Central Bank Operations

III. Central Bank Operations

1. Overview

The global economy continued on the path of recovery in the year 2021 amid lingering downside risks. Domestic inflation pressures built up further, whereas overall price trends were still considered manageable. Meanwhile, Taiwan's economy witnessed robust growth, albeit with divergence among different sectors. Against such a backdrop, the Bank held the policy rates unchanged to help safeguard price and financial stability and foster economic growth.

To help small and medium-sized enterprises (SMEs) adversely impacted by the COVID-19 pandemic, the Bank launched the Special Accommodation Facility to Support Bank Credit to SMEs ("the Facility") in April 2020. In mid-2021, with a surge in coronavirus infections at home, in order to enhance funding access for SMEs, the Bank continued its rolling review on the Facility and made relevant adjustments such as raising the total amount available under the Facility. Later, with the domestic coronavirus outbreak largely stable, corporate needs for relief funding declined. Therefore, the deadline for banks to accept new SME loan applications under the Facility remained December 31, 2021, as scheduled. However, to continue helping alleviate corporate financial burdens by supporting low funding costs, SME loans granted by banks under the Facility would remain eligible for the Facility's preferential interest rates until June 30, 2022.

In addition, to promote financial stability, rein in financial institutions' credit risk associated with real estate lending, and curb inordinate flows of credit resources towards the property market, the Bank amended the Regulations Governing the Extension of Mortgage Loans by Financial Institutions in March, September, and December 2021, to adjust its selective credit control measures. In order to reinforce the effectiveness of these control measures, the Bank held meetings twice to urge banks to comply with credit risk-based pricing principles when extending mortgage loans. Moreover, the Bank also adopted relevant supporting measures.

In response to economic and financial conditions, the Bank continued to conduct open market operations by issuing CDs to manage market liquidity and reserve money so as to maintain liquidity in the banking system and market rates at appropriate levels and sustain steady growth in monetary aggregates. For the year as a whole, reserve money and the monetary aggregate M2 registered year-on-year growth of 12.18% and 8.72%, respectively. Both readings were higher than the GDP growth rate of 6.45% over the same period, indicating sufficient market liquidity to support economic activity.

In the foreign exchange (FX) market, bolstered by the US government's US$1.9 trillion fiscal stimulus package and solid growth in Taiwan's exports in the first half of 2021, the NT dollar appreciated against the US dollar and exhibited greater volatility. In the second half of the year, the US Fed adopted monetary policy tightening and Taiwan's exports continued to record significant expansion, resulting in the NT dollar against the US dollar fluctuating within a limited range. When the NT dollar exchange rate experienced more fluctuations, the Bank, in line with its statutory mandates, stepped into the FX market through two-way interventions as warranted to maintain dynamic stability of the NT dollar exchange rate, with a net buying of US$9.1 billion for the year. In 2021, compared with other major currencies (including the Singapore dollar, the euro, the yen, and the Korean won), the NT dollar experienced lower volatility in its exchange rate vis-à-vis the US dollar. Moreover, in addition to approving more bank branches as authorized FX banks, the Bank reviewed the laws and regulations governing FX business as seen fit so as to facilitate authorized FX banks' competitiveness and service quality.

In order to ensure business continuity of the payment and settlement systems amid the COVID-19 pandemic, the Bank continued urging financial institutions to take precautionary measures in case of pandemic-related contingencies. Furthermore, considering marked growth in interbank retail payment transactions, the Bank raised the ceiling on the amount of financial institutions' end-of-day balance in the Interbank Funds Transfer Guarantee Special Account[8] to be counted as part of the required reserves. The Bank also required the Financial Information Service Co., Ltd. (FISC) to collaborate with financial institutions in reinforcing mobile payment infrastructure, such as constructing an "inter-institutional electronic payment institutions platform" and launching the "mobile number funds transfer" service to promote mobile payment. In the meantime, in response to the evolving trend of the digital economy, the Bank has conducted research on central bank digital currencies (CBDCs) and has moved on to the second phase with a proof-of-concept (PoC) study on a general purpose CBDC, which will be completed in September 2022.

To assist the domestically-oriented services sector battered by the pandemic and boost private consumption, the government rolled out the Quintuple Stimulus Voucher program, effective from October 8, 2021. The Central Engraving and Printing Plant, a subsidiary of the Bank, was instructed by the government to design and print the vouchers from August and later completed the production of 19.5 million sets of paper vouchers in mid-October. Through this program, the Bank joined a concerted effort in helping stimulate domestic consumption.

[8] Authorized financial institutions may jointly open an Interbank Funds Transfer Guarantee Special Account with the Bank. The funds in the Special Account serve as guarantee for clearing individual interbank retail payments.

2. Monetary Management

Holding Policy Rates Steady

The global economy continued to recover amid potential downside risks in the year 2021. Meanwhile, domestic inflation pressures built up further, yet the overall price increase was still viewed as manageable. Taiwan's economy exhibited robust growth, albeit with uneven recovery momentum across sectors. Against this backdrop, the Bank kept policy rates unchanged in 2021. The discount rate, the rate on refinancing of secured loans, and the rate on temporary accommodations remained at 1.125%, 1.5%, and 3.375%, respectively.

Continuing to Conduct Open Market Operations to Absorb Excess Liquidity

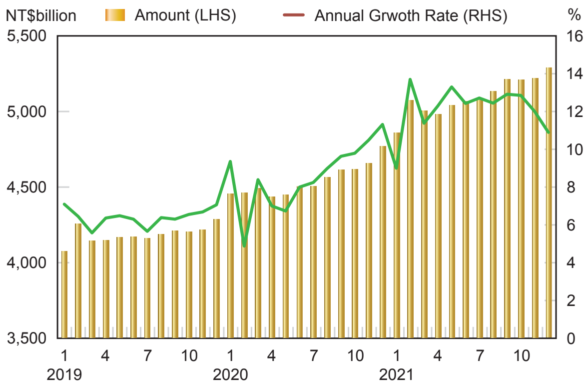
In 2021, the Bank continued to manage market liquidity through open market operations by issuing CDs in response to domestic economic and financial conditions, which helped to maintain reserve money and market rates at appropriate levels.

(1) Appropriately Managing Reserve Money

The Bank continued to conduct open market operations by issuing CDs. At the end of 2021, the total outstanding amount of CDs issued by the Bank was NT$9,483 billion. Reserve money grew by 12.18% for the year 2021, 3.59 percentage points higher than the previous year's figure. In terms of the monthly movements of reserve money, the annual growth rates of reserve money for January and February are often more volatile as the exact timing of the Lunar New Year holidays shifts on the Gregorian calendar each year. In 2021, reserve money posted an annual growth rate of 11.38% during this period. From March onwards, the annual growth rate remained relatively stable. Later, despite displaying a downtrend from October to December owing to a higher base effect, the annual growth rate of reserve money still remained above 10%.

On the demand side, reserve money, measured on a daily average basis, increased by NT$554 billion over the previous year. Of the components, net currency increased by NT$272 billion and the annual growth rate rose to 11.99% from 9.17% the previous year; reserves held by financial institutions expanded by NT$282 billion, with the annual growth rate trending up to 12.37% from 8.02% the previous

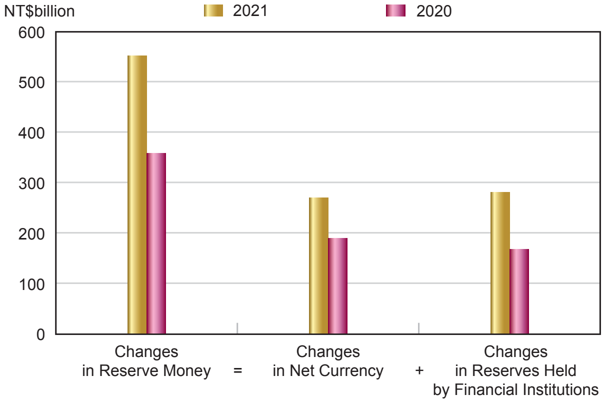
Reserve Money (Averages of Daily Figures)



Source: *Financial Statistics Monthly* (February 2022), CBC.

year. Currency held by the non-bank public expanded further on account of an increase in the private sector's demand for currency amid a steady recovery in the domestic economy and the low interest rates paid on bank deposits enhancing the willingness to hold currency in hand. Meanwhile, the overall growth rate of banks' reserves increased compared to the previous year as continuous growth in deposits raised banks' demand for reserves.

Changes in Reserve Money (Averages of Daily Figures)



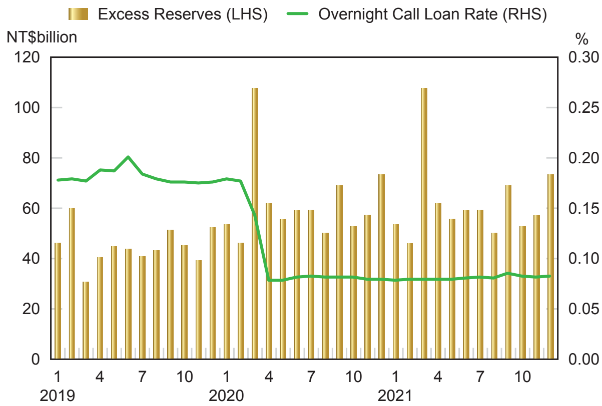
Source: *Financial Statistics Monthly* (February 2022), CBC.

From the supply side perspective, reserve money increased by NT$513 billion at the end of the year. According to the balance sheet of the Bank revealing the sources of changes in reserve money, increases were mostly attributable to the growth in foreign assets held by the Bank and expanded claims on financial institutions, whereas decreases were due to the Bank's issuance of CDs.

(2) Overnight Call Loan Rate Broadly Stable

In response to the demand for asset allocation of financial institutions, the Bank increased the monthly bidding amount for 2-year CDs from NT$40 billion to NT$60 billion from February 2021 and raised it further to NT$80 billion from April before reducing it to NT$60 billion from November onwards. The annual average excess reserves of financial institutions in 2021 was NT$62.7 billion, close to the NT$62.5 billion of the previous year. The annual average overnight call loan rate fluctuated slightly at around 0.080%.

Excess Reserves and Overnight Call Loan Rate



Source: *Financial Statistics Monthly* (February 2022), CBC.

(3) Conducting Regular Small-Scale Repo Operations

The Bank conducted small-scale test repo operations on CDs and government bonds in April and October 2021, respectively, to improve operational readiness and ensure resilience of the open market operations.

