

## Analysis

### Central Banks Use Swap Lines to Maintain the Flow of US Dollar

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Original post [here](#).

***The Yale Program on Financial Stability has produced and will continue to update a spreadsheet to assist those contemplating swap line agreements. The spreadsheet catalogs past and current examples of crisis-focused swap line agreements, identifies interesting program features, summarizes existing evaluations of programs, and shares general resources on the topic. This spreadsheet can be accessed [here](#). (Current version as of 3/26/2020 for those unable to access Google Sheets)***

As the world responds to the COVID-19 pandemic, the US dollar funding markets have come under stress. To address this issue, the US Federal Reserve (Fed) and other major central banks have taken a series of coordinated actions to provide more global US dollar liquidity. Swap lines are a powerful and flexible tool when central bank reserves are inadequate or when normal currency markets become distressed. We discuss here: (i) the recent actions regarding the US dollar, (ii) actions relating to prior crises, and (iii) significant features that countries might consider when contemplating entering a swap line.

Under a currency swap agreement, the lending central bank, for example, the Bank of England (BoE), requests US dollars from the Fed. In exchange, the Fed receives an equivalent value of pounds calculated at the market exchange rate. The BoE then lends the dollars to banks in the UK, charging interest. For the life of the swap, the BoE has a dollar liability, which takes the form of an account at the Fed, and the Fed has a pound liability, which is an account at the BoE. When the swap is over, the BoE returns the dollars to the Fed and the Fed returns the pounds to the BoE. The BoE also pays to the Fed the interest earned on the funds lent.

The Fed bears no exchange risk on these transactions. Also, because the receiving central bank determines the banks in its country to which it lends dollars, the Fed has no contractual relationship with those institutions and therefore does not bear any credit risk related to the downstream borrowers. (See [2020 Swap Line FAQs](#)).

The recently established Fed swap lines appear to operate similarly to the standing swaps and those used in the GFC. (See [Frequently asked questions: US Dollar and Foreign Currency Liquidity Swaps](#), which describes earlier programs.)

#### **2020 Actions**

On [March 15](#), the Fed and five central banks with which it has unlimited standing swap lines agreed to: (i) lower the interest rate by 25 basis points; the rate is now the overnight index swap rate (OIS) rate plus 25 basis points; and (ii) offer loans with 84-day maturity in addition to their ongoing weekly operations, beginning on March 16. The five central banks are the Bank of Canada, Bank of England (BoE), European Central Bank (ECB), Bank of Japan (BoJ), and Swiss National Bank (SNB). ([Fed webpage discussing swaps](#)). The Fed calls these the “key banks.” The

changes are to remain in place as long as appropriate to smooth the functioning of the US dollar funding markets

On [March 20](#), the Fed and four of the five key banks also announced that, beginning March 23, they would increase the frequency of their 7-day maturity operations from weekly to daily, continuing at least through the end of April.

The Bank of Canada does not currently conduct offerings of US dollars, but agreed to the rate provisions of the March 15 announcement and also announced on March 20 that it would initiate a USD Term Repo Facility (at the new rate), should one become necessary. [See the Canadian announcement here.](#)

[March 19](#), the Fed announced swap lines with nine more countries, bringing the total to 14. Maximum amounts currently authorized under the swaps are shown in Table 1.

**Table 1.** Federal Reserve US Dollar liquidity swap provisions

Maximum amount available	Country/Region
Unlimited standing facility	Canada, United Kingdom, European Union, Japan, Switzerland
\$60 billion	Australia, Brazil, South Korea, Mexico, Singapore, Sweden
\$30 billion	Denmark, Norway, New Zealand

Source: [Central Bank Swap Arrangements](#), Federal Reserve Bank of New York website

The US dollar is by far the most widely held and transacted international currency. Strains in dollar funding markets outside the US can disrupt financial conditions inside the US as well. If foreign entities were to experience difficulties accessing dollars to settle their transactions denominated in US dollars, the strain could further destabilize the flow of international commerce and roil US financial markets, potentially impacting businesses and households.

### Lessons from the GFC and other Crises

The latest actions match the number and country distribution of swap lines that the Fed deployed during the Global Financial Crisis (GFC). Moreover, the scope of the lines established so far closely approximates those the Fed had in place at the peak of the GFC—it did not offer uncapped capacity to the key banks until October 2008, after the failure of Lehman Brothers. (In recognition of changes to the economic situation, some lines are larger than during the GFC.) During the GFC, the Fed swaps were heavily used; by December 10, 2008, swaps outstanding had risen to more than \$580 billion. ([Fleming and Klaage](#), 2010). A BIS study considered the Fed swap lines “to be very effective in relieving stresses in US dollar liquidity stresses and stresses in foreign currency markets.” ([BIS](#), 2010).

