

ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

Do Excess Reserves Reveal Credit Crunches?

by Joseph G. Haubrich

The anticipated economic recovery is haunted by the specter that banks, under pressure from regulators and shareholders, will make too few loans to reignite the economy. Like a phantom, this so-called credit crunch eludes attempts to pin it down, quantify it, or dissect it.

Concern about a credit shortage surfaced in media accounts in early 1990, even before the recession materialized. Businesses complained that banks were less willing to lend money, and this dissatisfaction was interpreted as a sign of a credit crunch. "Credit crunch" is an admittedly nebulous term indicating a substantial reduction in credit—one whose dimensions extend well beyond rising interest rates to nonprice factors that depress investment.

The appropriate policy response to signs of a credit crunch depends on the source of the problem. For example, if restrictive monetary policy is seen as the culprit, then easing is the correct response, as long as other factors remain constant. If banks are flush with funds but are reluctant to lend, then their lending policies and those of their regulators warrant scrutiny. If businesses are simply not seeking loans because of a poor economic outlook, then that is an altogether different matter.

Difficulty in determining whether we are experiencing a credit crunch cannot be blamed on insufficient data, because a variety of credit numbers are available, including bank loans, mortgages,

domestic nonfinancial debt, and consumer installment loans. Instead, the problem lies in disentangling the many influences on credit, including demand, supply, and monetary and fiscal policy. Those who have declared that a crunch is under way, alleging that reduced lending is the result of a lower supply of funds from banks, have merely chosen one of many possible explanations.

One way to distinguish the effects of monetary policy from those of bank lending practices is to look at excess reserves, or funds that banks hold in excess of those required by law. Allan Meltzer, the distinguished Carnegie-Mellon economist, and his colleagues on the Shadow Open Market Committee use this approach to label the recent credit crunch reports as "nonsense." Meltzer argues that if banks were reluctant to lend (because of higher capital requirements, lower returns, or fiendish regulators), their reservations would show up as an increase in excess reserves.¹ This uptick has not occurred.

Meltzer's position fails to take into account the fact that the excess reserve level depends directly on the Federal Reserve's monetary policy procedures. This *Economic Commentary* shows that excess reserves can clearly identify a credit crunch only under very restrictive conditions: First, the Federal Reserve must be targeting only the monetary aggregates, and second, it must remain firm in its commitment to these targets over time.

Does an increase in excess reserves indicate that a credit crunch is under way, as one recent report suggests? The author examines this issue from both a current and a historical perspective and finds that because the level of excess reserves depends directly on Federal Reserve policy, this measure is generally an unreliable indicator of credit conditions.

■ How Might Excess Reserves Indicate a Credit Crunch?

Banks are required to hold reserves (cash on hand and deposits with the Federal Reserve) equal to about 12 percent of their transactions deposits, thereby limiting the amount of money they can lend. Thus, it is monetary policy, in the form of reserves that the Fed injects into the system, that restricts lending. If the Fed adds reserves, the banking system normally increases lending and deposits until the reserves required on the resulting deposits match the newly injected reserves. (Banks borrowing from the Fed and the public's demand for cash complicate the matter somewhat, but the basic premise holds.) Because interest is not paid on reserves, banks generally try to hold as few as possible.

During a credit crunch, however, banks may decide not to make these additional loans. For the banking system as a whole, this means holding excess reserves. This is a simple matter of logic

and arithmetic. Normally, banks would increase their loans, and thus their deposits, until the new reserves totaled 12 percent of the new deposits. If banks made fewer loans and created fewer deposits, reserves would then amount to more than 12 percent of total deposits. As the Shadow Open Market Committee report puts it, "If banks have become reluctant to lend, as exponents of the credit crunch suppose, banks' excess reserves would have increased."

Although this simple logic is true for the banking system as a whole, any one particular institution may not be holding excess reserves. Banks may sell their surplus funds to one another through the federal funds market, or they may exchange them for Treasury bills or other securities. Still, reserves that are sold or transferred do not vanish; they just reappear at other banks.

■ Federal Reserve Operating Procedures

Although this reasoning is insightful, it holds only if the Federal Reserve is unwavering in its commitment to target the monetary aggregates, not interest rates. For instance, if the Fed attempted to maintain a range for the federal funds rate (the interest rate banks charge each other for overnight loans) by adding or draining reserves, there would be no direct link between excess reserves and credit availability. Therefore, to present a complete picture, we must address the questions of *when* and *why* the Fed chooses to intervene in the market for bank reserves.

