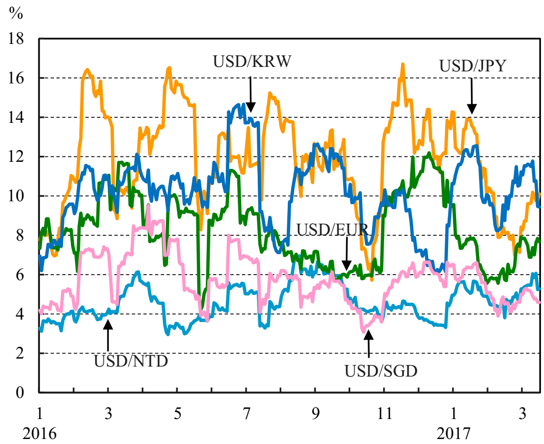
Taiwan is a small open economy; therefore, its foreign exchange market may be easily affected by massive and frequent movements of foreign capital. To lessen the effects of short-term inflows and outflows, the IMF has suggested that such economies may take the needed policy steps to raise/lower interest rates, lead local currencies to appreciate/depreciate, or take capital flow management measures.

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



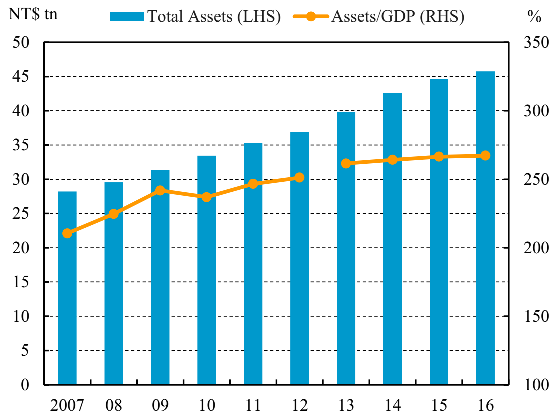
Note: Volatility refers to the annualized standard deviation of 20-day daily returns.
Source: CBC.

3.2 Financial institutions

3.2.1 Domestic banks

The total assets of domestic banks[49] accumulated continuously in 2016, though at a slower pace than in the previous year. Asset quality declined slightly, and the concentration in corporate loans mildly increased while the concentration of credit exposures in real estate loans decreased slightly. Nevertheless, banks should take prudent actions to address related credit risks deriving from a conservative outlook on real estate transactions. The estimated VaR of overall market risk exposures of domestic banks rose but had a limited influence on their capital adequacy. Moreover, liquidity risk was moderate thanks to ample liquidity in the banking system. The profitability of domestic banks in 2016 declined compared to that of the previous year, while the average capital adequacy ratio rose. This revealed that the capacity of domestic banks to bear losses was satisfactory.

Chart 3.16 Total assets of domestic banks



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

Total assets continued to increase at a moderate pace

The total assets of domestic banks kept increasing, albeit at a more moderate pace, and reached

[49] The 40 domestic banks referred to in this section include the Agricultural Bank of Taiwan.

NT$45.75 trillion at the end of 2016, equivalent to 267.26% of annual GDP (Chart 3.16). The annual growth rate of total assets decreased to 2.44%[50] from 4.94% a year earlier. Broken down by sector, annual growth rates of assets held by domestic banking units (DBUs), offshore banking units (OBUs), and overseas branches declined continuously, particularly offshore banking units and overseas branches (Chart 3.17). This was mainly because banks' policies regarding loans to Mainland China turned more cautious.

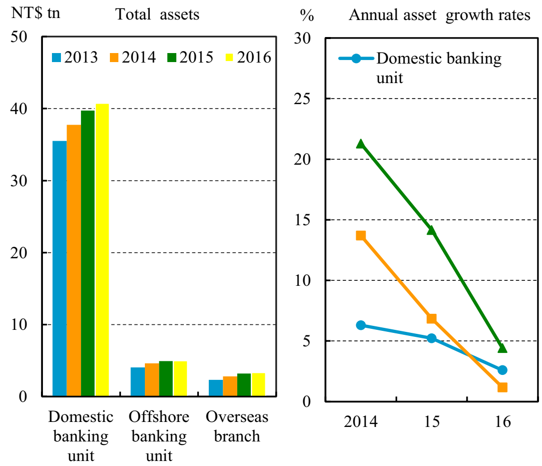
Credit risk

Customer loan growth increased

Customer loans[51] were the major source of credit risk for domestic banks. Outstanding loans of the DBUs stood at NT$22.43 trillion at the end of 2016, accounting for 49.02% of total assets, with the annual growth rate increasing to 3.35% from 2.80% a year earlier (Chart 3.18).

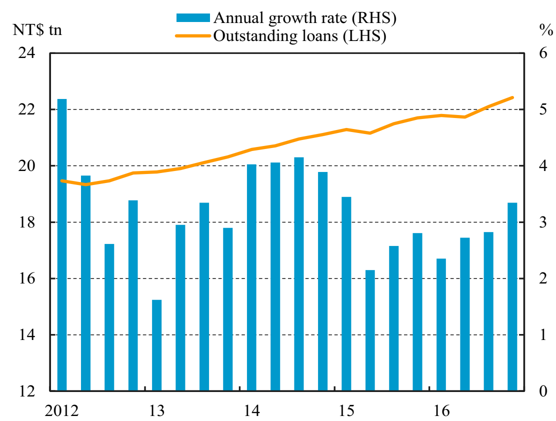
In terms of loan borrowers, the annual growth rate of corporate loans increased to 3.46% at the end of 2016 from 1.48% a year earlier, resulting from higher corporate demand for borrowing when the domestic economic growth gained momentum from Q2 onwards. However, the growth rate of household borrowing fell to 4.00% from 5.17% at the end of the previous year owing to a slowdown in mortgage loan growth, and government loans saw a negative growth rate of -0.45% mainly because increasing government tax revenues lessened the demand for bank borrowing.

Chart 3.17 Total assets and annual asset growth rates of domestic banks (DBUs, OBUs and overseas branches)



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

Chart 3.18 Outstanding loans and annual loan growth rate in domestic banks



Source: CBC.

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[50] Because life insurance companies obtained some funds from banks' time depositors through endowment policies aimed at expanding their foreign investments, the total assets of domestic banks expanded moderately as a result of slower growth in time deposits.

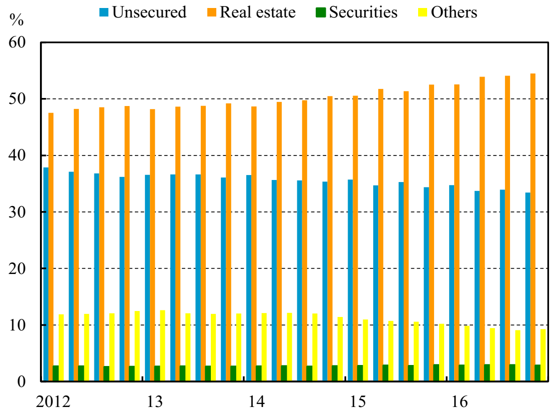
[51] The term "customer loans" herein refers to discounts, overdrafts, other loans, and import bills purchased. It excludes export bills purchased, non-accrual loans and interbank loans.

Concentration of credit exposure in real estate decreased slightly, but the share of real estate-secured credit elevated

Real estate loans[52] granted by the DBUs of domestic banks amounted to NT$8.14 trillion at the end of 2016, accounting for 36.29% of total loans. The ratio dropped slightly by 0.17 percentage points over the previous year, reflecting lower concentration of credit exposure in real estate loans. However, the total real estate-secured credit granted by domestic banks rose to NT$14.91 trillion, accounting for 54.50% of total credit,[53] with an increase of 1.98 percentage points over the previous year (Chart 3.19).

Trading volume in the real estate market contracted and prices trended downwards in 2016 due to the levying of a consolidated housing-and-land income tax and a heavier tax burden on real estate owners. Although the market saw some improvement in early 2017 as its trading volume increased slightly thanks to a gradual recovery of the domestic economy, prospects for the real estate market remained dim. Banks should purdently readjust their loan strategies and strengthen risk management to address related credit risks.

Chart 3.19 Credit by type of collateral in domestic banks

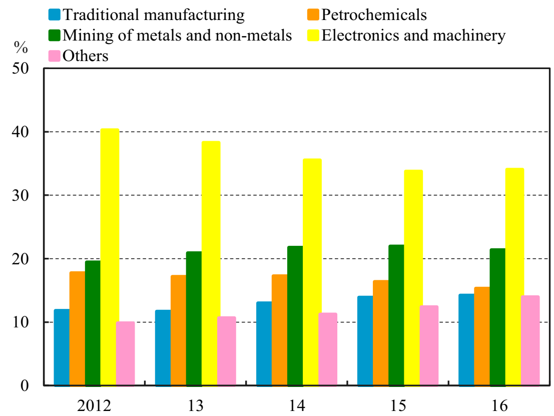


Source: CBC.

Credit concentration of corporate loans slightly increased

For the DBUs of domestic banks, corporate loans stood at NT$9.82 trillion at the end of 2016, of which loans to the manufacturing sector registered NT$3.85 trillion and accounted for the largest share of 39.20%. Within the manufacturing sector,[54] loans to the electronics

Chart 3.20 Exposure to the manufacturing sector by domestic banks

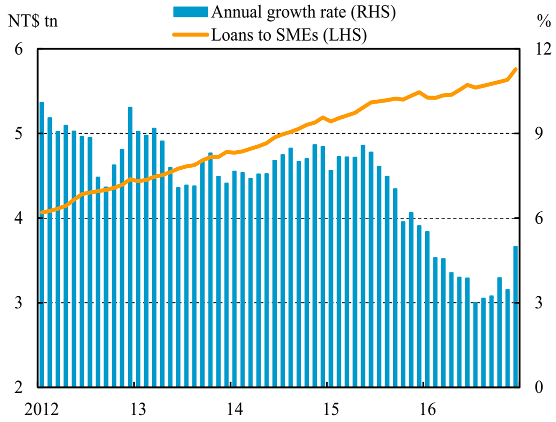


Note: Exposure to each sector = loans to each sector/loans to the whole manufacturing sector.
Source: CBC.

