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Policy Issue

Policy Coordination for Global Financial Stability Remarks at "The ECB and Its Watchers" Conference Held in Goethe-University Frankfurt on 6th April 2017

Hiroshi Nakaso*

I. Monetary Policy Divergence

The Bank of Japan is sometimes referred to as the inventor of various unconventional monetary policy instruments such as the zero interest rate policy, quantitative easing, and forward guidance, all of which were considered at the time to be measures to address Japan's idiosyncratic problems. Today, these measures are commonly adopted by many central banks in the advanced economies.

I don't say this because I want to boast of the Bank of Japan's genius. Rather, I want to stress that "necessity is the mother of invention". It was our strong mission-oriented will that drove us to develop and implement a series of unconventional monetary policy instruments to terminate the deflation that plagued Japan for over a decade. The latest version of this kind is the "Quantitative and Qualitative Monetary Easing with Yield Curve Control (YCC)". The outline of the YCC is illustrated in Figure 1.

Under the YCC, the interest rate is the operational target. The novelty of the new policy framework is that there are two target rates. The target rates comprise the short-term policy interest rate, which at present is negative 0.1 %, and the 10-year JGB yield, which is set at around 0 % currently. The target rates can be adjusted according to economic and inflation developments. This would be discussed and decided at every Monetary Policy Meeting. Under the framework, the Bank of Japan purchases necessary and sufficient JGBs to meet the interest rate targets. Therefore, quantity is determined endogenously.

The policy seems to have been working so far. As you can see in the left panel of Figure 2, the yield curve in Japan remains lower relative to the U.S. curve. Meanwhile, Japan's 10Y yield has remained within the target range, as you see in the right panel. The divergence between the U.S. rates is likely to widen as the U.S. Fed is en route to policy normalization while the BoJ and the ECB continue with the accommodative monetary policies.

* Deputy Governor Bank of Japan Hiroshi Nakaso, 2-1-1 Nihonbashi-Hongokucho, Chuo-ku, Tokyo, 103-8660, Japan, E-Mail: dgn-sec@boj.or.jp.

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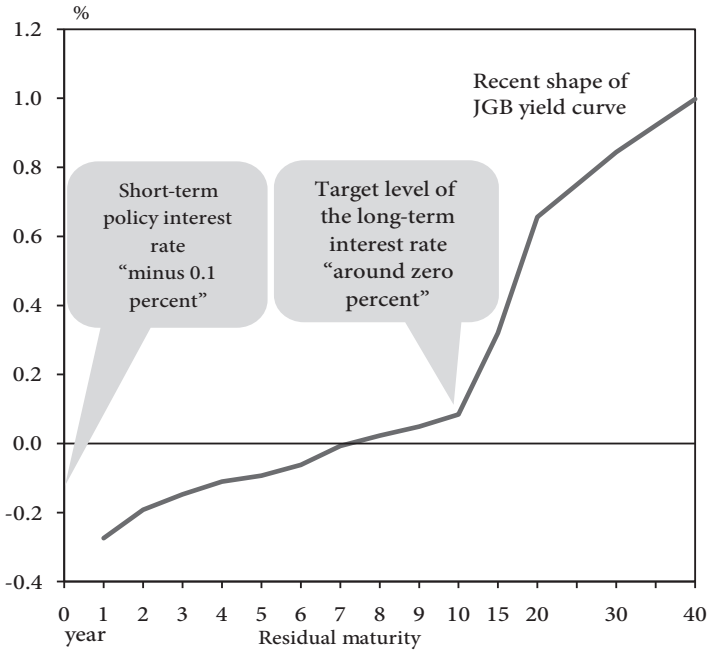
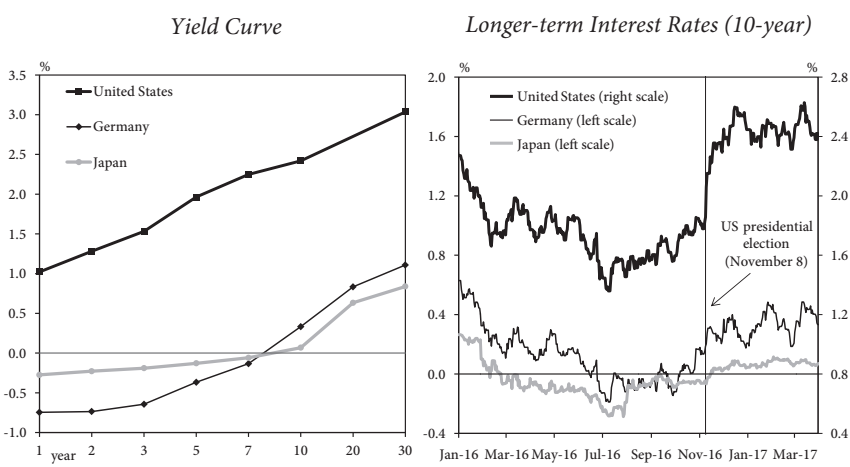


