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US Dollar Funding Stress in the Time of COVID-19

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Executive Summary

Previous financial crises have usually been accompanied by liquidity and funding issues for most market participants. The latest COVID-19 crisis has been no different with market dislocations occurring over the past few weeks in the commercial paper (CP), high yield, investment grade and forward foreign exchange markets. Although the US Federal Reserve (Fed) has led from the front with appropriate policy responses to create facilities and mechanisms to nip any problems in the bud, it is also necessary to ensure liquidity transmission beyond banks to the real economy. Besides, not all emerging market (EM) economies would benefit from the Fed's interventions as many do not have adequate reserves or Treasury securities to exchange or swap with US dollars.

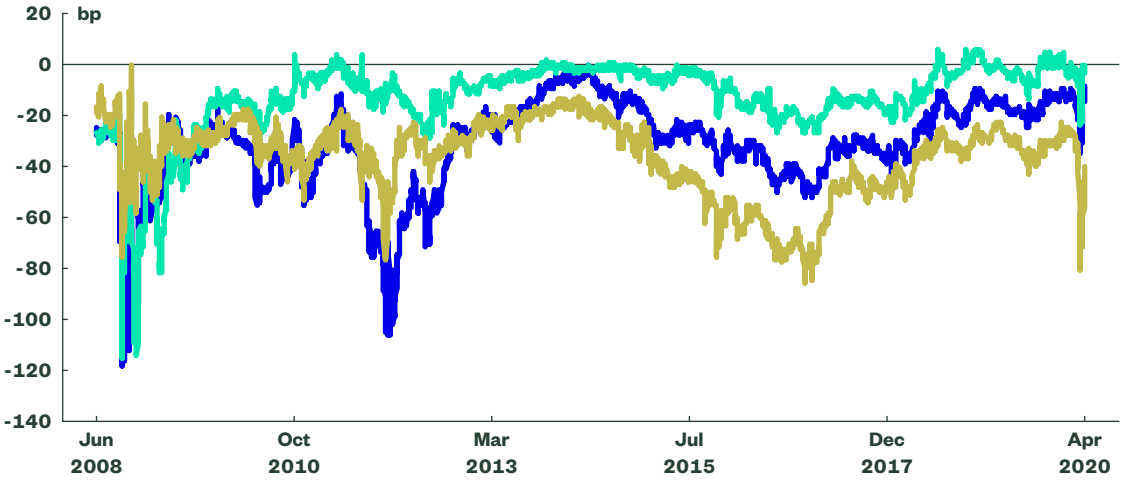
1 High Levels of US Dollar Funding Stress

The economic fallout from the COVID-19 crisis has led to stress in US dollar funding markets over the past few weeks, reflecting both demand as well as supply side factors. US dollar funding demand has grown in recent years due to currency hedging by corporates, banks and portfolio managers outside of the United States (the US). It is likely to increase further as demand from EM countries' corporates and financial institutions should increase with pandemic-related lockdowns, supply chain disruptions and economic strains.

The FX swap basis is the difference between the dollar money market interest rate and the implied dollar interest rate in the FX swap market, where US dollars are borrowed against another currency as collateral. A negative basis would mean borrowing dollars through FX swaps is more expensive than borrowing from the dollar money market. This also makes it dearer for international investors to hedge US dollar exposure owing to the impact on the pricing of forward foreign exchange.

As shown in Figure 1, the dollar-yen cross-currency basis (during March 2020) reverted to levels similar to that of previous crises, including the Global Financial Crisis (GFC). Subsequently, the currency basis moderated or in some cases reversed, partly due to interventions made by authorities. But there were occasional spikes, too, largely due to seasonality in the cross-currency basis as US banks try to minimize risk weighted assets over the end of each quarter. The volatility in the cross-currency basis reflects not only Japan-specific but also global liquidity and funding issues.[1]

Figure 1
EUR, GBP and JPY — One-Year Cross Currency Swap



Source: Thomson Reuters, SSGA Global Macro Research, as at 1 April 2020.