52 The term "real estate loans" herein refers to house-purchase loans, house-refurbishment loans, and construction loans.
53 The term "credit" herein includes loans, guarantee payments receivable, and acceptances receivable.
54 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.

industry stood at NT$1.31 trillion and accounted for 34.04% of loans to the whole sector, slightly increasing over the previous year. This reflected somewhat higher credit contentration of corporate loans in the electronics industry (Chart 3.20).

Chart 3.21 Loans to SMEs by domestic banks



Source: CBC.

As for credit to small and medium enterprises (SMEs), SME loans by domestic banks steadily expanded to NT$5.76 trillion at the end of 2016, increasing by NT$273.7 billion or 4.99% over the previous year. However, its growth rate fell by 0.73 percentage points compared to the previous year (Chart 3.21). As the ratio of SME loans to total corporate loans kept rising year by year and reached a ten-year high of 58.67% at the end of 2016, this indicated that banks conformed well to government policy to meet SMEs' funding needs under proper risk control. Moreover, the SME loans guaranteed by the Small and Medium Enterprise Credit Guarantee Fund (SMEG) remained at a relatively high level over recent years and stood at NT$801.8 billion at the end of 2016, although decreasing by 2.59% from the end of 2015.

The impact of TRFs and DKOs on banks is expected to diminish as their nominal amount decreased markedly

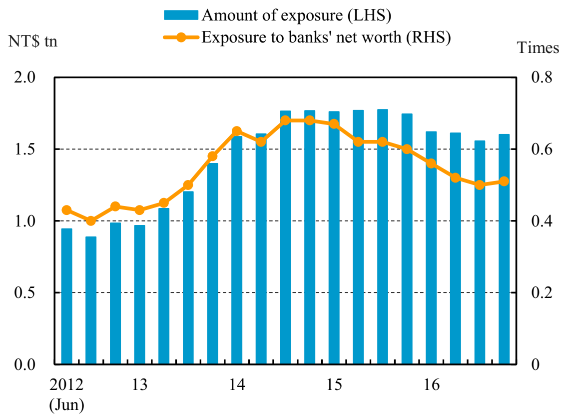
Because of a sharp depreciation in the renminbi from 2014 onwards, domestic banks with large exposures to target redemption forwards (TRFs) and discrete knock-outs (DKOs) faced higher default risk from clients. To address this issue, the FSC has introduced several rounds of supervisory reinforcements during 2014-2017 and banned banks that did not build or implement proper internal control from engaging in such business or levied large fines on such banks.

As most banks have set up sufficient provisions for potential losses from defaults, together with a significant decrease in the nominal amount of TRFs and DKOs and the expiration of most contracts by the end of 2017, its impact on banks is expected to diminish gradually. However, the disputes between banks and investors over such transactions need to be settled appropriately by banks, under the request of the FSC.

Exposure to Mainland China decreased

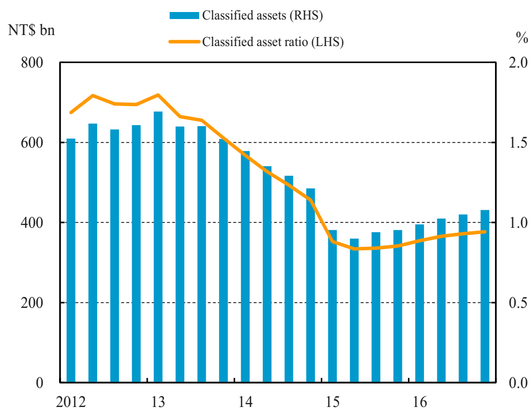
According to Article 12-1 of the *Regulations Governing the Banking Activity and the Establishment and the Investment by Financial Institution Between the Taiwan Area and the Mainland Area*, the aggregate amount of credit, investment, and interbank loans/deposits (hereafter statutory exposure)[55] extended by a domestic bank to customers in the Mainland Area should not exceed 100% of the bank's net worth as of the end of the preceding fiscal year. At the end of 2016, the aggregate amount of such exposure of all domestic banks stood at NT$1.59 trillion, or 51% as a percentage of banks' net worth, lower than 60% a year earlier (Chart 3.22). The exposure level continued to fall and no domestic bank exceeded the limit.

Chart 3.22 Exposure to Mainland China by domestic banks



Note: The FSC has implemented the calculation method of statutory exposure in the Mainland China area since April 2012.
Source: FSC.

Chart 3.23 Classified assets of domestic banks



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

In order to reinforce risk control and risk-bearing capacity for credit exposure of domestic banks to customers in the Mainland Area, the FSC implemented several measures[56] from 2014 onwards. Furthermore, in October 2016 the FSC required domestic banks to review their investment exposure to Mainland China, reinforce risk control measures,[57] and regularly evaluate the effectiveness of supervisory measures. However, financial risks in Mainland China are mounting on account of moderating economic growth, increasing default risks of corporate debts,

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

[56] See CBC (2015), *Financial Stability Report*, Chapter IV, May.

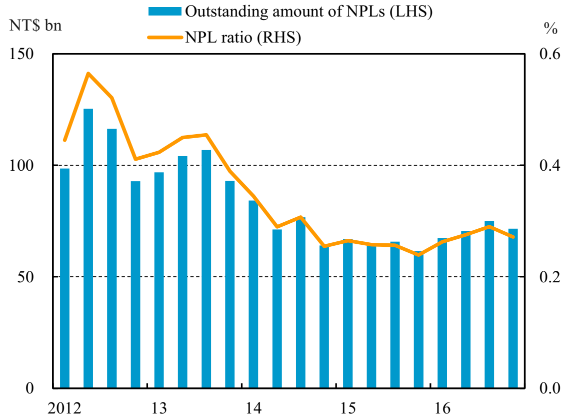
[57] The investment exposure control measures of domestic banks to Mainland China include: (1) requiring banks to review their bond portfolios, and if the investees are non-financial institutions of China's enterprises, banks should strengthen and control their investment risks; (2) examining the concentration of investment exposure to Mainland China, and if the ratios of holdings of bills and bonds issued by China's enterprises to the total amount of investment exposure to Mainland China are more than 30%, banks should re-evaluate their investment policies and reinforce risk control of such portfolios.

heightened volatility in stock and foreign exchange markets, and rising financial risks. Therefore, domestic banks should cautiously monitor economic and financial conditions in Mainland China, as well as prudently controlling their exposure to customers over there.

Asset quality declined slightly

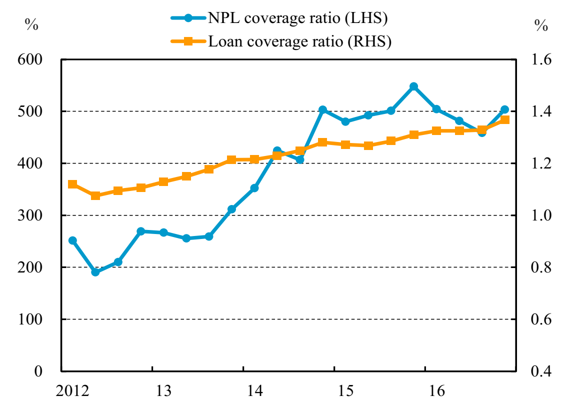
Outstanding classified assets[58] of domestic banks stood at NT$431 billion at the end of 2016, increasing by 13.06% from a year earlier, while the average classified asset ratio also rose to 0.94%, with a modest increase of 0.09 percentage points over the previous year (Chart 3.23). This showed that the asset quality of domestic banks had slightly declined. Meanwhile, the expected losses of classified assets[59] also expanded by NT$6.4 billion or 13.28% from a year earlier to NT$54.7 billion. However, the ratio of expected losses to loss provisions was only 13.55%, indicating domestic banks had sufficient provisions to cover expected losses.

Chart 3.24 NPL ratio of domestic banks



Note: Excludes interbank loans.
Source: CBC.

Chart 3.25 NPL coverage ratio and loan coverage ratio of domestic banks



Notes: 1. NPL coverage ratio = total provisions/non-performing loans.
2. Loan coverage ratio = total provisions/total loans.
3. Excludes interbank loans.
Source: CBC.

Furthermore, the outstanding NPLs of domestic banks registered NT$71.6 billion at the end of 2016, and the average NPL ratio stood at 0.27%, slightly increasing by 0.03 percentage points year on year (Chart 3.24). As a result of increasing provisions, the loan coverage ratio rose to 1.37% at the end of 2016 (Chart 3.25), but the NPL coverage ratio declined to 503.45% from the previous year due to the larger increase in NPLs over that in provisions. Nevertheless, the capability of domestic banks to cope with potential loan losses remained satisfactory.

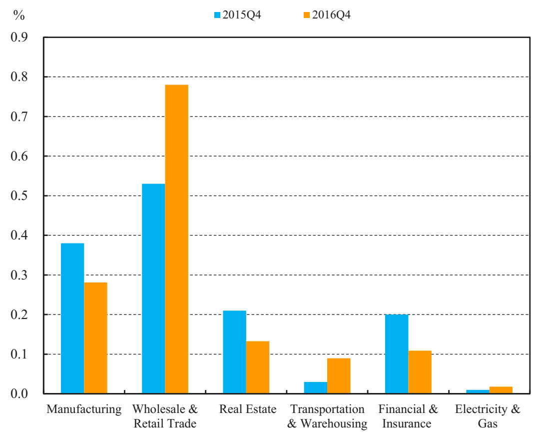
58 The *Regulations Governing the Procedures for Banking Institutions to Evaluate Assets and Deal with Non-performing/Non-accrual Loans* break down all assets into five different categories, including: category one – normal credit assets; category two – credit assets requiring special mention; category three – substandard credit assets; category four – doubtful credit assets; and category five – loss assets. The term "classified assets" herein includes all assets classified as categories two to five.

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

Among 40 domestic banks, almost all had NPL ratios of less than 1% at the end of 2016. In terms of borrowers, the NPL ratio for individual loans climbed by 0.02 percentage points to 0.25%, whereas for corporate loans it declined by 0.03 percentage points to 0.29%, compared to the previous year. Among corporate loans, the NPL ratios saw a rise in the wholesale and retail trade industries, as well as the transportation and warehousing industries, while the NPL ratios of the manufacturing, real estate, and financial and insurance industries decreased (Chart 3.26).

