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journal homepage: www.elsevier.com/locate/jfecLiquidity risk management and credit supply in the financial crisis[☆]Marcia Millon Cornett^a, Jamie John McNutt^b, Philip E. Strahan^c, Hassan Tehranian^{d,*}^a Bentley University, USA^b Southern Illinois University, Carbondale, USA^c Boston College and NBER, USA^d Boston College, USA

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ABSTRACT

Liquidity dried up during the financial crisis of 2007–2009. Banks that relied more heavily on core deposit and equity capital financing, which are stable sources of financing, continued to lend relative to other banks. Banks that held more illiquid assets on their balance sheets, in contrast, increased asset liquidity and reduced lending. Off-balance sheet liquidity risk materialized on the balance sheet and constrained new credit origination as increased takedown demand displaced lending capacity. We conclude that efforts to manage the liquidity crisis by banks led to a decline in credit supply.

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1. Introduction

In this paper, we study how banks managed the liquidity shock that occurred during the financial crisis of 2007–2009 by adjusting their holdings of cash and other liquid assets, as well as how these efforts to weather the storm affected credit availability. Because the Federal Reserve sets the aggregate supply of liquidity in the banking system, focusing on only time series variation in liquidity merely illustrates choices made by the Fed

(that is, the aggregate supply of liquidity). Our strategy instead is to put a spotlight on within-bank variation in holdings of cash and other liquid assets, which allows for an understanding of why some banks chose to build up liquidity faster than others during the crisis. This approach helps explain why the Fed's efforts to stimulate the economy with traditional tools of monetary policy were ineffective.

Our empirical model starts with the premise that banks hold cash and other liquid assets as part of their overall strategy to manage liquidity risk. In modern banks, liquidity risk stems more from exposure to undrawn loan commitments, the withdrawal of funds from wholesale deposits, and the loss of other sources of short-term financing than from the loss of demand deposits (e.g., Diamond and Dybvig, 1983). With both explicit and implicit government backing, deposits are unlikely to leave the banking system during crises. For example, Gatev and Strahan (2006) find inflows of deposits during periods of low market liquidity, while

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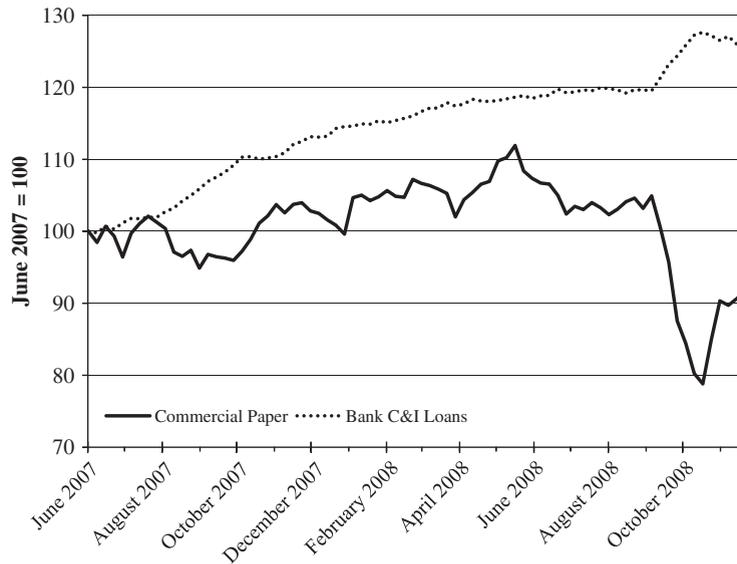


Fig. 1. Business lending rises as commercial paper moves back on the balance sheet. This figure shows the growth of commercial paper and bank business loans outstanding from June 2007 through November 2008. Data are obtained from the website of the Board of Governors of the Federal Reserve (www.chicagofed.org).

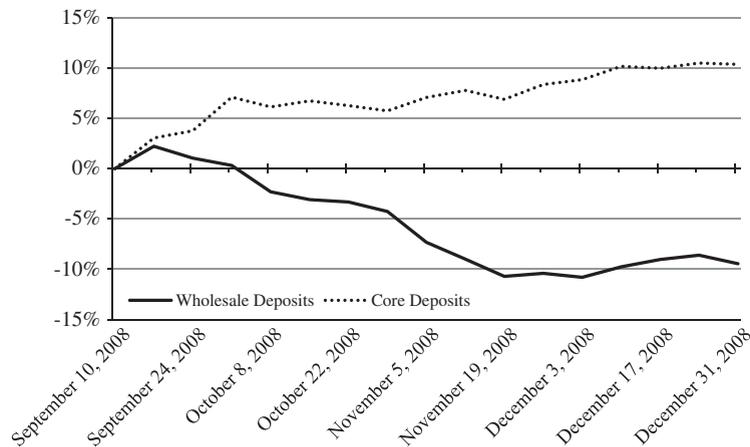


Fig. 2. Growth in deposits. This figure shows the weekly percentage change in core and wholesale deposits at commercial banks from September 10, 2008 through December 31, 2008. Core deposits include transactions deposits plus fully insured (< \$100,000) time deposits. Wholesale deposits include time deposits over \$100,000. Data are obtained from the Federal Reserve's H8 weekly data on bank assets and liabilities.

Pennacchi (2009) does not find such flows during the pre-Federal Deposit Insurance Corporation (FDIC) period. Together this suggests that deposits insulate banks from liquidity risk due to the advent of government guarantees. Liquidity risk from loan commitments, for example, was evident in aggregate data when the commercial paper markets froze following the September 2008 failure of Lehman Brothers. Issuers responded by taking down funds from commercial paper backup lines issued by banks, leading to a decline in commercial paper outstanding and an increase in bank lending (Fig. 1). At the same time, banks lost wholesale funds but gained retail deposits (Fig. 2).¹ We show that banks more exposed to

this liquidity risk increased their holdings of liquid assets, which in turn reduced their capacity to make new loans.

On the asset side of balance sheets, banks holding assets with low market liquidity expanded their cash buffers during the crisis. Specifically, banks that held more loans, mortgage-backed securities (MBS), and asset-backed securities (ABS) tended to increase holdings of liquid assets and decrease investments in loans and new commitments to lend. Because of concerns about the liquidity of loans and securitized assets, these banks rationally protected themselves by hoarding liquidity, to the detriment of their customers and markets. Turning to

(footnote continued)

panics and bank runs. These effects were greatest at large nonbank financial institutions.

¹ Gorton (2009) and Gorton and Metrick (2009) draw parallels between the increase in haircuts in the repo markets and banking

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