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Future Plans for Monetary Policy Implementation Frameworks at the Bank of England and European Central Bank

In assessing the monetary policy implementation framework for the Federal Reserve, the Federal Open Market Committee might learn from the experience of other advanced economy central banks. Indeed, the foreign experience played a key role in the Committee's discussions of the policy implementation framework two years ago.[1] This memo does not revisit that material. Instead it focuses on recent developments at the Bank of England (BOE) and European Central Bank (ECB), two central banks in economies with large, complex financial systems, like the United States. They are also central banks that, like the Federal Reserve, are considering issues related to their future monetary policy operating frameworks and the uncertainty of reserve demand over the medium term.

Bank of England

The Bank of England recently released a discussion paper on its future balance sheet and framework for controlling interest rates.[2] In the paper, the Bank indicated that it is currently "minded" to continue with a version of its floor framework to control short-term interest rates after it lets its asset purchases begin to roll off and reserves decline from their current elevated level.[3] The Bank also indicated that, with the paper, it was initiating outreach to market practitioners and other experts to better understand the demand for reserves.

What is the Bank of England's current system and what is it proposing? Prior to the global financial crisis, the BOE implemented a "voluntary reserves" corridor system. In this system, banks chose their own individual targets for reserves each maintenance period, and reserves were remunerated at Bank Rate—which was set at the middle of the interest rate corridor formed by the Bank's lending and deposit facility rates— so long as their average levels over the period were within a specified range of the chosen target. Starting in 2009, as the BOE began providing excess reserves, in large part through asset purchases, it moved to its current floor system in which all reserves are remunerated at Bank Rate. As such, the Bank moved to an "asset-driven" floor system, in which the quantity of reserves was driven by policy measures intended to reduce long-term rates or bank financing costs, and was more than sufficient to drive market interest rates to Bank Rate.

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[1] See the memo to the FOMC, "The Foreign Experience with Monetary Policy Implementation," July 7, 2016.
[2] Bank of England Discussion Paper, "The Bank of England's future balance sheet and framework for controlling interest rates," August 2, 2018.
[3] Continuing with the floor system does not necessarily mean that such a framework would be maintained in the long-run, but rather it could be the system during the transition to some future steady state.

The Bank in its paper suggested that it is inclined to remain in a floor system, albeit a floor system that is "liability-driven," in which the Bank supplies no more reserves than the level that financial institutions demand to bring short-term market interest rates close to Bank Rate.[4]

Why stay in a floor system? The BOE gave three reasons.

- First, one of the BOE's primary goals for its implementation framework is short-term interest rate control, and its current floor system is effective at keeping short-term market interest rates "in line" with the target communicated through Bank Rate.[5] Remaining in a floor system may also more easily handle the increased short-term interest rate volatility that might result from uncertainty about financial institutions' longer-run demand for reserves.

- Second, the Bank said that the floor system is "more robust to a wide range of future economic scenarios." The system would remain effective should reserves increase substantially because of the need for renewed asset purchases or other monetary policy measures. It should also remain effective in times of stress, during which there could be substantial use of the Bank's discount window.

- Third, the Bank noted that remaining in a floor system would provide "operational continuity" and "simplicity," as both financial institutions and the Bank are familiar with the system. Moreover, the floor system would be associated with only a very limited interbank market. Currently, the majority of the BOE's counterparties are not active in money markets, and if the Bank moved back to a corridor system, the costs of starting market trading for these firms, particularly smaller ones, could be substantial. A floor system would also be more flexible if the BOE wanted to broaden its counterparties further, for example in response to future changes in the financial system.

How will the floor system be implemented? Currently, abundant reserves are supplied as a result of the Bank's asset purchases, and short-term rates are controlled by remunerating reserves at Bank Rate. However, if the BOE unwinds these purchases, and wishes to remain in a floor system, it will eventually need to add reserves to the financial system. In the discussion paper, the Bank suggested it primarily plans to do this by "regularly offering" repos (lending reserves against U.K. government debt) at Bank Rate.[6] One motivation for doing so may be that a large repo book would result in less interest-rate risk to the central bank's balance sheet than holding

[4] The difference between an "asset-driven" and a "liability-driven" floor is murky since the quantity of reserves supplied equals the quantity demanded at the prevailing interest rates. Presumably, in a liability-driven floor, if counterparties are indifferent over a range of reserve levels at prevailing interest rates, then the framework supplies the reserves at the minimum of that range.

[5] The BOE said that they felt that they have enough additional tools to keep short-term interest rates from declining much below the floor, including central bank bills.

[6] Reserves would also be available through the BOE's liquidity facilities, including those that provide reserves for longer terms; however, term reserves would be made available at rates higher than Bank Rate.

assets outright would.[7]

However, many of the details of these operations are not outlined in the discussion paper. For example, it is not clear whether "regularly offering" would imply operations at a weekly, daily, or other frequency. Nor is it clear what the maturity of the repos would be. Also, the BOE may offer repos at full allotment, letting demand determine the amount of reserves to provide. The BOE noted that it would gauge demand for these operations through conversations with market participants, demand it observes at its liquidity facilities, and internal analysis.