Around end-February 2020, there were some early signs of credit and funding stress — for instance, retail investors were continuing to sell equity funds due to heavy losses and fears of a recession. In addition, oil prices collapsed following a breakdown in OPEC+ talks, which sent the market into panic mode and added to the already high market uncertainty caused by COVID-19. It should be noted that the recent increase in US dollar funding pressure in markets reflects credit and liquidity stress. On the whole, the demand for dollar cash increased significantly due to a preference for staying liquid during periods of high economic and market uncertainties. In this context, it is worth mentioning that the Bank of Japan's (BoJ) move to aid Japanese banks at the end of March to provide US$185 bn in liquidity to pre-empt funding concerns led to record repo market rates in Japan.

On the supply side, we note that demand for CP falls as money market funds — the traditional buyers of CP — sell to fund redemptions, mainly caused by large cash demand from corporates as well investors' need for paying margin calls and funding losses. Even before this process banks and other financial intermediaries such as money market funds prefer to stay liquid in anticipation of the redemptions as well as due to market microstructure dislocations. This need for US dollar cash is also partly why government bond and gold prices fell recently, despite the asset classes being perceived as traditional safe havens. In addition, the yield curve had inverted deeply before the Fed cut the policy rate by 100 bp, which made lending at shorter maturities more rewarding.

Some of the demand for US dollar came from corporates drawing on credit lines[2] as they were unable to get funding through other markets such as CP. Many non-financial corporates have pre-agreed credit swap lines with banks, of which more than 30% are via letters of credit and are off balance sheet.[3] Bank for International Settlements, citing Financial Times, claimed in a recent report that credit line drawdowns may have reached US$124 bn since 1 March 2020.[4] When corporates draw on these letters of credit, they use up a bank's balance sheet, forcing banks to curtail lending to other corporates and search for funding themselves.

As there are ongoing disruptions to supply chains and a subsequent fall in demand, corporate spreads are widening as well. If the current shock and associated dislocations were to persist, there are concerns that we could witness many more downgrades or defaults over the coming months. Although systemic risks are low now compared with the GFC period, ratings agencies have been downgrading sovereigns as well as corporates across the world.

The demand for US dollar also comes from foreign institutional investors who hold large proportions of dollar assets in their portfolios. This demand has been growing over the past few years as they have been trying to hedge their currency exposure or unwind their currency swap foreign bonds. For example, Asia's life insurers likely hold between US$1.5 tn and US$2 tn of foreign currency denominated bonds as part of their portfolio, which are mostly dollar denominated.[5] Japanese life insurance firms reported ¥10 tn (US$900 bn) in foreign securities, equivalent to 25% of their portfolio. These life insurance firms typically hedge a portion of their currency exposure to limit their currency mismatch either through FX or through cross currency swaps, which are done on a short-term rolling basis. The hedging causes additional demand for US dollars, further widening the basis.

Impact of the Fed's Interventions

The Fed's purchase program and support for businesses should help, but it takes time to feed through and is onshore only. The central bank recently admitted that the transmission of funds and relief to end-points is taking time due to flow issues, referred to as "plumbing issues" by certain commentators. However, these programs benefit markets at the point of announcement as sentiment improves and markets discount the future. The short end of the curve is more immediate in nature and needs actual purchases and flows. It is noticeable that the US dollar basis decreased after the Fed provided liquidity to US banks through its Commercial Paper Funding Facility and relaunched the 2008 Primary Dealer Credit Facility. However, some of the illiquidity in short-term markets and FX forward markets remained as it took time for aggregate liquidity provided by the Fed to filter though segments and tenures that needed it the most. Also, price discovery and liquidity could be impaired relative to normal times, given the COVID-19 related lockdown in many places and the fact that several short-dated markets, including the forward foreign exchange market, are manual in nature and bespoke.

