Discussion of "The Financial Market Effects of the Federal Reserve's Large-Scale Asset Purchases"

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1. Introduction

It is now one of the most important tasks in the area of monetary policy research to empirically evaluate the effectiveness of the monetary policy operations adopted by the central banks facing the zero lower bound. In this paper, Gagnon et al. (2011) empirically investigate the impacts of the Federal Reserve's program called large-scale asset purchases (LSAPs). They conduct two types of empirical exercises for this purpose: the event-study analysis and the time-series analysis. They find through the event-study analysis that the LSAPs of $1.7 trillion lowered the ten-year Treasury yield by 62 basis points, and that the ten-year agency debt yield and the mortgage-backed securities (MBS) yield declined more. They also find through the time-series analysis using the data over 1985 to 2008 that the LSAPs lowered the ten-year Treasury yield by 52 basis points. They also provide some evidence that the decline in the long-term interest rate reflects lower risk premiums, rather than lower expectations about future short-term interest rates.

The ultimate purpose of the paper is to know whether the LSAPs program worked or not. In the simplest way, their answer is, "Yes, it worked." But my first reaction was how large the number like "62 basis points" is, and whether this decline was sufficiently large to improve conditions in the U.S. credit markets. In my discussion, I will try to think about the economic meaning of their estimates. But before going to detailed comments, let me briefly mention the unique

feature of this paper. This is surely one of the pioneering papers on this issue, but there are already several papers that seek to evaluate the effectiveness of the Federal Reserve's policy during the recent crisis, including Hamilton and Wu (2010) and Doh (2010), although their number is still limited.

What I found to be quite unique about the paper is its description about cross-country comparison of large-scale asset purchases by the other two central banks: the Bank of Japan (BOJ) and the Bank of England. Unfortunately, their cross-country analysis is at a very early stage, so that I was not able to learn much about the similarities and differences between the Federal Reserve's LSAPs and, for example, the quantitative easing program adopted by the BOJ in 2001–06. I look forward to seeing a more comprehensive and detailed cross-country comparison either by the authors or by someone else. Another unique feature of the paper is its description about how the LSAPs were implemented. Section 3 of the paper tells about the core ideas of the LSAPs program that were shared by the staff of the Federal Reserve involved in the operation.[1]

2. LSAPs vs. Standard Monetary Easing

The authors report several numbers related to the effectiveness of the LSAPs. For example, they report through the times-series analysis that the LSAPs of $1.7 trillion lowered the ten-year Treasury yield by 52 basis points. This does not look like a small number, but I still wonder how large this is. The natural and easiest way to know how large this is will be to compare this number with the corresponding number associated with an interest rate cut in the normal circumstance (i.e., the policy rate is not at the zero lower bound).

Simulation results using the FRB/US model indicate that a 100-basis-point shock to the federal funds rate changes the ten-year Treasury yield by 15 basis points. This implies that we need to cut the federal funds rate by 350 basis points to achieve a decline of the ten-year Treasury yield by 52 basis points. In other words, the

[1]Gagnon et al. (2010), the working paper version of this paper, provides a more extended discussion of the LSAPs' implementation and gave me a sense of really being there (i.e., at the operation desk of the Federal Reserve Bank of New York).

impact of the LSAPs of $1.7 trillion, or 12 percent of nominal GDP, is almost the same as that of a reduction of the federal funds rate by 350 basis points. Of course, that cut of the federal funds rate is not feasible because of the zero lower bound, but this translation exercise gives us a clearer idea about the magnitude of the effects of the LSAPs. For example, I can now imagine, based on various empirical evidences on monetary easing in Japan, that the impact of the LSAPs was probably much larger than that of the quantitative easing program conducted by the BOJ.

