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Foreign Currency Funding of Major Japanese Banks
—— Review of the March 2020 market turmoil ——

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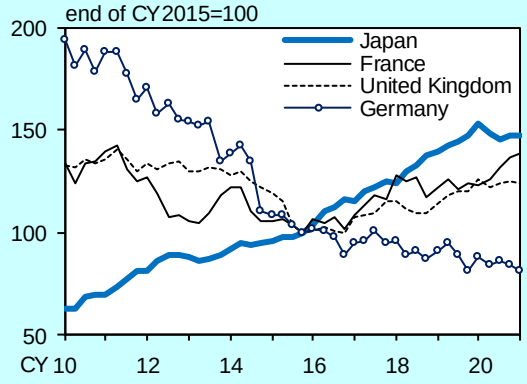
Most of the major Japanese banks have endeavored to stabilize their foreign currency funding by increasing long term market-based funding and corporate deposits while expanding their overseas lending. In March 2020, when tensions in the international financial and capital markets increased due to the spread of Covid-19, USD lending surged due to the drawdown of commitment lines and other factors. The efforts of individual banks to stabilize their USD funding, as well as the effectiveness of USD funds-supplying by the six major central banks, prevented a major disruption in Japanese banks' USD funding. However, the importance of enhancing the robustness of USD funding structures was reaffirmed, as evidenced by the apparent vulnerability of short-term market-based funding at the height of the stressed environment. Appropriate management of foreign currency liquidity risk is crucial, not only for the stable operation of individual banks but also for the stability of the financial system as a whole. Japanese banks, for which foreign currency funding is one of the most important management issues, need to maintain efforts to strengthen their funding base and upgrade their risk management.

Introduction

In recent years, many of the major Japanese banks have expanded their overseas investments and loans as they have become more active in overseas business (Chart 1). In parallel, their funding amount of foreign currency (mainly USD) has also been on the rise. Unlike yen, however, without ample supply of retail deposits, the weight of market-based funding tends to be high.

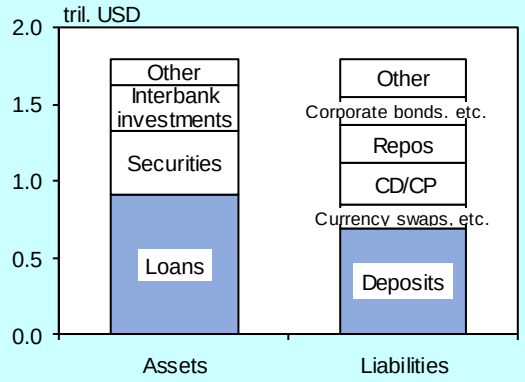
[Chart 1] Foreign claims of the banking sector in each country



Note: Cross-border claims for the non-financial private sector on an ultimate risk basis. Latest data as at end-March 2021.
Source: BIS; BOJ.

In fact, the foreign currency B/S of the major Japanese banks shows that on the asset side, loans with relatively long terms and low liquidity account for more than 50%, while on the liability side, deposits, which are recognized as relatively stable, account for less than 40%, with the remainder being raised through market transactions (Chart 2). For many major Japanese banks, stable foreign currency funding, supported by appropriate foreign currency liquidity risk management, is one of the most important management issues.

[Chart 2] Major Japanese banks' foreign currency-denominated balance sheet



Note: Covers internationally active banks. Data as at end-March 2021.
Source: BOJ.

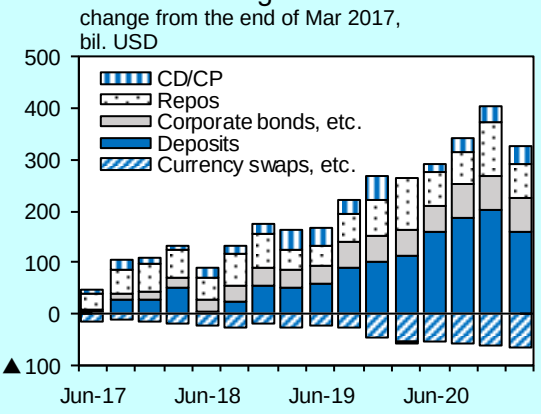
In this paper, we provide an overview of the recent efforts by major Japanese banks to ensure USD funding and review the situation in March 2020, when the spread of Covid-19 caused increased volatility in

international financial and capital markets. This paper also presents the implications for future initiatives that were reaffirmed through the experience brought about by these conditions.