The answers are critical in determining whether excess reserves can signal a credit crunch, particularly if the Fed is targeting interest rates (specifically, the federal funds rate). Because the open-market operations that add and drain reserves can absorb any excess reserves resulting from bank lending practices, the Federal Reserve can prevent the accumulation of surplus funds. In other words, monetary policy can mask the ability of excess reserves to signal a credit crunch.

Let's trace how this could happen. Suppose there is a credit crunch that causes

banks to lend less, perhaps because of more-stringent capital requirements, increased regulatory pressure, or even "animal spirits."² As a result of the drop-off in loans and thus in deposits, banks need to hold fewer reserves. As the demand for reserves falls, excess reserves begin to increase. The reduced demand (glut of reserves) lowers the price of borrowing in the federal funds market as banks compete to place their extra reserves with the fewer number of banks that need them. This results in downward pressure on the federal funds rate.

The story does not end here, however, if the Federal Reserve targets a particular federal funds rate and acts to offset the drop by balancing the reduced demand for reserves with a reduced supply. As the Fed drains reserves (decreases supply), the quantity demanded will once again equal the quantity supplied at the targeted interest rate.

Many observers believe that this is in fact a key aspect of the way the Federal Reserve System currently operates, at least in the short run. The official domestic policy directives, issued to the Federal Reserve Bank of New York (which carries out the open-market operations that add and drain reserves), are couched in terms of "degree of pressure on reserve positions."³ It is certainly possible to see how a significant amount of excess reserves would have to be absorbed to maintain this pressure.⁴

Indeed, as Meltzer points out, reserve growth has been quite sluggish recently, with total reserves showing no significant trend between January 1990 and March 1991 (see figure 1).⁵ One possible interpretation—the one that Meltzer offers—is that the Fed has kept reserve growth low and thus has caused the slow growth in loans and deposits. This view makes sense if the Fed is in fact targeting monetary aggregates such as the money supply.

The alternative, that in the short run the System targets the federal funds rate rather than the monetary aggregates, characterizes the Fed as more of a reac-

tor than an actor in this drama. Rather than causing the credit crunch, low reserve growth in this scenario is the *result* of the Fed's reaction to the effects of lower loan activity in the federal funds market. As a by-product, Federal Reserve policy would conceal the ability of excess reserves to signal a credit crunch.

■ Evidence

As Meltzer points out, the ratio of excess reserves to required reserves has remained low since the credit crunch issue first surfaced early last year, generally registering less than 2 percent between January 1990 and March 1991 (see figure 2). Moreover, excess reserves topped \$2 billion in only one month over this period, and mostly remained below \$1 billion.

Even if that \$1 billion of surplus funds were fully utilized (that is, if loans were increased enough so that the entire \$1 billion became required reserves), total loans would rise by no more than \$8.3 billion, or not quite four-tenths of 1 percent of the more than \$2 trillion loaned by U.S. commercial banks today. Because banks hold some excess reserves to satisfy their customers' demand for cash and to meet other obligations, the actual amount could be significantly less. Even the bulge in reserves that occurred near the end of 1990 does not indicate a credit crunch, but rather reflects the annual year-end increase in demand for excess reserves and the lagged adjustment to the reduction in reserve requirements on nontransactions accounts at banks, which the Federal Reserve adopted in December 1990.

One way to determine whether excess reserves are a reliable gauge of credit crunches is to look at how well they have performed during previous credit shortfalls. The crunch of 1966 resulted from Federal Reserve policies designed explicitly to restrict credit.⁶ The System accomplished this by curbing the growth of total reserves and by applying Regulation Q, which established an interest-rate ceiling on bank deposits. Restricted credit drove up interest rates, and in June 1966, the rate on prime

