



Economic Letter

Weakly Capitalized Banks Slowed Lending Recovery After Recession

by J.B. Cooke and Christoffer Koch

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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.⁴ If these institutions had behaved as the other banks did, the cumu-

lative 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

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 average 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.⁶ 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.⁷

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*).⁸

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.

Large institutions tend to have lower capital ratios.

Credit Growth Trends

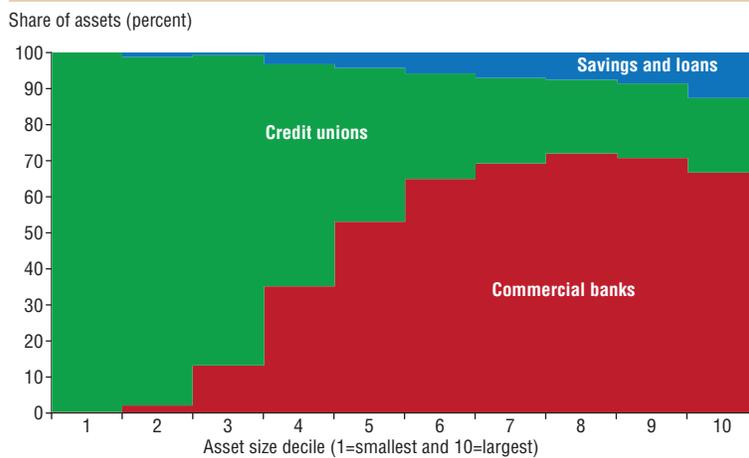
Commercial banks experienced strong lending growth during the boom years after the 2001 recession, peaking at 9.2 percent in third quarter 2004 (*Chart 2*).⁹

Credit growth among banks ebbed notably during the recovery, and in second quarter 2011, lending contracted 1.8 percent. Thrifts also experienced substantial lending growth during the boom years, gaining 8.5 percent in second quarter 2006

before declining 3.2 percent in first quarter 2011. Credit unions did not expand their lending as much during the boom period, topping out at 5.4 percent in first quarter 2006 before contracting 2.4 percent in first quarter 2011.

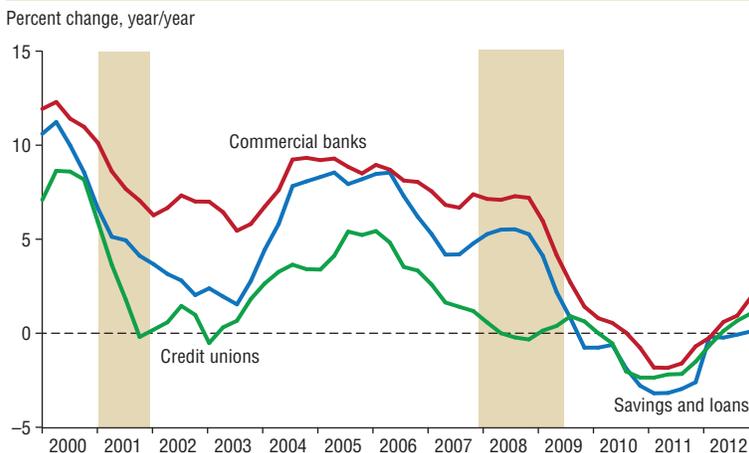
Part of the difference in the lending dynamics of banks, thrifts and credit unions is explained by the composition of their loan portfolios and resulting business-cycle sensitivity. For instance, compared with banks or thrifts, credit unions grant few commercial and industrial, construction and development, and commercial real

Chart 1 Commercial Banks Dominate Distribution of Depositories



NOTE: Data are for fourth quarter 2008
 SOURCES: Reports of Condition and Income; Federal Financial Institutions Examination Council; authors' calculations.

Chart 2 Median Lending Growth Slowly Recovers from Recession



NOTE: Shaded areas represent recessions.
 SOURCES: Reports of Condition and Income; Federal Financial Institutions Examination Council; authors' calculations.

estate loans. They predominantly make residential mortgage, auto and other consumer loans.¹⁰

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.