Efforts to Stabilize USD Funding

While expanding their overseas exposure, the major Japanese banks have endeavored to improve the stability of their USD funding base. Specifically, they have been acquiring corporate deposits, which are considered to have lower outflow risk than market-based funding, and issuing corporate bonds with longer maturities (Chart 3).

[Chart 3] Changes in major Japanese banks' funding instruments



Note: Covers internationally active banks. Latest data as at end-March 2021.

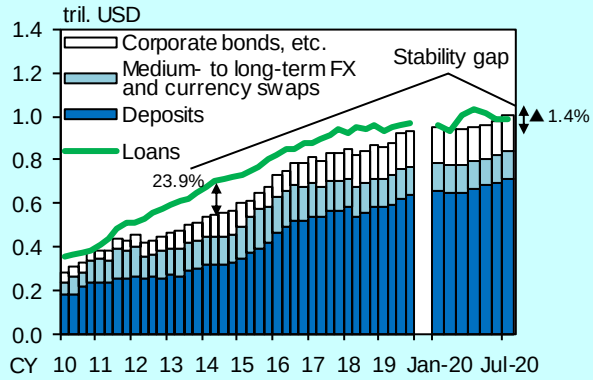
Source: BOJ.

One of the useful indicators to evaluate the stability of the foreign currency asset/liability structure is the "stability gap", the difference between 1) the total amount of loans (asset side) that are not easy to liquidate quickly and 2) the total amount of deposits, medium/long-term FX and currency swaps, and corporate bonds (liability side) that are deemed as stable funding sources.

The "positive stability gap" indicates a situation where lending is not fully covered by stable funding, with the gap being covered by short-term market-based funding. In this case, if for some reason it becomes difficult to raise funds in the market, there may be problems with foreign currency funding. On the other hand, the "negative stability gap" indicates that the lending is fully covered by stable funding. It should be noted, however, that the negative stability gap alone is not necessarily sufficient, as there are other issues not captured by the stability gap including the degree of stability of foreign currency deposits, drawdowns of commitment lines by the clients, and liquidity of foreign bond assets under stress.

Looking at the stability gap in recent years, it has improved steadily, reflecting the continuous efforts by major Japanese banks to enhance the stability of their foreign currency funding base (Chart 4). They also have focused on diversifying their funding sources and have become more resilient to stress since the mid-2010s, while it is still notable that they rely on CD/CP issuance to a certain degree as the short-term market-based funding source (Chart 2 above).

[Chart 4] Stability gap of major Japanese banks



Note: 1. Until end-March 2012, "Corporate bonds, etc." and "Medium- to long-term FX and currency swaps" indicate funding maturing in more than 3 months and thereafter and funding maturing in more than 1 year, respectively.
2. The figures indicate the ratios of the gaps to the loans (as at end-April 2014 and end-July 2020).
3. Covers internationally active banks.
4. Latest data as at end-July 2020.

Source: BOJ.

Impact of market stress due to the spread of Covid-19

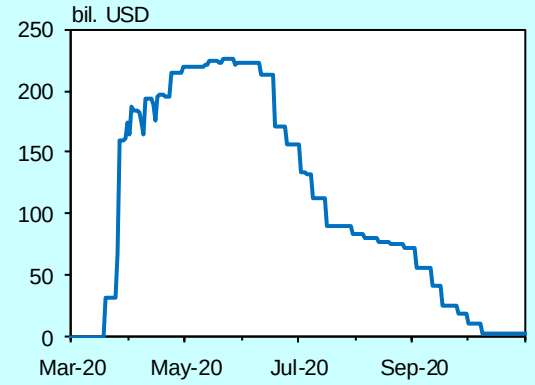
A supply-demand crunch occurred in the USD funding market in March 2020, when the spread of Covid-19 caused increased volatility in the international financial and capital markets ("March 2020 turmoil").

In addition to the aforementioned self-efforts to improve the stability of the foreign currency funding base, six major central banks[1] including the Bank of Japan responded by enhancing their USD funding operations (Chart 5), which helped avoid a major disruption to the USD funding of Japanese banks. However, the vulnerability of short-term market-based funding under stress conditions was highlighted and the importance of enhancing the robustness of foreign currency funding structures was reaffirmed.