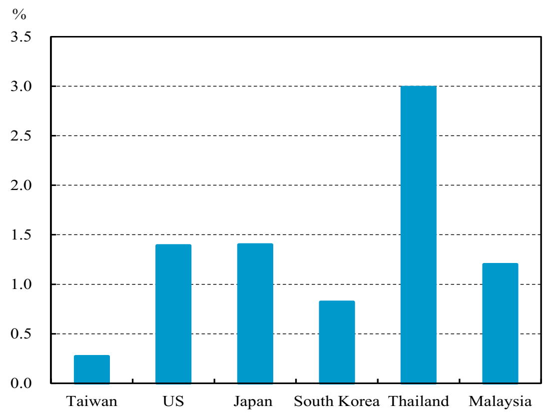
Compared to the US and neighboring Asian countries, domestic banks in Taiwan had much lower NPL ratios than banks in countries such as the US, Japan and Thailand (Chart 3.27).

Chart 3.26 NPL ratios of domestic banks in selected industries



Note: Excludes interbank loans.
Source: JCIC.

Chart 3.27 NPL ratios of banks in selected countries



Note: Figure for Japan is end-September 2016 data, while the others are end-December 2016 data.
Sources: CBC, FDIC, FSA, FSS, BOT and BNM.

Market risk

Estimated value-at-risk for market risk exposures rose slightly

In order to improve market risk assessments and meet the market risk capital requirements under the *Basel Accord*, the CBC developed a value-at-risk (VaR) model[60] for evaluating foreign exchange, interest rate, and equity risks, which is based on the VaR model of Jorion (2006)[61] and the market risk internal model developed by Chung (2015).[62] When estimating different risks, a dynamic Nelson-Siegel term structure model and a vector autoregressive VAR(1) model for multivariate time series were used for interest rate risks, while a random walk model was utilized for foreign exchange risks and an AR(1)-EGARCH(1,1) model for equity risks. In addition to general market risks, specific risks calculated under the

[60] See CBC (2016), *Financial Stability Report*, Box 2, May.
[61] Jorion, Philippe (2006), *Value at Risk: The New Benchmark for Managing Financial Risk*, Third Edition, McGraw-Hill.
[62] Chung, Ching Fang (2015), *The Development of an Internal Model for Measuring Banks' Market Risks under Basel III*, CBC commissioned paper, December.

standardized approach are also incorporated into the model to estimate interest rate risks and equity risks.

At the end of 2016, the net position of debt securities accounted for the largest share of total market risk exposures of domestic banks, followed by the net positions of foreign exchange and of equity securities. Based on the CBC's VaR model, the estimated total VaR for foreign exchange, interest rate, and equity exposures of domestic banks stood at NT$136.7 billion at the end of 2016, up by NT$4.9 billion or 3.72% compared to a year earlier (Table 3.1). Among them, the interest rate and foreign exchange VaRs increased by 6.67% and 23.81%, respectively, mainly owing to more volatility in international and domestic bond and foreign exchange markets. On the other hand, the equity VaR decreased by 27.21% owing to a reduction in its net position (Table 3.1).

The impacts of market risk on capital adequacy ratios were slight

According to the estimation mentioned above, the total VaR would cause a decrease of 0.37 percentage points in the average capital adequacy ratio of domestic banks and cause the ratio to drop from the current 13.33% to 12.96%. Nevertheless, it would still be higher than the statutory minimum of 8.625%.

Table 3.1 Market risks of domestic banks

Unit: NT$ bn

Types of risk	Items	End-Dec. 2015	End-Dec. 2016	Changes	
				Amount	PP;%
Foreign exchange	Net position	208.7	223.4	14.7	7.04
	VaR	4.2	5.2	1	23.81
	VaR/net position (%)	2.01	2.33		0.32
Interest rate	Net position	1,447	1,547.4	100.4	6.94
	VaR	114	121.6	7.6	6.67
	VaR/net position (%)	7.88	7.86		-0.02
Equities	Net position	80.1	64.5	-15.6	-19.48
	VaR	13.6	9.9	-3.7	-27.21
	VaR/net position (%)	16.98	15.35		-1.63
Total VaR		131.8	136.7	4.9	3.72

Note: PP = percentage point.
Source: CBC.

Liquidity risk

Liquidity in the banking system remained ample

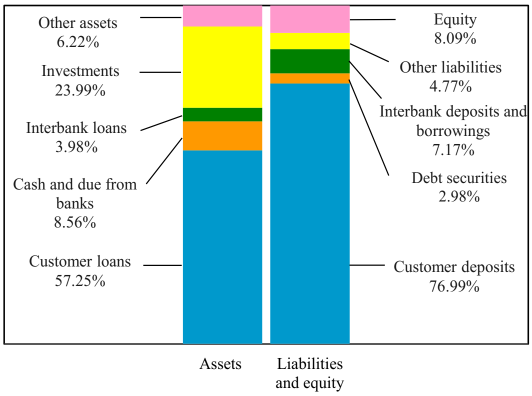
The assets and liabilities structure of domestic banks remained roughly unchanged in 2016. As for the sources of funds, relatively stable customer deposits still made up the largest share of 76.99 % of the total, followed by equity at 8.09%. Regarding the uses of funds, customer loans accounted for the biggest share of 57.25%, followed by securities investments at 23.99% (Chart 3.28).

The average deposit-to-loan ratio of domestic banks stood at 137.25%, higher than 136.21% at the end of the previous year, and the funding surplus (i.e., deposits exceeding loans) also expanded to NT$9.82 trillion. This indicated that the overall liquidity in domestic banks remained abundant (Chart 3.29).

Overall liquidity risk remained relatively low

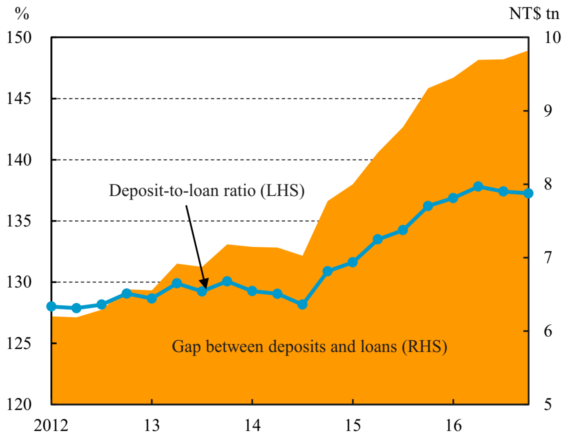
The average NT dollar liquid reserve ratio of domestic banks was well above the statutory minimum of 10% in every month of 2016 and stood at 31.20% in December, an increase of 0.21 percentage points year on year (Chart 3.30). All banks had ratios higher than 15%. Looking at the components of liquid reserves in December 2016, Tier 1 liquid reserves, mainly consisting of

Chart 3.28 Asset/liability structure of domestic banks



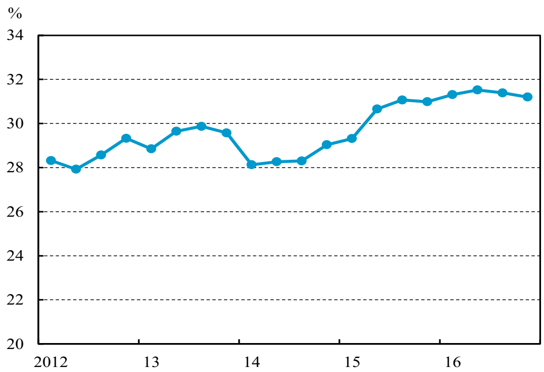
Notes: 1.Figures are as of the end of 2016.
2.Equity includes loss provisions. Interbank deposits include deposits with the CBC.
Source: CBC.

Chart 3.29 Deposit-to-loan ratio of domestic banks



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

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.

certificates of deposit issued by the CBC, accounted for 86.81% of the total, while Tier 2 and other reserves accounted for a total of 13.19%. The quality of liquid assets held by domestic banks remained satisfactory.

Moreover, the average liquidity coverage ratio (LCR) of domestic banks was 126% at the end of 2016, slightly higher than 125% a year ealier (Chart 3.31). The average ratios of state-owned banks and private banks were 120% and 127%, respectively. All banks met the minimum LCR requirement in 2016. Therefore, overall liquidity risk of domestic banks was relatively low.

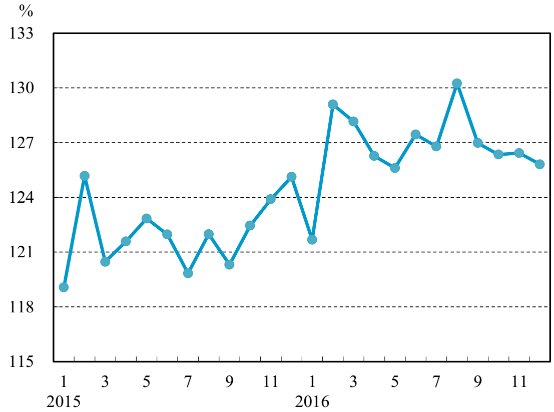
Profitability

Profitability decreased moderately

The net income before tax of domestic banks was NT$301.9 billion in 2016, decreasing by NT$18.7 billion or 5.85% year on year (Chart 3.32). The decrease was mainly due to rising provisions of most banks and additional losses from a US$180 million (about NT$5.7 billion) penalty paid by Mega Bank for its New York branch for not strictly fulfilling the requirements set forth in the US AML regulations. Moreover, the higher income base in 2015 resulting from CTBC bank recognizing a one-time gain from selling its Sinyi headquarters building was also one of the reasons for the decrease.

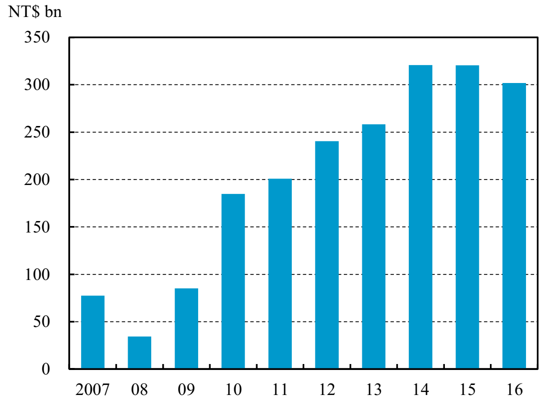
Affected by a decline in net income before tax and continuous increases in equity and

Chart 3.31 Liquidity coverage ratio of domestic banks



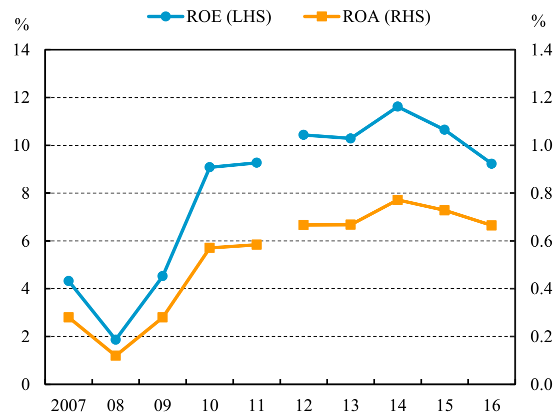
Source: CBC.