Figure 1: Quantitative and Qualitative Monetary Easing (QQE) with Yield Curve Control



Source: Bloomberg

Figure 2: Long-term Interest Rates of Advanced Economies

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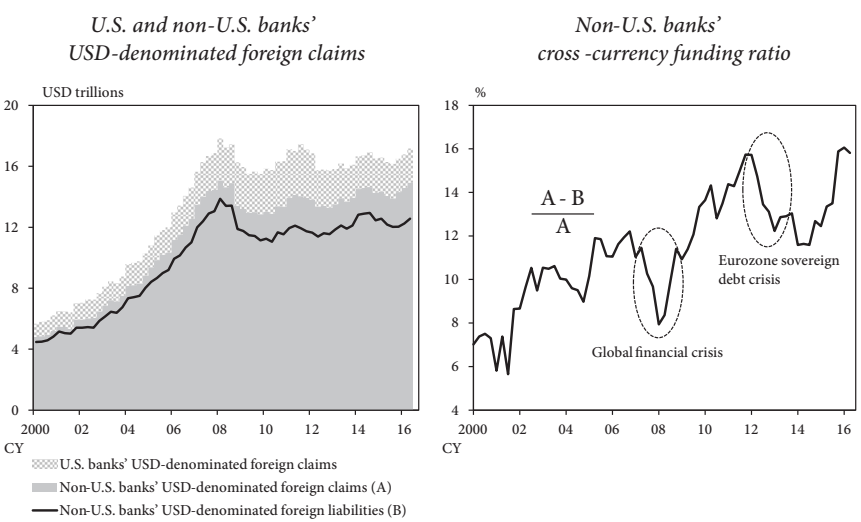
II. Implications for Global Financial Stability

The policy divergence may have implications for global financial stability. Let me explain why I think so. The left panel of Figure 3 shows U.S. dollar-denominated foreign claims of banks by nationality. It is striking to see that non-U.S. banks overwhelm U.S. banks in terms of market share. In one respect, this reflects the fact that, with much of global trade and financial transactions being conducted in dollars, non-U.S. banks are financially supporting cross-border activities, especially those of national firms.

So how do these non-U.S. banks fund U.S. dollars? When non-U.S. banks extend credit in dollars, they have to fund themselves in dollars, and often their on-balance-sheet credit extensions exceed their funding in dollars. This gap in funding is usually covered by FX swaps, which exchange domestic currencies with dollars.

In an FX swap, a non-U.S. bank would purchase some dollars against the domestic currency in the spot market, and the domestic currency against the same



Notes: 1. Latest data as at end-June 2016.

2. "Non-U.S. banks' USD-denominated foreign claims" and "Non-U.S. banks' USD-denominated foreign liabilities" are calculated as USD-denominated foreign claims and liabilities of all reporting countries after excluding those of U.S. banks, respectively.

3. "Non-U.S. banks' cross-currency funding ratio" is calculated as "Non-U.S. banks' USD-denominated foreign claims" less "Non-U.S. banks' USD-denominated foreign liabilities," divided by "Non-U.S. banks' USD-denominated foreign claims."

Source: BIS.