On 31 March 2020, the Fed announced the creation of a temporary repurchase agreement facility for foreign and international monetary authorities (FIMA Repo Facility or the Facility) to facilitate liquidity for central banks and other international monetary authorities. This was another historic move in the face of the COVID-19 crisis. To the extent that authorities are seeking to support corporates and guarantee loans, it helps in alleviating fears and reducing dollar hoarding. Although cutting reserve requirements and injecting repo market liquidity help banks in terms of avoiding a funding blowout, they might not necessarily pass this liquidity to the market due to tighter risk management rules. Post the GFC, thanks to stricter regulations, banking sector assets have grown slowly, reflecting an increase in the cost of maintaining balance sheet capacity even as banking activities have become more sensitive to the strength of the US dollar.[6]

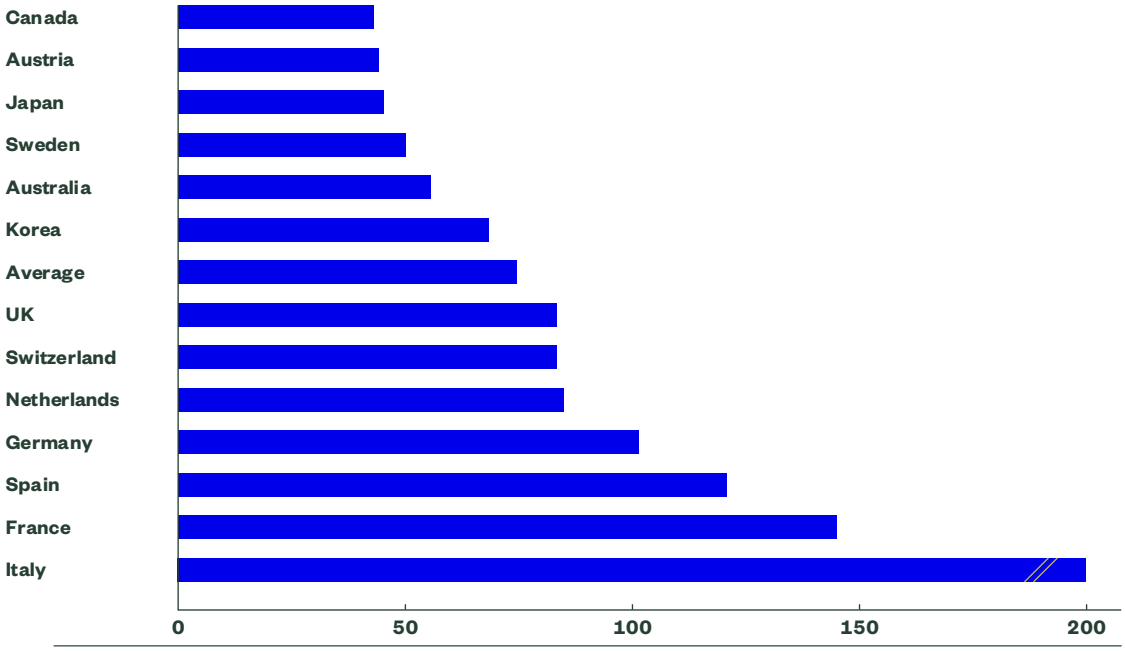
We also note that the impact varies across different markets. The first transmission is often to the euro-dollar basis, the largest market. But here the pricing is efficient, and since banks have less US dollar funding needs, the basis is also the quickest to revert. The sterling-dollar basis is not as deep — so the moves can be sharper, exacerbated by the number of banks based in London. The yen-dollar basis is often the worst out of the three as Japanese corporates tend to issue more in dollars and Japanese banks have higher dollar funding requirements relative to their balance sheets. As we move to other G10 currencies such as the Australian dollar, there is further deterioration as repo markets are less efficient, US dollar funding needs tend to be higher at times and without central clearing the impact on bank balance sheets tends to be negative.

2 US Dollar Funding Shortage and Financial Stability

The IMF's Global Financial Stability Report 2019[7] highlighted EM economies' sensitivity to declines in US dollar cross border lending owing to constraints in accessing alternative sources of dollar funding. The report highlighted that the vulnerability of global non-US banks to increases in dollar funding costs could lead to financial instabilities and recommended policy arrangements including the creation of swap lines between the Fed and various other central banks. The Fed has since then announced joint central bank action to enhance the provision of US dollar liquidity in coordination with the Bank of Canada, the Bank of England, the BoJ, the European Central Bank (ECB) and the Swiss National Bank. The Fed also established temporary dollar liquidity-swap lines with nine additional central banks on 19 March 2020.

