Commercial banks, credit unions and savings and loans sustained substantial losses during the Great Recession and ensuing financial crisis, exemplified by a 7.4 percent delinquency rate for U.S. commercial banks’ total loans and leases in first quarter 2010.1

Real estate was especially weak, with residential loan delinquencies peaking at 11.3 percent in first quarter 2010 and commercial real estate delinquencies at 8.8 percent a quarter later. Also high by historical standards was the 4.3 percent delinquency rate for commercial and industrial loans in third quarter 2009.2

The resulting loan losses ate into bank capital, the first line of defense for large depositors and debt holders, boosting the institutions’ leverage. A simultaneous decline in wholesale funding—via commercial paper or large time-deposits, for example—reduced the supply of loans, according to the Federal Reserve Senior Loan Officers’ Opinion Survey. This slowdown occurred even though Fed monetary policy was highly accommodative in a concerted effort to stimulate economic growth.3

The reluctance to lend played out particularly among a subset of banks—often larger institutions with very low ratios of capital to assets.

Variations in lending activity can result from changes in loan demand and in the supply of loans. For example, loan demand declines during recessions and rises in recoveries. The supply of loans may fall if depositors or other creditors withdraw funding that banks may find necessary to maintain their lending activities.4

The reluctance to lend played out particularly among a subset of banks—often larger institutions with very low ratios of capital to assets. If these institutions had behaved as the other banks did, the cumulative amount of loan activity might have been 5.8 percent higher during 2009–10, our analysis indicates—and might have provided greater support to Fed recovery efforts.

Channels of Monetary Policy

Monetary policy ripples through the economy via various transmission channels, including the price and quantity channels. The price channel (the cost of or interest rate for borrowed funds) can affect the timing of consumer spending and investment. By contrast, the quantity channel operates through the balance sheets of households, businesses, and banks and other financial intermediaries such as savings and loans (also called thrifts) and credit unions. Their levels of indebtedness affect both the amount and cost of borrowing. Among depository financial institutions, the quantity channel is often referred to as the lending channel.5

An impaired balance sheet is one reason depositories’ lending has been slow to recover since the financial crisis. Variations in lending activity can result from changes in loan demand and in the supply of loans. For example, loan demand declines during recessions and rises in recoveries. The supply of loans may fall if depositors or other creditors withdraw funding that banks may find necessary to maintain their lending activities.
difficult to replace, or if banks anticipate or incur large loan losses.

When loan losses occur, leverage rises—there is less equity standing behind outstanding loans—and lending standards tend to tighten.

**Capitalization Matters**

Overall commercial bank deposit growth slowed markedly, from an average year-over-year rate of 8.4 percent in 2000–08 to 5.8 percent in 2009–10. Growth dipped to a low of 2.3 percent in December 2010 as hard-pressed households drew down their savings. Large time-deposits shrank by an annual rate of 6.4 percent from October 2008 to December 2010 after growing an average 12.7 percent from 2000 to September 2008.

Large loan losses during the economic downturn eroded institutions’ capital and may have scared away some large depositors and creditors.

Because capital helps protect large debt holders, it is instructive to look at the lending behavior of banks with differing ratios of capital to assets to see how lending in 2009–10 was affected at banks with lower capital ratios. Many of these institutions engaged in earlier, boom-period risk taking and credit growth.

Academic research on the lending channel has focused almost exclusively on commercial banks. Evidence suggests that the lending channel works primarily through those commercial banks that are more likely to be financially constrained. Illiquidity, small asset size and low capitalization can serve as proxies for the limitations confronting these institutions.

Asset size and capitalization are negatively correlated for commercial banks, credit unions and savings and loans. Although the number of all three types of depositories has fallen steadily over time, the relative market shares of commercial banks, credit unions and thrifts by asset size did not fundamentally change between 2000 and 2012. In fourth quarter 2008, for example, it’s clear that banks were among the largest institutions (**Chart 1**).

Commercial banks account for about 86 percent of lending, followed by credit unions and savings and loans at 7 percent each. Credit unions are the most common type of small- to medium-sized depository.
However, portfolio composition does not fully explain why lending patterns of the least-capitalized banks and thrifts differed greatly from their better-capitalized counterparts.

The origins of weak overall lending growth are evident in institutions’ level of capitalization. The three panels in Chart 3 display year-over-year median lending growth by capitalization decile (from weakest/lowest to strongest/highest) according to institution type.11

The difference in the lending growth of the least-capitalized (red line) and better-capitalized commercial banks and thrifts is apparent. During the sluggish 2009–10 recovery, credit largely contracted among the weaker, least-capitalized banks and thrifts. Because capitalization is negatively correlated with institution size, the large, highly leveraged banks and thrifts followed a softer lending growth path, impacting overall credit growth.

