

4. Foreign Exchange Market

The NT Dollar Exchange Rate

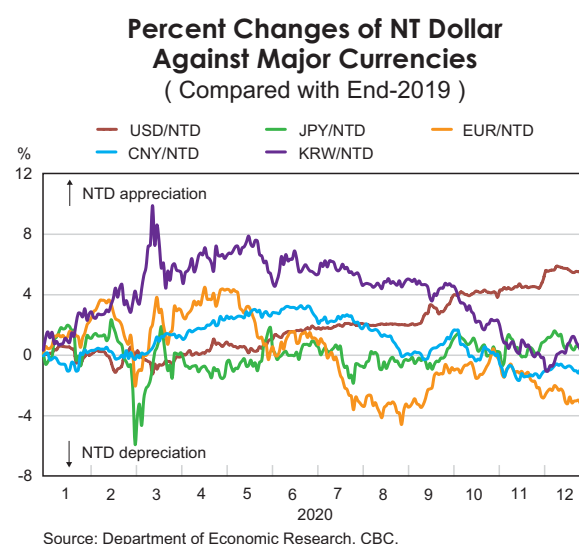
On a daily average basis in 2020, the NT dollar appreciated against the Korean won, the US dollar, the renminbi (RMB), the euro and the Japanese yen. The trade-weighted nominal effective exchange rate index of the NT dollar increased by 4.29% on a daily average basis. The exchange rate movements of the NT dollar vis-à-vis each of the above foreign currencies are analyzed as follows.

During the course of the year, the NT dollar against the US dollar appreciated slightly. Early in the year, the COVID-19 pandemic impacted the world, which led to an increase in safe-haven demand for US dollars; however, the pandemic in Taiwan was well controlled, resulting in the NT dollar against the US dollar fluctuating within a limited range. In March, although the Fed cut interest rates twice and declared it would purchase Treasury securities and agency mortgage-backed securities in the amounts needed, the NT dollar depreciated against the US dollar owing to net foreign capital outflows. Then, as the Fed announced US\$2.3 trillion worth lending facilities in early April and later reiterated its commitment to support the pandemic-hit economy with low interest rates, the NT dollar appreciated against the US dollar. In the second half of 2020, the pandemic worsened in the United States, which led investors to worry that the pace of the economic recovery had moderated, and US President Donald Trump signed into law a US\$2.3 trillion pandemic aid and spending package. Against this backdrop, combined with the repatriation of offshore funds, the NT dollar appreciated continuously against the US dollar. At the end of 2020, the NT dollar appreciated by 5.61% against the US dollar compared with the end of the previous year. On a daily average basis, the NT dollar appreciated against the US dollar by 4.55% in 2020.

In 2020, the NT dollar against the euro appreciated in the first four months and depreciated toward the year end. Early in the year, the COVID-19 pandemic spread in Europe and affected economic activity. In March, the euro weakened on the ECB's announcement of a temporary envelope of additional net asset purchases of €120 billion until the end of the year, leading the NT dollar to appreciate against the euro. In the second quarter, the European Commission (EC) announced a plan to set up a €750 billion recovery fund to boost investor confidence in the euro area's economic outlook, sending the NT dollar against the euro to a yearly low of 35.399 on September 1. Late in September, the NT dollar appreciated against the euro as the euro was constrained by the second wave of COVID-19 in Europe. Later, the NT dollar depreciated against the euro as the euro strengthened on the back of the EC's approval of COVID-19 vaccine use, the ECB's expansion of its emergency bond buying, and a trade deal to avoid post-Brexit chaos. Compared with the end of the previous year, the NT dollar depreciated against the euro by 3.73% at the end of 2020. On a daily average basis, the NT dollar appreciated against the euro by 2.47%.

During the course of the year, the NT dollar against the yen fluctuated narrowly, except for a brief depreciation in March. Early in the year, the COVID-19 pandemic outbreak drove the yen higher on safe-haven demand, sending the NT dollar against the yen to a yearly low of 0.2946 on March 9. Later, because of the escalation of the COVID-19 outbreak in Japan, the NT dollar appreciated against the yen. From April on, the NT dollar against the yen fluctuated in tandem with the developments in the pandemic, US-China relations, prospects of a global economic recovery, the US presidential election, and vaccine progress. In sum, the NT dollar appreciated by 0.23% against the yen at the end of 2020 compared with the previous year end. On a daily average basis, the NT dollar appreciated against the yen by 2.41%.