Since the GFC, US dollar assets of global non-US banks have been trending upward, increasing from US$9.7 tn in 2012 to US$12.4 tn by early 2018. In addition, the magnitude of US dollar positions relative to total banking system assets — across all currencies — is comparable to its pre-crisis level. Although US dollar liquidity of non-US banks has been increasing steadily since the GFC, the stability of the US dollar funding has improved only moderately. This reflects banks' ability to fund their US dollar assets over a longer time horizon using stable sources of funding, in part to ensure the continuity of credit and the preservation of business relationships. We note that South Korea and Japan have lower US dollar liquidity that is below the overall liquidity of their balance sheets as measured by the all-currency liquidity ratio (Figure 2).

Figure 2
Non-US Banks' US Dollar Liquidity Ratio Compared With All-Currency Liquidity Ratio (%)



Source: International Monetary Fund, as at Q1 2018.
Note: The ratio for Italy is 753.8.

3 Emerging Markets

When a shortage of dollars results in a strengthening of the US dollar, the impact can be felt more widely especially in countries with external funding needs. The over-reliance of EM corporates and quasi-sovereigns on dollar liquidity during crises has been historically exacerbating their financial positions.

US dollar funding stress spreads through Asian markets mainly due to the following reasons:

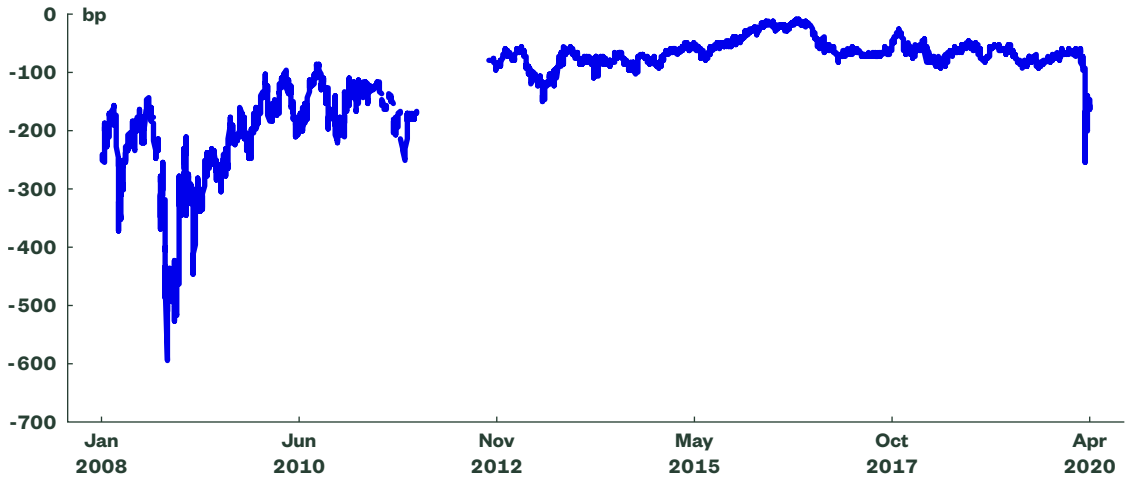
1. Underfunded dollar liabilities with limited cover from FX swap market depth and/or official reserves
2. The high likelihood of missed payments along Asian supply chains, which force suppliers to draw down on dollar deposits and
3. The unprecedented scale of portfolio outflows[8]

The cross-currency bases in South Korea, Singapore, Hong Kong and Taiwan markets widened significantly before starting to narrow after the Fed announced US dollar swap lines with the Bank of Korea (BoK) and the Monetary Authority of Singapore (MAS). Given the sharp risk-off sentiment, the usual providers of US dollar cash, such as asset managers and foreign banks, have been less willing to lend to borrowers in Asia. We note that in Asia, the US dollar term funding market is less well developed and the most common way for banks to borrow the US dollar is via FX swaps. Asian local banks tend to hold their local currency cash as deposits, and when they need dollars, they typically exchange their local currency with a foreign bank via FX swaps.[9] As a result, basis swaps markets in some of these countries were badly affected when the US dollar supply tightened.