In the following, we review the situation of major Japanese banks during the March 2020 turmoil to examine the issues related to foreign currency funding; namely, 1) understanding the risk profile, 2) ensuring stable funding source, 3) the effectiveness of liquidity stress testing, 4) the ability to cope with stress

situations, and 5) prompt and accurate data collection.

[Chart 5] Outstanding amount of USD Funds-Supplying Operations



Note: Latest data as at 31 October.
Source: BOJ.

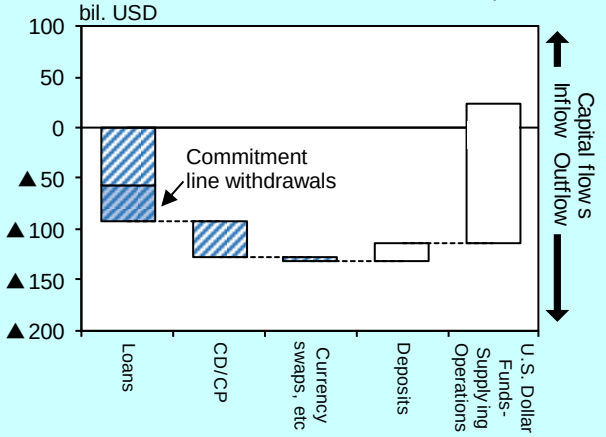
Note that the purpose of this paper is to discuss the experience of the March 2020 turmoil and the implications that can be gleaned from it, and it is not intended to be an exhaustive discussion of the issues faced by Japanese banks in managing foreign currency liquidity risk.

Understanding the risk profile

Major Japanese banks experienced a sharp increase in lending, including drawdowns of commitment lines by their clients during the March 2020 turmoil (Chart 6).

[Chart 6] Flow of funds over the March 2020 turmoil

cumulative flows from the end-Feb to end-Apr 2020

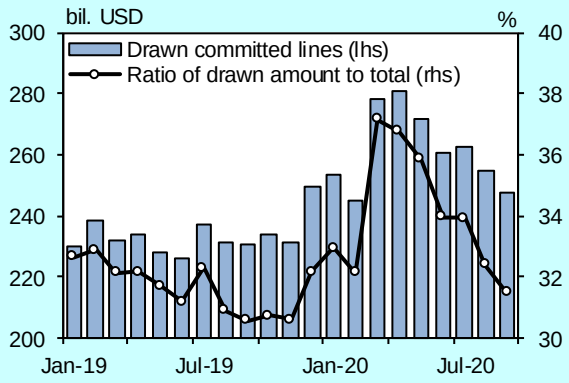


Note: Covers internationally active banks.
Source: BOJ.

The scale of drawdowns varied depending on the nature and circumstances of client companies, with particularly large drawdowns by industries significantly affected by the pandemic (Chart 7).

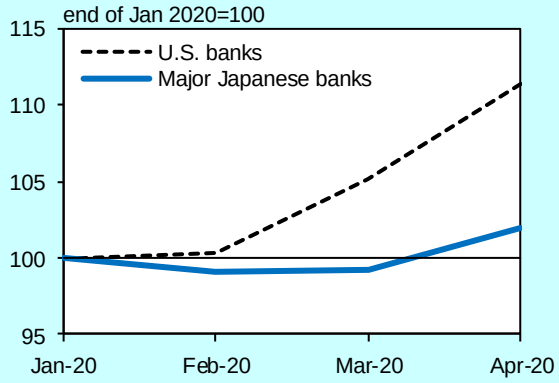
In addition, non-Japanese companies that drew on their commitment lines did not retain the funds in their deposit accounts at Japanese banks. The deposit balance figures show the contrast between the major Japanese banks and the U.S. banks during the period (Chart 8).

[Chart 7] Commitment line drawdown



Note: Covers internationally active banks. The data are as at month-end. Latest data as at end-September 2020.
Source: BOJ.

[Chart 8] Deposit balances of Japanese and U.S. banks



Note: "Major Japanese banks" covers foreign currency-denominated deposits of internationally active banks. "U.S. banks" covers deposits in the U.S. held by commercial banks chartered in the U.S.
Source: FRB; BOJ.

At the height of market tensions, companies tend to concentrate their funds in their main bank settlement accounts so that they can make urgent payments. It is assumed that most of the loans to non-Japanese client companies by Japanese banks, including those used for short-term operating funds, outflowed from those Japanese banks and accumulated in the settlement accounts of those clients, typically at the U.S. banks.

