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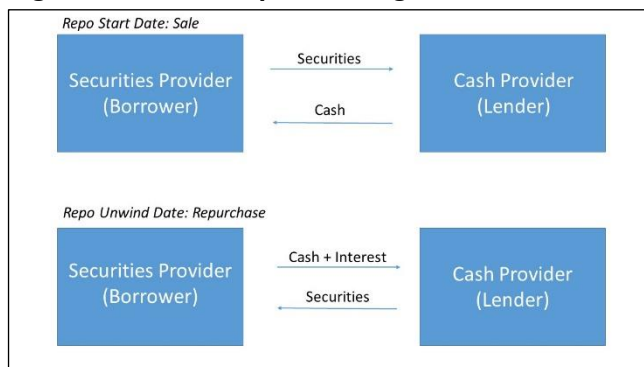
Repurchase Agreements (Repos): A Primer

Repurchase agreements (repos) are a major source of short-term funding for financial institutions. Repos are a policy concern because they have long been identified as a potential source of systemic risk, meaning that problems in that market could lead to broader financial instability.

Characteristics

Repos are legally arranged as a contract between two parties to sell a security, such as a Treasury bond, and then repurchase it at a later date at a higher prearranged price (Figure 1). Economically, a repo is equivalent to a short-term collateralized loan, with the security serving as collateral and the percentage change in price between sale and repurchase acting as the interest rate on the loan (called the *repo rate*). From the borrower's perspective, the transaction is called a *repo* (or an RP); from the lender's perspective, it is called a *reverse repo* (or an RRP).

Figure 1. Bilateral Repurchase Agreement



Source: CRS

Repos' characteristics vary widely, including the length to maturity, whether they last for a specified term or are open-ended, types of collateral accepted, and the size of the *haircut* (i.e., the difference in value between the securities sold and cash delivered). As a result, repo rates vary based on these varying characteristics. Generally, repos are short-term and repo rates are relatively low.

Repos can be bilateral or triparty. In bilateral repos, cash and securities are exchanged directly between the two parties. In triparty repos, the cash and securities are exchanged through a third-party clearing bank. In the United States, the Bank of New York Mellon (BoNYM) is currently the only clearing bank for triparty repos. Triparty repos eliminate the risk that the counterparty to the repo will not fulfill its terms at the unwind date. Instead, counterparty risk is borne by the clearing bank if it provides credit. Bilateral repos can also eliminate counterparty risk if they are cleared. The primary U.S. clearinghouse for repos is the Fixed Income Clearing Corporation (FICC). FICC's counterparty exposure is mitigated through margin requirements, which require cash to be posted upfront.

Participants

Repos are large-scale transactions that do not directly involve retail investors. Financial institutions enter into repos either because (1) one institution has short-term borrowing needs and another institution has unused cash that it would like to earn interest on (as shown in Figure 1); or (2) one institution needs to borrow a certain security (e.g., to complete a short sale) and another institution is willing to lend it for cash.

Many types of financial institutions participate in repo markets, including hedge funds, money market funds, pension funds, insurance companies, government-sponsored enterprises, and banks. Typically, repos involve securities dealers on at least one side of the transaction. Securities dealers are *market makers* in securities markets, requiring them to borrow and lend securities and cash to execute client orders. Many of the largest securities dealers are owned by large bank holding companies or foreign bank organizations.

Market Size

According to the Federal Reserve (Fed), there were \$3.9 trillion of repos outstanding in the second quarter of 2019, up 21.6% from the previous year. However, outstanding repos are probably lower now than they were before the financial crisis. Due to data gaps, the current relative size of bilateral versus triparty repos and different institutions' shares of the repo market are uncertain.

Repos in the Financial Crisis

In the 2007-2009 financial crisis, problems in the repo market contributed to the widespread liquidity problems faced by financial firms, including Bear Stearns and Lehman Brothers. Many types of financial firms face a liquidity mismatch, meaning that their assets are less liquid (i.e., easily convertible into cash) than their liabilities. To meet ongoing cash-flow needs, some of these firms convert securities into cash by borrowing short term in the repo market. But the amount of borrowing available on the repo market depends on the willingness of other firms with surplus cash to lend it. In normal conditions, firms are relatively indifferent about whom they lend to in repo markets because they are protected by collateral. During the financial crisis, some argue that firms became less willing to lend and required higher-quality collateral or a larger haircut (particularly for non-Treasury collateral), thereby reducing the amount of liquidity available to firms—including solvent firms. Although all short-term credit markets can be subject to this sort of run in a panic, the repo market is a particular concern because of its size and use by a broad range of financial firms. The plethora of different types of firms using repos also meant there was inconsistent

and, for some types of firms, little regulation of how firms used repos.

