
Mainland China	6	6	bb/1	bb/1
Thailand	6	6	bbb/1	bbb/1
Indonesia	6	6	bb/1	bb/1

Sources: Standard & Poor's and Fitch Ratings.

Credit ratings

Average credit rating level remained steady

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) [51] 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 in its Banking System Indicator/Macro-Prudential Indicator (BSI/MPI) [52] also remained unchanged at level bbb/2 (Table 3.2).

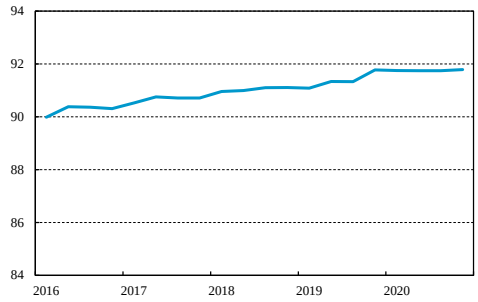
[50] For all D-SIBs, excluding the First Bank which was just designated as a D-SIB at the end of 2020, the common equity ratio, Tier 1 capital ratio and capital adequacy ratio should reach 7.5%, 9% and 11%, respectively. The statutory standards for the aforementioned three ratios of non-D-SIBs are 7%, 8.5% and 10.5%, respectively.

[51] 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.

[52] 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.

Among 38 domestic banks, except for one bank which had its credit rating upgraded, the others remained unchanged at the end of 2020. The weighted average credit rating index[53] remained the same as the previous year, indicating a limited impact of the COVID-19 pandemic on banks. Overall, the average credit rating level remained stable (Chart 3.40).

Chart 3.40 Credit rating index of domestic banks

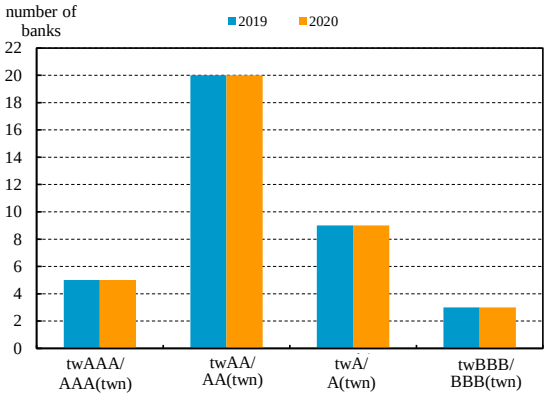


Sources: Taiwan Ratings Corporation, Fitch Ratings and CBC.

Rating outlooks for most domestic banks remained stable

Most 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 2020 (Chart 3.41). Ten banks received a negative rating outlook caused by the impact of the pandemic or weakening capital levels, while rating outlooks for the other banks remained stable or positive.

Chart 3.41 Number of domestic banks classified by credit ratings



Sources: Taiwan Ratings and Fitch Ratings.

Taiwan's strong economic growth momentum despite the pandemic disrupting the global economy, coupled with an improvement in the operational environment of the banking industry, would help buttress domestic banks' capital levels and profitability. Reflecting this, Taiwan Ratings announced in March 2021 that Taiwan's banking industry outlook was stable, and Moody's also adjusted the outlook of Taiwan's banking industry from negative to stable.[54]

[53] 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.

[54] Press releases by Taiwan Ratings and Moody's on March 29, 2021.

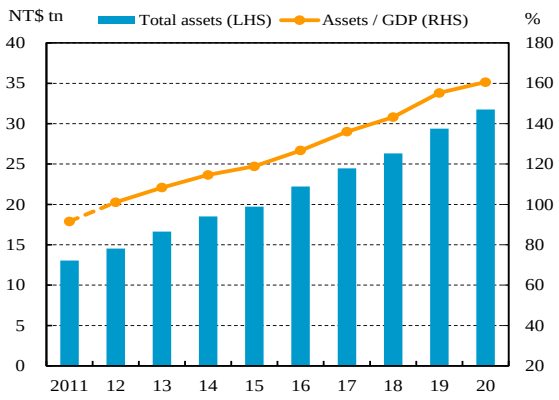
3.2.2 Life insurance companies

In 2020, total assets of life insurance companies kept growing, though at a slower pace. Moreover, pretax income reached a record high, while the average RBC ratio further improved and overall credit ratings held stable. However, owing to the expansion of foreign investment positions, life insurance companies still faced higher FX risk, interest rate risk and equity risk.