FIGURE 1 TOTAL AND REQUIRED RESERVES, 1990-91

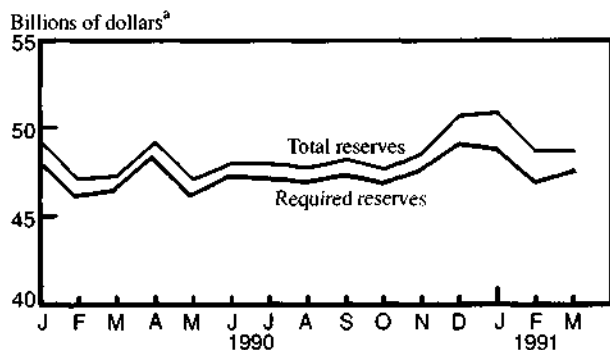


FIGURE 2 EXCESS RESERVES AND EXCESS RESERVES/REQUIRED RESERVES, 1990-91

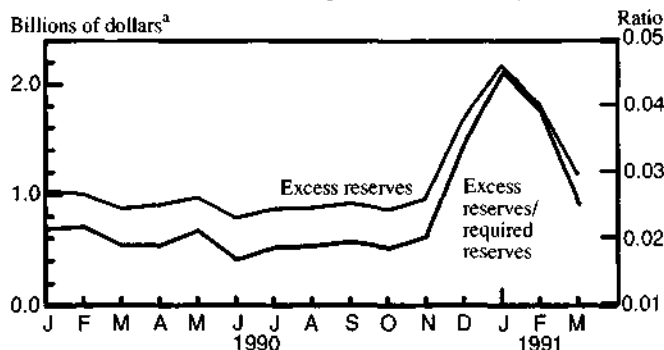


FIGURE 3 EXCESS RESERVES AND EXCESS RESERVES/REQUIRED RESERVES, 1966-67

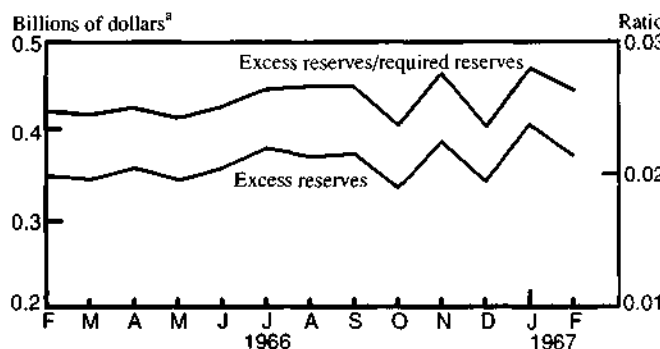
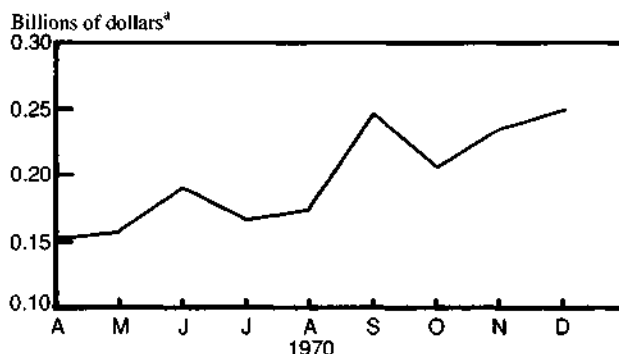


FIGURE 4 EXCESS RESERVES, 1970



a. Not seasonally adjusted.

SOURCE: Board of Governors of the Federal Reserve System.

commercial paper rose above the rate banks could pay on certificates of deposit (CDs) and on other large deposits. The secondary market rate on negotiable CDs, which could be resold in the open market, also surpassed the Regulation Q maximum of 5.5 percent. When this happened in 1963, 1964, and 1965, the Fed responded by increasing the Regulation Q ceiling. In 1966, however, the System held the line in an effort to curtail credit even further.

As one would expect, this hard-line policy resulted in excess reserves showing little, or even negative, growth. Figure 3 plots excess reserves and the ratio of excess reserves to required reserves from February 1966 to February 1967. Note that the ratio was significantly lower in 1990 (figure 2) than in 1966—a time of acknowledged monetary restraint. Because today's economic environment is different from that of the 1960s, however, it is difficult to

make direct comparisons. Lower interest rates in the 1960s meant that banks had less incentive to conserve their surplus funds. Moreover, in the earlier decade the Federal Reserve targeted excess reserves directly through manipulating "free reserves" (the difference between excess reserves and discount loans from the Federal Reserve).

