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Accounting, Finance

The Role of "Repo" in the Financial Crisis

Researchers look at the effect of banks' off-balance-sheet collateralization of commercial paper in the recent financial crisis.

March 8, 2012 | by Bill Snyder

By now, nearly everyone knows that the financial meltdown of 2007, and the subsequent recession, began with the collapse of the housing market and the subprime securities market, the funder of millions of mortgages.

Understanding exactly what happened, and why, has been the subject of a good deal of academic work, much of it pointing in different directions. Solving this riddle, though, is more than an academic exercise: The answers could well shape public policy and the regulation of financial markets for some time. One reason academics and policy makers have had difficulty understanding how the meltdown occurred is the lack of detailed, usable records of financial transactions in the corners of the financial system that were most affected by the crisis.

"Lots of stories circulate, but there is little data to tell whether these stories make sense or not. Our goal was to change this state of affairs by bringing in new data that can shed light on some of these important questions," says Stefan Nagel, associate professor of finance at Stanford's Graduate School of Business.

That uncertainty led Nagel and two colleagues to amass a database of 15,000 separate transactions by major money market funds as well as security lenders. When analyzed, the data indicated that the main trouble spots were not in places where many observers had suspected them to be.

The timing and magnitude of events leading up to the crisis indicates that more was going wrong than just failures in the mortgage market and a so-called "run on repo" (repurchase agreements), which some researchers point to as a prime cause of the collapse.

Where the Crisis Began

Subprime mortgages started to deteriorate in January 2007 — eight months before the panic that hit that August — and those losses were not large enough to have caused so much systemic damage.

One factor frequently discussed is the rapid expansion and subsequent collapse of the shadow banking sector, a collection of investment banks, hedge funds, insurers, and other non-bank financial institutions that replicate some of the activities of regulated banks, but are supervised differently.

In the years leading up to the crisis, these institutions held a wide variety of loans, including residential mortgages, auto loans, and credit card loans, which traditionally were held by the commercial banking sector. Instead of being financed by deposits in commercial banks, the loans were funded by repurchase agreements, popularly called "repos," and asset-backed commercial paper or ABCP.

Repos and ABCP are both short-term lending instruments. In the case of ABCP, a company or group of companies will sell receivables to a bank, which, in turn, will issue them to its investors as commercial paper. The commercial paper is backed by the expected cash inflows from the receivables. Repos are very short-term collateralized loans that work something like this: A dealer sells securities to investors, with a promise to buy them back for the same price plus a premium. The size of the premium depends on the perceived risk.

Starting in 2007, the shadow banking system suffered a severe contraction. Why this happened is poorly understood, but a popular theory is that a lot of the short-term funds received by shadow banks prior to the crisis took the form of repurchase agreements and that many of these repos were backed by securitized mortgages as collateral. According to this view, the shadow banking system collapsed when money market funds and other cash lenders became concerned about the quality of the collateral that backed repos and withdrew their funding.

That led to a "run on repo" akin to the bank runs that plagued commercial banking prior to the introduction of deposit insurance. But Nagel says the focus on the repo market as a major culprit in the financial crisis is an error.

How Bad Assets Entered the Banking Mainstream

In a recently revised working paper, now under review for publication, called "Sizing up Repo," he and colleagues Arvind Krishnamurthy of Northwestern University, and Dmitry Orlov, a PhD student at Stanford GSB, argue that "the 'run on repo' by money market funds and other cash lenders was confined to a small slice of the repo market."

The vast majority of repos were collateralized by safe government securities, they say, not riskier securitized mortgage products. So while the 'run on repo' may have contributed to the problems of a few repo borrowers that were relying heavily on repo with riskier collateral, in general, "the 'run on repo' was a sideshow," Nagel said.

Instead, much of the short-term funding for securitized mortgage products, and the bulk of its contraction during the crisis took place in the asset-backed commercial paper market. According to Nagel, the risk of backing those assets was largely borne by commercial banks, which helps explain how solvency problems moved from the shadow banking system into the regular banking sector.

Many commercial banks took a page from Enron's playbook and created special purpose vehicles that allowed the banks to keep risky assets on the balance sheets of the vehicles instead of on their own, Nagel said. As a result, it was difficult for investors or regulators to know that the banks still effectively bore the risk of these securities.

But when those securities went bad the vehicles could no longer find buyers for their commercial paper. At that point, the poisoned assets migrated to the balance sheets of the commercial banks, depleting their capital, moving the bad debt from the shadow banking system — the vehicles are part of it — to the conventional banking system.

Using raw information from quarterly filings by money market funds to the Securities and Exchange Commission, the researchers were able to examine transactions by the 20 largest money market fund families, covering some 80% of the assets in the industry. The researchers

analyzed 15,000 individual repo transactions, taking about a year to code and extract the data from the SEC filings.

They found that, before the market contracted, money market funds held $2.3 trillion in assets, and about $400 billion in repos. The vast majority of these repos were backed by safe securities issued by the U.S. Treasury or other government agencies. Only about 10% were collateralized with riskier assets such as securitized subprime mortgages, not nearly enough to cause a systemic crisis, a very different conclusion than that of other researchers.

Nagel believes the work indicates a need for closer scrutiny by regulators of the market for commercial paper, and the use of special purpose vehicles that pull significant assets off institutional balance sheets.

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