What determines the level of reserves? In addition to asking the public questions about the intended floor system, the BOE is also conducting outreach to understand better the demand for reserves. As their asset purchases roll off, the quantity of reserves may at some point shift from being asset-driven to being liability-driven – that is, reach the minimum level at which they equal the demand for reserves at the prevailing Bank Rate. While reserves are expected to decline from current levels (of around £600 billion), the BOE expects that reserves will be "materially higher" than before the global financial crisis (when they were around £80 billion), for a couple reasons.[8]

- First, demand for reserves will be higher than before the crisis because of banks' desire for larger liquidity buffers due to both regulatory changes and increased self-insuring of liquidity risk. Nearly all of the BOE's counterparties are subject to the Liquidity Coverage Ratio (LCR), which has led these institutions to hold High-Quality Liquid Assets (HQLA) to insure against liquidity shocks.

  However, for the largest financial institutions, the BOE expects that reserve demand will be importantly influenced by the return on and liquidity of various forms of HQLA, and that these could vary considerably over time. The BOE also notes that providing reserves via repos backed by government bonds instead of through outright purchases could influence demand. The BOE suggests that repos allow banks to more flexibly manage their liquidity, but repos are also less attractive than holding other forms of HQLA on an outright basis, as a repo of government bonds for central bank reserves will lower a bank's LCR because repos are subject to haircuts.[9]

[7] The Bank of England and the U.K. Treasury recently introduced a new capital framework in which the government explicitly backstops the capital of the BOE, but the Bank must still assess the risks of its operations. See memo to the Board, "A New Financial Framework for the Bank of England," July 2, 2018.
[8] BOE staff plan to monitor a variety of measures to help gauge the level of reserves that is consistent with a "liability-driven" floor. These include interest rate dispersion and intermediation patterns in secured and unsecured money markets, funding activity in debt capital markets, and take-up in the BOE's indexed long-term repo (ILTR) operations.
[9] However, if regulators had concerns about the ability of banks to sell government bonds in the event of a stress event, regulators could limit the amount of government bonds that banks can hold as HQLA. U.K. banks are required to ensure that their "ability to monetize HQLA in stress is not limited in any way." See "The PRA's approach to supervising liquidity and funding risks," February 2018, for a discussion of LCR including the treatment of reserves.

- Second, the BOE believes reserve demand has increased in part because the number of its counterparties has risen significantly, from 43 to 194 institutions, and now includes investment firms and central counterparties. As noted above, the majority of the BOE's counterparties are not active in money markets, and instead are content to hold reserves to meet HQLA requirements and other liquidity needs. The BOE also expects that demand for reserves for payment system needs will grow as more of its counterparties join the United Kingdom's settlement systems.

What the BOE did not talk about. Although the Bank raised several important issues in the discussion paper, several issues surrounding the operating framework were not explicitly addressed.

- *Quotas*. The BOE did not discuss the use of reserve quotas for financial institutions, an element in the floor systems used at the Norges Bank and the Reserve Bank of New Zealand since before the global financial crisis. In a quota or "tiered" system, the rate paid on reserves falls after a bank's reserves rise above some level. After initially implementing a floor system, in both Norway and New Zealand, reserves held by banks began to move above levels that the central banks felt were needed for payment system purposes and liquidity buffers. With reserves remunerated at market rates, banks had little incentive to lend funds to each other as there was no opportunity cost to holding the reserves. As a result, over time, banks that needed to borrow in the interbank market had to bid up rates to acquire funds, and the central banks felt the need to offset these pressures with additional reserves.[10]

- *Other considerations*. While the BOE noted the influence of various factors on the demand for reserves, it did not discuss some other reasons why the Bank might choose to provide abundant reserves. For example, the paper did not discuss much the merits of providing abundant reserves to smooth liquidity shocks to the payment system. Nor did the BOE argue that abundant reserves might help promote financial stability. Some observers have been concerned that a shortage of safe assets encourages the creation of quasi-safe assets by the private sector and raises financial stability concerns.

Decision process. Rather than make a final decision regarding its operational framework and announce it to the public as complete, the Bank's paper sketched out how the operating system that it is inclined toward would work. The paper also asked for comments through the end of October on a specific set of questions about the framework and reserve demand (see Appendix 1 for the list of questions).[11] These questions will form the basis of the Bank's ongoing

[10] See the memo to the FOMC, "The Foreign Experience with Monetary Policy Implementation," July 7, 2016, and the memo to the Board, "Lessons from Floor Systems," April 26, 2017. The quota or tiering system of both central banks is a form of "target rate limited access" system, or TARALAC, where the central bank has a target rate, but only provides a fixed amount of reserves at that rate.

