

4. Foreign Exchange Market

The NT Dollar Exchange Rate

In 2023, on a daily average basis, the NT dollar appreciated against the Japanese yen and the renminbi (RMB) but depreciated against the euro, the US dollar and the Korean won. The trade-weighted nominal effective exchange rate index of the NT dollar decreased by 2.1% on a daily average basis. The exchange rate movements of the NT dollar vis-à-vis each of the above foreign currencies are as follows.

During the course of the year, the NT dollar against the US dollar depreciated broadly. At the beginning of the year, inflationary pressures in the United States eased amid market expectations that the Fed might slow down its pace of interest rate hikes. As the US dollar weakened, coupled with capital inflows to Taiwan, the NT dollar appreciated against the US dollar towards a yearly high of 29.700 on February 2. Then, the Fed raised interest rates by 0.25 percentage points, with Fed Chair Jerome Powell indicating that maintaining a tight monetary policy stance for a period might be necessary to achieve price stability; as a result, the US dollar strengthened and the NT dollar depreciated. After the collapse of Silicon Valley Bank in March, the market reduced expectations of a strong Fed interest rate hike, causing the US dollar to fall and the NT dollar to appreciate. Subsequently, amid persisting inflation, the Fed raised interest rates by 0.25 percentage points in March, May, and July. Additionally, escalating tensions in the Middle East in October increased market demand for safe-haven assets, also bolstering the US dollar. Furthermore, foreign portfolio investors began to realize profits from July onwards, resulting in net capital outflows that drove a continuous depreciation of the NT dollar against the US dollar. In November and December, as the Fed kept its policy rate unchanged and US inflation rates were lower than expected, the US dollar weakened and the NT dollar appreciated against the US dollar. At the end of 2023, the NT dollar depreciated by 0.1% against the US dollar compared with the end of the previous year. On a daily average basis, the NT dollar depreciated against the US dollar by 4.4% in 2023.

In the first half of 2023, the NT dollar depreciated against the euro, while in the second half, it fluctuated within a certain range. At the beginning of the year, inflationary pressures in the euro area remained high. As the European Central Bank (ECB) raised interest rates by 0.5 percentage points in February and again in March despite the Swiss Credit crisis, the euro strengthened and the NT dollar depreciated against the euro. Then, three more rate hikes by 0.25 percentage points in May, June, and July also sent the euro higher, and the NT dollar against the euro thus weakened. After another

rate hike by 0.25 percentage points in September, poor economic data and easing inflation in the euro area led to market expectations that the ECB would soon end its tightening cycle, causing the euro to depreciate. Subsequently, as the ECB kept its policy rates unchanged in both October and December and announced the cessation of reinvestment under the Pandemic Emergency Purchase Programme (PEPP) before 2024, the euro strengthened and the NT dollar depreciated against the euro. Compared with the end of the previous year, the NT dollar depreciated against the euro by 3.8% at the end of 2023. On a daily average basis, the NT dollar depreciated against the euro by 6.9%.

In 2023, the NT dollar generally appreciated against the yen. In the first half of the year, the Bank of Japan (BoJ) maintained an extremely loose monetary policy, keeping the yen under pressure. However, the collapse of the Silicon Valley Bank in March stimulated safe-haven demand, leading the yen to appreciate temporarily. In July, the BoJ raised its economic growth forecast, driving the yen to strengthen, and the NT dollar depreciated against the yen. The BoJ's emphasis on maintaining loose monetary policy and the smaller-than-expected adjustment of the yield curve control (YCC) policy at the end of October weakened the yen, and the NT dollar thus appreciated against the yen. In late November, Japan's core CPI inflation rate turned higher than the previous month, which raised market expectations that the BoJ might end its loose monetary policy earlier. As a result, the yen appreciated and the NT dollar depreciated against the yen. In mid-December, the BoJ kept its policy interest rates unchanged, causing the NT dollar to appreciate against the yen. Compared to the end of 2022, the NT dollar appreciated by 6.9% against the yen by the end of 2023. In terms of average exchange rates, the NT dollar appreciated by 2.1% against the yen compared to the previous year.