Chart 3.32 Net income before tax of domestic banks



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

assets, the average ROE and ROA fell year on year to 9.23% and 0.66% from 10.65% and 0.73%, respectively. This showed a weaker profitability of domestic banks in 2016 (Chart 3.33). Compared to selected neighboring Asia-Pacific economies, the ROEs of domestic banks ranked in the middle, higher than the US and South Korea. However, the ROAs still lagged behind their counterparts, only better than Australia and South Korea (Chart 3.34).

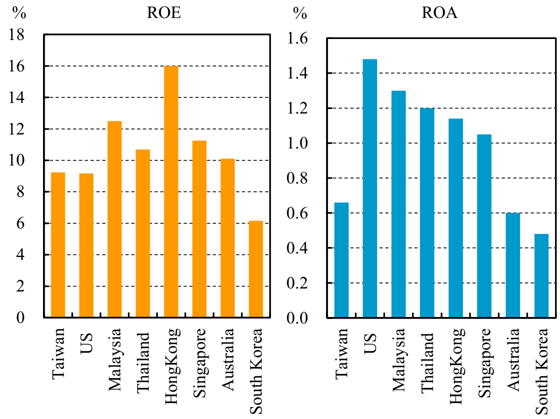
Analyzing domestic banks by segments, net income before tax of domestic banking units (DBUs) and offshore banking units (OBUs) dropped moderately by 3.82% and 3.56%, respectively, while that of overseas branches decreased significantly by 24.92% in 2016. As a result, the contributions of DBUs and OBUs to total profits improved, but the ratio for overseas branches trended down (Chart 3.35).

In 2016, only one bank achieved a profitable ROE of 15% or more, decreasing from two banks in 2015. The number of banks whose ROAs reached the international standard of 1% also saw a decrease from seven to four (Chart 3.36). Nevertheless, there still were nine banks with higher ROEs and 12 banks with higher ROAs compared to 2015.

Net operating income grew continually

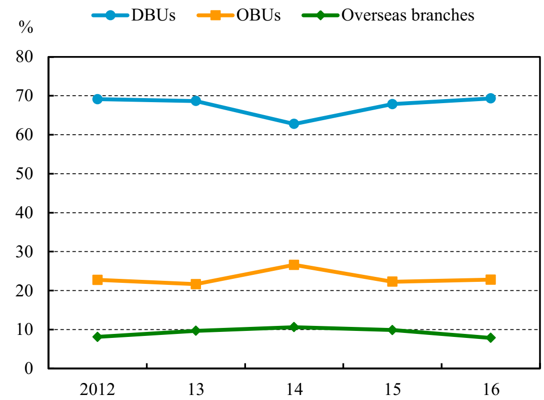
Total net operating income of domestic banks registered NT$746 billion in 2016, increasing by NT$11.5 billion or 1.56% year on year, mainly owing to growth in non-interest

Chart 3.34 Comparison of ROEs and ROAs of banks in selected economies



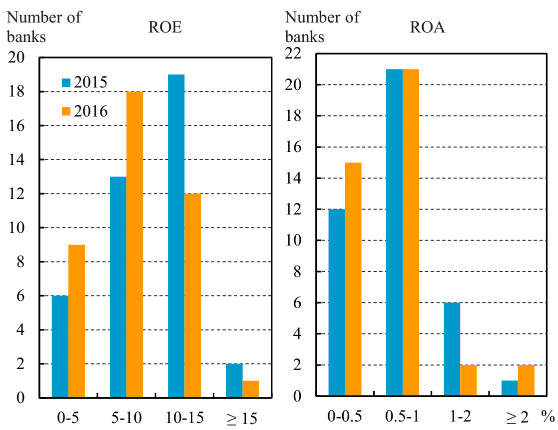
Note: Figures are as of the end of 2016.
Sources: CBC, FDIC, BNM, BOT, HKMA, APRA, FSS and IMF.

Chart 3.35 Profit contributions of domestic banks by segments



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

Chart 3.36 Distribution of ROEs and ROAs of domestic banks



Source: CBC.

income, such as net gains on financial instruments and fee income. Analyzed by income component, net gains on financial instruments significantly grew by NT$14.3 billion or 20.3% year on year, supported by a substantial increase in valuation and disposal gains of financial instruments at fair value. Net fee income also rose by NT$6.6 billion or 3.90% year on year, benefiting from growth in the sale of insurance products and credit card business (Chart 3.37).

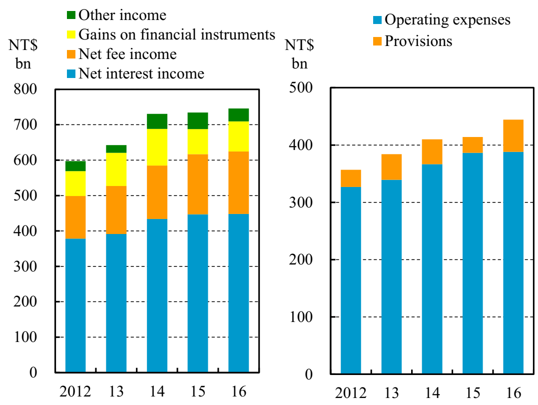
Total costs increased markedly due to a rise in provisions

The total costs of domestic banks registered NT$444.2 billion in 2016, rising by NT$30.2 billion or 7.3% compared to the previous year. Among them, operating expenses[63] slightly increased by NT$1.5 billion or 0.39%, but their share of total costs decreased to 87% from 93% in 2015. Meanwhile, provisions for loan losses and guarantee reserves remarkably increased by NT$28.7 billion or 104.57% year on year. The increase was mainly because domestic banks were required by the FSC to maintain a provision ratio of at least 1.5% against real-estate loans by the end of 2016, and also banks wanted to be prepared to address possible default losses related to TRF contracts (Chart 3.37).

Factors that might affect future profitability

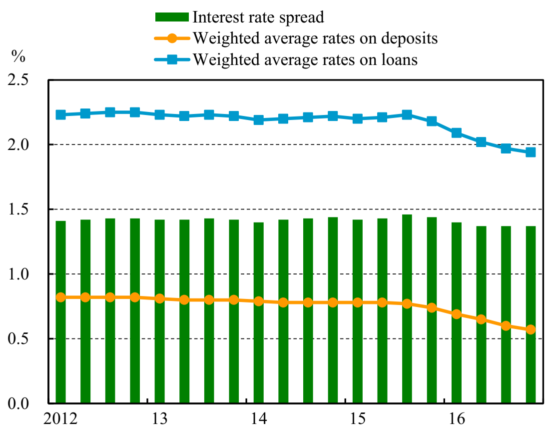
As a result of policy rate cuts by the CBC and increases in large-value loans to government and well-performing private enterprises at low lending rates, the interest rate spread between deposits and loans of domestic banks dropped by 0.07 percentage points from 2015 Q4 to hit a

Chart 3.37 Composition of income and costs of domestic banks



Source: CBC.

Chart 3.38 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.

[63] Operating expenses include employee benefits expenses, depreciation and amortization expenses, and other operating and management expenses.

five-year low at 1.37 percentage points in 2016 Q2 and remained the same in the second half of the year (Chart 3.38). The downtrend in the interest rate spread could undermine future profitability of domestic banks.

Furthermore, after Mega Bank was fined by the US authority for not strictly fulfilling the requirements set forth in the US AML regulations, the FSC has required domestic banks to reinforce their AML control mechanisms and regulatory compliance programs. This, coupled with more actions taken by banks in response to stricter international regulation and supervision of anti-money laundering (Box 1), means that compliance costs of domestic banks will increase and in turn affect their future profitability. Furthermore, the significant appreciation of the NT dollar against the US dollar in 2017 Q1 was also detrimental to those banks with high foreign incomes.

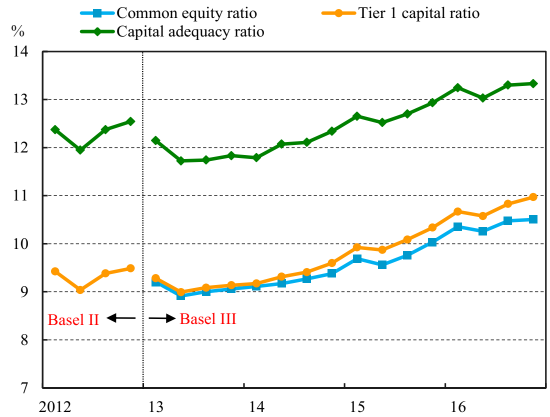
Capital adequacy

Capital ratios trended upward

In the second quarter of 2016, the average capital ratio of domestic banks declined slightly owing to seasonal factors such as cash dividends being declared and paid. Afterwards, as a result of capital injection and accumulated earnings as well as the issuance of Basel III-compliant capital instruments, the average common equity ratio, Tier 1 capital ratio, and capital adequacy ratio rose to 10.50%, 10.97%, and 13.33%, respectively, at the end of 2016 (Chart 3.39). However, compared to neighboring Asia-Pacific economies, domestic banks in Taiwan had relatively lower capital levels (Chart 3.40).