Assets grew at a slower pace

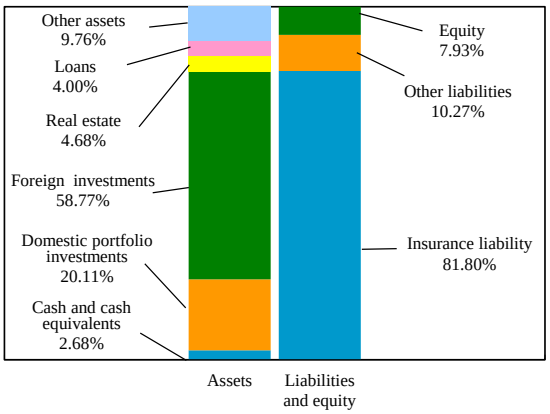
The total assets of life insurance companies reached NT$31.75 trillion at the end of 2020, equivalent to 160.59% of annual GDP (Chart 3.42). The annual growth rate of total assets decreased to 8.03%, reflecting a slower pace of growth. The top three companies in terms of assets made up a combined market share of 55.29%. The market structure of the life insurance industry remained roughly unchanged in 2020.

Chart 3.42 Total assets of life insurance companies



Note: Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
Sources: FSC and DGBAS.

Chart 3.43 Asset/liability structure of life insurance companies



Note: Figures are as of the end of 2020.
Source: FSC.

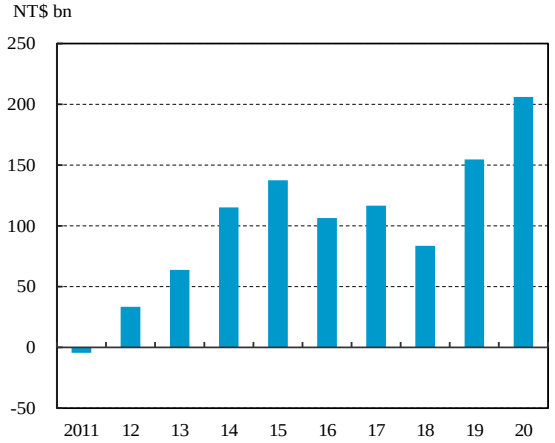
Foreign investments remained the primary usage of funds

In terms of the usage of funds of life insurance companies at the end of 2020, foreign investments and domestic portfolio investments continued to account for the primary shares of total assets. Among them, the share of foreign investments decreased to 58.77% owing to a contraction in international bond investments, whereas that of domestic portfolio investments rose to 20.11% as life insurers increased investments in Taiwan's stock markets. As for the sources of funds, insurance liabilities accounted for 81.80%, the largest share of total liabilities and equity, while the share of equity increased to 7.93%, mainly supported by the accumulation of earnings and a strong expansion of unrealized securities investment profits (Chart 3.43).

Pretax income continued to reach a record high

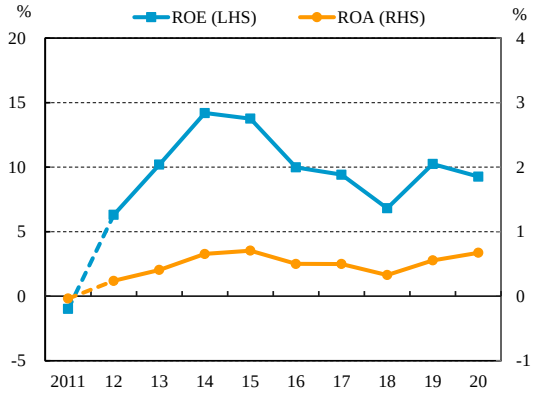
Life insurance companies reported a record-high net income before tax of NT$206.1 billion in 2020 from NT$154.7 billion a year before, a substantial year-on-year increase of 33.26% (Chart 3.44). This mainly resulted from an increase in investment revenue as life insurance companies actively realized their capital gains of stock and bond investments. Accordingly, their average ROA increased markedly to 0.67% from 0.56% a year earlier, whereas the ROE declined to 9.27% from 10.24% (Chart 3.45) because of a greater rise in equity.

Chart 3.44 Net income before tax of life insurance companies



Note: Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
Source: FSC.

Chart 3.45 ROE & ROA of life insurance companies



Notes: 1. Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
2. ROE = net income before tax/average equity.
3. ROA = net income before tax/average assets.
Source: FSC.