In the first half of 2023, the NT dollar initially depreciated against the RMB and then appreciated, while the exchange rate fluctuated within a narrow range in the second half of the year. At the beginning of the year, China reopened its borders and implemented monetary, fiscal, and housing market support policies. Market expectations for its economic recovery were optimistic, supporting the RMB and leading the NT dollar to depreciate against the RMB. Then, tensions escalated between the United States and China, and the RMB depreciated further on an easing of monetary policy by the People's Bank of China (PBoC). Entering the second half of the year, China attempted to stabilize the RMB exchange rate through measures such as adjusting the counter-cyclical factor in the central parity quotation and altering the required reserve ratio for foreign currency deposits, which supported the RMB and led to NTD depreciation against the RMB. In early December, the international credit rating agency Moody's revised down China's sovereign credit outlook, causing the NT dollar to appreciate against the RMB. Compared to the end of 2022, the NT dollar appreciated by 1.9% against the RMB by the end of 2023. In terms of average exchange rates, the

NT dollar also appreciated by 0.5% against the RMB compared to the previous year.

In 2023, the NT dollar first appreciated and then depreciated against the won. At the beginning of the year, the won appreciated due to the Bank of Korea's (BoK's) rate hike. In the following months, the BoK decided to keep the policy rate unchanged, leading to market expectations that South Korea's rate hike cycle was nearing its end. This resulted in an appreciation of the NT dollar against the won. In July, with the BoK indicating potential future rate hikes and a rise in South Korean government bond yields, driving net foreign capital inflows, the won strengthened. In October, though improvements in South Korea's exports and a record low unemployment rate supported the

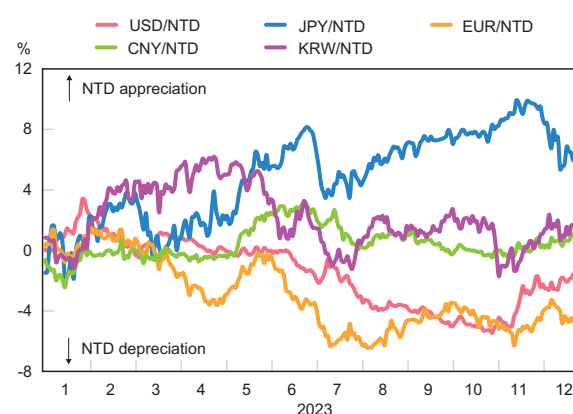
Annual Changes of NTD Exchange Rate Against Major Currencies

	NTD/USD	NTD/EUR	NTD/JPY	NTD/CNY	NTD/KRW
Exchange Rate (2023/12/29)	30.735	34.011	0.2173	4.3338	0.0237
Exchange Rate (2022/12/30)	30.708	32.709	0.2324	4.4175	0.0244
Annual Change	-0.1%	-3.8%	6.9%	1.9%	2.7%
Average Exchange Rate (2023)	31.150	33.682	0.2217	4.3973	0.0239
Average Exchange Rate (2022)	29.777	31.357	0.2264	4.4198	0.0231
Annual Change	-4.4%	-6.9%	2.1%	0.5%	-3.4%

Source: Department of Economic Research, CBC.

won, the BoK decided to freeze the policy rate, leading to narrow fluctuations of the NT dollar exchange rate against the won. Thereafter, with the BoK maintaining its policy rate and milder-than-expected inflation data released in late December, it raised market expectations for a BoK rate cut, strengthening the NT dollar against the won. Compared with the end of 2022, the NT dollar appreciated by 2.7% against the Korean won at the end of 2023. On a daily average basis, the NT dollar depreciated by 3.4% against the won in 2023.

Percentage Changes of NT Dollar Against Major Currencies (Compared with End-2022)



Source: Department of Economic Research, CBC.