(4) Continuous Growth in Monetary Aggregates

The government provided relief loans in response to the economic impacts of the pandemic in the previous year. Subsequently, marked domestic economic recovery and stronger corporate demand for funds nudged up bank loans and investments. Moreover, as extended export strength continued to buttress an increase in inward remittances of overseas sales revenues, M2 recorded an annual growth rate of 8.45% in December 2020. With continuous growth in bank loans and investments in 2021, the M2 growth rate sustained at a higher level, but broadly moderated from June onwards. The M2 annual growth rate was 8.72% in 2021, higher than the upper boundary of the reference range at 6.5%.

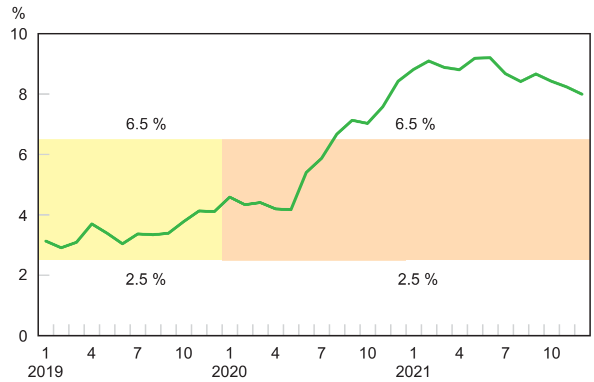
With regard to the monthly movements in 2021, for the first two months of the year, net foreign capital inflows and faster growth in bank loans and investments, as well as stronger demand for funds prior to the Lunar New Year holidays, brought the M2 growth rate up to 9.12% in February. It slipped to 8.83% in April owing to net foreign capital outflows and slower growth in bank loans and investments in March and April. Later, the M2 growth rate returned to an uptrend and hit a yearly high of 9.23% in June, driven by stronger expansion in bank loans and investments.

From July onwards, owing to a higher base effect, the M2 growth rate showed a broad downtrend despite net foreign capital inflows and an increase in bank loans and investments sending the M2 growth rate slightly higher in September. Afterwards, the M2 growth dropped to a yearly low of 8.02% in December.

The annual growth rate of the monetary aggregate M1B, measured on a daily average basis, went up by 5.95 percentage points to 16.29% in 2021. The rise in M1B growth was primarily owing to greater demand for funds amid a steady recovery in the domestic economy, a lower opportunity cost for the public to hold demand deposits, and a booming stock market.

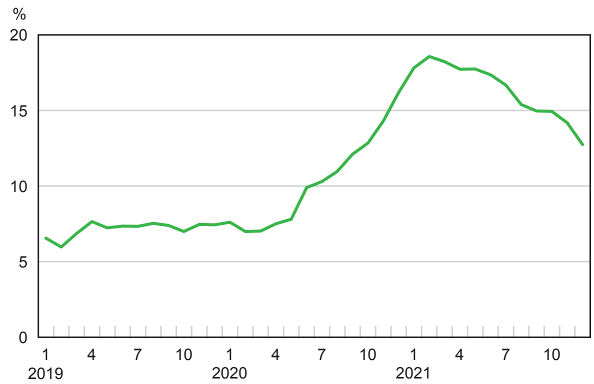
As for the monthly movements, the annual growth rate of M1B registered 17.81% in January, and then rose to the yearly high of 18.57% in February owing to higher demand for funds prior to the Lunar New Year holidays and an increase in currency issuance. Later, bolstered by a gradual domestic economic recovery and a buoyant stock market, M1B

Annual Growth Rate of M2



Source: *Financial Statistics Monthly* (February 2022), CBC.

Annual Growth Rate of M1B



Source: *Financial Statistics Monthly* (February 2022), CBC.

recorded month-on-month increases from March onwards; however, on account of a higher base effect, the annual growth rate of M1B exhibited a steady downtrend and fell to an all-year low of 12.75% in December.

Continuing the Special Accommodation Facility to Support Bank Credit to SMEs

Back in April 2020, to help SMEs adversely impacted by the pandemic, the Bank launched the Special Accommodation Facility to Support Bank Credit to SMEs ("the Facility"). With the domestic COVID-19 flare-up in mid-2021, the Bank continued to conduct a rolling review on the Facility and made relevant adjustments in order to enhance funding access for SMEs. Adjustments included stretching the applicable duration of preferential interest rates on newly-approved cases, raising the total amount of the Facility, extending the deadline for SME applications, and allowing increased borrowing within the specified maximum.

As the pandemic situation was broadly stable at home, the need for such funding assistance waned. The deadline for banks to accept new SME loan applications under the Facility remained December 31, 2021, as scheduled. However, to continue offering assistance by easing corporate funding burdens, the Bank extended the applicable duration of preferential interest rates on approved SME loans to June 30, 2022. Under the Facility launched in April 2020 to the end of 2021, financial institutions had approved more than 309 thousand applications with the disbursement totaling NT$504.9 billion.

Adjusting the Selective Credit Control Measures

In view of the still fast increase in banks' real estate lending, the Bank adjusted the selective credit control measures three times in the year 2021 to curb inordinate flows of credit resources towards the property market and to further rein in financial institutions' credit risk associated with real estate lending. These measures represented the policy efforts to facilitate effective allocation and reasonable utilization of credit resources as outlined in the government's Healthy Real Estate Market Plan so as to prevent bank credit from flowing towards property and land hoarding.

1. In 2021, the Bank further amended the *Regulations Governing the Extension of Mortgage Loans by Financial Institutions* in March, September, and December to reinforce the selective credit control measures. Major revisions were as follows:

(1) March 2021: The Bank lowered the LTV ratio caps on housing loans extended to corporate entities and on the third (or more) housing loans and high-value housing loans by natural persons. The Bank also introduced a new LTV ratio ceiling on mortgage loans for idle land in industrial districts.

(2) September 2021: The Bank removed the grace period for a second home loan taken out by a natural person for housing located in the stipulated specific areas.[9] The Bank lowered the LTV ratio caps on land loans and on mortgage loans for idle land in industrial districts.

[9] Specific areas included Taipei City, New Taipei City, Taoyuan City, Taichung City, Tainan City, Kaohsiung City, Hsinchu County, and Hsinchu City.

(3) December 2021: The Bank lowered the LTV ratio caps on high-value housing loans and on the third (or more) housing loans by natural persons, on loans for unsold new housing units, and on mortgage loans for idle land in industrial districts to 40%. The Bank also lowered the LTV ratio cap on land loans to 50% and required that the construction should commence within the promised time frame as formally undertaken by the loans' borrowers.

2. The Bank held meetings twice to improve the effectiveness of the selective credit control measures and urged banks to implement credit risk-based interest rate pricing principles.

(1) The Bank held the meeting on "Strengthening the Effectiveness of the Implementation of the Bank's Selective Credit Control Measures" in May with 36 domestic banks. Through the meeting, banks were urged to comply with relevant laws and regulations as well as risk-based pricing principles when extending mortgage loans and to avoid a price competition.

(2) The Bank held the meeting on "Strengthening the Effectiveness of the Implementation of the Bank's Selective Credit Control Measures" again in October with 36 domestic banks and the National Federation of Credit Co-operatives R.O.C. In this meeting, the Bank reiterated that banks should comply with credit risk-based pricing principles and should fully explain the pricing strategies for interest rates to borrowers so as to enable them to make proper financial planning decisions.

3. The Bank adopted the following supporting measures to improve the effectiveness of the implementation of the selective credit control measures.

(1) Statistics of banks' newly-extended real estate loans were released regularly on the Bank's website.

(2) 55 on-site financial examinations were conducted in 2021 to ensure banks' compliance with relevant laws and regulations.

(3) The Bank used moral suasion with banks, urging them to comply with relevant laws and regulations and implement credit risk-based differential pricing principles.

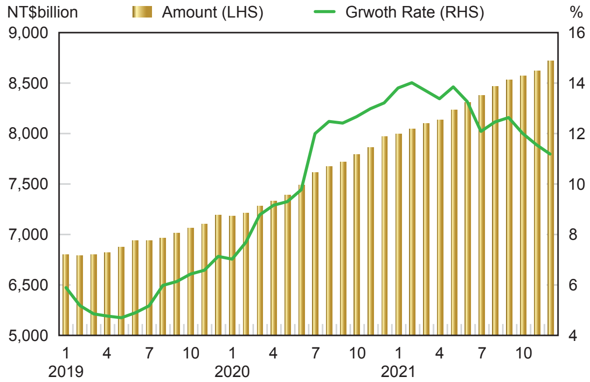
(4) The Bank suggested the FSC to enhance control over financial institutions' real estate guarantee business.

Facilitating SME Funding

To sufficiently meet the funding needs of SMEs, the FSC continued to encourage lending by domestic banks to SMEs, while the Bank also urged commercial banks to increase lending to SMEs.

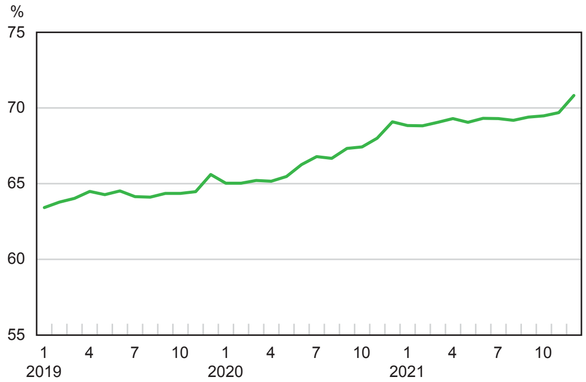
At the end of 2021, the outstanding loans extended to SMEs by domestic banks amounted to NT$8,689 billion, increasing by NT$876 billion from the end of the previous year and far exceeding the annual target of increased lending of NT$300 billion set by the competent authorities. Outstanding SME loans recorded an annual growth rate of 11.22% at the end of 2021, lower than the previous year owing to a higher base effect. Furthermore, the ratio of SME loans to loans extended to all private enterprises rose slightly from 69.08% at the previous year end to 70.83% at the end of 2021.

Outstanding Loans Extended to SMEs



Source: FSC.

Ratio of Outstanding Loans Extended to SMEs to Those Extended to Private Entreprises



Source: FSC.

Accepting Redeposits from Financial Institutions

Accepting redeposits from Chunghwa Post, the Agricultural Bank of Taiwan, and commercial banks is another instrument for the Bank to influence banks' reserve positions in order to promote financial stability. At the end of 2021, the outstanding redeposits of Chunghwa Post stayed broadly unchanged at NT$1,624 billion, while the outstanding redeposits of the Agricultural Bank of Taiwan and of commercial banks were NT$165 billion and NT$354 billion, respectively.

