Repurchase agreement

A **repurchase agreement**, also known as a **repo**, **RP**, or **sale and repurchase agreement**, is the sale of securities together with an agreement for the seller to buy back the securities at a later date. The repurchase price should be greater than the original sale price, the difference effectively representing interest, sometimes called the *repo rate*. The party that originally buys the securities effectively acts as a lender. The original seller is effectively acting as a borrower, using their security as collateral for a secured cash loan at a fixed rate of interest.

A repo is equivalent to a spot sale combined with a forward contract. The spot sale results in transfer of money to the borrower in exchange for legal transfer of the security to the lender, while the forward contract ensures repayment of the loan to the lender and return of the collateral of the borrower. The difference between the forward price and the spot price is effectively the interest on the loan while the settlement date of the forward contract is the maturity date of the loan.

Structure and terminology

A repo is economically similar to a secured loan, with the buyer (effectively the lender or investor) receiving securities as collateral to protect him against default by the seller. The party who initially sells the securities is effectively the borrower. Almost any security may be employed in a repo, though highly liquid securities are preferred as they are more easily disposed of in the event of a default and, more importantly, they can be easily obtained in the open market where the buyer has created a short position in the repo security by a reverse repo and market sale; by the same token, non liquid securities are discouraged. Treasury or Government bills, corporate and Treasury/Government bonds, and stocks may all be used as "collateral" in a repo transaction. Unlike a secured loan, however, legal title to the securities passes from the seller to the buyer. Coupons (interest payable to the owner of the securities) falling due while the repo buyer owns the securities are, in fact, usually passed directly onto the repo seller. This might seem counterintuitive, as the legal ownership of the collateral rests with the buyer during the repo agreement. The agreement might instead provide that the buyer receives the coupon, with the cash payable on repurchase being adjusted to compensate, though this is more typical of sell/buybacks.

Although the transaction is similar to a loan, and its economic effect is similar to a loan, the terminology differs from that applying to loans: the seller legally repurchases the securities from the buyer at the end of the loan term. However a key aspect of repos is that they are legally recognised as a single transaction (important in the event of counterparty insolvency) and not as a disposal and a repurchase for tax purposes.

The following table summarizes the terminology:

	Repo	**Reverse repo**
Participant	Borrower Seller Cash receiver	Lender Buyer Cash provider
Near leg	Sells securities	Buys securities
Far leg	Buys securities	Sells securities

Types of repo and related products

There are three types of repo maturities: overnight, term, and open repo. Overnight refers to a one-day maturity transaction. Term refers to a repo with a specified end date. Open simply has no end date. Although repos are typically short-term, it is not unusual to see repos with a maturity as long as two years.

Repo transactions occur in three forms: specified delivery, tri-party, and held in custody (wherein the "selling" party holds the security during the term of the repo). The third form (hold-in-custody) is quite rare, particularly in developing markets, primarily due to the risk that the seller will become insolvent prior to maturation of the repo and the buyer will be unable to recover the securities that were posted as collateral to secure the transaction. The first form—specified delivery—requires the delivery of a prespecified bond at the onset, and at maturity of the contractual period. Tri-party essentially is a basket form of transaction, and allows for a wider range of instruments in the basket or pool. In a tri-party repo transaction a third party clearing agent or bank is interposed between the "seller" and the "buyer" The third party maintains control of the securities that are the subject of the agreement and processes the payments from the "seller" to the "buyer."

Due bill/hold in-custody repo

In a **due bill repo**, the collateral pledged by the (cash) borrower is not actually delivered to the cash lender. Rather, it is placed in an internal account ("held in custody") by the borrower, for the lender, throughout the duration of the trade. This has become less common as the repo market has grown, particularly owing to the creation of centralized counterparties. Due to the high risk to the cash lender, these are generally only transacted with large, financially stable institutions.