Foreign Exchange Trading

Trading in the Taipei foreign exchange market increased in 2023. Total net trading volume for the year was US\$9,341.0 billion, representing an 8.8% year-on-year increase. The daily average turnover was US\$37.8 billion in 2023.

In terms of trading partners, transactions between banks and non-bank customers accounted for 30.6% of the total turnover, while interbank transactions made up 69.4%, including 21.7% for transactions among local banks and 47.7% for those between local banks and overseas banks.

As far as traded currencies were concerned, NT dollar trading against foreign currencies accounted for 45.1% of the total trading volume, of which trading against the US dollar made up a dominant 43.5%. Transactions in third currencies contributed to 54.9% of the total trading volume, with trading in currency pairs of USD-RMB, USD-euro, and USD-yen accounting for respective shares of 19.7%, 8.4%, and 8.1%. Compared with 2022, NT dollar trading against foreign currencies increased by 1.2% while transactions in third currencies increased by 16.0%.

With respect to types of transactions, the major types were foreign exchange swaps and spots, accounting for 51.1% and 38.6% of total turnover, respectively. Compared with 2022, the trading volumes of forwards, swaps, options, and cross currency swaps increased, whereas those of spots and margin

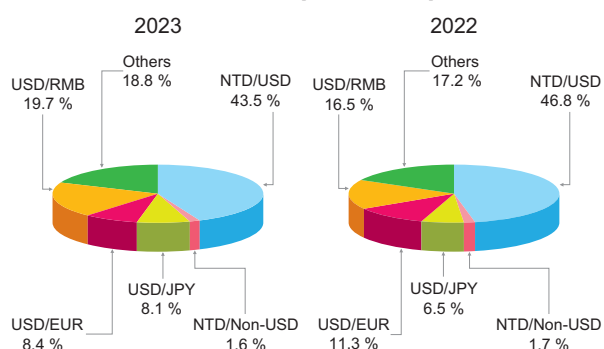
Turnover of Major Products in the Taipei Foreign Exchange Market

Unit: US\$ billion

Year	Spots	Forwards	Forex Swaps	Margin Trading	Options	Cross Currency Swaps	Total
2019	3,079.5	662.0	4,007.1	6.4	213.7	45.3	8,014.0
2020	3,408.8	503.7	4,110.9	7.3	206.0	34.5	8,271.0
2021	3,584.5	507.6	3,839.4	4.7	222.7	29.1	8,188.1
2022	3,658.9	522.1	4,174.0	6.6	206.0	14.9	8,582.6
2023	3,608.3	681.0	4,773.8	4.2	258.3	15.6	9,341.0
2022-2023 Annual Growth Rate (%)	-1.4	30.4	14.4	-36.4	25.4	4.0	8.8

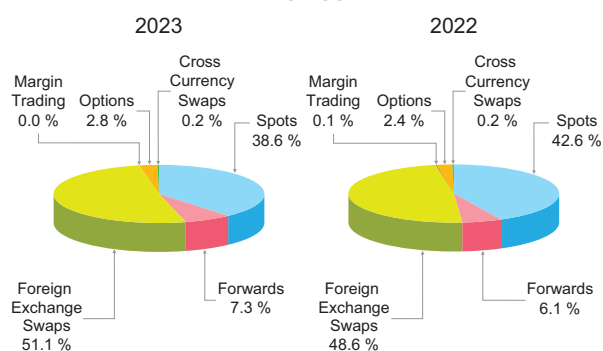
Source: Department of Foreign Exchange, CBC.

Composition of Foreign Exchange Transactions by Currency Pair



Source: Department of Foreign Exchange, CBC.

Composition of Foreign Exchange Transactions by Type of Product



Source: Department of Foreign Exchange, CBC.

trading decreased.

For other foreign currency derivatives, including forwards, swaps, and options based on foreign currency interest rates, stock price indices, commodity prices, and credit derivatives, their combined turnover was US\$260.8 billion. Of this amount, interest rate-related derivatives accounted for the lion's share at 98.4% with US\$256.6 billion, decreasing by 16.6% from the previous year. Interest rate futures accounted for the majority of this decrease.