Box

Selective Credit Control Measures: Implementation and Results

Pursuant to *The Central Bank of the Republic of China (Taiwan) Act*, the Bank is authorized by law to adopt selective credit control measures in order to foster financial stability. Since the second half of 2020, the domestic housing market had been gathering steam and a decline in mortgage lending standards had also begun to show in some banks.

To promote financial stability and sound banking operations, to urge banks to carefully consider mortgage loan purposes and borrower status as per the directive of "efficient allocation and proper use of credit resources" under the government's Healthy Real Estate Market Plan, and to curb bank credit resources from flooding the real estate market, the Bank implemented selective credit controls on four occasions (December 2020, and March, September, and December 2021) – by amending the *Regulations Governing the Extension of Mortgage Loans by Financial Institutions*. The actions were aimed at strengthening bank management of credit risks associated with real estate lending and preventing credit resources from being used for property hoarding. They have since produced good results, with the LTV ratios significantly brought down for the regulated loan types.

I. Implementation of the selective credit control measures

1. Introduction and amendments

(1) December 2020

The Bank noticed that there had been a disproportionate concentration on banks' real estate lending – which could draw investment away from productive economic activities and hamper sound allocation of credit resources – and an uptrend in housing loans and construction loans. In this view, the Bank sought to rein in housing loans extended to natural persons buying multiple homes and those to corporate entity homebuyers, to stop bank credit from being used for hoarding undeveloped land, and to strengthen loan standards for unsold housing units. To that end, the Bank introduced selective credit controls on housing loans to corporate entities, on new housing loans to natural persons already with two or more outstanding housing loans, on land loans, and on loans for unsold housing units, all four of which would also serve as uniform regulations to facilitate compliance among financial institutions.

(2) March 2021

While real estate lending continued to exhibit fast growth, corporate entities also showed a more pronounced tendency to buy multiple homes and to flip them for profit within a short time span. Accordingly, the Bank amended the selective credit control measures, including lowering the LTV ratio caps on housing loans taken out by corporate entities and on high-value housing loans, and adjusting LTV ratio caps for natural person homeowners according to the number of outstanding housing loans they already had. In addition, the Bank aimed to promote the development of industrial land lots by introducing new restrictions on loans collateralized against idle land in industrial districts.

(3) September 2021

To preempt an inordinate credit flow into the real estate sector for speculation and restrain related credit risk, the Bank took the precaution of adjusting credit controls, including imposing new restrictions on the second (or more) housing loans taken out by natural persons for homes in the designated "specific areas,"[1] to help contain overleverage and strengthen banks' credit risk management. The Bank also lowered the LTV ratio ceiling on land loans to curb them from an excessive surge. In addition, to urge land loan borrowers to begin construction promptly after land acquisition, the Bank thus stipulated that the "specific time frame" condition for idle industrial land mortgage loans to be exempt from the restrictions shall be one year.

(4) December 2021

In light of a still marked concentration of real estate lending in banks' loan positions, further amendments were made to ensure bank credit resources were under robust management and

[1] Including Taipei City, New Taipei City, Taoyuan City, Taichung City, Tainan City, Kaohsiung City, Hsinchu County, and Hsinchu City.

Key Points of the Adjustments of Selective Credit Control Measures

<table>
<tr><th colspan="2" rowspan="2">Type of loans</th><th colspan="4">LTV ratio caps and others (date: mm/dd/yyyy)</th></tr>
<tr><th>12/08/2020 -
03/18/2021</th><th>03/19/2021 -
09/23/2021</th><th>09/24/2021 -
12/16/2021</th><th>12/17/2021 -</th></tr>
<tr><td rowspan="2">Corporate entity</td><td>First housing loan</td><td>LTV cap: 60%;
No grace period</td><td rowspan="2">LTV cap: 40%;
No grace period</td><td rowspan="2">(unchanged)</td><td rowspan="2">(unchanged)</td></tr>
<tr><td>Second (or more) housing loan(s)</td><td>LTV cap: 50%;
No grace period</td></tr>
<tr><td rowspan="5">Natural person</td><td>High-value housing loan in addition to two (or less) outstanding housing loans</td><td rowspan="2">LTV cap: 60%;
No grace period</td><td>LTV cap: 55%;
No grace period</td><td>(unchanged)</td><td>LTV cap: 40%;
No grace period</td></tr>
<tr><td>High-value housing loan in addition to three (or more) outstanding housing loans</td><td>LTV cap: 40%;
No grace period</td><td>(unchanged)</td><td>(unchanged)</td></tr>
<tr><td>Second housing loan for a home in one of the "specific areas"</td><td>(nil)</td><td>(nil)</td><td>No grace period</td><td>(unchanged)</td></tr>
<tr><td>Third housing loan</td><td rowspan="2">LTV cap: 60%;
No grace period</td><td>LTV cap: 55%;
No grace period</td><td>(unchanged)</td><td rowspan="2">LTV cap: 40%;
No grace period</td></tr>
<tr><td>Fourth (or more) housing loan(s)</td><td>LTV cap: 50%;
No grace period</td><td>(unchanged)</td></tr>
<tr><td colspan="2">Land loans</td><td>LTV cap: 65%, with 10% withheld for disbursement until construction commences</td><td>(unchanged)</td><td>LTV cap: 60%, with 10% withheld for disbursement until construction commences;

Borrower required to submit a substantive development plan for the land purchased</td><td>LTV cap: 50%, with 10% withheld for disbursement until construction commences;

Borrower required to submit a substantive development plan and undertake that construction would begin within a specific time frame*</td></tr>
<tr><td colspan="2">Loans for unsold housing units</td><td>LTV cap: 50%</td><td>(unchanged)</td><td>(unchanged)</td><td>LTV cap: 40%</td></tr>
<tr><td colspan="2">Idle industrial district land mortgage loans</td><td>Internal rules of banks</td><td>LTV cap: 55%;

Exemption condition: (1) commencement of construction, or (2) submission of a substantive development plan and an affidavit stating that construction would take place within a specific time frame</td><td>LTV cap: 50%;

Exemption condition: (1) commencement of construction, or (2) submission of a substantive development plan and an affidavit stating that construction would take place within one year</td><td>TV cap: 40%;
Exemption conditions unchanged</td></tr>
</table>

Note: * On January 13, 2022, the Bank met with banks on the subject of "reinforcing management of risks associated with land loans," urging them to set up internal rules to ensure that land loan borrowers begin construction on the collateralized land lots as per the loan terms. Particularly, regarding the condition of "specific time frame," banks were asked to exercise prudence in assessing and verifying the actual time needed (up to a maximum of 18 months) for borrowers before commencing construction. Banks should clearly state in the loan contracts that if borrowers fail to begin construction within the agreed time frame, banks shall reclaim the loan amount disbursed in a gradual manner by a reasonable percentage and raise the interest rates on the loans with annual increments.

Source: Department of Banking, CBC.

not used for speculative hoarding of homes and land lots. The key adjustments included lowering the LTV ratio caps on high-value housing loans and the third (or more) housing loans for natural persons, on land loans, on loans for unsold housing units, and on idle industrial district land. Meanwhile, lending standards for land loans were tightened by requiring borrowers to commit in writing to commencing construction within a specific time frame.

2. Related actions

To amplify the effects of the selective credit control measures, the Bank followed up with related actions as described below.

(1) Compiling and disclosing relevant data: Statistical data on those types of real estate lending subject to the Bank's credit controls are published on the Bank's website on a regular basis.
(2) On-site financial examinations: Beginning from January 2021, the Bank also ran targeted examinations to ensure the banking sector's compliance with the selective credit controls. Within the year of 2021, a total of 55 such examinations were conducted.
(3) Meeting with financial institutions: The Bank held two meetings with financial institutions in May and October 2021 on the subject of "enhancing the effectiveness of the selective credit control measures," urging banks to ensure compliance, to offer reasonable pricing based on assessments of credit risk and other factors, and to refrain from price wars. The Bank also reminded borrowers to heed their own mortgage interest burdens and be financially prepared for any future changes.
(4) Strengthening bank risk management in property guarantee business: Acting on the recommendation of the Bank, the FSC adopted several measures to prompt banks to enhance risk management related to real estate guarantee business. These measures included a cap on the ratio of the guarantee balance of bills finance companies for real estate firms and a requirement that banks shall incorporate real estate guarantee business into the scope of their internal control and audit rules in accordance with the relevant regulations stipulated by the Bank.

II. Implementation results of the Facility

1. LTV ratios brought down

Since the first rule tightening in December 2020, those types of loans under restriction have been made by domestic banks in accordance with the relevant rules, and the average LTV ratios have been significantly lower than before implementation.

LTV Ratios of Real Estate Loans Before and After Rule Tightening

(unit: %)

<table>
<tr><th colspan="4">Type of loans</th><th>Before (average; mainly Jan.-Sept. 2020)</th><th>After (average; Dec. 2021)</th><th>Statutory cap (Dec. 2021)</th><th>Current cap (12/17/2021 onwards)</th></tr>
<tr><td rowspan="6">Housing loans</td><td colspan="3">Corporate entity</td><td>63.97</td><td>39.84</td><td>40</td><td rowspan="6">40</td></tr>
<tr><td rowspan="5">Natural person</td><td colspan="2">Third housing loan</td><td>63.97</td><td>53.18</td><td>55</td></tr>
<tr><td colspan="2">Fourth (and more) housing loan(s)</td><td>63.97</td><td>47.84</td><td>50</td></tr>
<tr><td rowspan="2">High-value housing</td><td>Two (or less) outstanding housing loans</td><td>71.00</td><td>50.68</td><td>55</td></tr>
<tr><td>Three (or more) outstanding housing loans</td><td>71.00</td><td>39.28</td><td>40</td></tr>
<tr><td colspan="2" rowspan="3">Land loans</td><td colspan="2">Loan application made during 12/08/2020-09/23/2021</td><td rowspan="3">69.19</td><td>63.60</td><td>65</td><td rowspan="3">50</td></tr>
<tr><td colspan="2">Loan application made during 09/24/2021-12/16/2021</td><td>58.05</td><td>60</td></tr>
<tr><td colspan="2">Loan application made from 12/17/2021 onwards</td><td>37.52</td><td>50</td></tr>
<tr><td colspan="2" rowspan="2">Loans for unsold housing units</td><td colspan="2">Loan application made during 12/08/2020-12/16/2021</td><td rowspan="2">51.03</td><td>33.62</td><td>50</td><td rowspan="3">40</td></tr>
<tr><td colspan="2">Loan application made from 12/17/2021 onwards</td><td>28.59</td><td>40</td></tr>
<tr><td colspan="4">Idle industrial district land mortgage loans</td><td>n.a.</td><td>49.78
(Oct. 2021)</td><td>50</td></tr>
</table>

Notes: 1. The "before" data are based on the information for the Jan.-Sept. 2020 period as reported by the 14 banks when they came to meet with the Bank in November 2020, except for the "before" data on high-value housing loans taken out by natural persons, which were based on data reported by banks before the Bank first imposed credit controls on this type of loan in June 2012.
2. The "after" data were compiled by the Bank based on the reports submitted by 39 domestic banks.
3. "n.a." means there was no statistical compilation.

