



## Can the FOMC Increase the Funds Rate Without Reducing Reserves?

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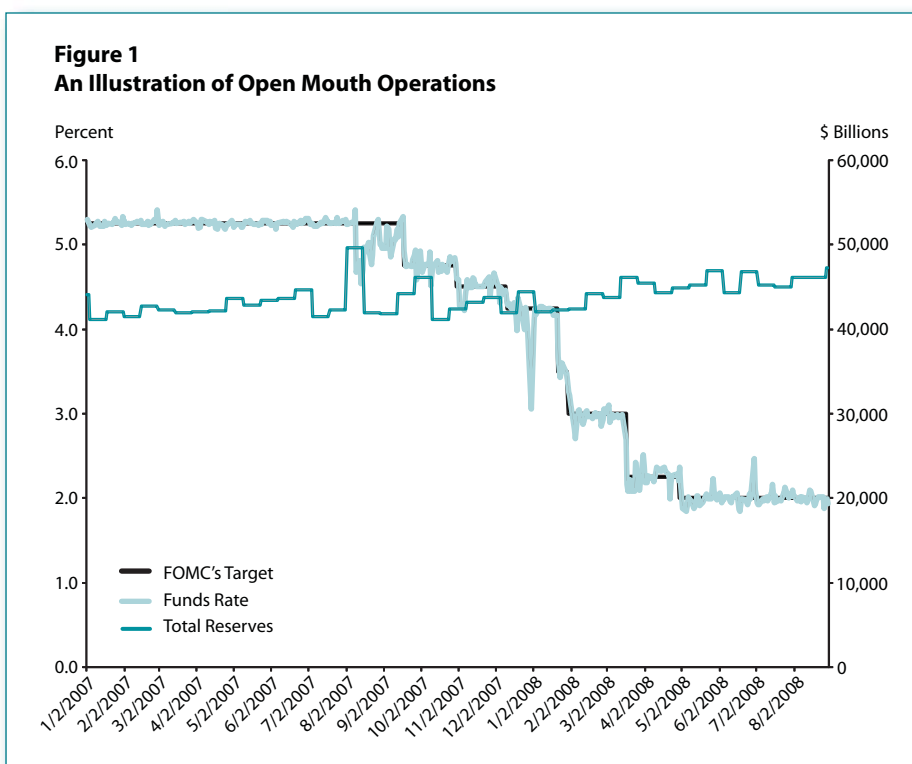
Excess reserves held by depository institutions are currently in excess of \$1 trillion. This situation raises the question: Can the FOMC increase the funds rate from its current level—between zero and 25 basis points—without substantially reducing the supply of reserves? I believe that it is unlikely. This synopsis explains why.

Since the late 1980s, the Federal Open Market Committee (FOMC) has implemented monetary policy by setting a target for the effective federal funds rate. Traditionally, it was thought that the Fed controlled interest rates by changing the total supply of reserves through open market operations: An open market purchase of government securities causes the funds rate to decline; an open market sale causes the funds rate to rise. Since it was known that the FOMC was targeting the funds rate and the FOMC began announcing changes in policy in 1994, the Committee has been able to control the funds rate through *open mouth operations*—that is, the FOMC simply announces the target and the funds rate goes to the new target level without the Fed having to engage in open market operations.

The fact that the Fed has changed the effective funds rate without significantly increasing the supply of reserves is illustrated in Figure 1, which shows the FOMC's target for the funds rate, the effective funds rate, and the level of total reserves in the banking system for the period January 2, 2007, through September 29, 2008. The interest rate data are daily; however, the reserves are available only biweekly. Note that the effective funds rate stayed close to the 5.25 percent funds rate target from January 2, 2007, to the onset of the financial crisis, which I date at August 9, 2007 (when the funds rate first spiked above the target and then fell below the target before the FOMC

**With the funds rate driven to levels far below its target, the FOMC had no recourse but to adjust the target accordingly.**

reduced the target to 4.75 percent on September 18, 2007). During this period, there was a slight upward drift in total reserves. The FOMC then reduced the target by 325 basis points in a series of seven moves with no appreciable change in the growth rate of reserves. Moreover, the effective funds rate tended to stay relatively close to the target until the target change was announced, when it adjusted immediately to the new target level.