Average RBC ratio rebounded, while equity to asset ratio continued to rise

Thanks to higher valuations of their stock holdings in 2020, capital levels of life insurance companies rose in the year, and the average RBC ratio rebounded to 299.13% at the end of the year from 292.54% the previous year (Chart 3.46). Furthermore, the average equity to asset ratio rose significantly to 8.57% from 7.1% the previous year (Chart 3.47).

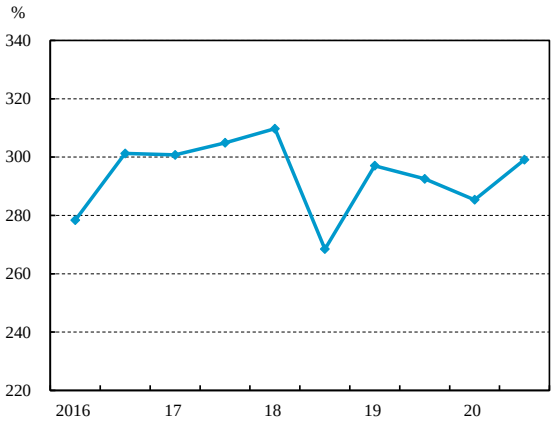
Overall credit ratings remained stable, and downside risks to rating outlooks diminished

Among the 11 life insurance companies rated by credit rating agencies,[55] none received rating adjustments in 2020, except for one life insurance company receiving an upgrade from twA+ to twAA. As of the end of the year, all rated life insurance companies maintained credit ratings

[55] 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' ratings, and secondarily on the ratings by other credit rating agencies.

above twA or its equivalent, with the ratings of the top three companies in terms of assets holding at twAA. However, many companies were rated with a negative outlook in consideration of increasing volatility in financial markets and a weakening global economic outlook amid the pandemic, which might pose a negative impact on their capital levels. Nevertheless, downside risks to their rating outlooks diminished, supported by the assessment that a record high of pretax income in 2020 could help sustain their capital levels.

Chart 3.46 RBC ratio of life insurance companies

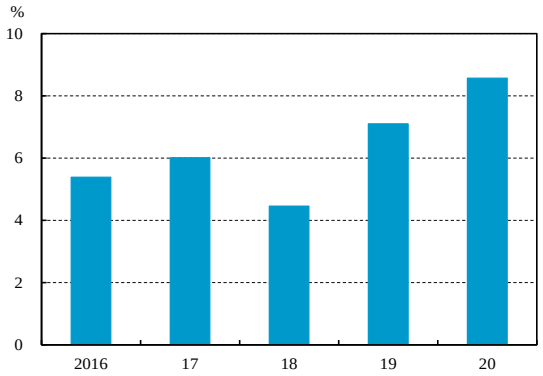


Notes: 1. RBC ratio = regulatory capital/risk-based capital.
2. Figures are exclusive of life insurance companies in receivership.
Source: FSC.

First-year premiums declined dramatically

From the beginning of 2020 onwards, a cut in credited interest rates by insurance companies and a new measure implemented by the FSC to enhance sound management of investment-linked insurance policies linked to target maturity bond funds, affected consumers' willingness to purchase new insurance policies. As a result, the first-year premiums (FYPs) from traditional as well as investment-linked insurance policies markedly dropped by 28.08% year on year. In 2021 Q1, the FYPs from traditional insurance policies continued to shrink. However, the FYPs from investment-linked insurance policies rebounded significantly, fueled by buoyant buying sentiment in such policies as stock markets in the US and Taiwan hit new highs. As a result, the FYPs from traditional and investment-linked insurance policies picked up and increased by 10.19% year on year.

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.

In view of increasing demand for foreign currency-denominated insurance policies and with the aim of enhancing asset-liability allocation efficiency for life insurance companies that offer such products, the FSC announced in March 2021 its intention to amend the *Regulations Governing Foreign Investments by Insurance Companies*. The amendments proposed a change

to the current percentage for the reserves for non-investment-linked life insurance business to be exempted from the allowed foreign investment amount, raising it from 35% to 40%. Furthermore, the FSC proposed to strengthen the disclosure of the FX risk in foreign currency-denominated traditional insurance policies to policyholders.

Foreign investment positions expanded, with higher equity risk and interest rate risk

Foreign investment positions of life insurance companies grew continually and reached NT$18.66 trillion at the end of 2020, of which more than 90% was invested in USD-denominated financial products. In order to alleviate the impacts of exchange rate fluctuations, life insurance companies actively used derivative financial instruments for FX hedges and accelerated the accumulation of FX valuation reserves to adhere to relevant regulations. However, the FX risk inherent in open FX positions for life insurance companies still warrants close attention.