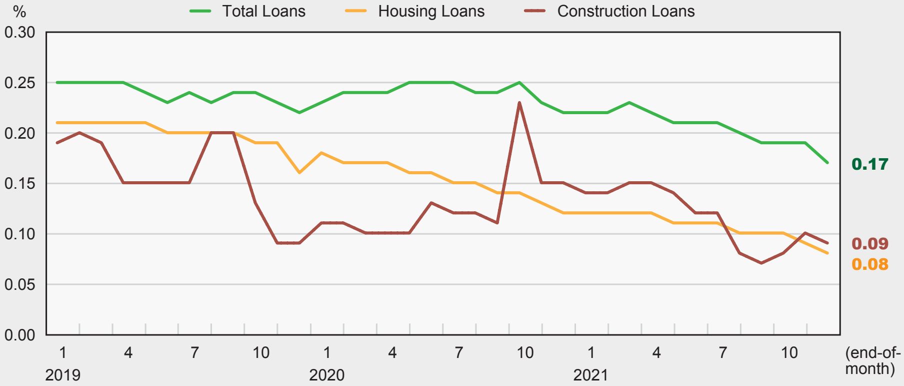
Source: Department of Banking, CBC.

2. Banks' real estate lending risk management considered satisfactory

(1) Non-performing loan ratios comparatively low

As of the end of December 2021, the non-performing loan ratios for housing loans and construction loans extended by domestic banks were 0.08% and 0.09%, respectively. With both ratios lower than the overall non-performing loan ratio, which was 0.17%, domestic banks continued to exhibit good asset quality.

Non-performing Loan Ratios of Domestic Banks

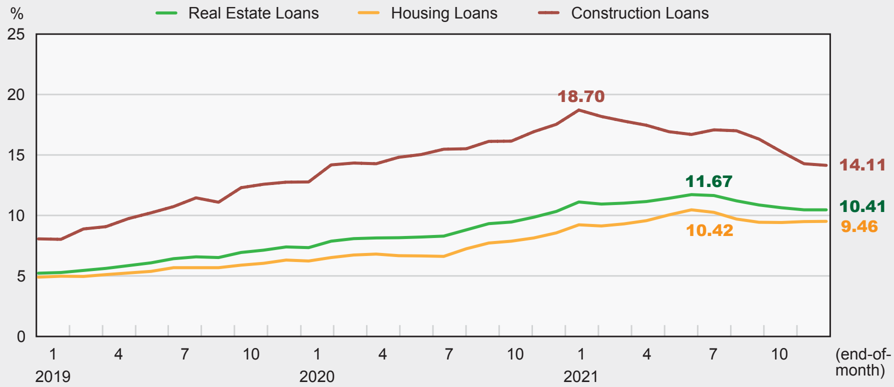


Source: FSC.

(2) Growth in real estate lending broadly slowed

At the end of December 2021, the annual growth rate of real estate lending by all banks slowed to 10.41% from the 11.67% registered at the end of June 2021. Of the components, the annual growth rate of construction loans dropped markedly to 14.11% from the 18.70% of end-January 2021, while that of housing loans dropped to 9.46% from the 10.42% of end-June 2021.

Annual Growth Rates of Real Estate Loans (All Banks)



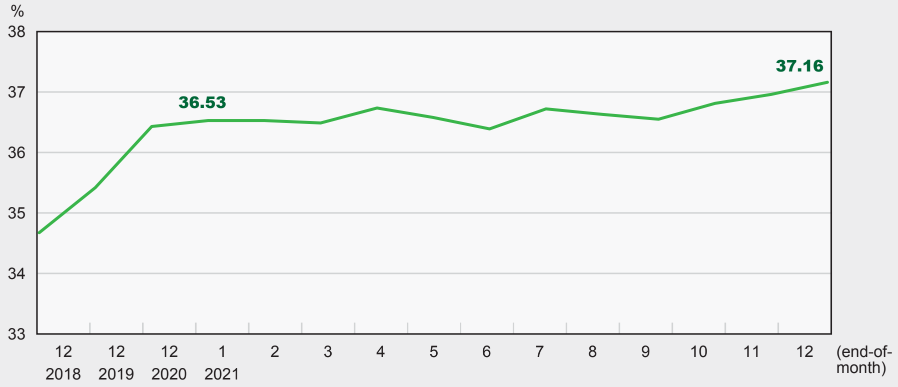
Notes: 1. "All banks" include domestic banks and local branches of foreign and Mainland Chinese banks.
2. "Real estate loans" include loans for home purchases, home renovations, and building construction.

Source: *Financial Statistics Monthly* (February 2022), CBC.

(3) Real estate loan concentration largely steady

From the beginning of 2021, the share of real estate lending in total lending by all banks stayed largely steady. The share was 37.16% at the end of December 2021, still lower than the historical high of 37.90% recorded at the end of October 2009.

Real Estate Loan Concentration (All Banks)



Notes: 1. "All banks" include domestic banks and local branches of foreign and Mainland Chinese banks.
2. "Real estate loans" include loans for home purchases, home renovations, and building construction.

Source: *Financial Statistics Monthly* (February 2022), CBC.

III. Conclusion: The Bank will run a rolling review and act as needed to sustain financial stability

A healthy real estate market requires coordinated efforts from all relevant government agencies to address issues from the various aspects of demand, supply, and the system. Looking ahead, the Bank will stay attentive to the developments in banks' real estate lending and in the housing market, conduct a rolling review of the selective credit control measures, and act as needed to promote sound banking operations and foster financial stability.

3. Foreign Exchange Management

Promoting the Sound Development of the Foreign Exchange Market

(1) Flexible foreign exchange rate management to maintain dynamic stability of the NT dollar exchange rate

Taiwan is a small open economy with high dependence on foreign trade and susceptible to potential impacts from sharp exchange rate fluctuations. Therefore, Taiwan adopts a managed float exchange rate regime. Under this regime, the NT dollar exchange rate is in principle determined by market forces. However, in the event of excessive exchange rate volatility, the Bank would conduct appropriate smoothing operations to stave off adverse effects for economic and financial stability and to facilitate an orderly foreign exchange market.

In recent years, massive and frequent movement of international short-term capital has become the driving force of exchange rate changes. So as to mitigate excessive exchange rate volatility and to improve market efficiency, the Bank has adopted "leaning against the wind" operations to prevent erratic flows from disrupting the foreign exchange market. A stable foreign exchange market is conducive to long-term economic stability and development.

In the first half of the year 2021, even though Taiwan was faced with a domestic flare-up of COVID-19 infections, its own outstanding export performance and the US$1.9 trillion American Rescue Plan drove the NT dollar to appreciate against the US dollar, and created wider fluctuations of the NTD exchange rate. In the second half of the year, against the backdrop of the spread of coronavirus variants all over the world, the Fed's monetary policy tightening to combat inflation, an easing of Taiwan's pandemic outbreak, and continuous double-digit export growth, the NTD exchange rate fluctuated in a relatively narrow range. To maintain dynamic stability of the NT dollar exchange rate, the Bank continued to conduct two-way smoothing operations in the forex market. For the year as a whole, net purchases by the Bank amounted to US$9.1 billion, and variability in the NT dollar exchange vis-à-vis the US dollar was smaller than that of major currencies such as the Singapore dollar, the Japanese yen, and the euro.

(2) Maintaining an orderly forex market and promoting sound market development

In 2021, the Bank carried on with a variety of policies to effectively manage the foreign exchange market:

a. The Bank continued to implement the Real-Time Reporting System for Large-Amount Foreign Exchange Transactions.

b. The Bank continued to strengthen management to ensure that forward transactions were based on real transactions.

c. The Bank urged authorized banks to enhance their exchange rate risk management in order to reduce market exposure of individual banks and to contain systemic risk.

d. The Bank continued to strengthen targeted examination on foreign exchange business to help ensure a sound foreign exchange market.

Foreign Currency Call Loan and Swap Market Management

(1) To provide the financial system with sufficient foreign currency liquidity to meet funding needs, including those for corporations to venture into overseas markets, the Bank appropriated seed capital for the Taipei Foreign Currency Call Loan Market, including US$20 billion, €1 billion and ¥80 billion.

(2) Through foreign currency call loans and swaps conducted by authorized foreign exchange banks, the Bank continued to support corporations and insurance companies by meeting the needs for foreign currency liquidity and exchange rate hedging.

Foreign Exchange Reserve Management and Foreign Currency Liquidity of the Bank

The Bank manages its foreign exchange reserves based on the considerations of liquidity, safety, and profitability. The Bank keeps a close watch on the global economic and financial situation and adjusts the portfolio of foreign exchange reserves accordingly. Currently, financial assets denominated in US dollars make up a larger share in Taiwan's foreign exchange reserves than the COFER (Currency Composition of Official Foreign Exchange Reserves) average published by the IMF. As of the end of 2021, Taiwan's total foreign exchange reserves stood at US$548.4 billion with an increase of US$18.5 billion or 3.5% compared to the end of 2020, mainly attributable to returns from foreign exchange reserve investments and smoothing operations. Combining the reserves held in gold valued at US$5.6 billion, the Bank's reserves assets totaled US$554.0 billion at the end of the year.

Foreign exchange reserves are the Bank's foreign currency claims on nonresidents. On the other hand, foreign currency claims on residents consist of US dollars held under swap agreements and foreign currency deposits and loans to domestic banks, which amounted to US$91.9 billion, US$43.4 billion, and US$7.2 billion, respectively, at the end of 2021.

In terms of foreign currency liquidity, the total amount, including foreign currency claims and gold, reached US$700.5 billion at the end of 2021.