The NT dollar against the RMB appreciated in the first half of 2020 and depreciated toward the end of the year. Early in the year, because of RMB strength on the signing of the US-China "phase one" economic and trade agreement, the NT dollar depreciated against the RMB. From then through to June, the NT dollar rose on RMB weakness mainly as result of the People's Bank of China's monetary policies to mitigate the impact of a rapid COVID-19 spread, as well as renewed US-China tensions since May; therefore, the NT dollar against the RMB appreciated and reached a yearly high of 4.1857 on June 29. In the second half of 2020, China's better-than-anticipated economic recovery, expectations of improved US-China tensions after the US presidential election in November, and the signing of the Regional Comprehensive Economic Partnership (RCEP) on November 15 combined to result in a depreciation of the NT dollar against the RMB. Overall, the NT dollar



Annual Changes of NTD Exchange Rate Against Major Currencies

	NTD/USD	NTD/EUR	NTD/JPY	NTD/CNY	NTD/KRW
Exchange Rate (2020/12/31)	28.508	35.056	0.2765	4.3592	0.0262
Exchange Rate (2019/12/31)	30.106	33.749	0.2771	4.3217	0.0261
Annual Change	5.61%	-3.73%	0.23%	-0.86%	-0.65%
Average Exchange Rate (2020)	29.578	33.784	0.2770	4.2862	0.0251
Average Exchange Rate (2019)	30.925	34.620	0.2837	4.4765	0.0265
Annual Change	4.55%	2.47%	2.41%	4.44%	5.89%

Source: Department of Economic Research, CBC.

depreciated against the RMB by 0.86% between end-2019 and end-2020. On a daily average basis, the NT dollar appreciated by 4.44% against the RMB when compared with the previous year.

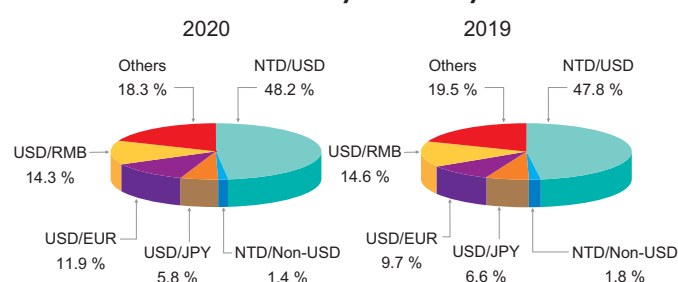
The NT dollar against the Korean won appreciated in the first five months and depreciated broadly in the rest of 2020. Early in the year, two policy rate cuts by the Bank of Korea in March and May in view of weak exports and impacts from sharp increases in COVID-19 cases, as well as rising tensions on the Korean Peninsula, led the won to weaken and the NT dollar against the won to appreciate. In the second half of 2020, the Korean won strengthened on a moderate economic expansion and an upgraded GDP growth forecast for 2020 and the NT dollar depreciated against the won. Compared with the end of 2019, the NT dollar depreciated by 0.65% against the Korean won at the end of 2020. On a daily average basis, the NT dollar appreciated by 5.89% against the won in 2020.

Foreign Exchange Trading

Trading in the Taipei foreign exchange market increased in 2020. Total net trading volume for the year was US\$8,271.0 billion, representing a 3.2% year-on-year increase. The daily average turnover was US\$33.1 billion in 2020.

In terms of trading partners, transactions between banks and non-bank customers accounted for 32.9% of the total turnover, while interbank transactions made up 67.1%, including 23.2% for transactions among local banks and 43.9% for those between local banks and overseas banks.

Composition of Foreign Exchange Transactions by Currency Pair



Source: Department of Foreign Exchange, CBC.

Turnover of Major Products in the Taipei Foreign Exchange Market

Unit: US\$ Million

Year	Spots	Forwards	Forex Swaps	Margin Trading	Options	Cross Currency Swaps	Total
2016	2,780,002	477,036	3,430,524	17,437	358,694	50,109	7,113,802
2017	2,826,236	423,119	3,550,558	12,402	242,537	43,934	7,098,786
2018	3,111,414	567,790	3,992,873	7,876	249,254	58,354	7,987,560
2019	3,079,471	661,954	4,007,094	6,430	213,734	45,308	8,013,990
2020	3,408,766	503,730	4,110,852	7,265	205,969	34,458	8,271,041
2019-2020 Annual Growth Rate (%)	10.7	-23.9	2.6	13.0	-3.6	-23.9	3.2

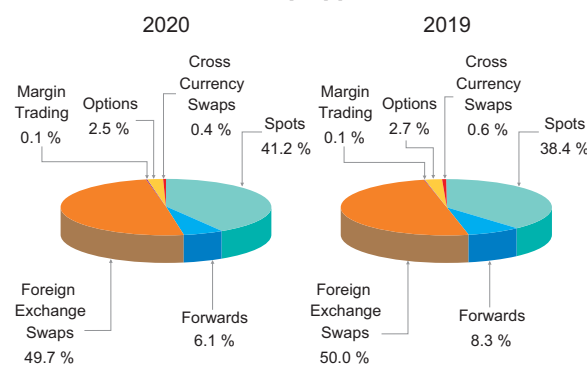
Source: Department of Foreign Exchange, CBC.