The impact of the US dollar tightening on basis swaps also depends on banks' business models as well as on institutional investors' hedging demand. For instance, as banks in Japan or Hong Kong that have large net foreign currency claims increase their demand for dollar hedges, they sell more US dollar/local currency forward contracts due to US dollar shortages, pushing FX swap points and cross-currency bases lower. We note that after the GFC, such claims from global non-US banks have been increasing. The economic composition has changed as well with some European economies reducing their share while other economies, such as Japan, expanding their share noticeably.[10]

South Korea Recently, South Korea has been witnessing a tightening in US dollar liquidity conditions. On 19 March, Korean one-year basis swaps dropped to -258 bp, from -60 bp a month before. Although this move is still moderate compared with the GFC period when the one-year basis widened to a range of -500 bp to -600 bp, it is still surprising, given that the BoK had been taking many steps to lower Korea's external funding dependency since 2010.

Figure 3
KRW — One-Year Cross Currency Swap



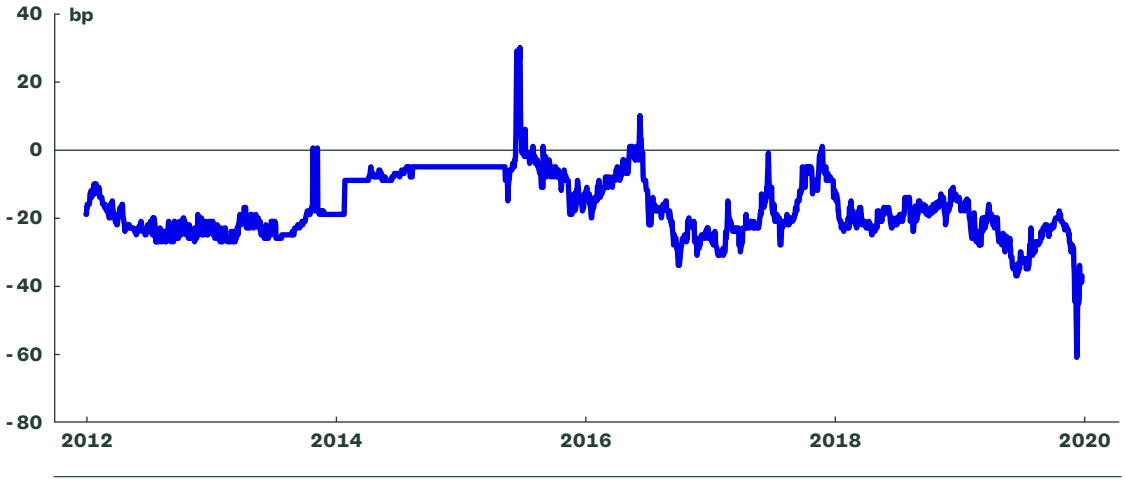
Source: Thomson Reuters, Bloomberg, SSGA Global Macro Research, as at 3 April 2020.
Note: Data is unavailable for certain time periods.

There are several reasons for the increased US dollar funding squeeze. First, there was a sizeable equity outflow of close to US$8 bn from South Korea in March 2020 due to liquidation of portfolio holdings by foreign investors. As the US dollar was removed from the domestic system when it was repatriated, dollar liquidity worsened. Second, there was a significant decline in FX deposits as corporates withdrew FX deposits to keep up with payments, given declining foreign revenues. FX deposits in Korea fell by almost US$7 bn in February and banks were facing higher demand from markets for dollars to finance short-term liabilities. Third, over the past ten years, to discourage financial institutions from engaging in excessive short-term external borrowing, the BoK has been tightening macroprudential regulations, which restricted banks' ability to channel dollars into the system.[11] This is a common feature and an unintended consequence of the tightening of bank regulations post the GFC.

An additional pressure on the cross-currency basis in Korea has been caused by the unwinding of a certain type of "basis trade", which is among many such trades undertaken by international investors. This trade is undertaken to take advantage of the negative cross currency bases or the low implied yields on onshore FX swaps: investors are long KTBs and pay FX swaps or cross currency swaps. This is FX neutral and locks in a fixed amount of carry in addition to duration exposure. The trade can be done on a mismatched basis (i.e., long 5Y bonds, paid 1Y CCS) and is popular for earning carry. Unwinding of this trade leads to a negative widening in the basis and a sell-off in bonds.