Tri-party repo

The distinguishing feature of a **tri-party repo** is that a custodian bank or international clearing organization, the tri-party agent, acts as an intermediary between the two parties to the repo. The tri-party agent is responsible for the administration of the transaction including collateral allocation, marking to market, and substitution of collateral. In the US, the two principal tri-party agents are The Bank of New York Mellon and JP Morgan Chase. The size of the US tri-party repo market peaked in 2008 before the worst effects of the crisis at approximately $2.8 trillion and by mid 2010 was about $1.6 trillion.[1] As tri-party agents administer hundreds of billions of US$ of collateral, they have the scale to subscribe to multiple data feeds to maximise the universe of coverage. As part of a tri-party agreement the three parties to the agreement, the tri-party agent, the repo buyer and the repo seller agree to a collateral management service agreement which includes an "eligible collateral profile". It is this "eligible collateral profile" that enables the repo buyer to define their risk appetite in respect of the collateral that they are prepared to hold against their cash. For example a more risk averse repo buyer may wish to only hold "on-the-run" government bonds as collateral. In the event of a liquidation event of the repo seller the collateral is highly liquid thus enabling the repo buyer to sell the collateral quickly. A less risk averse repo buyer may be prepared to take non investment grade bonds or equities as collateral, which may be less liquid and may suffer a higher price volatility in the event of a repo seller default, making it more difficult for the repo buyer to sell the collateral and recover their cash. The tri-party agents are able to offer sophisticated collateral eligibility filters which allow the repo buyer to create these "eligible collateral profiles" which can systemically generate collateral pools which reflect the buyer's risk appetite.[2] Collateral eligibility criteria could include asset type, issuer, currency, domicile, credit rating, maturity, index, issue size, average daily traded volume, etc. Both the lender (repo buyer) and borrower (repo seller) of cash enter into these transactions to avoid the administrative burden of bi-lateral repos. In addition, because the collateral is being held by an agent, counterparty risk is reduced. A tri-party repo may be seen as the outgrowth of the **due bill repo**, in which the collateral is held by a neutral third party.

Whole loan repo

A **whole loan repo** is a form of repo where the transaction is collateralized by a loan or other form of obligation (e.g. mortgage receivables) rather than a security.

Equity repo

The underlying security for many repo transactions is in the form of government or corporate bonds. **Equity repos** are simply repos on equity securities such as common (or ordinary) shares. Some complications can arise because of greater complexity in the tax rules for dividends as opposed to coupons.

Sell/buy backs and buy/sell backs

A **sell/buy back** is the spot sale and a forward repurchase of a security. It is two distinct outright cash market trades, one for forward settlement. The forward price is set relative to the spot price to yield a market rate of return. The basic motivation of sell/buy backs is generally the same as for a **classic repo**, i.e. attempting to benefit from the lower financing rates generally available for collateralized as opposed to non-secured borrowing. The economics of the transaction are also similar with the interest on the cash borrowed through the sell/buy back being implicit in the difference between the sale price and the purchase price.

There are a number of differences between the two structures. A repo is technically a single transaction whereas a sell/buy back is a pair of transactions (a sell and a buy). A sell/buy back does not require any special legal documentation while a repo generally requires a master agreement to be in place between the buyer and seller (typically the SIFMA/ICMA commissioned Global Master Repo Agreement (GMRA)). For this reason there is an associated increase in risk compared to repo. Should the counterparty default, the lack of agreement may lessen legal standing in retrieving collateral. Any coupon payment on the underlying security during the life of the sell/buy back will generally be passed back to the **buyer** of the security by adjusting the cash paid at the termination of the sell/buy back. In a repo, the coupon will be passed on immediately to the seller of the security.

A buy/sell back is the equivalent of a "reverse repo".

Securities lending

In securities lending, the purpose is to temporarily obtain the security for other purposes, such as covering short positions or for use in complex financial structures. Securities are generally lent out for a fee and securities lending trades are governed by different types of legal agreements than repos.

Repos have traditionally been used as a form of collateralized loan and have been treated as such for tax purposes. Modern Repo agreements, however, often allow the cash lender to sell the security provided as collateral and substitute an equivalent security at repurchase.[3] In this way the cash lender acts as a security borrower and the Repo agreement can be used to take a short position in the security very much like a security loan might be used.[4]

Reverse Repo

A reverse repo is simply the same repurchase agreement from the buyer's viewpoint, not the seller's. Hence, the seller executing the transaction would describe it as a "repo", while the buyer in the same transaction would describe it a "reverse repo". So "repo" and "reverse repo" are exactly the same kind of transaction, just being described from opposite viewpoints. The term "reverse repo and sale" is commonly used to describe the creation of a short position in a debt instrument where the buyer in the repo transaction immediately sells the security provided by the seller on the open market. On the settlement date of the repo, the buyer acquires the relevant security on the open market and delivers it to the seller. In such a short transaction the seller is wagering that the relevant security will decline in value between the date of the repo and the settlement date.