As far as traded currencies were concerned, NT dollar trading against foreign currencies accounted for 49.6% of the total trading volume, of which trading against the US dollar (USD) made up a dominant 48.2%. Transactions in third currencies contributed to 50.4% of the total trading volume, with trading in currency pairs of USD-RMB, USD-euro, and USD-yen accounting for respective shares of 14.3%, 11.9%, and 5.8%. Compared with 2019, NT dollar trading against foreign currencies and transactions in third currencies both increased by 3.2%.

With respect to types of transactions, the major types were foreign exchange swaps and spots, accounting for 49.7% and 41.2% of total turnover, respectively. Compared with 2019, the trading volume of spots, foreign exchange swaps and margin trading increased, whereas those of the other types 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, total turnover amounted to US\$100.2 billion. Of this amount, interest rate-related derivatives accounted for the lion's share at 96.4% with US\$96.6 billion, decreasing by 46.3% from the previous year. Interest rate futures accounted for the majority of this decrease, down by US\$61.9 billion.

Composition of Foreign Exchange Transactions by Type of Product



Source: Department of Foreign Exchange, CBC.

Turnover of Other Products in the Taipei Foreign Exchange Market

Unit: US\$ Million

Year	Interest Rate-Related Products					Commodity-Related Products	Stock Index Options	Credit Derivatives	Total
	Forward Rate Agreements	Interest Rate Swaps	Interest Rate Options	Foreign Currency Interest Rate Futures	Subtotal	Commodity Options			
2016	120	41,952	5,743	51,222	99,037	3,053	145	933	103,168
2017	-	49,453	11,412	116,911	177,776	2,802	121	857	181,556
2018	-	78,848	25,974	149,310	254,132	3,524	403	2,861	260,920
2019	-	70,809	12,429	96,751	179,989	3,771	384	969	185,113
2020	-	52,113	9,580	34,882	96,576	3,087	147	399	100,208
2019-2020 Annual Growth Rate (%)	-	-26.4	-22.9	-63.9	-46.3	-18.1	-61.8	-58.8	-45.9

Source: Department of Foreign Exchange, CBC.

Renminbi Business

Renminbi investment tools became even more diversified during 2020. By the end of 2020, there were 65 domestic banking units (DBUs) and 57 offshore banking units (OBUs) engaging in renminbi business. The balance of renminbi deposits amounted to RMB244.5 billion; renminbi remittances totaled RMB1,615.5 billion in 2020; and renminbi settlement through the Taipei Branch of the Bank of China totaled RMB4,907.2 billion.

Renminbi Business Conducted by Financial Institutions

Unit: RMB Billion

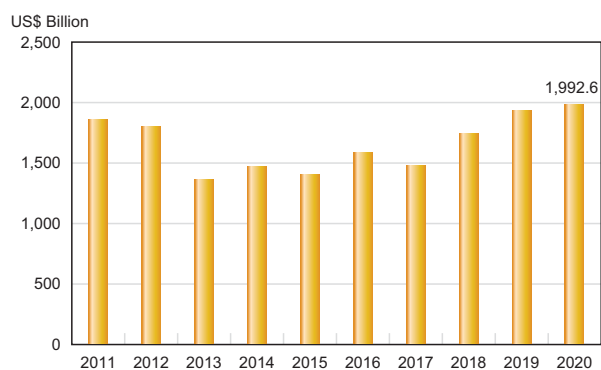
Business Items	Amount
Deposit balance (include NCDs, end of 2020)	244.5
Total remittances (February 2013 to December 2020)	13,002.7
Total settlement through the Taipei Branch of the Bank of China (February 2013 to December 2020)	32,645.0
Total value of 180 RMB-denominated bonds issued (as of the end of 2020)	118.7
Accumulated premium receipts from RMB-denominated investment-linked insurance business (February 2013 to December 2020)	20.5
Accumulated premium receipts from RMB-denominated traditional insurance business (April 2014 to December 2020)	7.2

Source: Department of Foreign Exchange, CBC.