Hong Kong With the HK dollar's 1Y basis narrowing from the second half of 2019 until early 2020, US dollar liquidity conditions in Hong Kong appeared to be fairly accommodative. But by early-March, the HK dollar's currency basis swap started widening and reached an eight-year peak of -60 bp on 18 March.

Figure 4
HKD — One-Year Cross Currency Swap



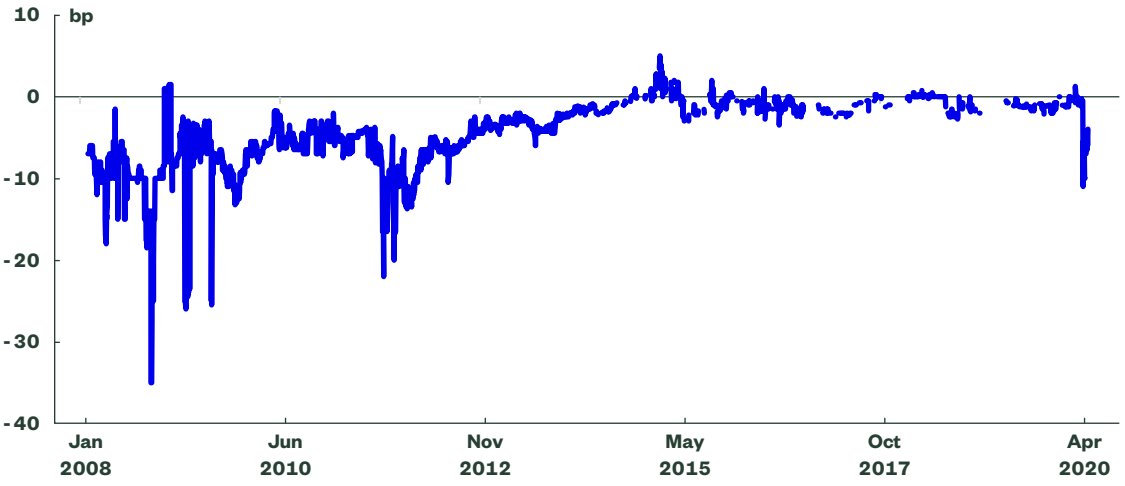
Source: Thomson Reuters, SSGA Global Macro Research, as at 1 April 2020.

Taiwan Similar to Hong Kong, before the US dollar funding shortage, US dollar liquidity conditions in Taiwan had been relatively accommodative due to repatriation flows from overseas investments. We note that in Taiwan, like in South Korea, funding stress rose largely owing to credit concerns and missed payments along the global supply chain as well as liquidation of portfolios by foreign investors. The scale of equity outflows has been unprecedented from Taiwan with over US$10 bn in outflows recorded from equity markets in March 2020 alone. Demand for dollar hedges also increased due to large FX hedged bond positions by domestic institutional investors (for instance, in Japan).

China's accommodative domestic liquidity has helped limit the spillover from FX risk. So far, renminbi liquidity has suffered very moderately despite the high volatility in global assets and the tightening of US dollar liquidity. However, if US dollar funding stress were to persist, especially for corporations with dollar funding demand or for offshore investors looking to liquidate renminbi assets, we could see higher volatility in renminbi assets.

Singapore has also seen a sharp tightening in US dollar liquidity conditions. The most likely reason for this is Singapore banks using FX swaps to build their US dollar cash positions.

Figure 5
SGD — One-Year Cross Currency Swap



Source: Bloomberg, SSGA Global Macro Research, as at 3 April 2020.
Note: Data is unavailable for certain time periods.

India and Indonesia share the same set issues in that both countries have run current account deficits for a long time, leading to large negative net international investment positions and a reliance on foreign investments to close domestic funding gaps. Their domestic banks also use foreign currency financing to fund domestic lending. As a result, when US dollar liquidity conditions are stressed, the spot exchange rate tends to get affected. For instance, the USD/IDR spot increased as investors holding assets in Indonesian rupiah bought USD/IDR via the spot market and Indonesia lost about US$5 bn from the bond market. As regards India, the country lost about US$11 bn from equities and bonds in March. In these countries, the scale and swiftness of fund withdrawals coupled with a shift back into US dollar cash have played a very big role in causing US dollar stress.