Uses

For the buyer, a repo is an opportunity to invest cash for a customized period of time (other investments typically limit tenures). It is short-term and safer as a secured investment since the investor receives collateral. Market liquidity for repos is good, and rates are competitive for investors. Money Funds are large buyers of Repurchase Agreements.

For traders in trading firms, repos are used to finance long positions, obtain access to cheaper funding costs of other speculative investments, and cover short positions in securities.

In addition to using repo as a funding vehicle, repo traders "make markets". These traders have been traditionally known as "matched-book repo traders". The concept of a matched-book trade follows closely to that of a broker who takes both sides of an active trade, essentially having no market risk, only credit risk. Elementary matched-book traders engage in both the repo and a reverse repo within a short period of time, capturing the profits from the bid/ask spread between the reverse repo and repo rates. Presently, matched-book repo traders employ other profit strategies, such as non-matched maturities, collateral swaps, and liquidity management.

United States Federal Reserve use of repos

Repurchase agreements when transacted by the Federal Open Market Committee of the Federal Reserve in open market operations adds reserves to the banking system and then after a specified period of time withdraws them; reverse repos initially drain reserves and later add them back. This tool can also be used to stabilize interest rates, and the Federal Reserve has used it to adjust the Federal funds rate to match the target rate.[5]

Under a repurchase agreement ("RP" or "repo"), the Federal Reserve (Fed) buys U.S. Treasury securities, U.S. agency securities, or mortgage-backed securities from a primary dealer who agrees to buy them back, typically within one to seven days; a reverse repo is the opposite. Thus the Fed describes these transactions from the counterparty's viewpoint rather than from their own viewpoint.

If the Federal Reserve is one of the transacting parties, the RP is called a "system repo", but if they are trading on behalf of a customer (e.g. a foreign central bank) it is called a "customer repo". Until 2003 the Fed did not use the term "reverse repo"—which it believed implied that it was borrowing money (counter to its charter)—but used the term "matched sale" instead.

Risks

While classic repos are generally credit-risk mitigated instruments, there are residual credit risks. Though it is essentially a collateralized transaction, the seller may fail to repurchase the securities sold, at the maturity date. In other words, the repo seller defaults on his obligation. Consequently, the buyer may keep the security, and liquidate the security to recover the cash lent. The security, however, may have lost value since the outset of the transaction as the security is subject to market movements. To mitigate this risk, repos often are over-collateralized as well as being subject to daily mark-to-market margining (i.e., if the collateral falls in value, a margin call can be triggered asking the borrower to post extra securities). Conversely, if the value of the security rises there is a credit risk for the borrower in that the creditor may not sell them back. If this is considered to be a risk, then the borrower may negotiate a repo which is under-collateralized.[6]

Credit risk associated with repo is subject to many factors: term of repo, liquidity of security, the strength of the counterparties involved, etc.

Certain forms of repo transactions came into focus within the financial press due to the technicalities of settlements following the collapse of Refco in 2005. Occasionally, a party involved in a repo transaction may not have a specific bond at the end of the repo contract. This may cause a string of failures from one party to the next, for as long as different parties have transacted for the same underlying instrument. The focus of the media attention centers on attempts to mitigate these failures.

In 2008, attention was drawn to a form known as repo 105 following the Lehman collapse, as it was alleged that repo 105s had been used as an accounting trick to hide Lehman's worsening financial health. Another controversial form of repurchase order is the "internal repo" which first came to prominence in 2005. In 2011 it was speculated, though not proven, that internal repos used to finance risky trades in sovereign European bonds may have been the mechanism by which MF Global lost some several hundred million dollars of client funds, before its bankruptcy in October 2011.[7]

History

In the US, repos have been used from as early as 1917 when wartime taxes made older forms of lending less attractive. At first repos were used just by the Federal Reserve to lend to other banks, but the practice soon spread to other market participants. The use of repos expanded in the 1920s, fell away through the Great depression and WWII, then expanded once again in the 1950s, enjoying rapid growth in the 1970s and 1980s in part due to computer technology.[6]