Postcrisis Reforms

A number of reforms to mitigate systemic risk in the repo market were implemented after the financial crisis:

Triparty Risks. The Tri-Party Repo Infrastructure Task Force, a private-sector task force sponsored by the New York Fed, was created in 2009 to recommend reforms to reduce systemic risk in triparty repo. Clearing banks reformed the triparty settlement process to reduce the need for them to offer intraday credit to finance repo settlement, and required precommitment to access it. The share of triparty repos relying on intraday credit fell from 92% in 2012 to less than 5% in 2014. In 2016, the Fixed Income Clearing Corporation (FICC) eliminated its interbank GCF Repo service, which made potentially unlimited intraday credit available from FICC to banks. In 2017, the Securities and Exchange Commission approved an expansion of FICC's central clearing of repos.

Fails. Settlement fails occur when a bilateral repo lender fails to return the pledged security at the unwind date. Although routine, a surge in fails could be destabilizing in a stressed environment. In 2009 and 2012, penalties were introduced to discourage certain fails. Nevertheless, fails have continued at a lower level, with occasional spikes.

Opacity. Lack of data on aspects of the repo market, including rates and volume, added to uncertainty during the crisis. Subsequently, the Fed and the Office of Financial Research (OFR) have attempted to gather more comprehensive data. The Fed has long published data on repos involving *primary dealers* (large Treasury security dealers), and in 2010 began publishing data on triparty repos. In 2019, OFR issued a rule to collect data on repos cleared by FICC. Since 2018, the Fed has published data on key repo rates, such as the Secured Overnight Financing Rate. Regulators still do not collect comprehensive data on all types of repos, however.

Enhanced regulation. The 2010 Dodd-Frank Act (P.L. 111-203) required enhanced prudential (safety and soundness) regulation (EPR) of large banks and systemically important financial market utilities (FMUs) who are viewed as posing systemic risk. The two firms that clear triparty and bilateral repos, respectively, are subject to EPR—BoNYM was designated as a global-systemically important bank (G-SIB), subjecting it to the Fed's most stringent regulatory requirements, and FICC was designated as a FMU, under SEC supervision. Repo participants that are not part of large banks are not subject to EPR.

Under EPR, large banks are subject to new liquidity rules. Some, but not all, of the securities dealers active in repo markets are owned by large banks. Certain rules already implemented make large banks less reliant on short-term borrowing. However, the Net Stable Funding Ratio rule—which would directly limit their use of repos—has not been finalized. Higher capital requirements introduced after the crisis also make it more costly for banks (and dealers who are part of banks) to engage in repos. Finally, a 2017

regulation changed how repos were netted when a failing G-SIB is resolved to maintain its value.

Federal Reserve's Role in Repo Markets

The Fed also intervenes in repo markets to conduct monetary policy. Called open market operations, the Fed uses repos and reverse repos to affect overall liquidity and target the federal funds rate, its primary monetary policy target. Traditionally, the Fed's repo counterparties have been the primary dealers. In 2013, the Fed created a standing facility called the Overnight Reverse Repurchase Operations Facility to expand its operations to more counterparties. (At this facility, the Fed is the cash borrower.) The Fed also provides reverse repos to foreign official institutions as part of its services to them.

During the financial crisis, the Fed intervened heavily in repo markets to restore overall liquidity. Because of the severity of the crisis, this intervention alone could not restore liquidity for all firms, and the Fed was forced to lend directly to securities dealers and others. Changes following the crisis in how monetary policy is conducted had ended the Fed's use of repos (but not reverse repos). However, the Fed has regularly used repos again since a spike in repo rates in September 2019.

Ongoing Issues

Repos remain an inherently unreliable source of funding in a crisis, even if large banks are less reliant on them following postcrisis reforms. The Fed can intervene in repo markets to restore overall market liquidity, but it cannot ensure all nonbank borrowers individually have access to liquidity because it does not provide repos directly to borrowers on demand. Nevertheless, borrowers may rely more heavily on repos because they believe the Fed will step in during a crisis, which economists call *moral hazard*.

A more specific source of systemic risk is a scenario where a major securities dealer involved in the repo market faces a liquidity crisis. This could cause a fire sale of the dealer's assets if the dealer tried to raise cash or if the dealer failed and its repo counterparties sold its collateral to recoup cash. Fire sales could impose losses on unrelated investors holding similar assets, spreading financial instability.

The greater reliance on triparty and cleared bilateral repos since the crisis reduces overall risk but increases the systemic importance of the firms at the heart of those transactions—BoNYM and FICC, respectively. Were either firm to fail, it could destabilize financial markets because their role in repo markets could not easily and quickly be replaced. Policymakers debate whether enhanced prudential regulation has successfully contained the systemic risk posed by the banks and FMUs subject to it.

Repos are not uniformly regulated—the market itself is not regulated and the different types of participants face varying requirements governing their borrowing and lending. This complicates systemic risk regulation and transparency. Most recent reforms to repo practices were voluntary (e.g., penalties for fails) and thus potentially calibrated from a user—instead of a policy—perspective.

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