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# The Federal Reserve System

**Date:** July 13, 2016

**To:** Federal Open Market Committee

**From:** Thomas Laubach and Simon Potter, on behalf of the Long-Run Framework Executive Committee

**Subject:** Foundational Memos for the Long-Run Framework Project

Attached is the third and final memo from the foundational work of the Long-Run Framework (LRF) project. This memo covers money markets. The two previously distributed memos cover lessons learned from the financial crisis and foreign experiences with implementation frameworks. This "foundational" work provides historical perspectives and addresses environmental issues that are intended to be informative for the design of a long-run implementation framework.

The memo reviewing lessons from the crisis examines some of the challenges that were faced during the financial crisis, such as the control of short-term interest rates and the provision of liquidity. The purpose of this work is to highlight aspects of the crisis that are most salient in considering a monetary policy implementation framework; it does not provide a complete review of policies implemented during the crisis. The memo reviewing foreign experiences summarizes the frameworks of central banks from nine advanced economies and four emerging markets. The memo reviewing money markets discusses changes that have occurred in these markets by examining the role they play in the transmission of monetary policy and providing some perspectives from market participants. In addition, several memos were produced and distributed as background material for Research Directors.

These memos are the results of several months of work, representing a System-wide effort to research these issues. In developing the material, staff and stakeholders from across the System contributed and shared views on the project by participating in working groups, plenary meetings and workshops.

At this stage, to inform the ongoing work of the LRF project, we would like your feedback on this foundational work and what aspects of the material you viewed as most salient in considering the future framework. Brief summaries of this material will be presented at the July FOMC meeting, followed by Q&A, and there will be ample time for discussion (not a full go-round). The Chair would welcome your reactions and comments to this work at that time.

Looking ahead, the second phase of the project is underway and focusing on specific aspects of frameworks, including interest rate targets and operating regimes, as well as balance sheet policies. A series of memos on these issues is being prepared for the November FOMC meeting. The final phase will entail a menu of options for the Committee to consider for the long-run framework.

This cover note provides an overview of the objectives for the long-run framework that were established when the work was initiated last year. It also highlights four main themes that emerge from the foundational phase of the work.

## A Recap of the LRF Project Goals

The goal of the LRF project is to provide framework options that will achieve an appropriate degree of control over short-term interest rates, including during periods of financial distress, and support the Fed's ability to address liquidity strains in money markets. In addition, the options are to be robust to structural changes in the financial system and support overall financial stability, as well as enhance the Fed's ability to achieve macroeconomic and financial stability objectives at the zero bound.[1] Additional criteria include reducing deadweight losses associated with reserve requirements, promoting efficient, active and resilient money and government securities markets, as well as efficient and resilient payments systems. The framework will also be evaluated on the criteria laid out in the Committee's Policy Normalization Principles and Plans. The foundational work highlights that the pre-crisis framework had some deficiencies with respect to some of these criteria.

## Broad Themes of the Foundational Work

- *The pre-crisis framework revealed challenges in providing liquidity, as well as tradeoffs between liquidity provision and interest rate control.*

  Throughout the foundational work, themes emerged around how central banks provide liquidity and tradeoffs that exist between interest rate control and liquidity provision. A lesson from the work reviewing the crisis is that the pre-crisis framework did not position the Federal Reserve to efficiently and effectively provide liquidity on a large scale while also maintaining control of the funds rate. In the pre-crisis framework, reserve injections generally needed to be offset or sterilized in order to maintain the level of reserves consistent with the funds rate target. Without this ability, liquidity provided through various facilities caused the federal funds rate to trade below its target at times in 2008, a situation that was not alleviated until hitting the zero lower bound. The need to provide liquidity, at least during some phases of the crisis, may have been viewed by policymakers as relatively more important than maintaining precise control over the funds rate.