We also note that commodity-based countries such as Indonesia and Malaysia have significant domestic US dollar credit. The US dollar assets of the banking system of these countries are not funded with stable sources of dollar liabilities, leading to a cross-currency funding gap. FX swap markets are also small in Malaysia and Indonesia relative to the private sector's short-term external debt, and reserves coverage for external debt is also amongst the poorest. Therefore, both currencies are likely to remain vulnerable to significant further weakness.

Impact of the Fed's Interventions on EM Economies

The result of the variable cross-currency basis is that covered interest parity (CIP) deviations have increased significantly since the GFC, which has several implications, including its effect on small economies' ability to exercise monetary policy independently of the Fed's interest rate choice.[12] Many of the Fed's interventions have been aimed at minimizing this impact.

The most significant recent shift came from the broadening of the Fed swap lines to more central banks including the MAS in Asia. While the swap lines are not indefinite standing facilities of unlimited quantum as with the Fed's lines with the ECB or the BoJ, they are still significant. The Fed has acted preemptively to avoid further funding stress, which could lead to even wider sell-offs and currency weaknesses in EM. Since the expansion of the Fed swap lines, we note that dollar funding stress has narrowed significantly in many markets, including notably in South Korea, where the currency basis swap narrowed to -158 bp (end-March) from -258 a week earlier. However, cross-currency bases remain wide across markets, suggesting that there might be other factors affecting the funding stress.

On 31 March 2020, the Fed allowed foreign central banks to exchange Treasury securities held with it for US dollars, which could then be used to provide financing to institutions and act as an alternative temporary source for the currency. This new facility along with US dollar liquidity swap lines should help ease strains in global US dollar funding markets. However, not all countries may benefit from this facility as swapping assumes Treasury holdings with the Fed as well as sufficient foreign currency reserves. This means, emerging economies with low foreign currency reserves or Treasury holdings would find it difficult to benefit from this facility. In addition, while certain EM central banks may get US dollars via this facility and may pass it on to other banks, country-specific policies may prevent the cash from being channeled to businesses that need US dollars the most.

Although many EM Asia economies are fiscally strong, with strong currency reserves and low government debts, many of them require huge amounts of US dollars on a day-to-day basis owing to their active roles in the global supply chain. If disruptions in global supply chains and capital flows were to persist, we could see protracted recessionary conditions in EM, which will amplify the existing dollar funding stress.

According to the Institute of International Finance, March 2020 saw record high portfolio outflows — US$52.4 bn in equity and $US31 bn in debt — from EM. Debt outflows were the second largest monthly on record, with the largest occurring in October 2008. Emerging Asia was the most affected region with outflows amounting to US$19.5 bn, compared with inflows of US$4.5 bn in February 2020.

4 Conclusions

While the recent dollar funding stress has been mostly mitigated by proactive and pre-emptive measures undertaken by the Fed and other central banks, a protracted lockdown and deep recession could create further liquidity and funding pressures on banks and other corporates in EM economies. The World Bank for instance recently warned of the huge economic risks that EM economies could face due to COVID-19, which in turn could catalyze into currency pressures and strains, leading to depreciations and defaults. Funding pressure on banks could result in bank defaults as well as credit cycle contagion related to solvency-linked rating changes. In effect, EM economies could face risks that may snowball into currency crises, banking crises and debt crises — similar to the Latin American debt crisis seen in the 1980s or the Asian financial crisis seen in the 1990s. All told, if such risks, including to short-term funding, liquidity and investments, are not adequately addressed, they may ripple across the globe causing financial instability spanning the entire spectrum of asset classes.

Many of the recommendations of the Committee on the Global Financial System's liquidity provisions might be appropriate under conditions where solvency, liquidity and operational risks coalesce for many EM economies. This means, reducing volatility in global liquidity cycles is especially pertinent during uncertain periods of crises, which should make sure that financial stability that is consistent with macroprudential policy regulations continues to endure.

Endnotes

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