Turnover of Other Products in the Taipei Foreign Exchange Market

Unit: US\$billion

Year	Interest Rate-Related Products				Commodity-Related Products	Stock Index Options	Credit Derivatives	Total
	Interest Rate Swaps	Interest Rate Options	Foreign Currency Interest Rate Futures	Subtotal	Commodity Options			
2019	70.8	12.4	96.8	180.0	3.8	0.4	1.0	185.1
2020	52.1	9.6	34.9	96.6	3.1	0.1	0.4	100.2
2021	79.0	10.7	104.3	194.0	4.1	0.4	0.6	199.2
2022	90.4	14.7	202.6	307.6	2.9	0.3	0.8	311.7
2023	79.8	8.6	168.3	256.6	1.8	1.9	0.5	260.8
2022-2023 Annual Growth Rate (%)	-11.7	-41.4	-16.9	-16.6	-39.5	448.1	-39.9	-16.3

Note: "Forward agreements" is excluded from the table because the turnover has been zero since 2017.

Source: Department of Foreign Exchange, CBC.

Renminbi Business

Renminbi investment tools became even more diversified during 2023. By the end of 2023, there were 65 domestic banking units (DBUs) and 56 offshore banking units (OBUs) engaging in renminbi business. The balance of renminbi deposits amounted to RMB130.8 billion; renminbi remittances totaled RMB2,424.2 billion in 2023; renminbi settlement through the Taipei Branch of the Bank of China totaled RMB5,706.1 billion.

Renminbi Business Conducted by Financial Institutions

Unit: RMB Billions

Business Items	Amount
Deposit balance (including NCDs, end of 2023)	130.8
Total remittances (February 2013 to December 2023)	19,465.2
Total settlement through the Taipei Branch of the Bank of China (February 2013 to December 2023)	49,204.0
Total value of 204 RMB-denominated bonds issued (as of the end of 2023)	135.5
Accumulated premium receipts from RMB-denominated investment-linked insurance business (February 2013 to December 2023)	21.8
Accumulated premium receipts from RMB-denominated traditional insurance business (April 2014 to December 2023)	9.7

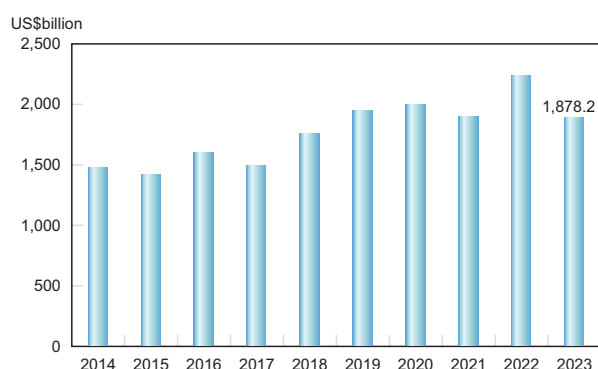
Source: Department of Foreign Exchange, CBC.

Foreign Currency Call Loan & Swap Markets

The transaction volume in the foreign currency call loan market in 2023 was US\$1,878.2 billion, a decrease of 15.7% over the previous year. Of this amount, US dollar transactions accounted for a dominant share with US\$1,734.9 billion, making up 92.4% of the total while decreasing by 16.2% from 2022. Renminbi transactions reached RMB685.1 billion in 2023, making up a share of 5.2% of the total and recording a year-on-year fall of 19.7% in volume. Japanese yen transactions reached ¥1,452.6 billion in 2023, representing a small share of 0.5% of the total with a year-on-year decrease of 50.8% in volume. The amount of euro transactions amounted to around €2.0 billion, with a modest share of 1.0%. Other currencies accounted for a combined 0.9% of the total transaction volume. The balance of foreign currency call loan transactions stood at US\$57.2 billion at the end of 2023.