Further breaking down the components of regulatory capital, common equity Tier 1 capital, which features the best loss-bearing capacity, accounted for 78.80% of eligible capital, while non-common equity Tier 1 capital and Tier 2 capital registered significantly smaller shares of 3.49% and 17.71%, respectively, at the end of 2016. This showed that the capital quality of domestic

Chart 3.39 Capital ratios of domestic banks



Notes: 1. Figures from 2013 forward are based on Basel Ⅲ, while prior years are based on Basel Ⅱ.
2. Common equity ratio = common equity Tier 1 capital/risk-weighted assets
3. Tier 1 capital ratio = Tier 1 capital/risk-weighted assets
4. Capital adequacy ratio = eligible capital/risk-weighted assets

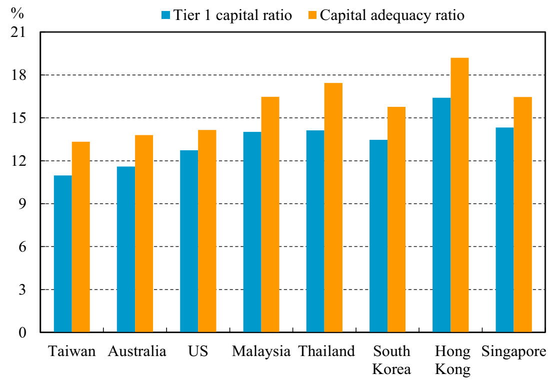
Source: CBC.

banks was satisfactory.

The capital levels of all domestic banks were higher than the 2016 statutory minimum

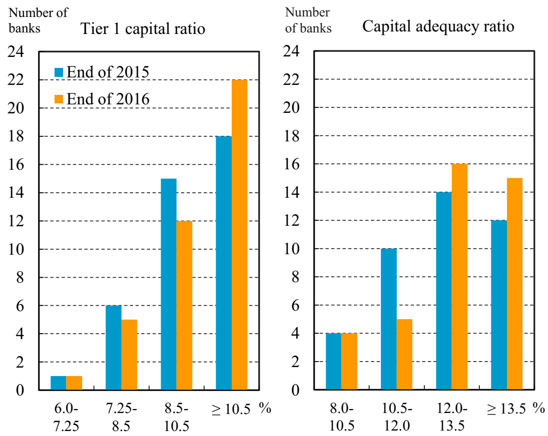
At the end of 2016, the common equity ratios, Tier 1 capital ratios, and capital adequacy ratios for all domestic banks remained above the statutory minimum requirements for 2016.[64] Compared to the end of the previous year, the number of banks with Tier 1 capital ratios higher than 10.5% and capital adequacy ratios higher than 12% significantly increased, indicating that most banks have been improving both their capital levels and quality (Chart 3.41).

Chart 3.40 Comparison of capital ratios in selected economies



Note: Figures are as of the end of 2016.
Sources: CBC, APRA, FDIC, BNM, BOT, FSS, HKMA, and IMF.

Chart 3.41 Number of domestic banks classified by capital ratios



Source: CBC.

A few banks still faced pressure to raise their capital levels

Even though the capital ratios of all banks met the minimum standards at the end of 2016, a few state-owned and private banks might not fulfill the escalating minimum capital requirements between 2017 and 2019 and thus face pressure to raise their capital levels. Such banks should actively improve their capital adequacy via issuing common stocks or qualified subordinated debts, accumulating earnings, or adjusting asset structures.

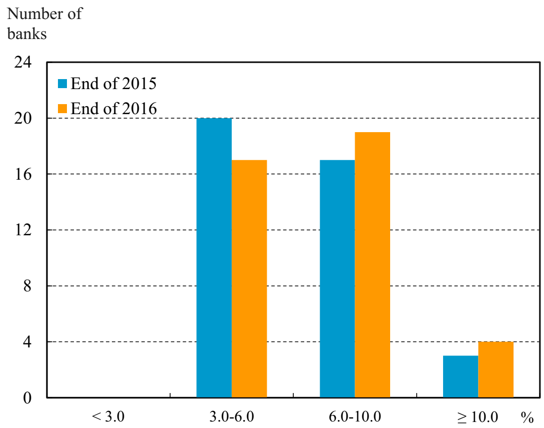
[64] The minimum capital requirements in the Basel Ⅲ transition periods are as follows:

Ratios	2016	2017	2018	2019 onwards
Common equity ratio (%)	5.125	5.75	6.375	7.0
Tier 1 capital ratio (%)	6.625	7.25	7.875	8.5
Capital adequacy ratio (%)	8.625	9.25	9.875	10.5

Leverage ratios higher than the international standard of 3%

The average leverage ratio[65] of domestic banks at the end of 2016 stood at 6.29%, higher than 5.9% a year before. The ratio was well above the international standard of 3%, showing sound leverage levels of domestic banks. By individual banks, no bank had a leverage ratio below 3%, while the number of banks with a leverage ratio higher than 6% came to 23, three more than the number of the previous year (Chart 3.42).

Chart 3.42 Leverage ratios of domestic banks



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

Credit ratings

Average credit rating level further enhanced

With respect to the overall risk assessments of Taiwan's banking system made by credit rating agencies, Standard & Poor's maintained Taiwan's Banking Industry Country Risk Assessment (BICRA)[66] unchanged at Group 4. Compared to other Asian economies, the risk of Taiwan's banking system was higher than those of Hong Kong, Singapore, Japan, and South Korea, about the same as that of Malaysia, but much lower than those of Mainland China, Thailand, Indonesia and the Philippines. The assessment of Taiwan's banking system by Fitch Ratings' Banking System Indicator/Macro-Prudential Indicator (BSI/MPI)[67] also remained

Table 3.2 Systemic risk indicators for the banking system

Banking System	Standard & Poor's		Fitch	
	BICRA		BSI/MPI	
	2016/2	2017/2	2016/2	2017/1
Hong Kong	2	2	a/3	a/3
Singapore	2	2	aa/2	aa/2
Japan	2	2	a/1	a/1
South Korea	3	3	bbb/1	a/1
Taiwan	**4**	**4**	**bbb/1**	**bbb/1**
Malaysia	4	4	bbb/1	bbb/1
Mainland China	5	5	bb/3	bb/1
Thailand	6	6	bbb/1	bbb/1
Indonesia	7	7	bb/2	bb/1
Philippines	7	7	bb/1	bb/1

Sources: Standard & Poor's and Fitch Ratings.

[65] With a view to keeping in line with international standards published by the Basel Committee on Banking Supervision (BCBS), the FSC required all banks to calculate Basel III leverage ratios from 2013 onwards and disclose the ratios starting from 2015. Moreover, the leverage ratio will be incorporated into Pillar 1 (minimum capital requirement) from January 1, 2018.

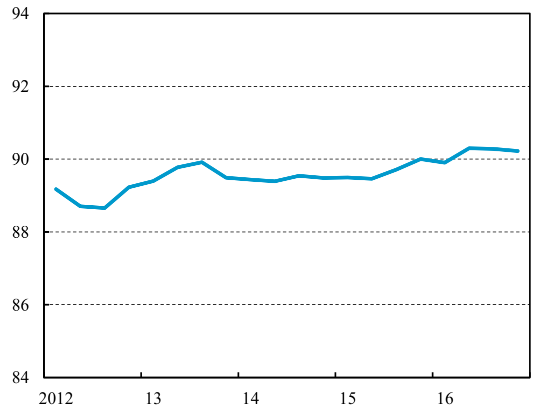
[66] The analytical dimensions of Standard & Poor's BICRA include economic risk and industry risk. The economic risk of a banking sector is determined by factors including economic resilience, economic imbalances, and credit risk in the economy, while industry risk is determined by institutional framework, competitive dynamics and system-wide funding. The overall assessments of those factors will lead to the classification of a country's banking system into BICRA groups, ranging from group 1 (lowest risk) to group 10 (highest risk), in order to indicate the relative country risk and banking sector credit quality.

[67] Fitch Ratings has devised two complementary measures, the BSI and MPI, to assess banking system vulnerability. The two indicators are brought together in a Systemic Risk Matrix that emphasizes the complementary nature of both indicators. The BSI represents banking system strength on a scale from aa (very strong) to ccc/cc/c (very weak). On the other hand, the MPI indicates the vulnerability to stress on above-trend levels of private sector credit, a bubble in real asset prices, and/or major currency appreciation, measuring the vulnerability of the macro environment on a scale from 1 (low) to 3 (high) in terms of banking system vulnerability.

unchanged at level bbb/1 (Table 3.2).

All domestic banks received ratings by credit rating agencies for 2016.[68] The credit rating index[69] of domestic banks went up[70] in 2016 (Chart 3.43), mainly because two banks were upgraded.

Chart 3.43 Credit rating indices of domestic banks

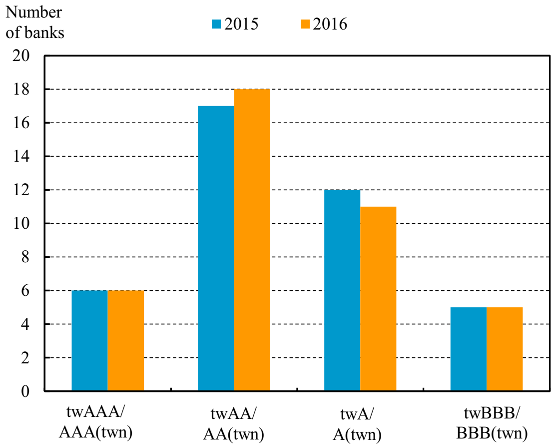


Note: End-of-period figures.
Sources: Taiwan Ratings Corporation, Fitch Ratings, and CBC.

Rating outlooks for most domestic banks remained stable or positive

Most domestic banks maintained credit ratings of twAA/twA (Taiwan Ratings) or AA(twn)/A(twn) (Fitch Ratings) at the end of 2016, and none had credit ratings lower than twBB/BB(twn) (Chart 3.44), similar to the previous year. Only three banks had negative rating outlooks in 2016,[71] while the other 37 banks remained stable or positive.

Chart 3.44 Number of domestic banks classified by credit ratings



Note: End-of-period figures.
Sources: Taiwan Ratings Corporation and Fitch Ratings.

3.2.2 Life insurance companies

In 2016, asset growth in life insurance companies accelerated, their average RBC ratio rose and overall credit rating remained stable at the end of the year. However, the profitability of life insurance companies weakened significantly and market risk stayed high owing to large open foreign exchange positions.

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68 As of the end of 2016, the majority 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).

69 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.

70 The credit rating index by the end of 2016 was slightly lower than that of the third quarter because of changes in total assets of some banks.