In July 2011, concerns arose among bankers and the financial press that if the 2011 U.S. debt ceiling crisis leads to a default it could cause considerable disruption to the repo market. This is because treasuries are the most commonly used collateral in the US repo market, and as a default would downgrade the value of treasuries it could result in repo borrowers having to post far more collateral. [8]

Market size

The US Federal Reserve and the European Repo Council (a body of the International Capital Market Association) try to estimate the size of their respective repo markets. At the end of 2004, the US repo market reached US$5 trillion.

The European repo market has experienced consistent growth: from €1.9 billion in 2001 to €6.4 trillion by the end of 2006 and was expected to continue significant growth due to Basel II, according to a 2007 Celent report, “The European Repo Market.”[9]

Especially in the US and to a lesser degree in Europe, the repo market contracted in 2008 as a result of the financial crisis. But, by mid 2010, the market had largely recovered and, at least in Europe, had grown to exceed its pre-crisis peak.[1]

Other countries including Chile, India, Japan, Mexico, Hungary, Russia, China, and Taiwan, have their own repo markets, though activity varies by country, and no global survey or report has been compiled.

Repo and Reverse Repo in India

In India, RBI uses repo and reverse repo techniques to increase or decrease the liquidity in the market. To increase liquidity, RBI buys government securities from banks under REPO; to decrease liquidity, RBI sells the government securities to banks. http://www.svtuition.org/2011/11/repo-and-reverse-repo.html The repo rate in India in 2012 is 8% and the reverse repo rate is 7%. The repo rate is always 1% higher than the reverse repo rate.

Notes and references

[1] Gillian Tett (2010-09-23). "Repo needs a backstop to avoid future crises" (http://www.ft.com/cms/s/0/692d4184-c72d-11df-aeb1-00144feab49a.html). The Financial Times. . Retrieved 2010-09-24.

[2] In other words, if the lender seeks a high rate of return they can accept securities with a relatively high risk of falling in value and so enjoy a higher repo rate, whereas if they are risk adverse they can select securities which are expected to rise or at least not fall in value.

[3] http://www.cov.com/files/Publication/60f595c5-6bb2-4a4e-8fe2-5378a84cd91a/Presentation/PublicationAttachment/c4755b62-a153-47bc-b341-84e08001da31/Are%20Repos%20Really%20Loans.pdf

[4] http://www.primebrokerage.net/blog/tag/repo-rate/

[5] John Hussman. "Hardly a Bailout" (http://www.hussmanfunds.com/wmc/wmc070813.htm) Hussman Funds, August 13, 2007. Accessed September 3, 2010.

[6] Kenneth D. Garbade (2006-05-01). "The Evolution of Repo Contracting Conventions in the 1980s" (http://www.newyorkfed.org/research/epr/06v12n1/0605garb.pdf). New York Fed. . Retrieved 2010-09-24.

[7] AZAM AHMED and BEN PROTESS (2011-11-03). "As Regulators Pressed Changes, Corzine Pushed Back, and Won" (http://dealbook.nytimes.com/2011/11/03/as-regulators-pressed-changes-corzine-pushed-back-and-won/). New York Times. . Retrieved 2011-11-08.

[8] Darrell Duffie and Anil K Kashyap (2011-07-27). "US default would spell turmoil for the repo market" (http://www.ft.com/cms/s/0/190a2cd6-b925-11e0-bd87-00144feabdc0.html#axzz1T7z00Z9x). The Financial Times. . Retrieved 2011-07-29.

[9] Celent Report: According to figures published by Celent 6 June 2007.

External links

- Repurchase and Reverse Repurchase Transactions - Fedpoints - Federal Reserve Bank of New York (http://www.newyorkfed.org/aboutthefed/fedpoint/fed04.html)
- Explanation of the Federal Reserve repurchase agreements actions of August 10, 2007 (http://www.hussmanfunds.com/wmc/wmc070813.htm)
- Statement Regarding Counterparties for Reverse Repurchase Agreements March 8, 2010 (http://www.newyorkfed.org/markets/rrppolicy/rrp_operating_policy_100308.html)

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