While it is not easy for banks to expand the balance of deposits in foreign currencies, it is important to obtain deposits that are less likely to flow out even during market fluctuations. Increasing the number of settlement accounts by providing ancillary services such as transaction banking may be a viable option.

It is also notable that the major Japanese banks aggressively utilized commitment line contracts to cultivate and enhance relationships with non-Japanese client companies, while that in turn contributed to the

increase in fund outflows during the March 2020 turmoil. Furthermore, it was also reaffirmed that when transactions are concentrated among large customers, the behavior of those customers in times of stress can have a significant impact on the bank's funding situation.

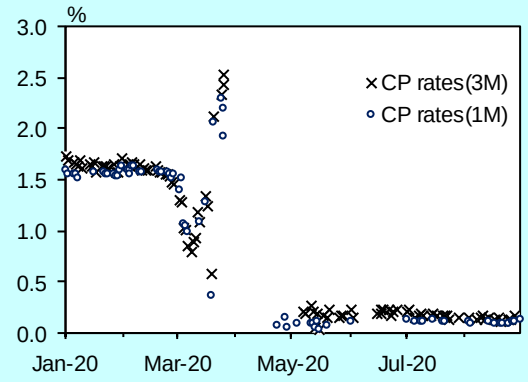
In light of these lessons, in order to accurately factor in the possibility of large future outflows in their foreign currency liquidity risk management, banks should carefully analyze their B/S (including analysis of the trend of increase/decrease in loans and deposits by client company category, such as Japanese/non-Japanese, industries, size and credit rating, deposit amount, and interest rate) to capture the risk profile and reflect it appropriately in liquidity stress testing.

It is also necessary to examine the risks associated with the expansion of commitment line contracts and the concentration to large customers and reflect gained insights in their business strategies.

Ensuring stable funding source

Under the March 2020 turmoil, prime MMFs, one of the major buyers in the USD-denominated CD/CP market, drastically reduced their CD/CP purchase in order to cope with the large fund outflow, causing the surge in funding costs for CD/CP (Chart 9).

[Chart 9] Financial CP Rates

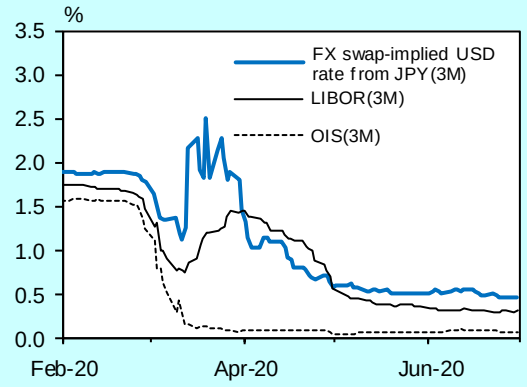


Note: CP rates are financial commercial paper interest rates. Latest data as at 31th August.
Source: FRB.

Since then, some banks refrained from funding via the CD/CP market until it stabilized on the back of the US Federal Reserve's policy responses[2].

Liquidity in the foreign exchange swap market also declined sharply (Chart 10). The FX swap-implied USD rate from JPY, which soared around March 13, returned to the previous level around March 26 after the six major central banks announced on March 15 that they would expand their USD operations. Until then, some Japanese banks temporarily suspended USD funding through foreign exchange swaps.

[Chart 10] USD funding costs via FX swaps



Note: Latest data as at 30 June.
Source: BOJ; Bloomberg.

The experience gained during the March 2020 turmoil revealed the vulnerability of foreign currency funding that relies on short-term market transactions. Japanese banks need to continue to strengthen their efforts to ensure the resilience of their foreign currency funding. As mentioned above, it is important to secure ample liquidity buffers (highly liquid assets such as central bank deposits and government bonds that can be easily liquidated) as well as acquire deposits with lower outflow risk than market-based funding.

It is also important to increase medium- to long-term funding by issuing corporate bonds and other instruments, although these funding sources are accompanied by relatively high costs. In other words, Japanese banks are facing the challenge of striking an appropriate balance between the stability of their foreign currency funding and ensuring profitability.

Since the spread of Covid-19, large-scale fiscal stimuluses by governments and other factors have led to a significant increase in deposits on a macro view, with the balance of stable funding exceeding the balance of loans (Chart 4 above). Even under such circumstances, it is still important for Japanese banks to assess the profile of foreign currency deposits, including their stickiness. In addition, while it is natural that Japanese banks may become more conscious of profitability of their foreign currency funding, their foreign liquidity risk management should be aimed at the appropriate balance, avoiding inappropriate loss of stability as a result of restraining medium- to long-term funding.