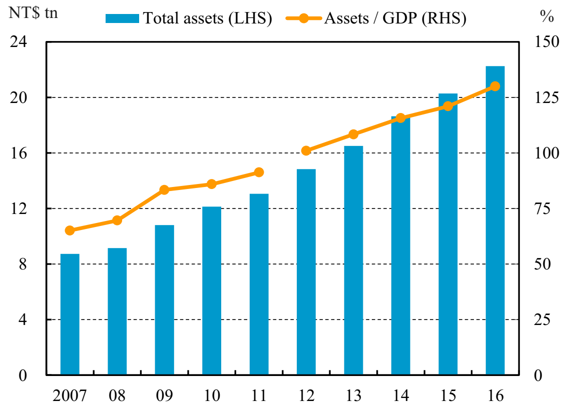
71 Three banks with negative rating outlooks were ANZ Bank (Taiwan), Yuanta Bank and TC Bank. ANZ Bank (Taiwan) received a negative rating outlook in the third quarter of 2016, affected by its parent company. The rating outlooks of Yuanta Bank and TC Bank had turned stable in January 2017, as the capital level of their parent company, Yuanta Financial Holdings, stabilized when it adopted a more conservative growth strategy.

Asset growth accelerated

The total assets of life insurance companies grew continually and reached NT$22.25 trillion at the end of 2016, equivalent to 129.97% of annual GDP (Chart 3.45). The annual growth rate of total assets registered 9.74% at the same time, rising from 8.8% a year earlier.

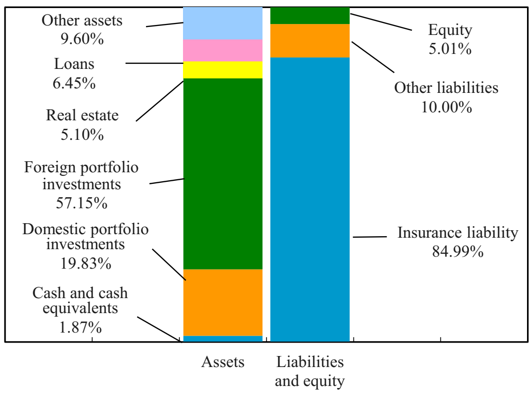
At the end of 2016, 20 domestic life insurance companies [72] held a 98.53% market share by assets, including four foreign affiliates with a 2.72% market share, while four foreign life insurance companies held the remaining 1.47% of total assets. The top three companies in terms of assets held a combined market share of 56.26%, a slight increase of 0.12 percentage points year on year. The market structure of the life insurance industry remained roughly unchanged in 2016.

Chart 3.45 Total assets of life insurance companies



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

Chart 3.46 Asset/liability structure of life insurance companies



Note: Figures are as of the end of 2016.
Source: FSC.

The share of foreign portfolio investments increased

In terms of the usage of funds, foreign portfolios and domestic securities accounted for the majority of the investments by life insurance companies as of the end of 2016. The share of foreign portfolio investments rose to 57.15%, owing to the fact that life insurance companies, with an expansion in usable funds, increased high-yield foreign bond investments and international bond investments that are not subject to the overseas investment ceiling. On the other hand, the share of domestic securities investments continued to drop to 19.83%.

The primary source of funds in life insurance companies was insurance liability. As policy reserves continually accumulated in line with an expansion in the policy underwriting

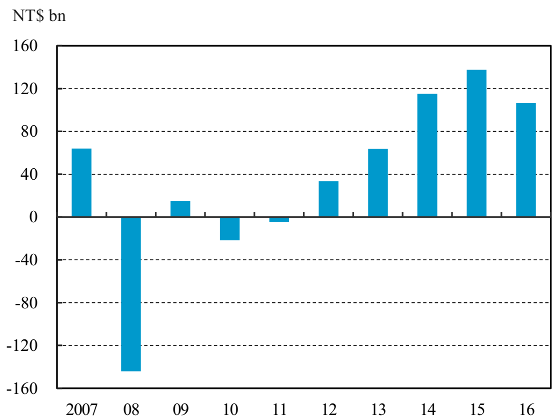
[72] Foreign affiliates included.

business, the share of insurance liability rose to 84.99%, while equity decreased slightly to a share of 5.01%. Overall financial leverage of life insurance companies increased marginally (Chart 3.46).

Profitability weakened significantly

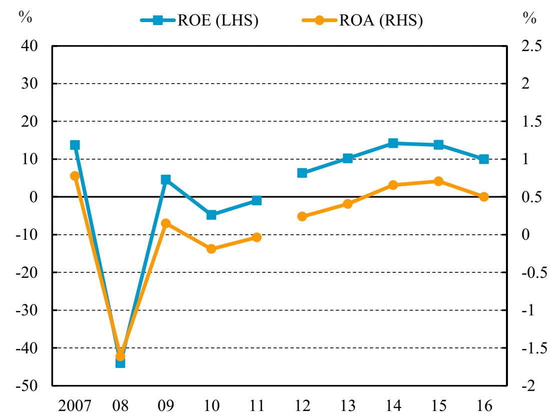
Life insurance companies reported net income before tax of NT$106.5 billion in 2016, a year-on-year decrease of NT$31.1 billion or 22.58% (Chart 3.47). This was chiefly driven by foreign exchange losses deriving from the appreciation of the NT dollar against the US dollar, as well as increases in commission expenses and policy provisions spurred by significant growth in first year premiums. Consequently, average ROE and ROA decreased to 9.98% and 0.5%, respectively, from 13.77% and 0.71% a year earlier (Chart 3.48), and the average rate of return on funds dropped to 4.11% from 4.22% the previous year. This posed challenges for insurance companies to alleviate interest rate spread losses. Among all 24 life insurance companies, ten companies posted better profits and achieved ROEs of 10% or more, equivalent to the number of a year earlier. However, there were eight companies that still suffered losses.

Chart 3.47 Net income before tax of life insurance companies



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

Chart 3.48 ROE & ROA of life insurance companies



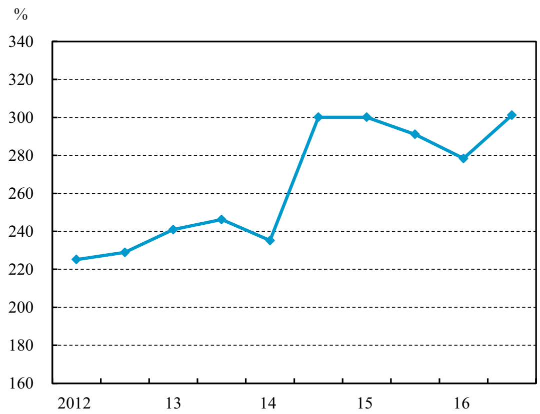
Notes: 1. Figures from 2012 forward are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
2. ROE = net income before tax/average equity.
3. ROA = net income before tax/average assets.
Source: FSC.

Average RBC ratio rose

In 2016, life insurance companies strengthened capital levels through accumulation of operating profits and issuance of subordinated debt. As a result, the average RBC ratio rose to 301.25% at the end of 2016 from 291.08% a year before (Chart 3.49).

By individual company, there were 15 companies with RBC ratios over 300%, two less than the figure of the previous year. Only one company had an RBC ratio below the statutory minimum of 200% and needed to improve its financial structure, though its assets accounted for only 1.58% of the total (Chart 3.50). Additionally, the negative equity Chaoyang Life Insurance was taken into receivership by the FSC on January 26, 2016 and was merged into Nan Shan Life Insurance on January 16, 2017.

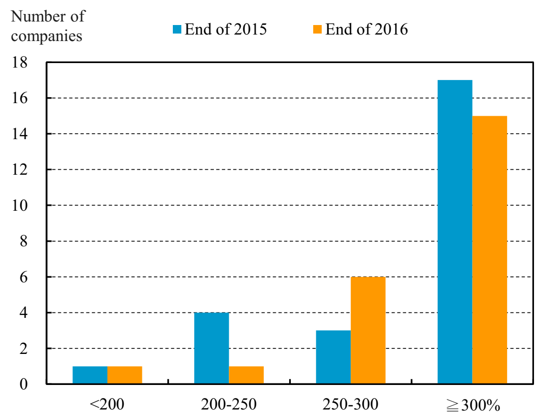
Chart 3.49 RBC ratio of life insurance companies



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

Overall credit ratings remained stable

Chart 3.50 Number of life insurance companies classified by RBC ratios



Note: Figure for 2016 is exclusive of Chaoyang Life Insurance.
Source: FSC.

Among 12 life insurance companies rated by Taiwan Ratings or Fitch Ratings, none received rating adjustments in 2016, except for Yuanta Life Insurance and Farglory Life Insurance receiving credit ratings of twA+ (Taiwan Ratings) for the first time, and credit rating of CTBC Life Insurance was withdrawn when it merged into Taiwan Life Insurance. As of the end of the year, all rated life insurance companies maintained credit ratings above twA or its equivalent, while the three biggest insurance companies by assets were all rated twAA+, showing strong capability to fulfill all financial commitments. Moreover, all companies received positive or stable credit outlooks except for Taiwan Life Insurance and China Life Insurance.

Life insurance companies faced higher market risk owing to large open foreign exchange positions

As their total assets grew continually in recent years, life insurance companies increased investments in international bond markets and other overseas investment targets owing to insufficient supply of domestic long-term financial instruments and relaxation of the regulatory overseas investment ceiling. This led to great expansion in their foreign portfolio positions. However, in 2017 Q1, the NT dollar exchange rate hiked against the US dollar because of large international capital inflows. It resulted in great foreign exchange losses and rapid exhaustion of foreign exchange valuation reserves[73] in the life insurance industry. Although life insurance companies had actively deployed hedging strategies, they still faced higher foreign exchange risk because of large unhedged foreign exchange positions. Meanwhile, life insurance companies invested heavily in bonds reported at fair value. While the Fed might continue raising the federal funds rate and scale back QE in the near future, it will put upward pressure on bond yields. Life insurance companies should prudentially control interest rate risk of those positions.

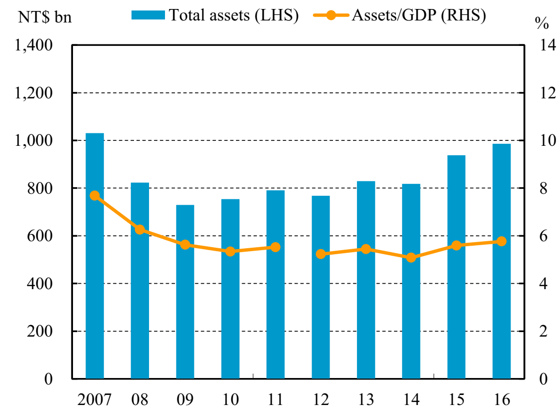
3.2.3 Bills finance companies

The total assets of bills finance companies continued expanding in 2016, while the guarantee business maintained an upward trend and credit asset quality remained sound. Net income before tax of bills finance companies slightly rose, whereas ROE & ROA somewhat descended. In addition, the average capital adequacy ratio of bills finance companies declined in 2016, and liquidity risk stayed high.