Figure 3: USD-Denominated Foreign Positions of Banks

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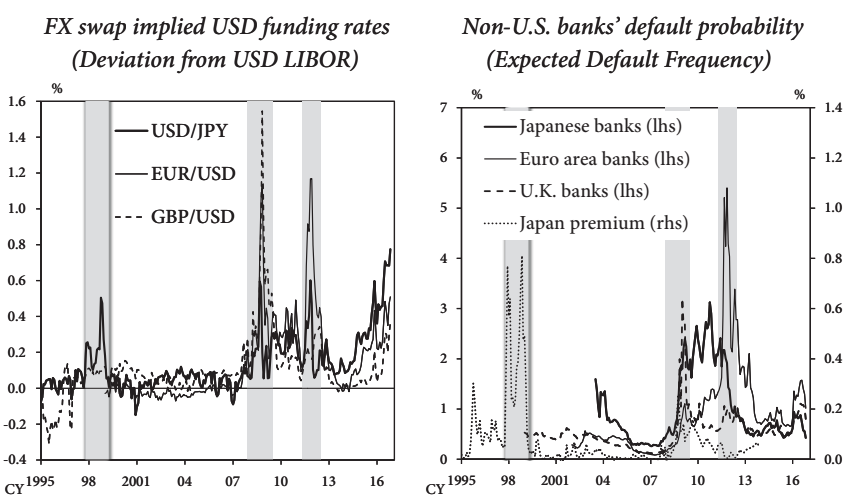
amount of dollars in the forward market. This is in effect obtaining dollars against collateral denominated in the domestic currency. The reliance on FX swaps can be approximated by dividing the dollar funding gap by foreign claims. This is shown in the right panel of Figure 3. You can see that the ratio is trending higher in the long term, with instances of sharp dips during periods of market stress.

Let me now focus on the FX swap market, which offers important clues in assessing developments in global financial markets. In textbooks on finance, it is said that "covered interest rate parity" will hold. This means that the effective cost of funding U.S. dollars through the FX swap market should be identical to the going cost of funding in the USD LIBOR based short-term money market. The basis of this textbook view is that, if the FX swap implied funding rate is higher than LIBOR, there is an arbitrage opportunity, which will be exploited by a bank until the opportunity is arbitraged away.

In real life, however, covered interest rate parity does not always hold, contrary to what the textbooks say. As the left panel of Figure 4 indicates, we often see periods where U.S. dollar funding costs through the FX swap market exceed the



Notes: 1. Latest data as at November 2016.

2. The shaded areas correspond to Japan's financial crisis (November 1997 through March 1999), the global financial crisis (December 2007 through June 2009), and the Eurozone sovereign debt crisis (May 2011 through June 2012).

3. Non-U.S. banks' default probability is the average of the EDF (Expected Default Frequency) of G-SIBs that are headquartered in each jurisdiction. "Japan Premium" is calculated as 3-month USD TIBOR less 3-month USD LIBOR.

Sources: Bloomberg; Moody's; BOJ.

Figure 4: FX Swap Implied USD Funding Rates and Banks' Creditworthiness

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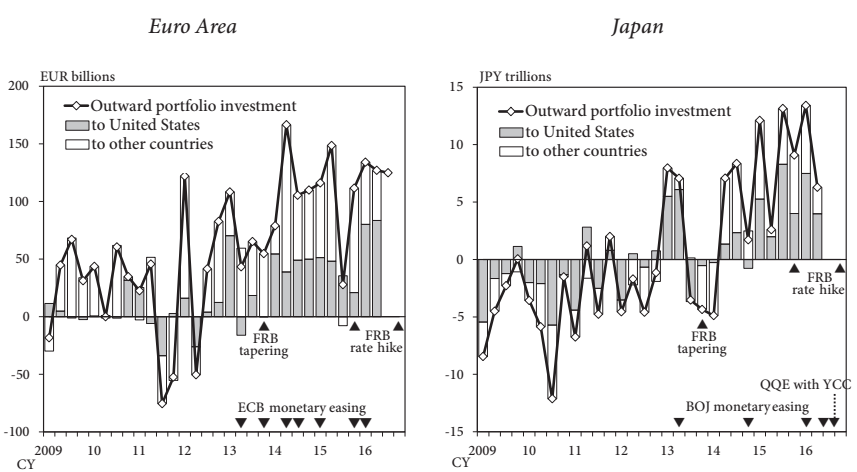
USD LIBOR. The deviation from USD LIBOR has often been associated with financial crises, which are expressed with the shaded areas. For example, in case of the Japanese financial crisis in the late 1990s, the dollar funding cost through dollar-yen swap contracts spiked. Likewise, during the recent global financial crisis from 2008 onwards, and the euro area debt crisis between 2011 and 2012, the dollar funding premia in the euro-dollar FX swap market spiked. All of these episodes are associated with the deterioration in the creditworthiness of banks. In the right panel, you can see that banks' default probabilities rose in the corresponding periods.