However, it should be noted that a reduction of the federal funds rate by 350 basis points is not extraordinarily large. For example, the federal funds rate declined more than 500 basis points during monetary easing in 2001–04, and more than 600 basis points during monetary easing in 1989–93. Compared with these numbers, the impact of the LSAPs seems to be modest. According to the Federal Open Market Committee (FOMC) statement in March 2009, the purpose of the LSAPs is to "help improve conditions in private credit markets" and to "provide greater support to mortgage lending and housing markets." Whether the LSAPs had sufficiently large impacts in light of these policy objectives still remains unclear.

3. Unconventional Monetary Operations

The descriptions in section 3 about the distinction between conventional and unconventional monetary policy are informative. On the one hand, conventional open-market operations (OMOs) are characterized by two principles: a central bank buys and sells only Treasury securities, and seeks to minimize effects of those transactions on market prices. As for the second feature, Gagnon et al. (2011) describe OMOs at the Federal Reserve as follows: "OMOs generally were designed to have a minimal effect on the prices of the securities included in the operations" (p. 10) and OMOs "tended to be small in relation to the markets for Treasury bills and Treasury coupon securities" (p. 10). On the other hand, OMOs in the LSAPs program are characterized by much wider varieties of securities, and OMOs in the LSAPs program "aimed to have a noticeable impact on the interest rates of the assets being purchased" (p. 10), and were "designed to be large relative to the markets for these assets" (p. 11).

This distinction between conventional and unconventional monetary operations is very clear.

At the same time, the authors describe some features of the operations actually conducted by the Federal Reserve. For example, in Gagnon et al. (2010), they state that "purchases of MBS were concentrated in newly issued, thirty-year securities, which were generally more liquid than other securities." The Federal Reserve did so to "support market functioning." They also state that "purchases of MBS were increased when market liquidity appeared to be good and were reduced when liquidity appeared to be poor." As far as I read these sentences, I have an impression that actual operations conducted by the Federal Reserve were not consistent with the philosophies of the LSAPs program; in fact, it is closer to conventional policy operations.

Of course, this does not rule out the possibility that some of the monetary operations during the crisis, especially operations conducted at the early stage of the crisis, were indeed carried out closely following the original philosophies of the LSAPs program. However, we should learn from the Federal Reserve's actual behavior in the market that distinction between conventional and unconventional monetary operations is not crystal clear as is often assumed in theoretical papers about unconventional monetary policy.

4. LSAPs and the Zero Lower Bound on Interest Rates

The authors state that LSAPs are "one of the key policy tools available at the zero bound" (Gagnon et al. 2011, p. 38). This is true, but the opposite may not necessarily hold. That is, LSAPs are available even when the policy rate is above zero. One may think that LSAPs are not desirable in an environment with positive interest rates, because LSAPs affect the level of interest rates, which is targeted by the central bank. However, LSAPs can be carried out with no effects on the level of the policy rate through appropriate sterilization.

An important question to be addressed is whether or not the use of LSAPs should be restricted only when the policy rate hits the zero lower bound. Cúrdia and Woodford (2010) and a series of papers by them adopt an assumption that central banks do not have skills to trade and monitor risky, illiquid assets. This assumption implies that LSAPs are costly, so that they should be used only when alternative

policy tools (such as the control of the policy rate) are not available. This is consistent with what we observed in the United States, Japan, and other industrial countries.