Total assets expanded and bond investment risks increased

The total assets of bills finance companies increased 5.22% in 2016 and stood at NT$986.5 billion at the end of the year, a figure equivalent to 5.76% of annual GDP. The asset expansion was mostly caused by more bill and bond holdings for the purpose of yielding revenues from the current market featuring low short-term interest rates (Chart 3.51). Among assets, bond investments amounted to NT$457.8 billion at the end of 2016, with an increase of NT$43.1 billion or 10.39% year on year. Foreign currency denominated bond investments in particular saw a significant increase of NT$44.5 billion

Chart 3.51 Total assets of bills finance companies



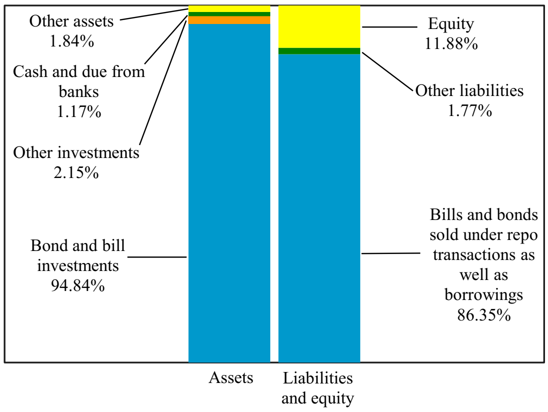
Note: Figures from 2012 onwards are on the TIFRSs basis, while prior years are on the ROC GAAP basis.
Sources: CBC and DGBAS.

[73] The foreign exchange valuation reserve was NT$18 billion as of the end of March 2017, decreasing by NT$25.4 billion or 58.50% from NT43.4 billion as of the end of 2016.

or 2.14 times. Considering the appreciation of the NT dollar against the US dollar in early 2017 and the expected hike of the Fed's policy rate, bond investments of bills finance companies might face increasing foreign exchange risk and interest rate risk.

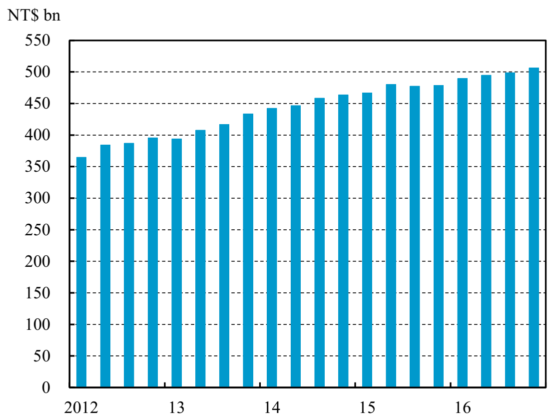
As for the asset and liability structure at the end of 2016, bond and bill investments constituted 94.84% of total assets, an increase of 0.81 percentage points year on year. On the liability side, bills and bonds sold under repo transactions as well as borrowings accounted for 86.35% of total assets, while equity only accounted for 11.88% (Chart 3.52).

Chart 3.52 Asset/liability structure of bills finance companies



Note: Figures are as of the end of 2016.
Sources: CBC and FSC.

Chart 3.53 Commercial paper guaranteed by bills finance companies



Source: CBC.

Credit risk

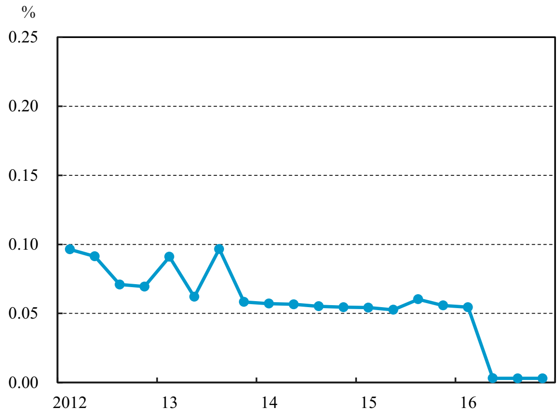
Guarantee liabilities grew continuously while the concentration of credit on real estate trended up

Owing to rising finance demands of corporates in money markets spurred by low short-term market rates, commercial paper guaranteed by bills finance companies saw an increase of NT$27.7 billion or 5.79% year on year and registered NT$506.3 billion at the end of 2016 (Chart 3.53). The average multiple of guarantee liabilities to equity of bills finance companies rose to 4.67 times at the end of 2016, compared to 4.62 times a year before. However, the multiple of each bills finance company still conformed to the regulatory ceiling of 5 or 5.5 times.[74]

[74] 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%.

At the end of 2016, guarantees granted to the real estate and construction industries and the credits secured by real estate accounted for 28.92% and 35.60%, respectively, of total credits of bills finance companies. Both ratios rose in 2016 and remained at high levels. While the outlook for the domestic housing market remains conservative, bills finance companies should closely monitor related credit risks. In response, the FSC continued to put a greater emphasis on real estate credit concentration and risk management for its on-site examinations of bills finance companies in 2017.[75]

Chart 3.54 Non-performing credit ratio of bills finance companies

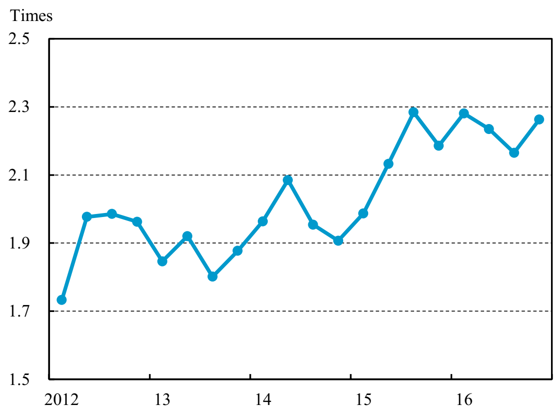


Note: Non-performing credit ratio = non-performing credit/(overdue guarantee advances + guarantees).
Source: CBC.

Credit quality remained sound

The credit quality of bills finance companies remained sound in 2016, as the non-performing credit ratio declined and stayed at a low level of 0.003% at the end of the year (Chart 3.54). Meanwhile, the credit loss reserves to non-performing credits ratio stood at 516.6 times, reflecting significantly sufficient reserves to cover potential credit losses.

Chart 3.55 0-60 days maturity gap to equity of bills finance companies



Note: 0-60 days maturity gap = cash inflow of major assets within 0-60 days - cash outflow of major liabilities within 0-60 days.
Source: CBC.

Liquidity risk remained high

Bills finance companies still faced a significant maturity mismatch between assets and liabilities, as 46.40% of assets were long-term bonds and most liabilities were short-term interbank call loans and repo transactions. Moreover, the substantial increase of bond investments resulted in the 0-60 day maturity gap to equity increasing to 2.26 times, compared to 2.19 times a year before. Both indicated that the liquidity risk in bills finance companies remained high (Chart 3.55).

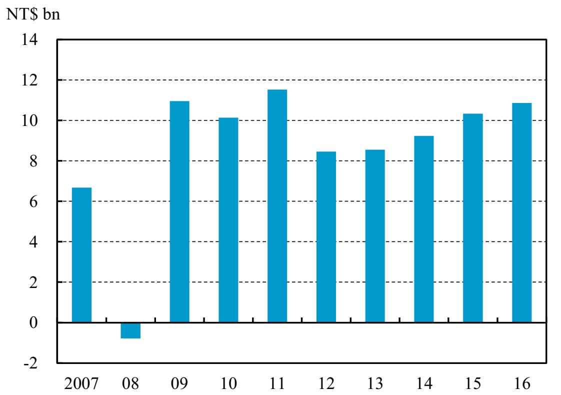
[75] According to the release of the Financial Examination Bureau of the FSC in December 2016.

Moreover, major liabilities[76] in bills finance companies grew by 6.05% in 2016, bringing the major liabilities to equity ratio to increase from 7.77 times a year before to 7.88 times at the end of 2016. However, the multiple of each bills finance company was still below the regulatory ceilings of ten or twelve times.[77]

Net income before tax slightly rose, whereas ROE & ROA decreased mildly

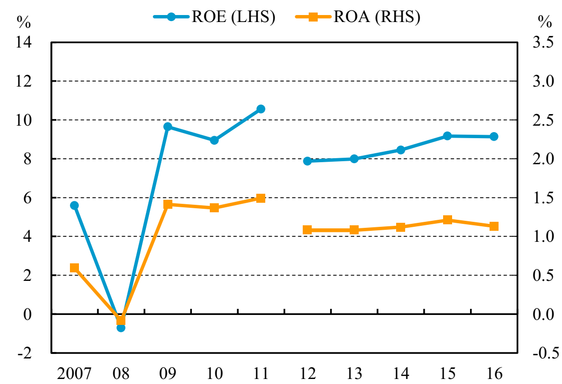
Bills finance companies posted a net income before tax of NT$10.9 billion in 2016, with an increase of NT$0.5 billion or 5.13% year on year (Chart 3.56). The rise was mainly driven by an increase in both commission fee income from commercial paper underwriting business and net interest income arising from higher interest income of bond investments and lower interest cost of call loans and RP transactions. However, owing to the faster growth of equities and assets, average ROE and ROA decreased mildly to 9.14% and 1.13%, respectively (Chart 3.57).