Capital Flow Management

In line with its efforts to promote financial liberalization and internationalization, the Bank's foreign exchange management has mainly been focusing on maintaining the market mechanism, and financial capital can, in principle, flow freely in and out of Taiwan. As of 2021, financial capital flows not involving NT dollar conversion have been able to flow freely. Additionally, there are no restrictions on financial flows involving NT dollar conversion for goods and service trade, nor for direct and securities investments approved by the competent authorities. Regulation only exists for short-term remittances. Annual remittances for an individual resident within US$5 million and for a juridical person within US$50 million can be settled by banks directly, while annual remittances above the aforementioned amounts require the approval of the Bank. Each transaction for a nonresident within US$0.1 million can be settled by banks directly, whereas any transaction amount above that threshold requires the approval of the Bank. Measures with regard to the management of capital flows in 2021 included:

(1) As the Financial Supervisory Commission amended *The Act Governing Electronic Payment Institutions*, which allows electronic payment institutions and foreign migrant worker remittance institutions to undertake small amount remittance business, the Bank therefore amended both the *Regulations Governing the Declaration of Foreign Exchange Receipts and Disbursements or Transactions* and the *Directions for Banking Enterprises While Assisting Customers to Declare Foreign Exchange Receipts and Disbursements or Transactions* accordingly, effective July 1, 2021.

(2) Promoting the Internationalization of Taiwan's Capital Market

In 2021, cases of fund-raising by domestic and foreign institutions through securities issuance, approved by or filed for record to the Bank, are shown in the following table.

Institution	Fund-Raising Method	Number	Amount
Foreign Companies	IPO on TWSE & TPEx and registration on the Emerging Stock Board	15	NTD 21.48 billion
	NTD convertible bonds	9	NTD 10.37 billion
	Foreign currency-denominated bonds	48 11 9 6	USD 38.28 billion RMB 14.02 billion AUD 1.14 billion ZAR 4.45 billion
	Overseas convertible bonds	1	USD 0.13 billion
	Overseas depositary receipts	1	USD 0.1 billion
Domestic companies (and domestic branches)	Overseas convertible bonds	5	USD 2.97 billion
	Overseas depositary receipts	3	USD 0.52 billion

Note: TWSE stands for the Taiwan Stock Exchange; TPEx stands for the Taipei Exchange.
Source: Department of Foreign Exchange, CBC.

(3) Approving Residents' Investments in Foreign Securities

Institution	Method/Instrument	Amount
Securities investment trust companies (SITEs)	63 domestic SITE funds (including 47 NTD-foreign multiple currency SITE funds)	NTD 1,300.8 billion (including 853.5 billion multiple currency funds)
	4 SITE private funds	NTD 4.8 billion
Life insurance companies	Non-discretionary money trusts managed by financial institutions	USD 0.6 billion
	Investment for their own accounts	USD 0.02 billion
Five major government pension funds and employment insurance funds	Investment for their own accounts	USD 7.57 billion

Source: Department of Foreign Exchange, CBC.

Management of Foreign Exchange Business of Financial Institutions

(1) Authorized foreign exchange banks

Pursuant to *The Central Bank of the Republic of China (Taiwan) Act and the Foreign Exchange Regulation Act*, the Bank reviews, authorizes and supervises banks to conduct foreign exchange business accordingly. In 2021, the Bank continued to approve bank branches as authorized foreign exchange banks and loosened restrictions on foreign exchange derivative product business in order to facilitate authorized foreign exchange banks' competitiveness and service quality. Major developments in 2021 were as follows.

a. At the end of 2021, there were 3,465 authorized foreign exchange banks in total, which included 37 head offices and 3,390 branches of domestic banks, 35 branches of foreign banks, three branches of Mainland Chinese banks, as well as 4,647 authorized money exchangers, post offices, and financial institutions authorized to engage in basic foreign exchange business.

b. The Bank amended the *Regulations Governing Foreign Exchange Business of Banking Enterprises* on January 28, 2021 to simplify procedures and qualifications for commercial banks to apply to become authorized foreign exchange banks. Restrictions were also relaxed for authorized banks to issue foreign currency bank debentures linked to derivatives or structured notes.

c. The Bank amended the *Directions Governing Authorized Banks for Operating Foreign Exchange Businesses Through Electronic or Communications Equipment* on December 30, 2021. Authorized banks can undertake customers' foreign exchange business through electronic or communications equipment without making a prior application as long as such business does not involve NT dollar conversion.

(2) Insurance Companies

As of the end of 2021, the numbers of insurance companies allowed to engage in traditional and in investment-linked foreign currency insurance business were both 21. The foreign currency premium revenue increased by US$3.55 billion, or 10.3%, from the previous year to US$37.96 billion in 2021.

(3) Securities Firms and Bills Finance Companies

a. The Bank amended the regulations on limits on foreign currency bills and bonds as well as foreign currency borrowings and loans by bills finance companies and broadened the scope of counterparties on October 20, 2021.

b. Approved cases for securities firms and bills finance companies to conduct foreign exchange business in 2021 are listed in the following table.

Institutions	Foreign Exchange Business	Number
Securities Firms	Underwriting of international bonds denominated in foreign currency	1
	Proprietary foreign securities trad-ing neither belonging to investment with their own funds nor for hedging needs	3
	Spot exchange transactions be-tween NT dollar and foreign cur-rencies	1
	Foreign currency spot exchange transactions	1
	Trading and exchanging beneficial certificates of funds	1
	Accepting orders to trade onshore and offshore funds	1
	Structured notes linked to foreign financial products	3
	Issuance of exchange traded notes tracking underlying foreign indices	1
Bills Finance companies	Auditing, underwriting, brokering, proprietary trading business of foreign currency bills	1

Source: Department of Foreign Exchange, CBC.

(4) Investment Trust/Consulting Firms and Futures Firms

The approved cases granted by the Bank for investment trust and investment consulting firms and futures firms (concurrently operating as a leverage transaction merchant) to conduct foreign exchange business as of 2021 are shown in the following table.

Institutions	Foreign Exchange Business	Number
Investment trust and investment consulting firms	Serving as mandated institutions of private offshore funds	4
	Conducting public offer or private placement of foreign currency-denominated funds	1
Futures firms (concurrently operating as a leverage transaction merchant)	Foreign currency margin trading	1
	Contracts for difference linked to silver, foreign equities or ETFs, or foreign stock market indices	3

Source: Department of Foreign Exchange, CBC.

(5) Foreign Exchange Brokers

To diversify equity ownership and to improve management on foreign exchange brokers, the Bank amended the *Regulations Governing Foreign Exchange Brokers* on September 14, 2021. The amendments included broadening the scope of related parties, applying the investment cap to the combined amount of investments by stipulating different investment caps according to the type of financial institution to which their related parties belong and adding in required qualifications for promoters, directors and supervisors, and responsible persons of foreign exchange brokers.

Foreign Currency Clearing Platform

(1) Taiwan's foreign currency clearing platform was consigned by the Bank and established by the Financial Information Service Co. The platform offers services for domestic and cross-border (including cross-strait) remittances of the Chinese renminbi and the Japanese yen, and domestic remittances of the US dollar, the euro, and the Australian dollar. The platform adopts a payment-versus-payment (PVP) mechanism among banks, a liquidity-saving mechanism for foreign currency remittances, and a delivery-versus-payment (DVP) mechanism for foreign currency bonds and bills. It has continued to function smoothly since its inauguration in 2013.

(2) Domestic Development of Foreign Currency Settlement Business in 2021

Currency	Domestic Participating Units	Settlements in 2021	
		Number of Transactions	Amount
US dollar	69	1,317,040	USD 1,783.1 billion
Renminbi	60	319,596	RMB 606.6 billion
Yen	39	31,636	JPY 1,131.9 billion
Euro	39	18,034	EUR 6.2 billion
Australian dollar	30	27,175	AUD 1.3 billion

Source: Department of Foreign Exchange, CBC.

Offshore Banking

(1) The Bank collaborated with the Financial Supervisory Commission in its amendment to the *Regulations Governing Domestic Juridical Persons Opening Accounts for the Purpose of Handling Loan-related Receipts and Disbursements in Offshore Banking Units*, including relaxing the restriction on transaction counterparties of the loan-related accounts to meet the practical need for credit business. The amended draft entered the preview process on December 8, 2021.

(2) Financial Status

a. Offshore Banking Units (OBUs)

At the end of 2021, the number of OBUs came to 59, and total OBU assets increased by US$10.46 billion, or 4.4%, over the previous year to US$249.92 billion. The net income after tax of all OBUs amounted to US$3.22 billion, decreasing by US$0.31 billion, or 8.8%, from a year before.

b. Offshore Securities Units (OSUs)

At the end of 2021, the number of OSUs stood at 19, and total OSU assets reached US$4.54 billion, a decrease of US$1.27 billion or 21.9%. The net income after tax of the business also decreased by US$130.9 million, or 71.2%, to US$53.0 million for 2021.

c. Offshore Insurance Units (OIUs)