  The work also raised questions about whether liquidity to address market strains is better provided through standing facilities, or whether separate tools or facilities should be kept "on the shelf," either explicitly or implicitly, for use in times of elevated market stress. A related issue is the perceived "stigma" associated with accessing central bank liquidity and, as highlighted by the work covering foreign experiences, not unique to the United States. Some foreign central banks have responded by recognizing liquidity insurance as an explicit objective of the central bank and redesigned facilities to provide ex ante clarity about the

[1] See the addendum for a complete restatement of the LRF Project Scope and Objectives.

principles and terms of liquidity provision. Evaluating which facilities and operations should be maintained and active, if only to retain capacity and operational readiness to provide policymakers flexibility in responding to market developments, is another important dimension of the LRF project.

Finally, this work highlights the need to carefully consider both the counterparty list and range of accepted collateral for central bank operations and liquidity facilities. During and after the crisis, many central banks expanded both, and plan to retain some of this expansion in their frameworks. In the United States, the expansion of counterparties and accepted collateral was undertaken largely to provide liquidity and support intermediation in nonbank sectors, as well as address market segmentation that originated from differential access to U.S. dollar funding. How a new framework should address such dislocations in the future should they arise, while maintaining interest rate control, is an important aspect of the LRF project.

- *Central banks use a variety of implementation frameworks, many of which have been altered due to actions taken during and after the crisis*

Policies implemented during and after the crisis left many central bank frameworks changed, though a few have been able to roughly preserve their pre-crisis framework. For example, the Reserve Bank of Australia and Bank of Canada have maintained balance sheets comparable to their size prior to the crisis and continue to use a "corridor" system to steer short-term rates. In this framework, the central bank adjusts the supply of reserves to achieve its target for a market interest rate, with two standing facilities enforcing the upper and lower limits of the corridor. In addition, reserves are managed to result in a "scarce" amount of excess reserves. The rate charged by a lending facility provides a ceiling on market rates in the event the overnight interbank market for reserves becomes sufficiently tight. A deposit facility provides the floor, which offers remuneration on reserves should lenders not find a borrower willing to offer a more favorable rate in the overnight market. In principle, overnight rates should fluctuate between the ceiling and the floor—that is, within the corridor.

Other central banks have used "floor" systems, where reserves are provided in sufficient quantity to push market rates down to the rate on the central bank bank's deposit facility. Many of the central banks studied became *de facto* "floor" systems after the crisis as unconventional monetary policies resulted in an abundant supply of reserves. It is worth noting that although a large balance sheet is often associated with a floor system, it does not necessarily need to be the case. For example, the Riksbank operates a corridor system with a large balance sheet, achieving reserve scarcity through the issuance of central bank bills.

In some cases, such as the Norges Bank and Reserve Bank of New Zealand, policymakers had concerns about the concentration of reserves within individual banks and the resulting decline in trading volumes in interbank markets. These concerns were addressed with banks adopting "quota" systems which remunerate reserves above some threshold at a lower rate.

Outside of the floor/quota versus corridor distinction, central banks also differ in the rate they target and the framework around reserves. For example, policy rates include an overnight unsecured market rate, an overnight secured market rate, administered rates and in the case of the Swiss National Bank, a 3-month unsecured rate. Despite the variety, the central banks that were studied generally reported having sufficient control over short-term rates and the ability to transmit policy actions to longer-term rates. Empirical evidence presented in the memo supports these conclusions. The foundation work also highlights differences in reserve regimes across central banks. Setting reserve requirements, having no requirements, or allowing banks to voluntarily set their reserve targets are some of the examples discussed.

Looking longer term, central banks also had different views on the appropriate size and composition of their balance sheets, though some noted that exceptionally large balance sheets that result from large-scale asset purchases may complicate relationships with fiscal authorities.