The Fed terminated its GFC swap lines as market conditions improved. However, the lines with the key banks were reestablished on a temporary basis in 2010 and converted to permanent standing facilities in [October 2013](#) to act as a “prudent liquidity backstop” to problems that

might arise in the availability of a currency. ([Federal Reserve, Oct 2013](#)). The standing agreements allow the Fed to quickly provide US dollars to funding markets as needed.

The Federal Reserve operates swap lines under the authority of [Section 14 of the Federal Reserve Act](#) and in compliance with authorizations, policies, and procedures established by the Federal Open Market Committee (FOMC). Most central banks have a similar authority.

During the GFC, central banks also created swap lines to address shortages in currencies besides the US dollar. The ECB entered into swaps with several countries to address strains in the availability of Euros: Sweden, Hungary, Denmark, Latvia, Poland, and the United Kingdom. ([BIS, see page 30](#)). The SNB entered into Swiss franc swaps with Poland, Hungary and the United Kingdom. ([BIS, page 31](#)). The BOJ entered into Japanese yen swaps with Korea and India. ([BIS, page 32](#)).

Central banks also introduced currency swaps after the 9/11 terrorist attacks in the US and in response to the Asian Financial Crisis. After the Asian Financial Crisis, several Asian countries entered into a multilateral swap agreement under the Chiang Mai Initiative, as well as many bilateral agreements, generally to supply US dollars or yen. ([BIS, page 32](#)). These lines were limited, in that only small amounts could be borrowed without IMF approval. These were augmented to provide for more flexibility and to make them two-way. See the [YPFS Swaps Resource Guide](#) for more information on these and other swaps.

### **Key Features of Swaps**

Swap lines are an important monetary policy tool and have attributes that make them very responsive to changing circumstances. Some of the features which countries contemplating swaps consider are:

#### Cooperation and coordination

Swaps signal cooperation between the implementing central banks; different levels of cooperation are possible and there can also be a coordinated effort to manage the flow of a currency so as to avoid arbitrage or better meet market needs. The recent March 20 announcement from the Fed and five key banks recognizes a joint need to provide significantly more availability of one-week funding. As another example, in 2008 the ECB and BOE timed their auctions of US dollars (provided under the swaps) to coincide with the Fed's auctions under its Term Auction Facility. ([ECB Press Release, 12/12/2007](#)). After September 15, 2008, however, the Fed negotiated terms of bilateral arrangements, such as interest rates and timing, with other central banks individually.

#### Design Flexibility

Swaps usually can be implemented fairly rapidly. After the 9/11 terrorists attacks, the Fed and ECB announced a US Dollar swap line on [September 13](#). The next day a line with the [BoE](#) was announced and augmentation of the standing line with [Canada](#). Standing lines can be activated or expanded very quickly as circumstances change.

#### Eligibility

In deciding which countries to enter into swaps with, a central bank considers the extent of bilateral capital flows between the two countries and the risk the swap lines could pose. There

have been instances where requests for swap line have been denied. However, in such cases, there may still be a way for a country to use a third-party swap to access the needed currency.

Most swaps are one-way or two-way bilateral agreements. One notable multilateral swap agreement is the Chiang Mai Initiative (Multilateralization) (CMIM) among Asian VVV countries to provide for US Dollar support. The CMIM replaced a prior multilateral agreement and a network of bilateral agreements but did not prohibit additional bilateral agreements, which have been maintained by several countries. [Sussangkarn 2010](#). [Chiang Mai FAQs](#).

Swaps enable a country to seek support for those foreign currencies in which its domestic banks have exposure and in amounts that it perceives are needed. The standing swaps that the Fed established in 2013 “constitute a network of bilateral swap lines among the six central banks” and “allow for the provision of liquidity in each jurisdiction in any of the five currencies foreign to that jurisdiction, should the two central banks in a particular bilateral swap arrangement judge that market conditions warrant such action in one of their currencies.” ([Federal Reserve website](#)). Thus far, the US Fed has not utilized its ability to request a foreign currency under these arrangements.

Notably, because of their flexible design properties, swaps can provide increased access to a third currency, such as US dollars, for countries that do not have a swap agreement with the Fed. The bilateral swap agreements established under the Chiang Mai Initiative demonstrate the range of types of agreements and their responsiveness. These agreements were established or renewed after the Asian Financial Crisis (AFC), when a lack of foreign reserves was an issue. They were a way for the countries to make their foreign currency reserves available to each other. Several of these lines have since been extended to include local currency swaps, as well as USD-for-local currency swaps.