In the foreign investments of insurance companies, securities investments constituted the largest share, of which about 90% were invested in bills and bonds and 10% in equities. With respect to bond investments, US government bond yields trended downwards significantly from 2020 Q1 onwards, triggering a massive wave of calling back international bonds by their issuers to be replaced with new issues. The redemption amount of international bonds in total reached US$45.8 billion throughout 2020, mostly held by life insurance companies that would face reinvestment risks. However, as the FSC expected the redemption amount of international bonds to shrink substantially in 2021, the reinvestment risks were to diminish. Moreover, recently, the stock indices, which seem to have decoupled from the real economy, rebounded strongly in some financial markets and, in turn, inflated the bubbles in some asset categories. In addition, US government bond yields rose significantly, which was unfavorable to the valuation of bond positions. Therefore, life insurance companies still face elevated equity risk and interest rate risk.

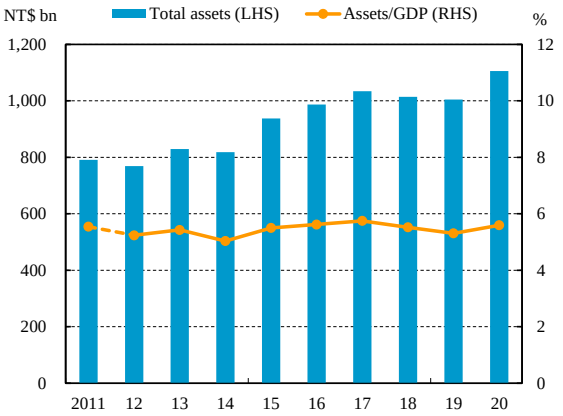
3.2.3 Bills finance companies

The total assets of bills finance companies expanded substantially in 2020. Their guarantee business increased and credit asset quality remained sound. Profitability improved markedly and the average capital adequacy ratio edged up. However, liquidity risk remained high.

Total assets expanded substantially

The total assets of bills finance companies expanded substantially by NT$100.8 billion or 10.03% in 2020 and stood at NT$1,105.3 billion at the end of the year, mainly owing to increases in bill and bond investments. The ratio of total assets to annual GDP rose to 5.59% from 5.31% the previous year (Chart 3.48).

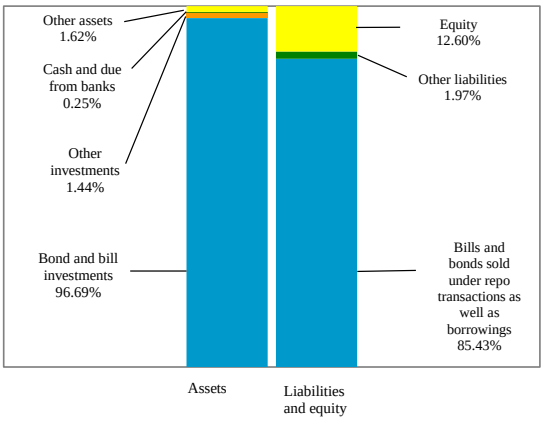
Chart 3.48 Total assets of bills finance companies



Note: Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is 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 96.69% of total assets as of the end of 2020, an increase of 2.04 pps compared to a year earlier. On the liability side, bills and bonds sold under repo transactions as well as borrowings accounted for 85.43% of total assets, while equity accounted for 12.60% (Chart 3.49). The asset and liability structure remained roughly unchanged.

Chart 3.49 Asset/liability structure of bills finance companies



Note: Figures are as of the end of 2020.
Sources: CBC and FSC.