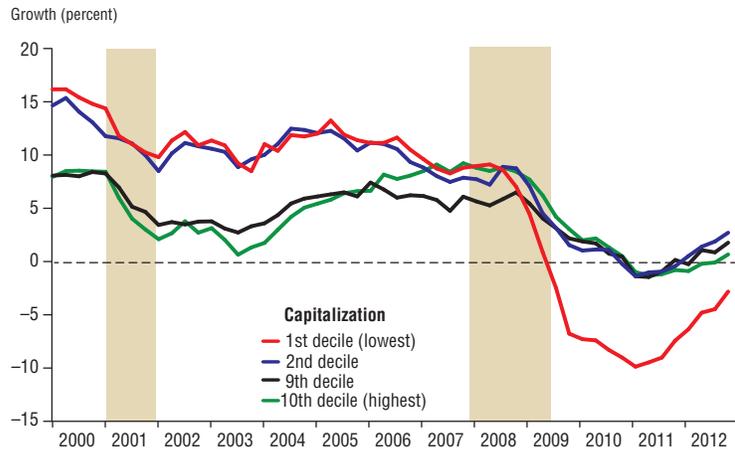
Diminishing Drag on Lending

Low capitalization was a problem for a subset of highly leveraged commercial banks and thrifts during the 2009–10 recovery. Because the highly leveraged

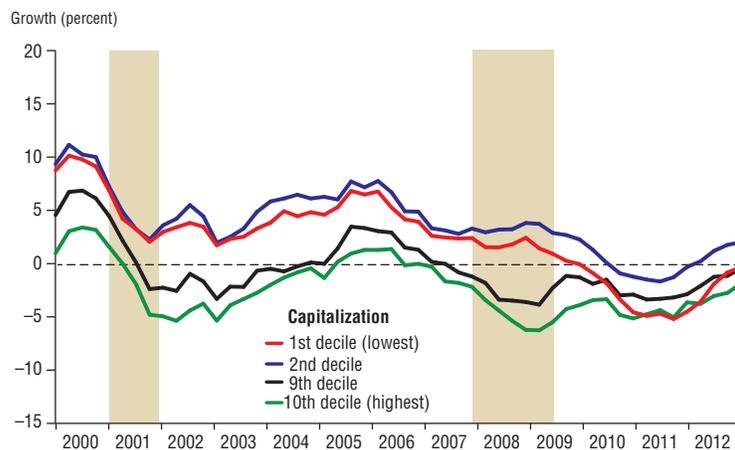
Chart 3

Capitalization Levels Affect Willingness to Lend
(Median year/year lending growth by depository type)

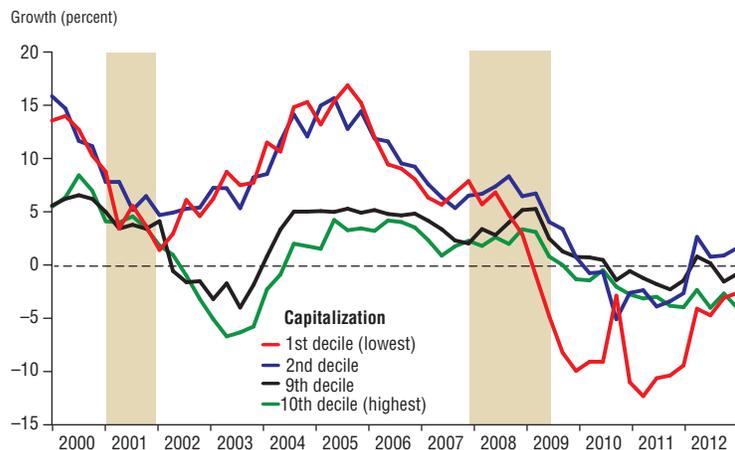
A. Commercial Banks



B. Credit Unions



C. Savings and Loans



NOTE: Shaded areas represent recessions.

SOURCES: Reports of Condition and Income; Federal Financial Institutions Examination Council; authors' calculations.

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 extensive reviews of monetary transmission channels can be found in textbooks such as *Monetary Theory and Policy*, by Carl E. Walsh, Cambridge, Mass.: MIT Press, 2010.

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, *American Economic Review*, vol. 90, no. 3, 2000, pp. 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 A.B. Ashcraft, *Journal of Money, Credit and Banking*, vol. 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, size × capitalization (interactions), time FEs × size, time FEs × capitalization. The time fixed effects capture aggregate macroeconomic factors. Capitalization is highly significant.

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