

## Excess Reserves in the 1930s: A Precautionary Tale

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- Excess reserves generally are not excess in the sense of being surplus or extra.
- In the 1930s, excess reserves were considered to be surplus, and increases in reserve requirements during that decade were designed to mop up those excess reserves.
- Banks responded to increases in reserve requirements by reducing deposits and restoring some of the excess reserves. This historical observation indicates that reductions in excess reserves are best approached with caution.

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Things are not always what they seem. For instance, are excess reserves really excess in the sense of being surplus or extra?

Why do banks want to hold excess reserves? Required reserves include vault cash and deposits at the Federal Reserve. Excess reserves are deposits at the Federal Reserve in excess of those reserve requirements. Excess reserves can be used, for example, to pay depositors who want cash and to transfer funds to other banks. Excess reserves are part of banks' total reserves, which also include required reserves. Banks can use required reserves only to satisfy their reserve requirements. In the normal course of business, required reserves are useless to a bank for any other purpose. Excess reserves are useful to a bank and not simply surplus reserves. If there were no reserve requirements, banks would still hold reserves.

*Similar to today's environment, in the 1930s the interest rates on low-risk assets such as government securities and excess reserves were close to each other.*

These observations are unremarkable: They are the stuff of typical undergraduate courses in money and banking or financial institutions. It hardly seems necessary to repeat them here—except that the confusion of excess reserves and surplus reserves is a good introduction to a more subtle but similar observation.

As many people have noted, excess reserves have increased substantially since fall 2008. Before September 2008, excess reserves held by commercial banks generally were less than \$2 billion. In November 2009, excess reserves were \$1,077 billion—about 550 times greater than their level just 14 months earlier. While \$1.1 trillion is a large number by almost anyone's standard, it is helpful to have some standard of comparison. Total loans and investments at commercial banks were about \$9 trillion in August 2008 and November 2009. Relative to these other interest-earning assets, this increase in excess reserves is very large.

### A history lesson

Interestingly, in the 1930s members of the Federal Open Market Committee held the view that excess reserves were surplus reserves (Friedman and Schwartz 1963, 520–24). And while

circumstances in the 1930s might seem quite different from those today, they were not so different in a couple of respects.

Total reserves and excess reserves increased substantially in the 1930s, as Figure 1 shows. The increase in total reserves was due largely to inflows of gold that were not sterilized by the Federal Reserve. The increase in excess reserves occurred at the same time, as many have noted recently (for example, Wheelock 2009). From \$105 million in January 1931, excess reserves rose to a peak of \$6.8 billion in November 1940. Uncertainty associated with the runs on the banking system from 1929 to 1933 and the ensuing economic problems probably explain part of the increase.

A low level of interest rates in the United States also contributed to the high level of excess reserves and may well have been a more important reason that excess reserves increased. Figure 2 shows the interest rate on three-month Treasury bills from 1931 to 1941. With the exception of a brief period in 1937, interest rates on these securities never averaged as high as 25 basis points in any month from October 1934 to November 1941. Although interest rates on reserves were zero, interest rates on three-month Treasury bills were not far from zero. The average interest rate for January 1940 was 1 basis point. Interest rates on government securities were close to the interest rate on excess reserves, just as they are today.

Frost (1971) shows that the low level of interest rates in the 1930s explains much of the increase in excess reserves. According to his theory—and virtually any theory about excess reserves—it is the level of interest rates on risk-free or low-risk assets relative to the interest rate on excess reserves that affects the quantity of excess reserves demanded. Similar to today’s environment, in the 1930s the interest rates on low-risk assets such as government securities and excess reserves were close to each other.

### History suggests caution

Because it believed that much of these excess reserves were surplus reserves, the Board of Governors decided in 1936 to reduce excess reserves by raising reserve requirements. If all of these excess reserves had been surplus, excess reserves would have fallen, and little else would have happened. The table shows the changes in reserve requirement ratios from 1933 to 1941.