Foreign Currency Call Loan & Swap Market

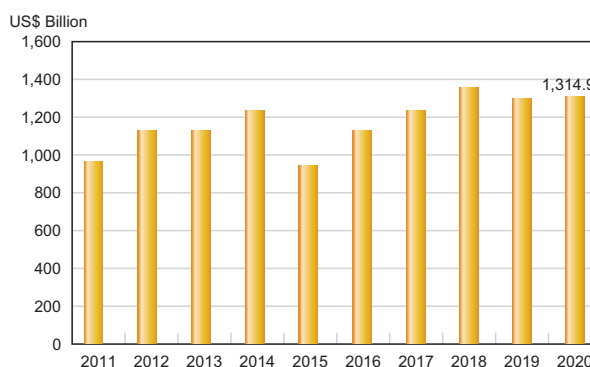
The transaction volume in the foreign currency call loan market in 2020 was US\$1,992.6 billion, an increase of 2.8% over the previous year. Of this amount, US dollar transactions accounted for a dominant share with US\$1,912.2 billion, making up 96.0% of the total while increasing by 5.3% from

Transactions in the Taipei Foreign Currency Call Loan Market



Source: Department of Foreign Exchange, CBC.

Transactions in the Foreign Currency Swap Market



Source: Department of Foreign Exchange, CBC.

2019. Renminbi transactions reached RMB440.7 billion in 2020, making up a share of 3.2% of the total and recording a year-on-year fall of 39.9% in volume. Japanese yen transactions reached ¥381.6 billion in 2020, representing a small share of 0.2% of the total with a year-on-year decrease of 47.4% in volume. The amount of euro transactions amounted to around €2.0 billion, with a modest share of 0.1%. Other currencies accounted for a combined 0.5% of the total transaction volume. The balance of foreign currency call loan transactions at the end of 2020 was US\$52.8 billion.

The volume of foreign currency-NTD swap transactions reached US\$1,314.9 billion, 1.0% more than 2019, while the balance was US\$263.2 billion at the end of 2020.

OBU Assets

There were 59 OBUs at the end of 2020, with 36 of them operated by domestic banks and the other 23 by foreign banks. The total assets of all OBUs increased to US\$239.5 billion at the end of the year, representing an increase of US\$17.6 billion, or 7.9%, from the previous year end owing to increasing portfolio investments. Domestic bank OBUs made up 89.7% of these combined assets with an amount of US\$214.8 billion, and the OBUs of foreign banks accounted for US\$24.6 billion or 10.3% of the total.

In terms of the uses of funds, portfolio investments, at US\$86.0 billion, represented the majority share of 35.9% of total OBU assets. Loans to non-financial institutions came in second place, accounting for 33.0% of total OBU assets. In terms of the destinations for funds, Asia accounted for the majority with a share of 50.8%, followed by America at 31.3%.

The OBUs' main source of funds came from due to financial institutions, making up 52.2% of total liabilities and equity. Deposits of non-financial institutions accounted for 38.0% of the total. The main funding origin of OBUs was Asia, accounting for the majority with 65.4%, followed by America with a share of 23.0%.

Forex trading turnover of all OBUs dropped by 1.2% to US\$668.6 billion, of which US\$427.5 billion went for spot transactions, US\$96.0 billion for forward transactions, and US\$145.1 billion for forex swap transactions. Compared with the previous year, the growth rates of trading of spots, forwards, and forex swaps were 8.3%, -15.7%, and -13.6%, respectively.

For OBUs, total turnover of other derivatives products decreased by 27.2% to US\$246.0 billion over the previous year. Of this amount, options transactions registered a turnover of US\$135.8 billion, making up 55.2% of the total.

Balance Sheet of OBUs in Banking System

Unit: US\$ Million

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
2016/12	77,236	42,803	44,929	11,467	176,435	72,245	86,865	0	17,326
2017/12	81,074	53,819	58,336	9,717	202,946	77,144	106,712	0	19,090
2018/12	82,161	59,180	48,552	11,074	200,968	78,704	96,622	0	25,641
2019/12	80,227	72,195	58,407	11,026	221,855	86,680	110,843	0	24,332
2020/12	78,995	86,016	61,925	12,524	239,459	91,094	124,885	0	23,480
2019/12-2020/12 Growth Rate (%)	-1.5	19.1	6.0	13.6	7.9	5.1	12.7	0.0	-3.5

Source: Financial Statistics Monthly, CBC.