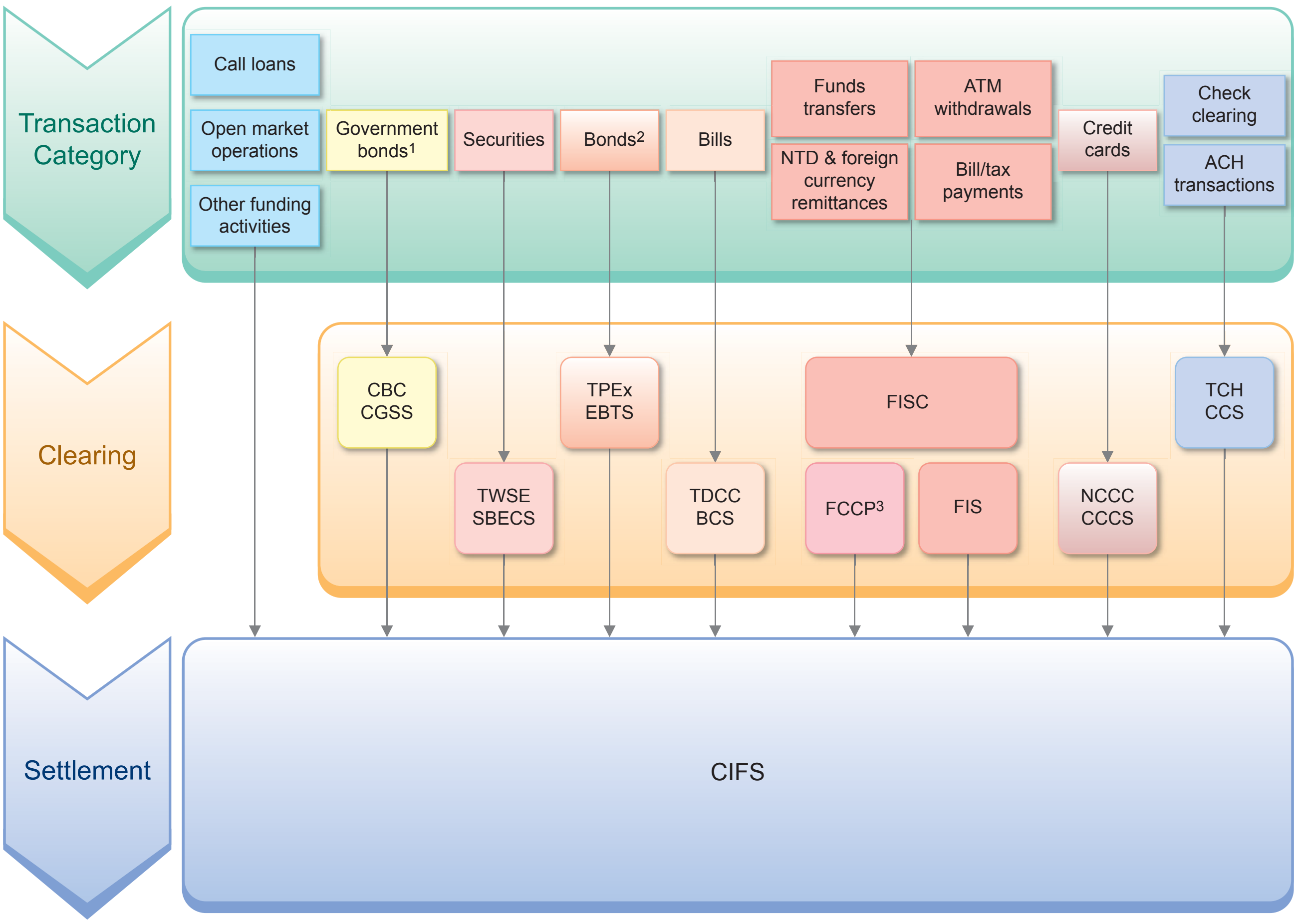
As of the end of 2021, the number of OIUs was 20, with a total amount of assets of US$1 billion, which was US$0.01 billion or 1.0% more than the previous year end. The net income after tax of all OIUs decreased to US$18.3 million, a decline of US$20.7 million or 862.5% from 2021.

4. Payment and Settlement Systems

The Bank plays a crucial role in the functioning of Taiwan's payment and settlement systems, and operates the CBC Interbank Funds Transfer System (CIFS) and the Central Government Securities Settlement System (CGSS).

The CIFS serves as the hub of Taiwan's payment and settlement systems, linking the interbank clearing systems operated by the FISC, the Taiwan Clearing House (TCH), the National Credit Card Center of R.O.C. (NCCC), the Taiwan Depository and Clearing Corporation (TDCC), the TPEx, and the TWSE, as well as the CGSS, together to construct a comprehensive system.

CIFS Settlement Services



Notes: 1. Including DVP settlements for interbank transactions of central government bonds and treasury bills.
2. Including netting settlements for outright trades of government bonds, corporate bonds, and bank debentures.
3. The CIFS is only responsible for settlements involving NT dollars, while settlements involving foreign currencies are performed by designated commercial banks.

Source: Department of Banking, CBC.

In addition, the Bank monitors major payment systems based on the *Principles for Financial Market Infrastructures* released by the Bank for International Settlements (BIS) to ensure sound operation of these systems and to promote stability of the financial system.

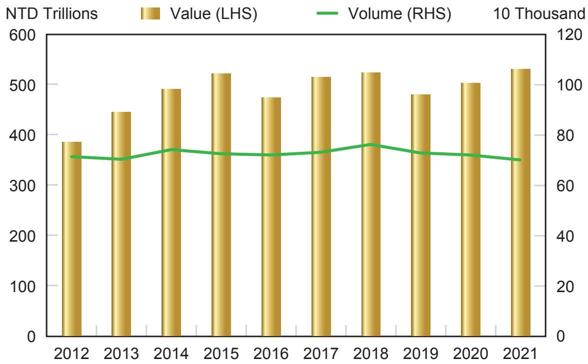
Operation of Payment and Settlement Systems

(1) Funds Transfers via the CIFS

As a large-value electronic funds transfer system, the CIFS not only deals with interbank funding, open market operations, and funds settlements in financial markets, but also provides interbank final settlement services for each clearing institution.

In 2021, two more banks joined the CIFS. At the end of 2021, there were 84 participants of the CIFS, including 69 banks, eight bills finance companies, Chunghwa Post, and six clearing institutions, namely the FISC, the TCH, the TDCC, the TWSE, the TPEx, and the NCCC. In the year 2021, the number of transactions via the CIFS was 704,219, and the amount of funds transferred totaled NT$533 trillion. Meanwhile, the daily average number of transactions via the CIFS was 2,840, decreasing by 1.97% over the previous year, whereas the daily average amount of funds transferred was NT$2,147 billion, increasing by 6.35% from a year before.[10]

Transaction Value and Volume of the CIFS



Source: Department of Banking, CBC.

(2) Transactions via the CGSS

Established in September 1997, the CGSS is a system for issuance, transfer, redemption, and interest payment of book-entry central government securities. Since its inception, central government bonds have been issued in book-entry form. Treasury bills were included in this system in October 2001 and have since been issued in book-entry form.

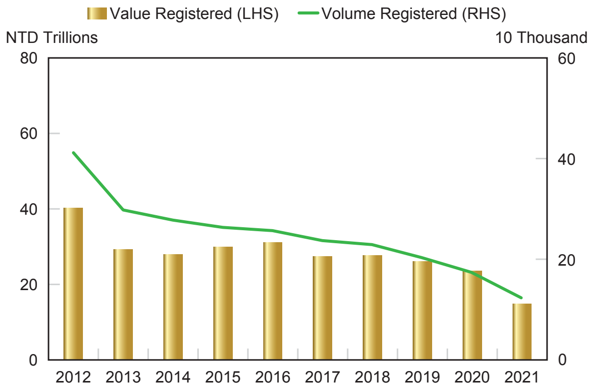
Since April 2008, when the CGSS linked up with the CIFS, fund settlements, principal redemptions, and interest payments have been handled through the CIFS using a delivery-versus-payment (DVP) mode. The DVP mode, promoted by the BIS, is an arrangement in a securities settlement system to ensure that securities delivery occurs at the same time as the

[10] The average transaction volume decreased primarily owing to declines in primary and secondary market transactions in central government bonds and interbank foreign exchange market transactions. On the other hand, the average transaction value increased mainly because of rises in transactions in certificates of deposit and interbank call loans.

funds transfer, effectively eliminating potential principal risk during the transaction process.

As of the end of 2021, there were 19 clearing banks with 1,678 branches that handled the registration of central government securities transfers. In 2021, this system processed 124,202 transfers with a total amount of NT$14.9 trillion. The declines in transaction value and volume of the CGSS in 2021 were mainly caused by the impact of the domestic COVID-19 flare-up as well as market expectations of the Fed tapering faster and raising rates at the end of the year, dimming the outlook for bond markets and thus decreasing bond trading incentives.

Transaction Value and Volume of the CGSS



Source: Department of the Treasury, CBC.

Oversight of Payment and Settlement Systems

To ensure sound operation of domestic payment and settlement systems and maintain their safety and efficiency, the Bank conducted the following oversight activities in 2021:

(1) Making Amendments to Relevant Regulations

In February 2021, the Bank amended the *Directions for the Central Bank of the Republic of China (Taiwan) to Govern Electronic Interbank Funds Transfer and Settlement* after thoroughly examining the relevant directions on payment and settlement risk management.

(2) Monitoring the Operation of the Large-Value Payment Systems

The Bank continued to monitor the operation of the large-value payment systems in 2021. During the year, 22 applications for the CIFS operation time extensions were filed by participating institutions because of system malfunctions or other contingencies. The Bank required these institutions to improve the time extension issue.

(3) Requiring Payment Institutions to Submit Information on Electronic Payment Business

Payment system operators and electronic payment service providers were required by the Bank to submit information about their operations and activities with regard to electronic payments on a regular basis. Furthermore, the Bank kept close watch on the development of financial technology (fintech) and innovations in the payment industry to assist in providing sound retail payment infrastructure.

(4) Supervising Contingency Drills Performed by Clearing Institutions

To ensure business continuity of payment and settlement systems, the Bank supervised clearing institutions conducting testing of business continuity plans and remote backup operations in case of emergency. In December 2021, the Bank, together with participants of the CIFS, performed system-wide testing of the operating procedures to ensure that the backup systems would operate smoothly when an emergency occurs and relevant personnel would be familiar with contingency procedures in response to disruptions to the system network.

(5) Performing Backup Drills with Clearing Banks

Since 2019, the Bank has supervised all clearing banks performing backup drills in the event of malfunction or line interruption of a CGSS participant's mainframe system annually. In November 2021, this drill was conducted successfully with 19 clearing banks.

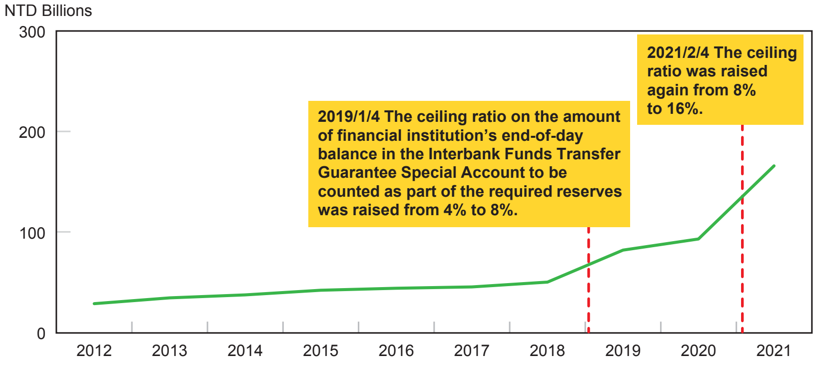
(6) Organizing Conferences to Enhance Payment System Operation

The Bank invites the FSC and clearing institutions to jointly hold two conferences on "Promoting Sound Operation of the Payment Systems" every year. However, owing to the COVID-19 pandemic, the conference held for securities clearing institutions including the TDCC, the TPEx, and the TWSE was suspended and replaced with report submission by the aforesaid institutions. The November meeting was held as scheduled and attended by payment clearing institutions including the FISC, the TCH, and the NCCC. The Bank urged clearing institutions to strengthen business continuity planning, enhance backup drills, and allocate appropriate operational staff to maintain business continuity in response to the pandemic or other emergencies.