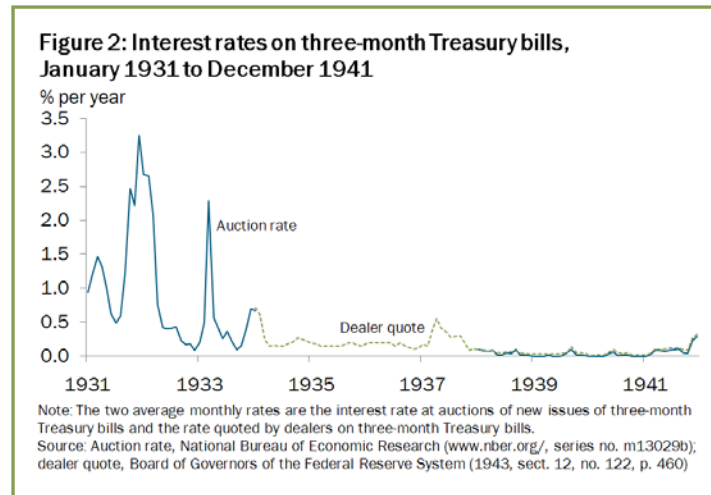
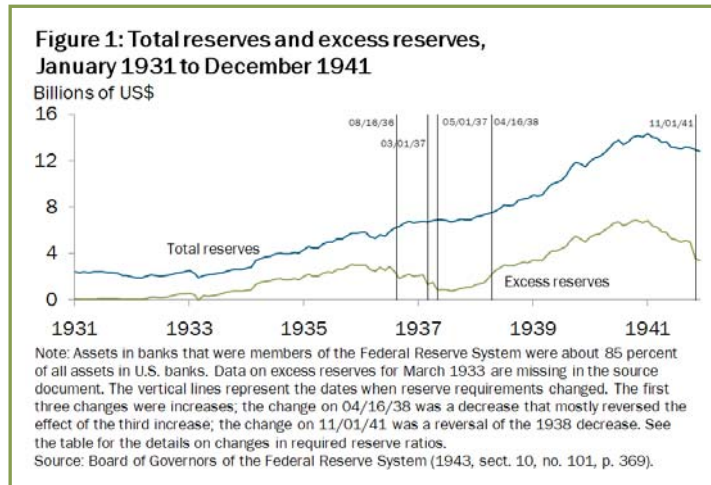


Figure 3 shows the changes in reserve requirements in 1936 and 1937 with the levels of excess reserves and required reserves. As expected, excess reserves fell after the increases in required reserves in 1936 and 1937.

Part of what happened subsequently, though, was not predicted by the proposition that the large amounts of excess reserves were surplus. As Figure 3 shows, instead of just falling and staying lower, excess reserves started to rise again in late 1937, and the level of required reserves fell.

Banks reduced their interest-earning assets to replace at least some of the excess reserves, and deposits fell. Partly because deposits and the supply of money fell as banks tried to build excess reserves back up, the recession in 1937 and 1938 resulted (Friedman and Schwartz 1963, 543–45; Cargill and Mayer 2006; Timberlake 1999).

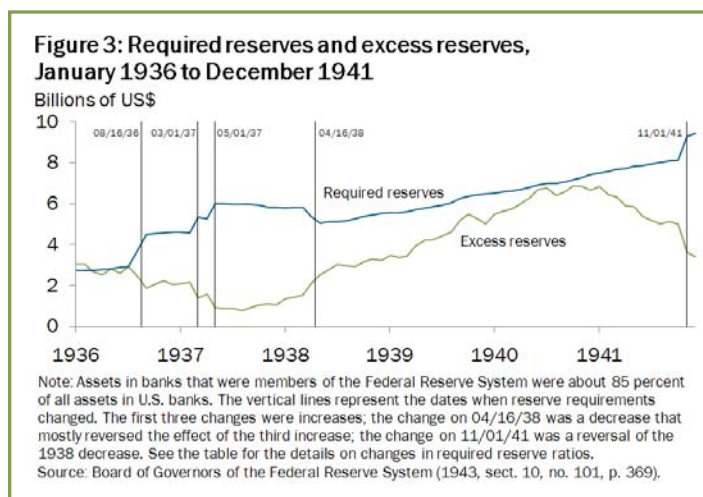
While it may be attractive on the surface to suppose that more than a trillion dollars of excess reserves in late 2009 includes substantial surplus reserves, events in the late 1930s suggest caution about reducing those excess reserves. Federal Reserve Chairman Bernanke (2010) recently outlined a cautious exit strategy from the current level of excess reserves and interest rates, a strategy consistent with this analysis of the 1930s.

These developments in the 1930s highlight another aspect of the Fed’s strategy for exiting from the current high level of excess reserves. In the 1930s, higher interest rates such as Treasury bill rates inevitably were associated with a lower level of excess reserves demanded. Excess reserves demanded decrease when a rate such as the short-term Treasury bill rate increases relative to the interest rate on excess reserves. In the 1930s, a higher interest rate on Treasury bills would have been associated with lower excess reserves because the interest rate on excess reserves was zero. The Federal Reserve today can affect the quantity of excess reserves demanded by changing the interest rate on excess reserves. If the Treasury bill rate and the interest rate on excess reserves both increase by the same amount, excess reserves demanded by banks will change little if at all.

**Banks' reserve requirements ratios**

Effective date	Net demand deposits			Time deposits
	Central reserve city banks	Reserve city banks	Country banks	All classes of banks
1917, June 21	13	10	7	3
1936, August 16	19.5	15	10.5	4.5
1937, March 1	22.75	17.5	12.25	5.25
1937, May 1	26	20	14	6
1938, April 16	22.75	17.5	12	5
1941, November	26	20	14	6

Note: Member banks were classified into different categories—central reserve city banks, reserve city banks, and country banks—depending on their location. Each class had different reserve requirements, but all requirements were increased proportionately in 1936 and 1937.  
Source: Board of Governors of the Federal Reserve System (1943, section 10, no. 107, p. 400).



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