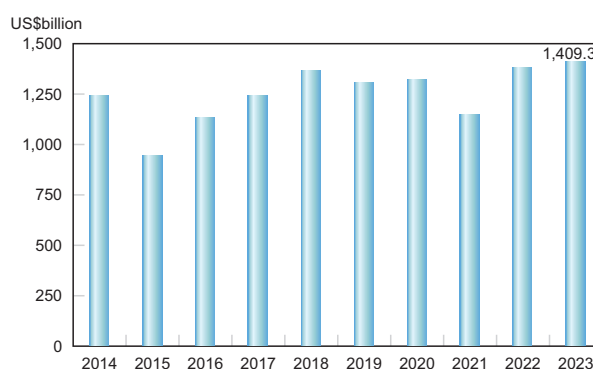
The volume of foreign currency-NTD swap transactions reached US\$1,409.3 billion, 2.7% more than 2022, while the balance was US\$274.6 billion at the end of 2023.

Transactions in the Foreign Currency Call Loan Market



Source: Department of Foreign Exchange, CBC.

Transactions in the Foreign Currency Swap Market



Source: Department of Foreign Exchange, CBC.

OBU Assets

There were 59 OBUs at the end of 2023, with 35 of them operated by domestic banks and the other 24 by foreign banks. The total assets of all OBUs increased to US\$277.3 billion at the end of the year, representing an increase of US\$11.2 billion, or 4.2%, from the previous year end owing to increasing portfolio investments. Domestic banks' OBUs made up 89.9% of these combined assets with an amount of US\$249.2 billion, and the OBUs of foreign banks accounted for 10.1% of the total with US\$28.1 billion.

In terms of the uses of funds, portfolio investments represented the majority share of 44.0% of total OBU assets with an amount of US\$122.0 billion. Claims on financial institutions and loans to non-financial institutions came in second and third place, accounting for 28.2% and 25.3% of total OBU

assets. In terms of the destinations for funds, Asia accounted for the majority with a share of 46.0%, followed by America at 33.7%.

The OBUs' main source of funds came from due to financial institutions, making up 50.1% of total liabilities and equity. Deposits of non-financial institutions accounted for 40.8% of the total. The main funding origin of OBUs was Asia, accounting for 64.1%, followed by America with a share of 25.4%.

Forex trading turnover of all OBUs increased by 41.7% to US\$1,187.9 billion, of which US\$610.4 billion went for spot transactions, US\$184.1 billion for forward transactions, and US\$393.5 billion for forex swap transactions. Compared with the previous year, the growth rates of trading of spots, forwards, and forex swaps were 25.1%, 37.3%, and 82.1%, respectively.

For OBUs, total turnover of other derivatives products decreased by 0.7% to US\$433.9 billion over the previous year. Of this amount, options transactions registered a turnover of US\$171.4 billion, making up 39.5% of the total.

Balance Sheet of OBUs in Banking System

Unit: US\$billion

Year / Month (End of month)	Loans to Non-financial Institutions	Portfolio Investment	Claims on Financial Institutions	Other Assets	Total Assets= Total Liabilities & Equity	Deposits of Non-financial Institutions	Due to Financial Institutions	Securities Issued	Other Liabilities & Equity
2019/12	80.2	72.2	58.4	11.0	221.9	86.7	110.8	0.0	24.3
2020/12	79.0	86.0	61.9	12.5	239.5	91.1	124.9	0.0	23.5
2021/12	78.5	93.7	68.2	9.5	249.9	104.5	125.1	0.0	20.3
2022/12	76.0	108.2	75.7	6.2	266.1	117.7	128.0	0.0	20.5
2023/12	70.2	122.0	78.3	6.7	277.3	113.3	138.8	0.0	25.2
2022/12-2023/12 Growth Rate (%)	-7.6	12.7	3.4	8.2	4.2	-3.8	8.4	0.0	23.4

Sources: *Financial Statistics Monthly*, CBC; Department of Foreign Exchange, CBC.