(7) Strengthening Liquidity Management of the Interbank Funds Transfer Guarantee Special Account under the CIFS

In light of significant growth in interbank retail payment transactions and the commencement of internet-only banks, the Bank raised the ceiling on the amount of financial institutions' end-of-day balance in the Interbank Funds Transfer Guarantee Special Account to be counted as part of the required reserves from 8% to 16%, effective from February 2021. In 2021, the daily average balance of the Special Account as guarantee funds to ensure the smooth functioning of the interbank retail payment system on a 24/7 basis was approximately NT$167 billion.

Daily Balance of the Interbank Funds Transfer Guarantee Special Account under the CIFS



Source: Department of Banking, CBC.

Ensuring Business Continuity of Payment and Settlement Services During the Pandemic Period

To ensure business continuity of payment and settlement systems during the pandemic, CIFS participating institutions were requested to continue complying with the guidance promulgated by the Bank. For example, participating institutions should deploy appropriate operational staff depending on the pandemic situation and take the following measures when necessary, such as implementing remote backup systems and operational measures, entrusting other participating institutions to assist with transfer or payment of funds, and transferring funds using physical checks.

Furthermore, in May 2021, the Bank reiterated the pandemic precautions for the CGSS operations which were stipulated in 2020 as guidance to ensure that all CGSS participants maintain business continuity by means of off-site working and other measures. As a whole, the domestic payment and settlement systems operated smoothly throughout the year without being disrupted by the pandemic.

Continuing to Urge the FISC to Assist in Providing Sound Mobile Payment Infrastructure for Financial Institutions

To enhance information transmission and to facilitate transfer of funds between electronic payment institutions and between electronic payment institutions and financial institutions, the Bank required the FISC to construct an "inter-institutional electronic payment institutions platform," which was launched in October 2021, to provide the funds transfer service. The platform would also be expected to offer tax and bill payment services in 2022.

In addition, to improve the convenience of interbank funds transfer, the FISC launched the "mobile number funds transfer" service in September 2020 to allow users to transfer funds by linking one mobile phone number to one bank account as a payee account. Later, the service was expanded for users to designate one mobile number to multiple bank accounts in September 2021. As of the end of 2021, 29 financial institutions provided the service of mobile number funds transfer. Among them, eight financial institutions offered users the option to link multiple bank account with one mobile number.

Extending the PoC Project to a General Purpose CBDC

The Bank completed the first phase of the CBDC research, which was a technical study on the feasibility of a wholesale CBDC in June 2020. The results showed the limitations of applying distributed ledger technology (DLT) to CBDCs because the DLT's performance could not meet the needs for real-time, high-frequency, and large-scale payment transactions. The ongoing second phase is a proof-of-concept (PoC) study on a general purpose CBDC, which already entered the technical experimentation stage. A prototype for a CBDC platform was established to simulate the CBDC in retail payment use cases, and the study is expected to be completed in September 2022. The experiment results will be disclosed at an appropriate time and serve as a basis for public discussion, which the Bank plans to use to broadly solicit stakeholders' opinions to assess the possibility of CBDC issuance.

5. Currency Issuance

As the sole agency with the authority to issue banknotes and coins, the Bank continued in 2021 to ensure a stable currency supply to meet public demand, which is subject to domestic economic conditions, seasonal factors, and the development of noncash payment instruments. The Bank also issued commemorative coin sets featuring the Chinese zodiac of the year and national parks of Taiwan.

Furthermore, to mitigate the impact of the coronavirus pandemic, the Bank was instructed to design and print the Quintuple Stimulus Vouchers as part of government efforts to stimulate and revive the economy. Meanwhile, the Bank continued to promote public awareness of counterfeit deterrence and encourage the use of circulating currency through various channels. The Bank also developed easy-to-use assistive devices to aid the visually impaired in identifying NT dollar banknotes.

Currency Issuance Increased to Meet Currency Demand

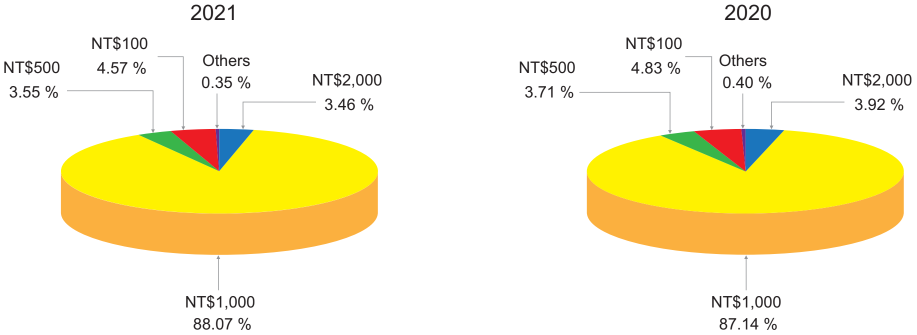
In 2021, the Bank provided an adequate amount of currency in response to currency demand. The currency issued peaked at NT$3,065.0 billion on February 9, the last business day before the Lunar New Year holidays, reflecting a temporary seasonal surge in cash demand. At the year end, the outstanding amount of currency issued was NT$2,948.4 billion, rising by NT$343.9 billion or 13.21% over the previous year end.

By denomination, the composition of NT dollar banknotes in circulation at the end

Currency Issued

Source: CBC.

Composition of NT Dollar Banknotes Issued
(Year-End Figures)



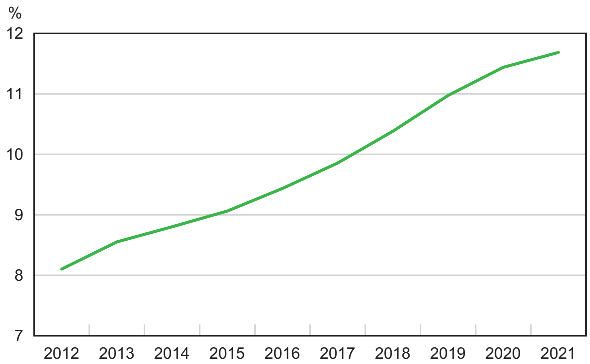
Source: CBC.

of 2021 was similar to the end of 2020. The majority of circulating banknotes went for the NT$1,000 note with a share of 88.07%, followed by the NT$100 and NT$500 notes with shares of 4.57% and 3.55%, respectively.

Currency in Circulation to GDP Rose Steadily

As domestic interest rates stayed at relatively low levels and cash was still frequently used for small-value transactions, the public's demand for currency remained high. The ratio of currency in circulation to GDP has continued to rise steadily since 2012 and reached 11.68% in 2021, 0.24 percentage points higher than the 11.44% of the previous year.

The Ratio of Currency Held by the Public to GDP



Sources: 1. CBC.
2. DGBAS, Executive Yuan.

Two Commemorative Coin Sets Were Issued

The Bank may also issue gold and silver coins and commemorative coins from time to time, such as for important ceremonies, national holidays, major international events, or other significant national events. During 2021, the Bank issued a casting set of coins for the Chinese Zodiac Year of the Ox and the tenth coin set of the National Parks of Taiwan series – Shoushan National Nature Park.

Commemorative Coin Set for the Chinese Zodiac Year of the Ox

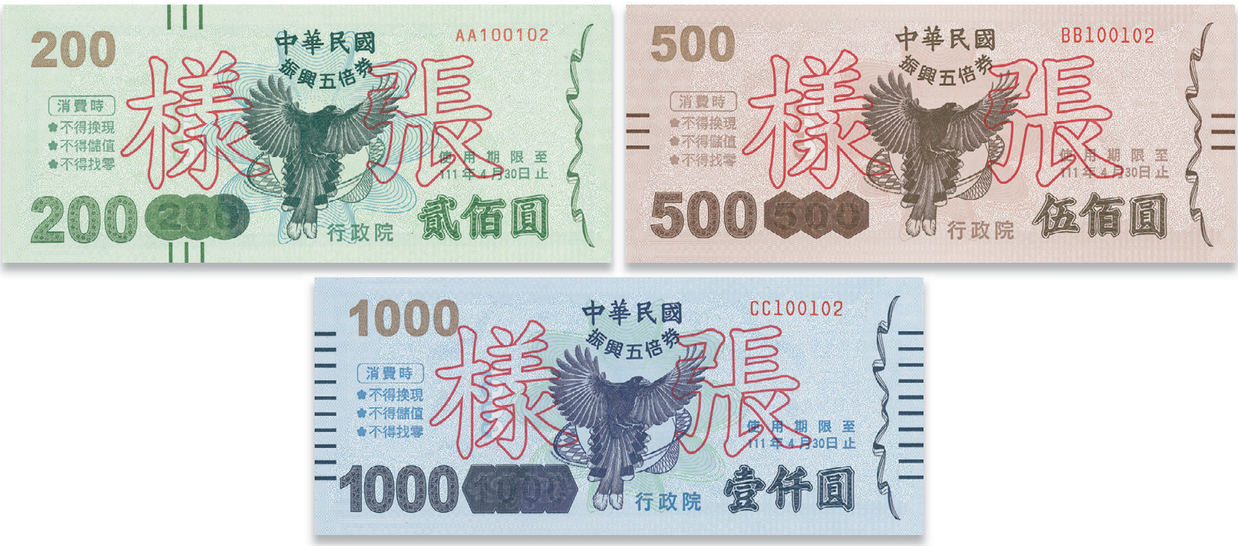
National Parks of Taiwan Series X - Shoushan National Nature Park

Source: CBC.

The Bank was Instructed to Print Quintuple Stimulus Vouchers to Assist Reviving Consumption

During 2021, in order to assist domestically-oriented service industries to weather a midyear domestic COVID-19 flare-up and encourage consumption, the government rolled out the Quintuple Stimulus Voucher program,[11] effective from October 8. The Central Engraving and Printing Plant, a subsidiary of the Bank, conducted the design of the vouchers with anti-counterfeiting techniques in August, and later completed the production of 19.5 million sets of paper vouchers (each set containing three NT$1,000 vouchers, two NT$500 vouchers and five NT$200 vouchers) on October 13.

Proof Copies of Quintuple Stimulus Vouchers



Source: CBC.