Effectiveness of liquidity stress testing

Liquidity stress testing is an essential element of liquidity risk management for financial institutions, as it simulates cash crunches that may occur due to factors such as heightened tensions in the financial markets as a whole or deterioration in the creditworthiness of

individual institutions, in order to ensure that liquidity buffers are sufficient to withstand a severe funding environment.

When conducting liquidity stress tests, it is necessary to set multiple scenarios, such as "deterioration in overall market funding environment", "deterioration in creditworthiness of the bank or counterparties", or "deterioration in both market funding environment and creditworthiness" while taking into account the risk profile of the bank's own funding structure. It is important to prepare for future crises by refining and updating the scenarios based on observations in the market, customer trends, and capital outflows. It is also important to ensure the feedback process, using the results of the tests not only to review the amount of liquidity buffer but also to help enhance the risk profile itself.

As the foreign currency liquidity risk profile varies depending on the financial market environment, liquidity stress tests need to be conducted periodically at a reasonable frequency, with enough flexibility to respond to significant changes in risk profile or market environment.

Ability to cope with stress situations

In order to respond appropriately to stress situations, it is essential to have in place a system in normal times. From this perspective, in addition to conducting liquidity stress tests, financial institutions usually 1) observe early warning indicators (EWIs) to detect changes in the environment and trigger responses, 2) set management stages (e.g., "normal", "concern", "crisis") to gradually increase the intensity of liquidity monitoring, 3) establish a contingency funding plan (CFP), and 4) establish a recovery plan (RCP) for more critical situations.

Generally, when EWIs violate a trigger, the management stage is raised, and when a move to a higher stage such as "crisis" happens, the framework is designed to consider moving to CFP or RCP.

Financial institutions need to verify the appropriateness of EWIs, liquidity management stages, CFPs, and RCPs in a timely manner, depending on the risk profile of their B/S and changes in the market environment. In addition, it is necessary to continuously confirm whether these crisis management tools are consistent as a whole and whether a system is in place to ensure their smooth use in stress situations, through the implementation of crisis response drills (fire drills), etc.

Prompt and accurate data collection

As financial institutions engage in a wide variety of transactions, their cash flow situation is constantly changing. Since many financial institutions use multiple funding sources and markets for foreign currency liquidity, it is necessary to consolidate data on foreign currency funding and management at each location for global cash management. In order to centrally manage such liquidity-related data, major Japanese banks are developing and upgrading their liquidity MIS (Management Information System).

Using liquidity MIS to accurately grasp the current status and outlook of cash flows on a group basis, and for each entity and location, will lead to accurate funding that takes into account future uncertainties and leads to efficient allocation of funds among entities and locations. In addition, in crisis situations, it is even more important to quickly grasp information such as when, at which locations, and to what extent additional funding is needed, and to take action.

Even in the March 2020 turmoil, the foreign currency funding situation of major Japanese banks changed rapidly due to the withdrawal of commitment lines and market fluctuations. In order to take appropriate actions under such circumstances, it is considered effective to obtain prompt and accurate funding data on a group basis. Therefore, in addition to improving the coverage and immediacy of liquidity MIS data, it is necessary to improve the usability of the system so that various monitoring indicators and stress test measurements can be conducted seamlessly.

Concluding Remarks

As interconnectedness in the global financial and capital markets increases, difficulties in raising funds in major currencies, once they become apparent, could propagate instantly and cause an international liquidity crisis. Financial institutions doing business overseas need to take into account such characteristics of liquidity risks and continue to make constant efforts to strengthen their foreign currency funding base and upgrade their risk management.

* Currently Research and Statistics Department.

[1] Bank of Canada, Bank of England, Bank of Japan, European Central Bank, U.S. Federal Reserve System, and Swiss National Bank.

[2] The U.S. Federal Reserve System decided on March 18 to create the MMF Liquidity Facility (MMLF: lending to financial institutions that purchase assets from MMFs, using those assets as collateral). As a result of these measures, the liquidity crunch in the CD/CP market has since been resolved. See "Overview of the Recent Events and Potential Reform Options for Money Market Funds," Report of the President's Working Group on Financial Markets, December 2020.

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