Credit risk

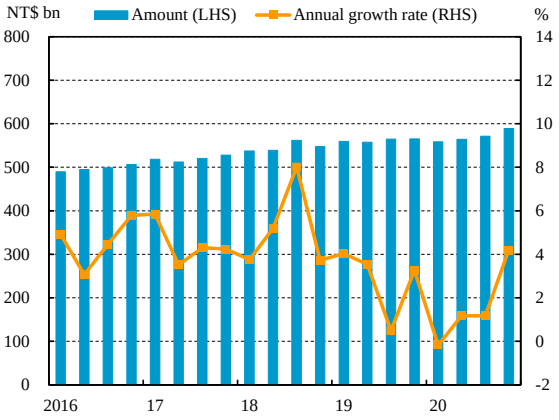
Guarantee liabilities expanded and the share of credit secured by real estate increased steadily

CP guaranteed by bills finance companies registered NT$589.1 billion at the end of 2020, increasing by 4.19% year on year (Chart 3.50). The increase was mainly because corporates

increased CP issuance to raise funds on the back of a new low level of interest rates in the money market. However, the average ratio of guarantee liabilities to equity decreased to 4.89 times owing to a greater increase in equity, and the ratio of each company remained below the regulatory ceiling of 5 or 5.5 times.

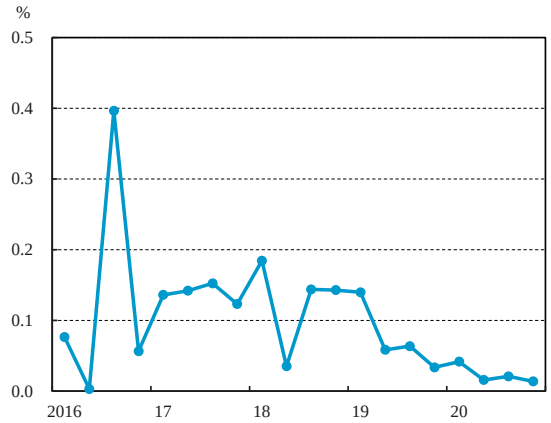
At the end of 2020, guarantees granted to the real estate and construction industries and credit secured by real estate increased to 30.81% and 42.11%, respectively, of the total credit of bills finance companies. Both ratios remained at recent high levels. As pressures on reducing unsold residential properties remain a concern and the government's recent measures to improve the health of the housing market will take time to show results, the credit risk of mortgage-related credit remains high. Bills finance companies should closely monitor the impacts of housing market trends on mortgage-related credit.

Chart 3.50 Outstanding CP guaranteed by bills finance companies



Source: CBC.

Chart 3.51 Guaranteed advances ratio of bills finance companies



Notes: 1. Guaranteed advances ratio = overdue guarantee advances/(overdue guarantee advances + guarantees)
2. The guaranteed advances ratio rose at the end of September 2016 because bills finance companies faced a dispute over the right to dispose of collateral.

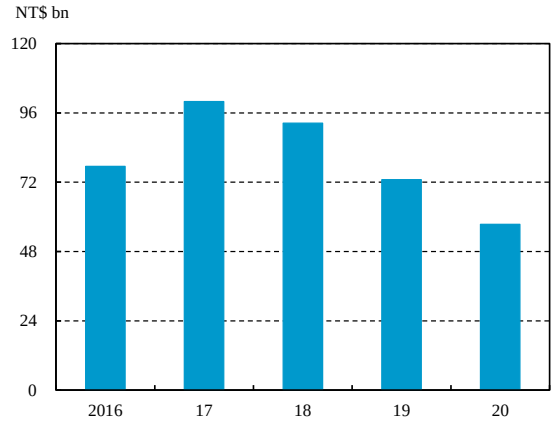
Source: CBC.

To strengthen the risk control on mortgage-related credit of bills finance companies, in December 2020, the Bank suggested the FSC consider preventing bills finance companies from allocating excessive credit resources in the real estate market. In response, the FSC included the guarantee business for the real estate industry as a focus of financial inspection on bills finance companies in 2021, initiated related targeted examinations, and proposed measures for preventing excessive credit resource allocation to the real estate market, so as to help enhance the risk control of mortgage-related credit of bills finance companies.

Credit quality remained sound as guaranteed advances ratio declined further

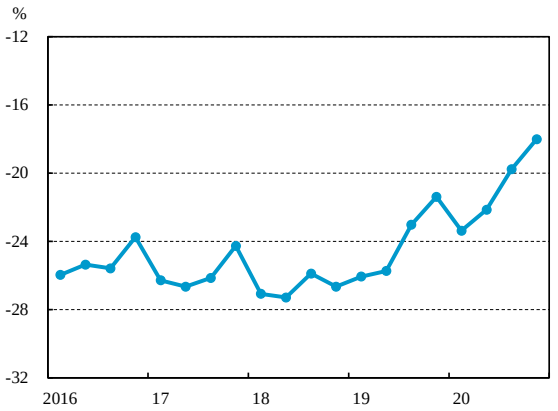
The credit quality of bills finance companies remained sound in 2020, as the guaranteed advances ratio declined further, reaching 0.01% at the end of the year (Chart 3.51). Moreover, the credit loss reserves to guaranteed advances ratio [56] expanded to 99.31 times, indicating sufficient reserves to cover potential credit losses. However, the risk of the COVID-19 pandemic resurging may add to concerns about a highly uncertain outlook for both domestic and global economic growth, which could weaken the credit quality of bills finance companies going forward, and thus warrant continuing attention.