Chart 3.56 Net income before tax of bills finance companies



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

Chart 3.57 ROE & ROA of bills finance companies



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

Average capital adequacy ratio descended

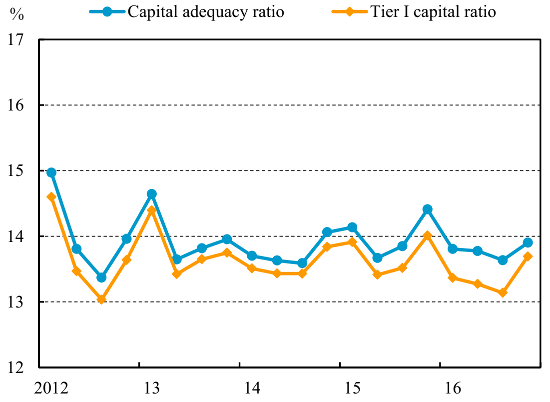
The average capital adequacy ratio of bills finance companies descended from 14.41% the previous year to 13.90% at the end of 2016, owing to higher risk-weighted assets spurred by more non-government bond holdings. The Tier 1 capital ratio also declined to 13.69% from 14.01% a year before. However, the capital

[76] Major liabilities include call loans, repo transactions as well as issuance of corporate bonds and commercial paper.

[77] 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 2016, 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.

adequacy ratio for each bills finance company remained higher than 12%, well above the statutory minimum of 8% (Chart 3.58).

Chart 3.58 Capital adequacy ratios of bills finance companies



Source: CBC.

Box 1
International anti-money laundering trends

With highly liberalized international finance, booming development of financial products and internet technology, constantly changing and evolving money laundering channels and means, as well as the difficulty of tracing cross-border money flows, the task of anti-money laundering continues to face significant challenges. National regulators tend to strictly require financial institutions to implement anti-money laundering measures and stringently punish those institutions that violate or undershoot related requirements. Consequently, institutions may suffer a great deal of financial loss and have their reputations seriously damaged. Accordingly, anti-money laundering has become a topical issue around the world. This Box first discusses the major rules and standards of cross-border anti-money laundering and supervisory trends and then analyzes related measures adopted by Taiwan's regulators in response to the challenges ahead, before drawing the conclusions.

1. The major rules of international anti-money laundering

The major rules and standards of anti-money laundering prescribed by major international organizations and countries are as follows:

1.1 Financial Action Task Force (FATF)

The FATF *Recommendations* are recognized universally as the global anti-money laundering (AML)/countering the financing of terrorism (CFT) standards. The 2003 FATF *Forty Recommendations* were revised and combined with the *Nine Special Recommendations* into the new FATF *Recommendations* in 2012 (e.g., *Recommendation 7* was added to counter the threat of the financing of proliferation of weapons of mass destruction).[1] Under the 2013 FATF *Methodology for Assessing Technical Compliance* with the FATF *Recommendations* and the *Effectiveness of AML/CFT Systems*, the standards of assessment have become more rigorous. The key requirements of the FATF *Recommendations* related to financial institutions include:

(1) Deploying a risk-based approach (RBA) to assess risks.

(2) Undertaking the precautionary measures of customer due diligence (CDD), monitoring business relationships with customers, and maintaining all necessary records on transactions.

(3) Adopting appropriate risk control measures and enhanced due diligence (EDD), and

reporting suspicious transactions for specific customers and high-risk transactions.

(4) Verifying the identity of the customer and beneficial owner before or during the course of establishing a business relationship or conducting transactions for occasional customers, except when, for example, the money laundering and terrorist financing risks are effectively managed.

1.2 Asia/Pacific Group on Money Laundering (APG)

APG was founded in 1997 (Taiwan is among the founding members) and is an associate member of the FATF, which has obligations to implement the measures set out in the FATF standards. In order to enhance the capacity of AML/CFT, APG requires its members to be assessed through *Mutual Evaluation* processes according to the FATF *Methodology* (including the technical compliance assessment and effectiveness assessment).

1.3 USA

The USA has continually promulgated related laws and regulations of AML/CFT since 1970. The main requirements from 2000 onwards are as below:

(1) To deter and punish terrorism, the *USA PATRIOT Act* was passed by Congress in 2001.[2] The *Act* imposes radical obligations of AML and information declaration on financial institutions, as well as allowing expansion of executive discretion of law enforcement authorities. It not only strictly prohibits transactions from high-risk geographic locations but also requires the know-your-customer (KYC) process to be fully proceeded to carry out the verification of identification.

(2) In June 2016, the New York State Department of Financial Services (NYDFS) enacted a final regulation of *Part 504 – Banking Division Transaction Monitoring and Filtering Program Requirements & Certifications* to require that banks must stringently implement the process of transaction monitoring and filtering, including identifying all the sources of documents, and confirming the integrity, correctness and quality.[3] Each regulated institution shall submit the certifications duly executed by its certifying senior officer to the Department by April 15 of each year. A certifying senior officer who files an incorrect or false Annual Certification also may be subject to criminal penalties for such filing.[4]

2. Supervisory trends of international AML

2.1 Heavier penalties

In recent years, regulators have imposed heavy penalties on those financial institutions that violated or insufficiently enforced related AML regulations. For example, four of 15 banks penalized by the USA regulators from 2012 to 2015 owing to deficiencies in their AML regimes, including BNP (US$8.97 bn), HSBC (US$1.92 bn), UBS (US$1.49 bn) and Commerzbank (US$1.45 bn), were all fined more than one billion US dollars. This shows much heavier penalties for AML violations than before.

2.2 Enhancing review processes of high-risk customers and off-shore companies

Financial institutions should rigorously review the transactions conducted by international and local politically exposed persons, other high risk activities, correspondent banking, non-face-to-face clients, clients with high risk, etc. Because of the so-called Panama Papers leak which revealed that thousands of people worldwide owned shell companies, much more attention has been paid to the implementation of KYC and CDD for off-shore companies across countries. Moreover, it is now commonly recognized that financial institutions should take appropriate measures of identifying and verifying ultimate beneficial owners to contain money laundering and other illegal activities.

2.3 Expanding scope of application of the AML regulations

With the types of money laundering activities continually evolving, channels of money laundering are no longer limited to financial institutions; nowadays, even real estate transactions, insurance policies, lawsuits, etc., have been the conduits of money laundering. Therefore, lawyers, notaries, other independent law professionals and accountants proceeding specific transactions for or on behalf of clients should bear the responsibility of reviewing clients' identities, maimtaining transaction records, and reporting suspicious transactions.

3. Taiwan's efforts to address cross-border AML

To keep in line with international standards and in response to the *APG Mutual Evaluation* in 2018, Taiwan has actively adopted related response measures (please refer to Section 3.3 *Financial Infrastructure* for details).

3.1 Building a more comprehensive legal system

In light of the FATF *Recommendations*, Taiwan's *Money Laundering Control Act* was amended and *Terrorist Financing Prevention Act* was enacted to help further complete our AML/CFT system.

3.2 Establishing the Anti-Money Laundering Office

To be better prepared for the third round of the *APG Mutual Evaluation* in 2018, the Executive Yuan (Cabinet) established the Anti-Money Laundering Office in March 2017, gathering specialists from different government agencies to show Taiwan has the determination to carry out anti-money laundering tasks. The office is in charge of organizing national policies and the corresponding guidelines for AML, as well as monitoring the preparations for the forthcoming *Mutual Evaluation*.

3.3 Strengthening the AML/CFT mechanism of financial institutions

The FSC has enhanced the AML/CFT mechanism of financial institutions in many aspects including regulation and execution, mainly shown as below:

(1) Improving regulations: the three directions governing AML/CFT for banking, insurance, securities and futures sectors and the *Rules Governing Offshore Banking Branches* have been amended respectively. The related directions or orders in accordance with the *Money Laundering Control Act* and the *Terrorist Financing Prevention Act* have been published for financial institutions to comply with.

(2) Supervising the implementation by financial institutions: financial institutions have been required to complete the full assessment of money laundering and terrorist financing risks, and the FSC has put an emphasis on how effective this is implemented during its annual examinations.

(3) Helping financial institutions strengthen their ability of transaction monitoring: the FSC urges relevant financial associations to come up with a list of activities and products with high money-laundering risk for every sector and study the types of suspicious money-laundering transactions, in order to help financial institutions strengthen their ability of transaction monitoring.[5]

(4) Reinforcing training and awareness: financial institutions have been required to enhance employee training in AML/CFT and to have their board of directors, supervisors and senior management actively attend related seminars to help shape a stronger corporate culture against financial crimes.

The CBC has also amended the *Directions Governing Banking Enterprises for Operating Foreign Exchange Business* in accordance with the rules of wire transfer prescribed by FATF to require that banks should verify the identity of clients engaging in foreign exchange business. The CBC's relevant rules about declaration of cross-border transportation of NT dollar (including failure to declare, false declaration, or amount exceeding the maximum allowed) have been also incorporated into the newly amended *Money Laundering Control Act*.

4. Conclusions

Enhancement of AML work has become an international trend. In addition to staying in line with international standards from a legal system perspective, rigorous implementation of the relevant regulations is needed. Having only regulations in place is not enough to move forward, government agencies have to actively step in, and the persistent effort from senior management of financial institutions is essential to success as well.

Financial institutions should change their profit-oriented business strategy in the past and put emphasis on the mechanism of internal control and compliance. Not only shall the personnel designated for this task shoulder the AML-related responsibilities, but the AML concept should also be firmly rooted in corporate culture to ensure effective implementation with the joint effort of all employees.

Financial institutions ought to keep abreast of international trends from those aspects of financial technology application, talent training, AML processes, etc., and establish comprehensive anti-money laundering mechanisms in a timely fashion to strengthen the capacity of effective responses.

Notes: 1. FATF (2012), *International Standards on Countering Money Laundering and the Financing of Terrorism & Proliferation*, February.

2. *Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001* is known as *USA PATRIOT Act*.

3. NYDFS (2016), *Superintendent's Regulations Part 504: Banking Division Transaction Monitoring and Filtering Program Requirements and Certifications,* June.

4. The finalized regulation of Part 504 has come into force from January 1, 2017; regulated entities should start to submit the Annual Certification in a regular manner from 2018.

5. The Bankers Association collected local and global cases to come up with the draft version of *Typologies of Suspected Money Laundering and Financing of Terrorism Transactions*, which offered dozens of typologies for banks' reference. For example, the total cash deposits into or withdrawals from the same account on the same business day or at the same counter cumulatively reaches above a certain amount; abrupt and large amounts of cash deposits into or withdrawals from a dormant account; immediately after the opening of a dummy account, there are large amounts deposited or remitted in and quickly transferred out, and which is apparently not commensurate with the client's identity and income background; each deposit or withdrawal is of similar amounts and being done in an intensive manner; frequently deposited/withdrawn large amounts into/out of a specific account for others or through different third parties.