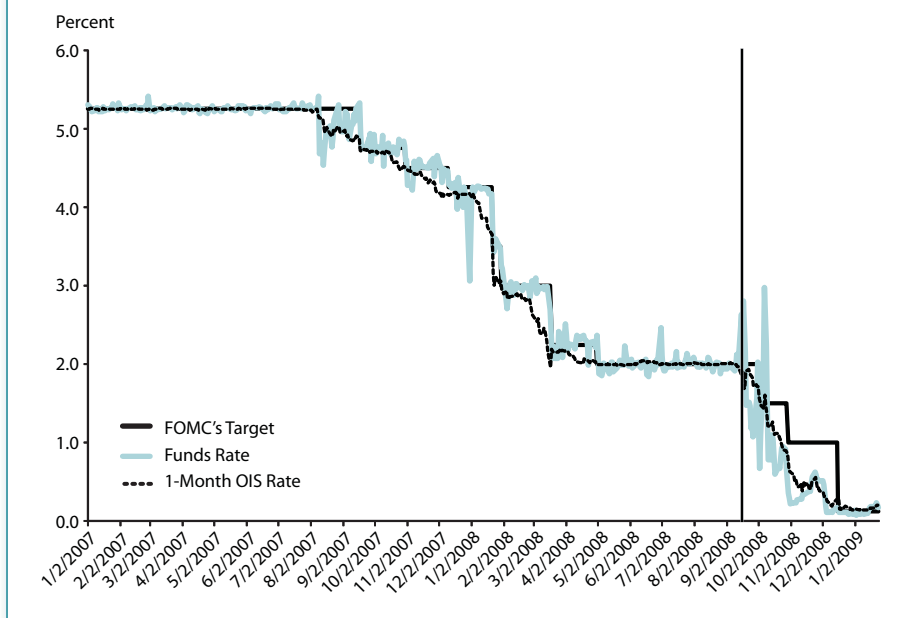
Beginning in late December 2007, the Fed began lending a relatively large amount of funds to financial institutions through various new lending facilities created to mitigate the effects of the financial crisis. However, the Fed offset (sterilized) the effect of this lending on total reserves by selling an equivalent amount of government securities so that these operations would not affect total reserves. In any event, the adjustment of the funds rate to the target during this period produced no significant change in reserves—the FOMC controlled the funds rate using open mouth operations.

Control of the funds rate through open mouth operations changed dramatically after the announcement on September 15, 2008, that Lehman Bros. would file for chapter 11 bankruptcy protection. Following this announcement, Fed lending to financial institutions increased dramatically. The increased lending was so large that the Fed was unable to continue its practice of sterilizing the effect of its lending on reserves by selling government securities. As a consequence, reserves increased dramatically: In the two weeks from September 10, 2008, to September 24, 2008, total reserves increased by \$63.6 billion.

The fact that the FOMC could no longer control the funds rate through open mouth operations is illustrated by Figure 2, which shows the daily federal funds rate, the FOMC's funds rate target, and the 1-month overnight indexed swap (OIS) rate from January 2, 2007, through January 30, 2009. The 1-month OIS rate is a measure of the market participants' expectation of the overnight federal funds rate over the next month.<sup>1</sup> The vertical line denotes September 15, 2008. Before September 15, 2008, not only did the funds rate not change until the FOMC changed its target, but the OIS rate moved in advance of the target changes, suggesting that market participants anticipated the FOMC's actions. However, as noted above, the funds rate did not change appreciably until the FOMC announced the target was changed, when the funds rate changed very quickly—frequently within minutes of the announcement.

These relationships changed dramatically after September 15, 2008, however. The funds rate not only moved in advance of the FOMC's target, but it moved in advance of the OIS rate as well. The reason is that the mas-

**Figure 2**  
**The End of Open Mouth Operations**



sive increase in the supply of reserves forced the funds rate to decline relative to the funds rate target. From September 10, 2008, to January 7, 2009, total reserves increased by nearly \$855 billion. With such a massive increase in reserves, much of which was held in excess reserves, the funds rate went to and stayed near zero. With the funds rate driven to levels far below its target, the FOMC had no recourse but to adjust the target accordingly.

Given the large amount of excess reserves, it seems unlikely that the FOMC could increase the funds rate through open mouth operations unless market participants were convinced that the Fed would act to significantly reduce excess reserves. In principle, the FOMC could raise the funds rate target by simultaneously raising the interest rate that it pays banks on reserves to the target rate. This would be very costly, however, given the massive quantity of reserves. Moreover, such an action could be viewed as providing banks with a massive and unwarranted subsidy. Consequently, it seems unlikely that the Fed would pursue this alternative. Hence, I believe that if the FOMC wants to increase the funds rate target, it must first significantly reduce excess reserves. ■

<sup>1</sup> For more details, see Daniel L. Thornton, "What the Libor-OIS Spread Says," Federal Reserve Bank of St. Louis *Economic Synopses*, Number 24, 2009; <http://research.stlouisfed.org/publications/es/09/ES0924.pdf>.