[11] In terms of governance, the Bank of England noted that the monetary policy framework decision is one for the Bank's Executive—the Governor and Deputy Governors—and not the Monetary Policy Committee as a whole.

engagement with market participants and other experts on the design of its operating framework and size of its balance sheet. This outreach will occur through regular market intelligence and other means, possibly including surveys. Public reaction and comments on the discussion paper and announcement have so far been limited, but the collection of comments is ongoing.[12]

European Central Bank[13]

Like the Bank of England, the ECB is currently using an "asset-driven" floor system. At the onset of the crisis in mid-2007, the ECB had difficulty keeping market interest rates close to the target of its interest rate corridor as it expanded liquidity in the system. It shifted emphasis from the center of its corridor, the main refinancing rate, to the bottom of its corridor, the deposit rate, and overnight interest rates declined to this rate. The ECB provided abundant reserves first as it introduced fixed-rate full-allotment repos and later as it conducted targeted longer-term refinancing operations and large-scale asset purchases.

Apart from a few speeches by ECB officials, the ECB has not released much public information about its future operational framework since around the time of the Federal Reserve staff's 2016 memo. These speeches seemed to support returning to a version of the ECB's pre-crisis operating system. Returning to this system would involve a symmetric corridor for short-term money market rates, using primarily repos to manage the supply of reserves, a strong preference for a balance sheet that is "short and lean," with a size that is principally determined by the amount of currency outstanding, and the use of reserve requirements if needed. These earlier views noted the importance of maintaining the capacity to respond to future crises, including conducting long-term credit operations and the ability to push short-term rates somewhat below the zero lower bound.[14]

However, we understand that internally the ECB is discussing a wide range of policy options as part of a large internal assessment process similar to the Federal Reserve's 2015-16 review. This work is still preliminary and will not be ready to present to ECB policymakers until next year.

For the ECB, implementing a pre-crisis type of corridor with balanced liquidity conditions may prove a challenge and remaining in the floor system may prove more desirable, given the higher and more uncertain demand for reserves going forward. Reserve demand is likely to be higher and more volatile because of regulatory changes, continued money market fragmentation, and demand from banks and non-banks to maintain higher liquidity buffers. This higher reserve demand from banks may be more than can be effectively met by the ECB's one-week Main

[12] Former Monetary Policy Committee member Charles Goodhart has privately said that he is concerned about the Bank's view because a floor system with abundant reserves will break the relationship between central bank operations and monetary aggregates. He fears that doing so will harm monetary policy transmission by reducing the connection between central bank reserves and commercial bank lending.
[13] The decision about the framework for monetary policy implementation is a decision of the Governing Council of the ECB, which includes the Presidents of the National Central Banks.
[14] See Ulrich Bindseil, "Evaluating Monetary Policy Operational Frameworks," in *Designing Resilient Monetary Policy Frameworks for the Future*, Jackson Hole Economic Policy Symposium, August 26, 2016.

Refinancing Operations (MROs), its standard operation pre-crisis. As such, longer-term refinancing operations or outright purchases may be needed. Based on its earlier views, a less preferred option for the ECB would be to keep a large balance sheet to support market functioning, including through the provision of tradeable safe assets to the financial system.

With respect to its operating target, the ECB does not reference a specific market rate, like the federal funds rate, but instead targets the general level of short-term interest rates. However, the ECB was viewed at times as assessing the effectiveness of policy transmission using EONIA, an unsecured overnight rate that is the reference rate for many economically-important rates in the euro area. While in the euro area unsecured money markets have remained relatively small post crisis, the ECB is expected to continue to assess its effectiveness against unsecured rates, but using the new unsecured reference rate ESTER.

With the ECB still in the process of winding down its net asset purchases, any decisions on the longer-term steady state implementation framework are likely some time off. The ECB could, like the BOE, decide to publicly sketch out its preferred option, but it could also remain in its current system and make smaller adjustments over time as it learns more. This would not preclude either staying in the current floor or eventually shifting back to a modernized version of the pre-crisis corridor system.

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Appendix 1 – Bank of England's Questions for Public Comment

Question 1 – Are there operational of other considerations that affect the level of Bank of England reserves that could be supplied via OMOs? How will the new programme of OMOs affect demand for the Bank's existing liquidity facilities (such as the Indexed Long-Term Repo Facility)?

Question 2 – How will the operating framework described here impact on day-to-day management of Sterling Monetary Framework participants' reserves positions?

Question 3 – How will the operating framework described here impact on inter-bank and other money market activity and pricing relative to the current floor system?

Question 4 – What will be the drivers of demand for Bank of England reserves and what will be their relative importance?

Question 4a – How does the management of day-to-day liquidity needs affect the demand for reserves?

Question 4b – How does prudential regulation affect the demand for reserves?

Question 4c – How is the demand for reserves affected by the relative returns available on other assets?

Question 4d – What are the structural factors that can be expected to drive demand for reserves over the longer term?

Question 5 – How will the supply of reserves via OMOs affect their demand relative to the current framework where supply is primarily via asset purchases?

Question 6 – What approach(es) could be taken to estimate the expected aggregate demand for reserves?