Chart 3.52 Non-guaranteed CP investments of bills finance companies



Source: CBC.

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.

Investment in non-guaranteed CP issued by the leasing industry accounted for a higher share, and its potential credit risks warrant attention

The outstanding amount of non-guaranteed CP investment by bills finance companies stood at NT$57.4 billion at the end of 2020, decreasing by 21.22% year on year (Chart 3.52). Each company's ratio of non-guaranteed CP investment to equity remained below the self-disciplinary ceiling of 2 times. However, the outstanding amount of investment in non-guaranteed CP issued by the leasing industry doubled compared to the previous year and accounted for more than 10% of total non-guaranteed CP investment. Considering that the leasing industry tends to rely on short-term sources for funding long-term investments, bills finance companies should pay attention to the potential credit risk associated with such investment.

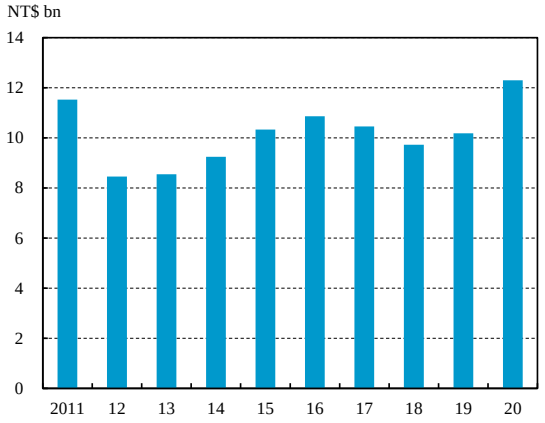
[56] Credit loss reserves to guaranteed advances ratio = (provisions + loss reserves to guarantees)/guaranteed advances

Liquidity risk remained high

In 2020, 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 at the end of the year, 45.22% of which were long-term bonds. Meanwhile, 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 continually and registered -18.01% at the end of the year (Chart 3.53), reflecting a decreasing but still high liquidity risk in bills finance companies.

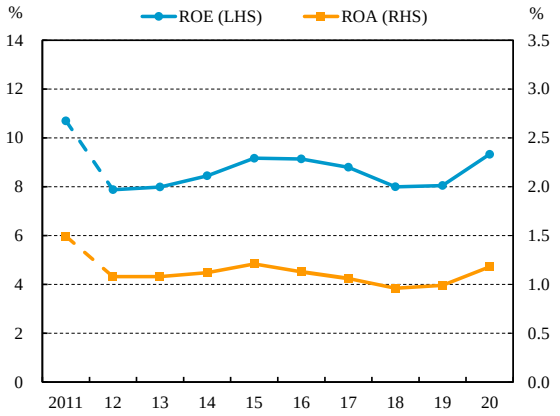
The outstanding amount of major liabilities[57] increased by 10.23% in 2020 and the average ratio of major liabilities to equity also increased to 7.88 times at the end of the year, reflecting a higher degree of financial leverage. However, the leverage ratios of all bills finance companies stayed below the regulatory ceilings of 10 or 12 times.

Chart 3.54 Net income before tax of bills finance companies



Note: Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
Source: CBC.

Chart 3.55 ROE & ROA of bills finance companies



Notes: 1. Figures from 2012 forward are on the TIFRSs basis; figure of 2011 is on the ROC GAAP basis.
2. ROE = net income before tax/average equity.
3. ROA = net income before tax/average assets.
Source: CBC.