If lending at the least-capitalized commercial banks had grown at the same rate it did at the other 90 percent of commercial banks, cumulative credit expansion might have been 1 percent lower during the lending boom’s peak (second quarter 2003 to second quarter 2005)—and 5.8 percent higher during the lending collapse (fourth quarter 2008 to fourth quarter 2010).12 In other words, monetary easing would have more effectively supported the economy through the lending channel during the recovery if the most leveraged (predominantly large) banks had held more capital.

A similar conclusion applies to thrifts and credit unions. Quantitatively, the low-capitalization effect is more pronounced for thrifts; for credit unions, it’s only about half of that exhibited by banks. Overall, if the lending growth of the least-capitalized commercial banks, thrifts and credit unions equaled the rate of the other 90 percent of depositories, cumulative lending in 2009–10 would have been 5.5 percent higher.

**Diminishing Drag on Lending**

Low capitalization was a problem for a subset of highly leveraged commercial banks and thrifts during the 2009–10 recovery. Because the highly leveraged...
banks and thrifts tended to be larger, they
dragged down aggregate credit growth.
The lending paths of the least- and most-
capitalized credit unions were similar.

In the past couple of years, lending
growth at the least-capitalized commercial
banks and thrifts has slowly picked up,
although not yet at the rate of their better-
capitalized counterparts. This growth
signals not only that the U.S. economy
is continuing to rebound from the Great
Recession and financial crisis, but also that
some of the weaker links in the financial
system are on their way to recovery.

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Notes
1 Delinquent loans include those past due 30 days or more
and still accruing interest, as well as those more in arrears
that are on nonaccrual status.
2 The overall delinquency rate was 2.7 percent from first
quarter 1991 to fourth quarter 2007. The rates were 2.2
percent for residential loans, 3.5 percent for commercial
real estate loans and 2.6 percent for commercial and
industrial loans.
3 The Federal Reserve, in line with its mandate, supported
the economic recovery by lowering the federal funds rate,
engaging in large-scale asset purchases and providing
forward guidance regarding the evolution of the federal
funds rate.
4 A bank’s portfolio of loans is the principal asset on an
institution’s balance sheet.
5 Note that these transmission channels are not mutually
exclusive and may interact in a number of ways. More ex-
tensive reviews of monetary transmission channels can be
found in textbooks such as Monetary Theory and Policy,
6 For example, see “What Do a Million Observations on
Banks Have to Say About the Monetary Transmission
Mechanism?” by Anil K. Kashyap and Jeremy C. Stein,
407–28; “Bank Size, Bank Capital, and the Bank Lending
Channel,” by R.P. Kishan and T.P. Opiela, Journal of
Money, Credit and Banking, vol. 32, no. 1, 2000, pp.
121–41; and “New Evidence on the Lending Channel,” by
38, no. 3, 2006, pp. 751–75.
7 See note 6. Kashyap and Stein emphasize illiquidity and
size, Kishan and Opiela capitalization.
8 A large part of the decline in numbers was driven by
mergers rather than outright failures. The depositories
are sorted by asset size from smallest to largest and then
divided into 10 equal-sized groups. The first group, or
decile, represents the smallest institutions; the 10th decile
contains the largest ones.
9 The median is less influenced by outliers than the mean
(simple average), and year-over-year changes are not
affected by seasonality in lending.
10 The uptick in credit union lending toward the end of the
Great Recession may reflect the cash-for-clunkers federal
program that disproportionately affected depositories
with a larger share of consumer loans. The first-time
homebuyer tax credit likely played a part in thrifts’ brief
lending rise in 2010.
11 Capitalization could be measured using a risk-weighted
capital ratio instead of the simple capital-to-total-assets
ratio. However, simple measures of capitalization convey
much the same information as more complex ones, as
Michael A. Seamans points out in “When Gauging Bank
Capital Adequacy: Simplicity Beats Complexity,” Federal
Reserve Bank of Dallas Economic Letter, vol. 8, no. 2,
2013.
12 These results were generated from a fixed-effects-panel
data regression. Lending growth was regressed on time-
fixed effects (FEs), capitalization, size × capitalization
(interactions), time FEs × size, time FEs × capitalization.
The time fixed effects capture aggregate macroeconomic
factors. Capitalization is highly significant.