More recently, the dollar funding cost is rising again. However, things look different. This time around, banks' default probability remains stable and there are no obvious problems with banks' creditworthiness. This should imply that the mechanism for current increases in the dollar funding premia is different from that of past stress periods. Let me delve a little more into this issue.

Against the background of monetary policy divergence between Japan and Europe on the one hand and the United States on the other, the nominal return on U.S. dollar assets is now higher than the return on yen or euro assets. And, as Figure 5 on outward portfolio investment indicates, financial institutions and investors in Japan and in Europe are increasing their investments in dollar assets. When banks invest in foreign currency denominated assets, they generally hedge foreign exchange risk. Hence, the demand for FX swaps increases. The



Notes: 1. Latest data for euro area as at end-September 2016, data for Japan as at end-June 2016.
2. In each panel, ▲/▼ indicates the timing and direction of monetary policy changes since 2013.

Sources: ECB; Ministry of Finance; BOJ.

Figure 5: Outward Portfolio Investment (Euro Area and Japan)

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figure suggests that recent monetary policy divergence is at least one factor that is encouraging Japanese and European financial institutions to invest in dollar-denominated financial assets, and this in turn is contributing to tighter market conditions in the FX swap market, and thus the higher dollar funding cost.

The outlook that the rate divergence between the U.S. would grow wider will continue to attract investment in U.S. dollar assets by non-U.S. banks, putting persistent upward pressure on the dollar funding cost in FX swap markets. So, what are the underlying risks, if any, to global financial stability under such circumstances?

The rising cost of dollar funding in itself bites into banks' profit bases. On top of this, one could imagine a case where, for some reason or other, growth in the emerging market economies decelerate and capital outflows from these economies are spurred or another financial crisis breaks. Then, suppliers of the dollar, including reserve managers of emerging market economies and SWFs of commodity-producing economies would restrain the supply of dollars in the FX swap market. This could exacerbate the dollar liquidity shortage. As a result, dollar funding premia would be pushed higher. This could affect the broader intermediary function as banks might be forced to cut back on their cross-border lending and security investment in emerging market economies. Consequently, the growth of emerging market economies may be further adversely affected. So, there is an element of pro-cyclicality embedded in the process.

III. Policy Responses and Coordination

As much as monetary policy divergence itself is a product of central bank policy actions in each economy aiming at price stability, it also is the responsibility of central banks to ensure that such monetary policy actions do not destabilize the international financial system through the behaviors of financial institutions. So, what can the central banking community do?

The first thing central banks should do is to encourage banks to rely less on FX swaps and more on stable dollar funding sources like customer deposits and debt instruments with longer maturities. But if the dollar shortage is of a global and systemic nature, central bank actions may need to be called upon. Indeed, the experiences with the Global Financial Crisis highlighted the increased cross-border activities of financial intermediaries and the need to adjust central banks' role as Lender of Last Resort in providing liquidity assistance accordingly.

Figure 6 illustrates a scenario in which liquidity assistance in a cross-border context becomes an issue. Here, a global bank headquartered in jurisdiction (A) experiences a B$ liquidity shock in host jurisdiction (B), in which it has a foreign branch or subsidiary. Liquidity shortages in the bank's operation in jurisdiction (B) may need to be addressed either by the host central bank (B) or by