Profitability enhanced substantially

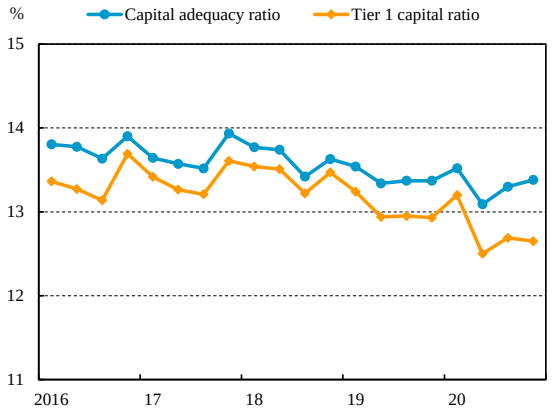
Bills finance companies posted a 10-year high net income before tax of NT$12.3 billion in 2020, markedly increasing by 20.79% year on year (Chart 3.54), mainly owing to a decrease in interest expenses of bill and bond repo transactions. The average ROE and ROA rose to 9.33% and 1.18% (Chart 3.55), respectively, reflecting a sharp increase in profitability.

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

Average capital adequacy ratio rose marginally

At the end of 2020, the average Tier 1 capital ratio of bills finance companies declined marginally to 12.65%, while their average capital adequacy ratio rose slightly to 13.38% (Chart 3.56). Moreover, the capital adequacy ratio for each company remained well above the statutory minimum of 8%.

Chart 3.56 Average capital adequacy ratios of bills finance companies



Source: CBC.

Box 3
LIBOR cessation: Impacts on Taiwanese banking industry and reponse measures

The London Interbank Offered Rate (LIBOR) is the main reference rate for pricing various financial instruments in global financial markets. After the 2008 financial crisis, there were multiple scandals related to LIBOR manipulation around the world. Moreover, the rapid shrinking of the interbank call loan market has affected the willingness of banks to submit LIBOR settings. To avoid undue market disruption caused by an unexpected cessation of LIBOR, the UK Financial Conduct Authority (FCA) stated that panel bank submissions for all LIBOR settings will no longer be required from January 2022 onwards. As a result, the approaching cessation of publication of the LIBOR settings and the transition of interest rate benchmarks posed challenges for financial markets. Against this backdrop, the way that the Taiwanese banking industry addresses the risks of LIBOR cessation warrants attention.

1. Background and developments of LIBOR cessation

1.1 Background of LIBOR cessation

LIBOR, calculated from estimates of unsecured interbank call loan rates submitted by a panel of banks, is widely used in the pricing and evaluation of various financial products. After the 2008 financial crisis, it was discovered that several banks had reported false interest rates to manipulate LIBOR to their own advantage. The scandal prompted a wave of financial benchmark rate reforms around the world. Although the LIBOR management mechanism was improved after the reforms, the interbank call loan markets in major economies continued to shrink over the same period. It not only affected the willingness of panel banks to submit LIBOR settings, but also led most LIBOR submissions to be reliant on assumptions or expert judgments. As a result, LIBOR submissions remained vulnerable to manipulation. Meanwhile, given shrinking interbank call loan markets, the scale of which fall disproportionately far below the amount of LIBOR-linked financial products globally, doubts about the representativeness of LIBOR in financial markets have been raised.

In order to avoid undue market disruption caused by an unexpected cessation of LIBOR and to promote the reform of alternative reference rates (ARRs), the UK FCA announced in July 2017 that it would no longer require banks to submit settings of LIBOR after the end of 2021 and jurisdictions are encouraged to establish robust ARRs to replace LIBOR. Then, with a view to reducing the burden of contract conversion on financial institutions, in March 2021, the FCA announced that it had decided to extend the cessation date of some

USD LIBOR settings to the end of June 2023. However, regulatory authorities such as the US Fed still encouraged financial institutions to cease entering into new contracts that use USD LIBOR as a reference rate for various tenors of financial instruments by the end of 2021.

1.2 Alternative reference rates for LIBOR

LIBOR is currently calculated for five currencies (USD, GBP, EUR, CHF, and JPY) and seven tenors (ranging from overnight to 12 months) with respect to each currency, resulting in the publication of 35 individual rates.[1] For those five currencies, ARRs were identified and recommended in respective jurisdictions. Unlike LIBOR, which represents an unsecured interest rate with a complete forward-looking term structure, ARRs are backward-looking overnight interest rates, relying entirely on transaction data. Among them, the Secured Overnight Financing Rate (SOFR) and the Swiss Average Rate Overnight (SARON) are secured rates calculated on the basis of repo transaction data, whereas the other three ARRs are unsecured rates.