The Bank Continued to Encourage the Use of Circulating Currency and Raise Public Awareness of Counterfeit Money

In order to deter and prevent counterfeiting, reduce currency issuing costs, and protect the environment by maximizing existing resources, the Bank launched several advertising campaigns during 2021 to enhance public understanding on the security features of NT dollar notes and coins and to promote the use of circulating currency.

[11] Under the voucher program, any citizen born before April 30, 2022, foreign spouse, permanent foreign resident, or accredited diplomat can register to receive the Quintuple Stimulus Vouchers in digital or paper form. These vouchers are worth NT$5,000 and will be free of charge. Consumers could use the stimulus vouchers for dining, travel, leisure, or shopping expenses from October 8, 2021 to April 30, 2022.

While striving to improve the cleanliness of currency by inspecting returned banknotes and destroying damaged ones, the Bank also continued to urge the public to help maintain the cleanliness of circulating notes and coins.

Educational materials for these campaigns were provided through multiple channels. For example, relevant videos were broadcasted on media such as the Bank's website, the Virtual Money Museum, YouTube, and the Bank's official mobile app. Information was also posted on the Bank's Facebook fan page and displayed on public transportation. Leaflets were distributed to the public and relevant institutions.

The Bank Was Devoted to Providing the Visually Impaired with Barrier-free Access to Currency

Since 2020, the Bank has carried out a program to promote the "visually impaired-friendly NT dollar banknote identification service." The Bank made multifaceted efforts to improve the ability of visually impaired people to recognize banknotes by producing audio materials and entrusting local visually impaired support groups to assist in education, and by developing easy-to-use assistive devices such as the NT dollar banknote gauge card, which have been distributed for free to the visually impaired.

Raised-Dot Tactile Feature of NTD Banknotes (Left) and NTD Banknote Gauge Card (Right) for the Visually Impaired

Source: CBC.

The Virtual Money Museum Website Was Upgraded

The Bank's Virtual Money Museum has been running smoothly since it came on line in June 2013. In response to increased use of mobile technologies and the needs of various platforms and devices, the Bank launched the upgraded version of the Virtual Money Museum website in August 2020. For instance, the Virtual Exhibition Hall of the above website allowed viewers to browse banknotes from around the world classified in various themes.

Annual Exhibition 2021 Titled "Human Rights Fighters" on the Virtual Money Museum Website

Source: CBC.

6. Fiscal Agency Functions

The Bank, as the fiscal agent of the government, offers services for the national treasury, such as handling the treasury deposit account (TDA), managing central government agency deposit accounts, and undertaking the issuance, transfer and registration, redemption, and interest payment of central government bonds and treasury bills.

Managing the Treasury Deposit Account

The Bank manages the TDA on behalf of the Ministry of Finance, processing receipts and disbursements of the central government. In order to provide convenient services for government agencies and the general public, the Bank delegates the handling of treasury business to 14 financial institutions and their 367 branches, including three overseas branches located in New York, Los Angeles, and Paris. In addition, there are another 4,746 national tax collection agencies set in financial institutions. In 2021, the Bank received a total of NT$4,197.9 billion in treasury deposits, an increase of NT$264.7 billion or 6.73% over the previous year. Payments made on behalf of the national treasury were NT$4,183.5 billion, increasing by NT$245.7 billion or 6.24% from 2020. At the end of 2021, the TDA balance was NT$67.7 billion, an increase of NT$14.3 billion or 26.78% from the end of 2020.

Handling Central Government Agency Deposits

Central government agencies are required to make their deposits with the Bank or other delegated banks. At the end of 2021, the balance of central government agencies' deposits with the Bank amounted to NT$184.2 billion, a slight increase of NT$0.8 billion or 0.44% over 2020. Deposits with other delegated banks were NT$657.5 billion at the end of 2021, increasing by NT$38.9 billion or 6.29%.

Managing Central Government Bonds

As a fiscal agent, the Bank provides services related to the issuance, transfer and registration, redemption, and interest payment of central government bonds. The Bank also conducts the auctions of central government bonds. There are 57 domestic dealers qualified to directly participate in the auctions, including 23 banks, 19 securities companies, eight bills finance companies, six insurance companies, and Chunghwa Post.

In 2021, the Bank conducted 20 issues of central government bonds in book-entry form worth

NT$617.0 billion. Of this amount, 10-year bonds accounted for the lion's share of 34.04%, with NT$210.0 billion, followed by 20-year bonds, representing a share of 21.07% with an amount of NT$130.0 billion.

In addition, the Bank paid NT$467.0 billion in principal and NT$88.1 billion in interest for central government bonds. At the end of 2021, the outstanding amount of central government bonds was NT$5,674.5 billion, an increase of NT$150.0 billion or 2.72% from the previous year end.

Managing Treasury Bills

The Bank also handles the auctions of treasury bills. Currently, direct bidders include banks, insurance companies, securities companies, bills finance companies, and Chunghwa Post.

In 2021, the Bank conducted 10 issues of book-entry treasury bills with a total amount of NT$320.0 billion. The majority of the issuance went for 91-day bills with NT$165.0 billion, or a share of 51.56%. At the end of 2021, the outstanding amount of treasury bills was NT$115.0 billion, a decrease of NT$10.0 billion or 8.00% from the end of 2020.

7. Financial Inspection

Pursuant to the objectives and duties stipulated in *The Central Bank of the Republic of China (Taiwan) Act*, the Bank conducts targeted examinations to ensure that monetary, credit, and foreign exchange policies are implemented effectively. The Bank has also established a report auditing system and a financial stability assessment framework to systematically monitor and assess possible sources of potential risks. The Bank adopts appropriate policies accordingly, in a timely manner to achieve the operational goal of financial stability. The following are the main tasks conducted in 2021.

On-Site Examination

Targeted examinations in 2021 were conducted on real estate mortgage loans and related fund flows, loan pricing policies, foreign exchange inward and outward remittances, customers' foreign exchange settlement of loans from abroad, derivatives transactions involving NTD exchange rates, deficiency corrections for forward exchange transactions, and counterfeit money processing of NTD and foreign currencies, etc.

Follow-up on Examination Findings

To ensure the effectiveness of the Bank's policies, the Bank continued to track whether the financial institutions under inspection had improved their operations based on the findings from the Bank's targeted examinations as well as the results of the Financial Supervisory Commission's financial examinations related to the Bank's operations or regulations. A particular focus in 2021 was on violations of the *Regulations Governing the Extension of Mortgage Loans by Financial Institutions*, followed up by administrative actions by the Bank.

Strengthening Off-Site Monitoring

In view of changes in financial conditions and amendments to financial regulations, the Bank constantly reviews and revises all relevant reporting forms and contents of statistical data submitted by financial institutions. Developments related to off-site monitoring in 2021 included the following:

(1) To strengthen its effectiveness of off-site monitoring of domestic banks, the analytical items and principles of the report auditing system CARSEL were reviewed and modified.

(2) Relevant reports and their analytical categories of financial institutions were modified in accordance with the amendments to "*the Methods for Calculating Bank's Regulatory Capital and Risk-Weighted Assets*" and the *Regulations Governing Foreign Bank Branches and Representative Offices*, as well

as the announcements and modifications of related regulations and administrative orders including the *Regulations Governing Domestic Juridical Persons Opening Accounts for the Purpose of Handling Loan-Related Receipts and Disbursements in Offshore Banking Units*.

(3) In accordance with the revisions to the *Country Exposure Report* and its related analytical programs, banks were required to submit the completed Reports through the Bank's Financial Information Online Reporting System.

Improving Information Transparency of Financial Institution Operations

The Bank regularly compiles and publishes financial institution statistics, such as *Condition and Performance of Domestic Banks (Quarterly)* and *Business Overview of Financial Institutions (Yearly)*. All related information is disclosed on the Bank's website and available for inquiry and download, with the aim of strengthening information transparency of financial institutions' operations and to reinforce market discipline.

Financial Stability Assessment

The Bank regularly conducts analysis on commercial banks' business operations and their risk exposure so as to identify potential risks to the stability of the overall financial system. It also compiles financial soundness indicators and publishes the *Financial Stability Report* to keep the public updated on the state of the domestic financial system and sources of potential risks and to aid cross-border communication and information sharing.

To enhance analytical effectiveness regarding financial stability, the Bank continued to improve the graphical user interface (GUI) of credit and market risk models and estimated domestic banks' value at risk (VaR) and unexpected losses from related risks, so as to capture the vulnerability of the banking system and to take preemptive measures.

In addition, climate change-related issues, which have increasingly drawn supervisory authorities' attention, have created new challenges and risks to central banks' conduct of monetary policy and the statutory mandate to maintain financial stability. In this view, the Bank devised strategies for addressing climate change issues, aiming to mitigate the impacts of related risks on domestic economic and financial systems so as to maintain financial stability and foster sustainable development of Taiwan's economy.

International Cooperation in Financial Supervision

In 2021, the Bank continued to actively engage in international cooperation related to financial supervision, such as attending the 12th SEACEN Meeting of Deputy Governors in Charge of Financial

Stability and Banking Supervision, the 23rd SEACEN-FSI Conference of the Directors of Supervision of Asia-Pacific Economies, and the 34th Meeting of Directors of Supervision of SEACEN Members (all held in virtual format). The Bank's delegates also attended international teleconferences, online courses, and webinars on financial supervision and financial stability.

8. Participation in International Activities

The Bank's endeavors to take part in international activities continued in 2021. As a member, the Bank hosts conferences, provides training courses, and attends numerous forums, including the annual meetings organized by the Asian Development Bank (ADB), the Central American Bank for Economic Integration (CABEI), and the South East Asian Central Banks (SEACEN) group. Furthermore, the Bank strengthens its ties with other central banks and related institutions to exchange views and share policy experience on current financial and economic issues.

In 2021, the Bank attended the 57th SEACEN Governor's Conference held virtually on December 6. At this conference, the Bank exchanged views with other member banks on the deep economic and financial impact of the COVID-19 pandemic on the global economy, and reaffirmed its commitment to help mitigate the pandemic's impact through policy responses on macroeconomic and financial fronts.

The Bank also attended the 12th SEACEN Online High-Level Seminar and Meeting of Deputy Governors of Financial Stability and Supervision during August 18 to 19.

In the meantime, the Bank participated in the meetings held virtually by other international organizations, such as the CABEI's 61st Ordinary Meeting of the Board of Governors on September 3, and the BIS' 91st Annual General Meeting on June 28 and 29.