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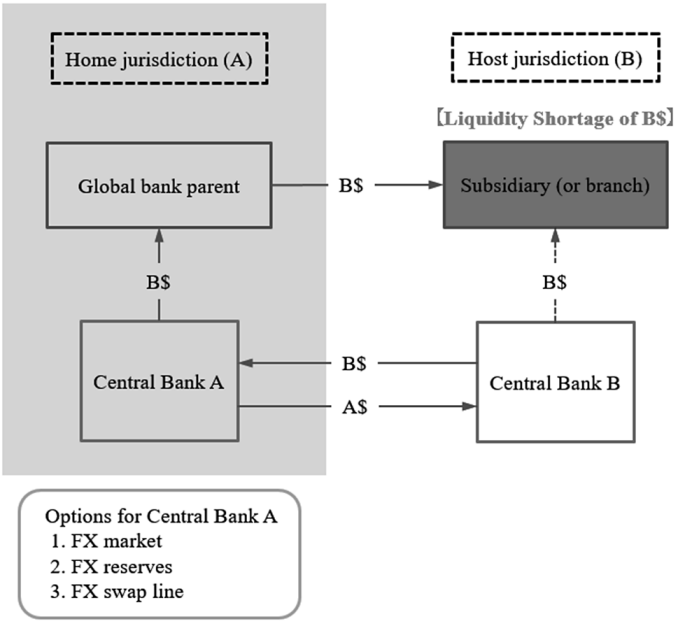

Figure 6: Issues Related to Cross-border Liquidity Assistance (LA) by Central Banks

the central bank in the home jurisdiction (A). If, for some reason or other, the host central bank cannot, or is constrained to provide liquidity assistance to the branch or the subsidiary, then the home central bank has to provide liquidity assistance in B$, which is a foreign currency for the home central bank. There are three options open to the home central bank (A): i) obtain foreign currency directly in the FX market; ii) draw on its own FX reserves; and iii) engage in an FX swap line with the host central bank (B). Each option has pros and cons. For example, the purchase of foreign currencies in the FX market by the central bank may be misinterpreted as FX intervention. This sends a wrong signal.

With regard to an FX swap line, an advantage for central bank (A) is that it can obtain a large amount of foreign currency B$ against the domestic currency without sending an adverse signal to the market. The fund can then be channeled to the bank in need of B$ liquidity. An advantage for the liquidity supplying central bank (B) is that it is exposed only to the sovereign credit of central bank (A), because the credit risk to the troubled bank is taken on by the home central bank (A).

Currently, a network of swap arrangements exists among the major six central banks, as you can see in the left panel of Figure 7. The swap line specifically tar-

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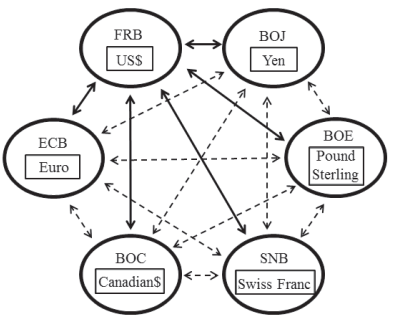
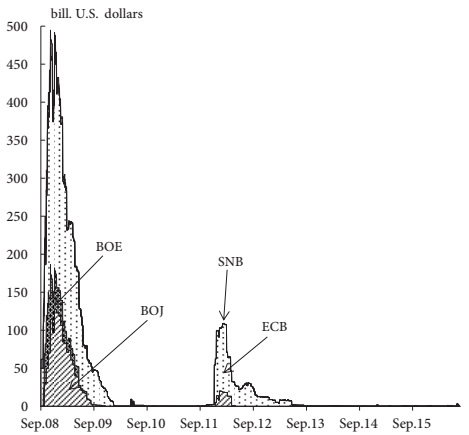
Central Bank Swap Lines



Outstanding Amount of US$ Funds Supplying Operation



Sources: BOE; BOJ; ECB; SNB.

Figure 7: Network of Central Banks Swap Lines

geted to address the dollar liquidity shortage was initially introduced in 2007 and was significantly reinforced during the Global Financial Crisis. Under the current framework, the six central banks have access to all other currencies besides the dollar. However, it is only the dollar swap line that has been activated so far.

As you can see in the right panel, the dollar swap line with the Fed has been used by the other central banks at a large scale during the Global Financial Crisis and the Euro Area Debt Crisis. It remains operational. The network of dollar swap lines is a new type of policy coordination among central banks that I think has successfully functioned as a backstop to prevent the global financial system from a systemic disruption.

The Global Financial Crisis left us with many lessons on the role of central banks as lenders of last resort in an increasingly globalized world. These lessons remain highly relevant. A recently published report by the Committee on the Global Financial System (CGFS) of the BIS on the liquidity assistance framework sets forth a set of open issues that need to be addressed by the central banking community. I hope the report proves a useful reference point for the next generation of central bankers so that they can be better prepared for a next crisis, which will likely be once again global in nature.

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