The credit crunch associated with the 1970 Penn Central bankruptcy has a somewhat different history.⁷ Although reserve growth slowed once again and market interest rates rose above Regulation Q levels, banks were able to accommodate this pressure to some degree by issuing commercial paper. When Penn Central filed for bankruptcy on June 21, it had about \$82 million of outstanding commercial paper. This naturally placed great stress on the market; firms found it hard to borrow commercial paper, yet had trouble turning to banks, which faced similar funding problems.

The Federal Reserve responded by suspending Regulation Q ceilings and by using the discount window and open-market operations to guard against liquidity pressure.⁸ This action suggests that the Fed was not trying to drain reserves, and hence that increased excess reserves might have revealed banks' reluctance to lend.

Although excess reserves never rose significantly during the Penn Central crisis and thus were not infallible indicators of a credit crunch, they did show a substantial increase that June (see figure 4). Nonetheless, closer examination shows that these surplus funds increased even more in September—several months after the crisis had passed. Moreover, weekly excess reserves also showed an unexpected pattern, as June's uptick commenced before the Penn Central crisis began.⁹ The Fed's quick action apparently overcame banks' reluctance to lend and

rerouted credit from the commercial paper market to the banks. Thus, because the Fed responded to the crisis by shifting its monetary policy, excess reserves again proved to be an unreliable indicator of credit conditions.

■ Conclusion

Pinpointing the nature, the severity, and the source of a credit crunch is difficult. One recent report attempts to track current credit conditions by examining whether banks are holding an unusually large amount of reserves, which the author assumes would signal a reluctance to lend. Although this approach shows no sign that a credit crunch is under way, evidence presented above indicates that excess reserves are an unreliable indicator of credit conditions.

We are thus left with the unwelcome prospect of being unable to state with certainty whether a credit crunch exists. The advantage of identifying a credit crunch goes beyond knowing whether the specter is real: Appropriate monetary policy responses depend on understanding the source of a credit shortfall. The ability to distinguish monetary policy effects from the effects of credit supply and demand shifts is crucial to determining whether the Federal Reserve or the banking system lies behind tight credit. The distinction has important policy consequences. If restrictive

Federal Reserve policies are responsible, then injecting more reserves could help to alleviate the credit shortfall. But if a credit crunch exists because banks are reluctant to lend, then merely increasing reserves will not eliminate the problem. This uncertainty means that the Federal Reserve—and the public—must rely on sources other than excess reserves to determine whether the disquieting shadow of a credit crunch will materialize into something more ominous or just fade away.

■ Footnotes

1. See Allan H. Meltzer, "There Is No Credit Crunch," *The Wall Street Journal*, February 8, 1991, p. A-14; and the Shadow Open Market Committee, *Policy Statement and Position Papers*, March 3-4, University of Rochester Public Policy Working Paper Series, pp. 3-10.
2. Because assessing a loan's risk and return depends partly on intangible factors, lending can be affected by sudden shifts in optimism or pessimism ("animal spirits") in the banking industry.
3. See the Federal Reserve Board's November 1990 directive, reported in "Record of Policy Actions of the Federal Open Market Committee," *Federal Reserve Bulletin*, vol. 77 (February 1991), pp. 98-103.
4. This does not mean that the Federal Reserve cannot or will not take action to offset a recession or a credit crunch. The Fed can reduce the targeted interest rate (and has done so) in order to increase reserves and the money supply.

5. Another useful indicator, the monetary base, grew substantially during this time, but the increase stemmed from larger holdings of currency. Because this currency was held by the public and not by banks, it could not support bank lending. Thus, the monetary base gives a distorted view of available credit during this period.

6. See Albert E. Burger, "A Historical Analysis of the Credit Crunch of 1966," *Federal Reserve Bank of St. Louis, Review*, vol. 51 (September 1969), pp. 13-30.

7. See William C. Melton, "Crisis!" in *Inside the Fed: Making Monetary Policy*, Homewood, Ill.: Dow Jones-Irwin, 1985, pp. 153-70.

8. See "Liquidity and Credit in the Second Quarter," *Federal Reserve Bank of New York, Monthly Review*, vol. 52 (August 1970), pp. 182-86.

9. The week before Penn Central filed for bankruptcy, excess reserves stood at \$273 million. This figure dropped to \$88 million during the week of the crisis and then returned to \$273 million the following week.

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