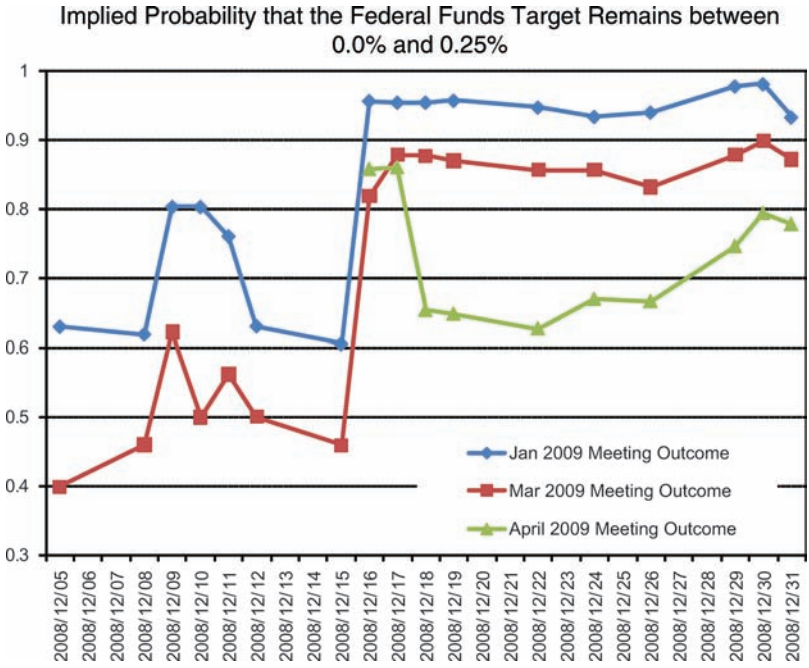
I do not see any problem with the Cúrdia-Woodford assumption. It is true that central banks do not have sophisticated skills to trade and monitor risky assets. However, the experience at the Federal Reserve Bank of New York tells us that the central bank is able to overcome the lack of such skills by borrowing skills from the private sector. Specifically, the authors state that the Federal Reserve Bank of New York hired external investment managers in order to quickly and efficiently implement the MBS purchases and to mitigate financial and operational risk. I'm not quite sure how much these managers contributed to the trading and monitoring activities at the Federal Reserve during the crisis, but this experience at the Federal Reserve seems to suggest that it might not be appropriate to rely too much on the Cúrdia-Woodford assumption.

The paper contains potentially important empirical evidence related to this issue. Their event-study analysis indicates that the impact of the LSAPs on the ten-year term premium is somewhere between 62 and 91 basis points, while the time-series analysis (using the data from the pre-crisis period) indicates that the corresponding figure is somewhere between 38 and 82 basis points. This difference implies that LSAPs were more effective in the crisis period during which financial markets did not work properly, although the authors did not conduct any statistical test for the difference in the estimated values. If this is the case, one may be able to argue that the use of LSAPs should be restricted only when financial markets do not function well.

5. The Effect of Policy Communications

The authors argue that the FOMC statements that the federal funds rate will remain at "exceptionally low levels for some time" (December 16, 2008) or "exceptionally low levels for an extended period" (March 18, 2009) did not change much the market expectation about the future path of the federal funds rate, based on the evidence that the one-year-ahead expected instantaneous interest rate did not move much around the release of the FOMC statements. Based on this argument, they conclude that the observed reductions in

Figure 1. Federal Funds Rate Predictions after December 16, 2008



Source: Federal Reserve Bank of Cleveland.

long-term interest rates, like the ten-year Treasury yield, come not from lower expectations of future short-term interest rates but from changes in term premiums.

To evaluate the (in)effectiveness of the policy commitment in a different way, I show some evidence in figure 1. This figure shows the implied probability that the federal funds target rate remains very low (i.e., between 0 and 0.25 basis points), which is estimated by the Federal Reserve Bank of Cleveland using prices of federal funds futures and options. The implied probability for the January 2009 meeting outcome (the probability that the federal funds target decided at the January 2009 meeting would be between 0 and 25 basis points) jumped up on December 16, 2008, when the FOMC lowered the federal funds target to a range of 0 to 25 basis points and stated that the federal funds rate was likely to remain at

exceptionally low levels for some time. The same thing was true for the May 2009 meeting outcome. Turning to the April 2009 meeting outcome, however, the implied probability was high for two days after the FOMC statement but started to decline on December 18, 2009, and remained low thereafter. In other words, market participants expected on the day of the FOMC statement that the federal funds rate would remain at very low levels at least until April 2009, but that expectation lasted only for two days. They started to expect that low rates would end before April 2009. This is consistent with the evidence provided by the paper.

References

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