- *Central bank implementation frameworks and regulatory changes alter participation and the type of trading in money markets, as well as likely affect the demand for reserves*

Another theme that emerged from the foundational work is how different frameworks and regulatory changes may affect participation and trading in money markets. The reserve regime, size of the balance sheet, interest rate regime (i.e. corridor vs. floor or quota system) and counterparty/collateral framework can all affect incentives for financial market participants to actively trade in money markets. Foreign central banks generally view active money markets favorably, though the nature of trading under various frameworks differs. For example, under floor or quota systems, trading often reflects arbitrage activities where banks with access to the deposit facility borrow from institutions that do not have access to the facility or face a lower remuneration rate. In contrast, trading in a corridor system is often driven by efforts to redistribute reserves within the banking system to meet reserve requirements. Given an objective of the LRF is to present options fostering efficient, active and resilient money markets, one issue is whether there is a material difference between trading to arbitrage a remuneration rate or reallocate scarce reserves.

Regulatory changes were also highlighted as having effects on money market activity. For example, regulations have likely altered the incentives to participate in certain money market activities and hold reserves. As a result, if the United States were to return to the pre-crisis framework, augmented with interest on reserves, money markets would likely still look different compared to before the crisis. The work reviewing money markets, however, notes that the scope of the changes makes their ultimate impact uncertain. A general theme, however, was that regulatory changes will likely increase demand for high-quality liquid assets (HQLA) in the years ahead. This raises the question whether central banks should provide facilities to aid banks in meeting the greater demand, or alter their frameworks to reduce banks' reliance on central bank facilities that provide HQLA. An issue regarding the framework is whether aiding money market participants in meeting regulatory requirements

will support and foster financial stability, or whether such facilities circumvent the original intent of the regulation and thereby pose risks to financial stability.

- *Implementation frameworks should have the capacity and scope to provide accommodation even when the policy rate has been reduced to zero*

  In looking at the ability of various frameworks to achieve macroeconomic objectives, many central banks faced with lower bound constraints viewed that policies adopted to continue providing accommodation were effective. The policies included large-scale asset purchases, forward guidance, long-term funding programs and negative policy rates. Though for negative rates, the view was that much remains to be learned and the longer-term impact remains uncertain. More broadly, evaluating the capacity of the Federal Reserve to implement unconventional stimulus at the zero lower bound, perhaps even including negative policy rates, is an important aspect of the LRF project.

## Addendum

## Long-Run Framework Project Scope and Objectives

### Scope

The project will focus on a range of operational and policy issues associated with the Federal Reserve's long-run *monetary policy implementation framework* including possible interest rate targets, mechanisms to achieve the desired level of short-term rates, and alternative structures of the Federal Reserve's assets and liabilities. The advantages and disadvantages of various implementation frameworks will be assessed based on the ability the Federal Reserve to achieve its goals across a range of macroeconomic and financial environments.

An important benchmark case in this analysis is an implementation framework similar in many respects to that which existed prior to the crisis. In this benchmark framework, the Desk would manage reserves levels to tightly control the level of the federal funds rate. The interest on excess reserves rate (IOER) and the discount window would help to establish lower and upper bounds, respectively, for the federal funds rate.

### Objectives

Staff will evaluate options for a long-run monetary policy implementation framework that will best achieve a number of key goals:

(1) Achieving an appropriate degree of control over short-term rates including during periods of financial distress and in a manner robust to structural changes in the financial system.
(2) Enhancing the ability of the Federal Reserve to achieve macroeconomic and financial stability objectives at the zero bound.
(3) Supporting the System's ability to address liquidity strains in money markets and support overall financial stability.

In addition, alternative long-run operating frameworks will be evaluated on their ability to:

(1) Reduce burdens and deadweight losses associated with reserve requirements.
(2) Promote efficient, active, and resilient money markets and government securities markets.
(3) Promote an efficient and resilient payment system.

Finally, criteria will be used in the evaluation following from the Committee's discussion of policy normalization principles and plans:

(1) The framework should involve holding no more securities than necessary to implement monetary policy efficiently and effectively.
(2) The assets held by the Federal Reserve will consist primarily of Treasury securities.