Examples of these swaps that incorporate terms tailored to the countries’ particular situation include:

- The [\(one-way\) swap line that Japan has established with Indonesia](#) permits Indonesia to swap its local currency for US dollars as well as Japanese Yen.
- The [\(two-way\) agreement between Japan and Singapore](#) which permitted each country to swap its local currency for US dollars from the other was [amended in 2018](#) to also permit Singapore to access Japanese Yen.
- The [\(two-way\) agreement between Japan and Thailand](#) permits both countries to swap their local currencies (i.e., the Japanese Yen and the Thai Baht, respectively) for US Dollars from the other. Thailand may also swap the Baht against the Japanese Yen.

There is also discussion of extending the basic CMIM multilateral agreement to include Yen and Yuan. ([Kyodo 2019](#)).

During the GFC, the ECB set up Euro swap lines with Sweden and Denmark. But it used a different arrangement with the central banks of Poland and Hungary because it did not want to accept their local currencies. Instead, the ECB entered into repo agreements under which the Poland and Hungary central banks exchanged high-quality Euro-denominated securities as collateral for the Euros they received. These central banks would then on-lend the Euros in a similar manner and received their securities back once they returned the Euros. Other countries such as Iceland received access to Euros not through swaps with the ECB, which the ECB

denied, but (in a fashion similar to the Asian experience) indirectly through swaps with countries that had such swaps, such as Sweden and Denmark. ([BIS, page 27, 30](#)). Although much smaller than the Fed's dollar lines during the GFC, the ECB believed that their Euro provisions to local banks "helped to achieve the key objectives of the swap lines and calmed markets and funding concerns during the crisis while taking into account moral hazard considerations." ([ECB, 2014](#)). Based on this assessment, the ECB converted some swaps to standing facilities.

While swap lines are established in response to currency strains, they can also serve other objectives. During the GFC, China established swap lines with six countries, which were also thought to have promoted the Chinese central bank's policy objective of promoting non-dollar currencies as trading and investment currency. ([BIS, page 33](#)).

### Credit Risk

The receiving central bank determines which of its domestic banks are creditworthy and on what terms (collateral, interest, maturity). Given this, central banks contemplating being on the receiving end of a swap should consider how they would adequately protect themselves through the eligibility, collateral, and other criteria that they establish.

### Lending Eligibility and Flexibility

Lending of funds to the domestic banks can be done through various modalities and terms as established by the receiving central bank, although sometimes the loan rate is agreed to with the lending counterparty. Features that can be customized include:

- Setting rates through various methods, e.g., variable-rate tenders, fixed-rate tenders, bilateral transactions;
- Lending against various types of collateral, including both foreign currency and securities denominated in foreign currency;
- Varying and/or changing the maturities of lending;
- Limiting the amount of lending to any one participant or providing full allotment;
- Setting the terms of the program which may be extended.

As demonstrated above, terms can be easily altered to meet situations as they develop. Recent programs have been revised to: (i) lower the cost of funds, (ii) offer longer-term maturities, (iii) provide more frequent offerings, and (iv) expand the flow to additional countries. In the wake of the 9/11 terrorist attacks, funding was lent on an overnight basis. In [October 2008](#), the major European banks (ECB, BoE, and SNB) agreed to lend on a longer term basis (at 7-day, 28-day, and 84-day maturities) to meet market needs.

### Preservation of Reserves

Currency swap lines between central banks enable the receiving central bank to obtain foreign currency and redistribute it locally to its domestic banks without having to use its foreign reserves. This can be very valuable, since it allows the central bank to maintain its reserves for its own purposes. Swaps also can augment reserves that are inadequate to respond to an increase in demand.

## Scalability

Once in place, swaps are easily scalable to meet changing conditions. Agreements can provide for a maximum amount, which need not be the same for each counterparty. For example, the agreement between Japan and Singapore permits Singapore to swap Singapore dollars for up to US\$3 billion or its equivalent in Japanese yen from Japan, but permits Japan to swap Japanese yen for only US\$1 billion from Singapore.

The amount of funds provided can be increased as the need arises and scaled back as conditions improve. On [October 13, 2008](#), for example, the Fed announced that it would increase the size of its swap line to four central banks (BoE, ECB, SNB, Bank of Canada) so that the respective banks could provide more US dollar funding. The same arrangement was extended to [Japan](#) the next day. The original lines had been established at much smaller levels. For example, the swaps with the SNB and the ECB, as established in December 2007, were originally limited to \$4 billion and \$20 billion, respectively. By October 2008, the Fed had repeatedly enlarged the caps to \$60 billion and \$240 billion, respectively, before removing them entirely. Therefore, countries looking to establish a currency swap need not consider the initial limit binding should circumstances change.

Key announcements discussed herein:

- [March 15, 2020 joint announcement](#)
- [March 19, 2020 announcement with Swap Lines FAQs](#)
- [March 20, 2020 joint announcement.](#)