2. Impacts of LIBOR cessation on Taiwanese banking industry

2.1 LIBOR exposure of Taiwanese banking industry

LIBOR has been a long-established benchmark interest rate with the most influence on the world. Being a participant in the global financial market, the Taiwanese banking industry has widely used LIBOR in their daily business. Considering that LIBOR and ARRs are essentially different, it is necessary for the banking industry to align relevant systems and operating procedures with the characteristics of ARRs. However, this may impact product design and trading system in the front office, asset and liability valuation, capital allocation, and risk analysis models in the middle office, and collateral management, settlement, and hedge accounting in the back office. According to a survey conducted by the Bankers Association of the Republic of China (BAROC), in terms of the LIBOR exposures of the Taiwanese banking industry, the notional position of financial derivatives accounted for the largest share of approximately 60% of the total at the end of June 2020, while the rest mostly went to cash products in assets. Compared with Japan and Hong Kong, the Taiwanese banks' overall exposures to LIBOR-linked products and contracts were limited. However, an estimated more than 60% of current LIBOR exposures will successively mature after January 1, 2022. It is higher than the levels of major economies, ranging from 40% to 50%.[2] Considering that more than 90% of such exposures lack appropriate fallback language in contracts, banks may find it difficult to apply fallback mechanisms or adopt ARRs after LIBOR cessation.

2.2 Major LIBOR cessation risks to the banking industry

LIBOR cessation risks are widely present in various bank operations. In general, there are six key risks faced by the banking industry, including profit and capital risk, market risk, liquidity risk, operational risk, legal risk, and reputational risk. According to a Sionic research,[3] financial derivatives trades posed lower LIBOR cessation risks as most market participants adhere to the International Swaps and Derivatives Association protocol, whereas cash products, such as loans and bonds, may have higher legal and operational risks owing to the lack of standardized contracts that incorporate fallback language.

3. LIBOR cessation response measures in Taiwan

3.1 Measures taken by the Bank and the FSC

In order to ensure that all banks are fully prepared for LIBOR cessation, in February 2020, the Bank and the FSC urged domestic financial institutions to carefully assess the risks of LIBOR discontinuation and address them appropriately. They are advised to: (1) make transition plans so as to shift to ARRs; (2) review legacy contracts referencing LIBOR, and actively communicate with affected customers and counterparties to negotiate relevant contract modifications; and (3) identify risks posed by LIBOR cessation and transition. In March 2020, the Bank, together with the FSC, urged the BAROC to establish a task force on LIBOR transition, which aims to investigate the impacts on and preparations by the Taiwanese banking industry and to recommend response measures for banks to make LIBOR transition plans. Currently, this task force is right on schedule in carrying out a series of working projects.

3.2 Current efforts of banks and recommendations

According to the information submitted by banks on October 30, 2020, most Taiwanese banks have set up dedicated committees or task forces for benchmark interest rate transition. They not only monitor the affected exposures regularly, but also assess potential impacts and carry out response strategies continually. In light of the wide-ranging impacts of LIBOR cessation, Taiwanese banks should conduct comprehensive impact assessments and develop complete LIBOR cessation and transition plans. In particular, they are advised to review the completeness of their own preparations and actively carry out LIBOR transition processes based on the recommendations of the aforementioned task force on eight major work items, namely governance structure and transition plans, impact assessments, new benchmark interest rate markets and product transition, contract renegotiation, customer communication, system and process adjustments, risk and

revaluation models, and financial reporting and taxation.

4. Conclusion

The Taiwanese banking industry uses LIBOR widely in their front, middle, and back office operations. Therefore, LIBOR cessation will have significant impacts on their financial product contracts, customer retention, business processes and information systems, risk management models, accounting, and taxation. Currently, some banks with LIBOR-linked financial product contracts which lack appropriate fallback language would need to actively strengthen their preparations for LIBOR cessation. With the LIBOR cessation date getting closer, banks should have adequate manpower and resources in place to formulate and execute LIBOR transition plans prudently. They are encouraged to carry out LIBOR transition processes as soon as possible so as to reduce potential risks arising from LIBOR cessation.

Notes: 1. The ARRs for USD, EUR, GBP, CHF, and JPY LIBOR are the Secured Overnight Financing Rate (SOFR), the Euro Short-Term Rate (€STR), the Sterling Overnight Index Average (SONIA), the Swiss Average Rate Overnight (SARON), and the Tokyo Overnight Average Rate (TONA), respectively.

2. Financial Stability Board (2020), "Supervisory Issues Associated with Benchmark Transition," July.
3. Sionic (2019), "Benchmark Reform – Taipei Workshop," October.