Repurchase Agreements ("Repos")

A government securities dealer who owns U.S. government fixed income securities finds another business entity who has funds to invest overnight. The dealer sells to this business entity $1 million face value of six-month T-bills at the current price of P_6. Payment is made in federal funds[3] to the dealer's bank against the delivery of the securities—also transferred by wire. At the time the dealer sells the securities, he agrees to repurchase them the next day at a higher price. Thus the buyer of the securities is, in effect, extending the dealer a one-day loan collateralized by the dealer's securities.[4]

The difference between the repurchase and sale prices in a repo amount to the interest that the dealer pays on the loan. The interest rate is quoted as an annualized rate and is, of course, called the *overnight repo rate* for U.S. T-bill securities. To deannualize this repo rate, one assumes that the year consists of 360 days and then multiplies the annual repo rate by 1/360 to obtain the appropriate repo rate for an overnight loan. It follows that the repurchase and sale prices of the repo transaction are related by

$$\textit{repurchase price} = \textit{sale price} \times \left(1 + \frac{R_P}{360}\right)$$

where R_P denotes the annualized overnight repo rate. If the repo is written for a period longer than a day, then to deannualize the repo rate, multiply it by the days in the period and divide by 360. Repo agreements that extend for at least 30 days are referred to as *term repos.*

3. Payments and security deliveries are accomplished by transmitting instructions over the Federal Reserve's wire. Funds and securities are transferred among the accounts of Federal Reserve member banks through book entry credits and debits.

4. On a repo, the lender of money asks for a collateral cushion in that the amount of money lent is less than the market value of the securities received as collateral. The percentage difference is called the haircut. The haircut varies with the maturity of the security and with the volatility of the market. A recent schedule showed a haircut range of 10 basis points (bps) for an overnight repo to 75 bps for a three-month repo.

Reverse Repurchase Agreements ("Reverse Repos")

A reverse repo is a technique often used to borrow securiti First the dealer finds an investor who has the desired securities. Th the dealer purchases the securities from the investor and simultar ously agrees to resell the same securities to the investor on the ne day. In essence, the dealer extends the investor a loan with the desir security as collateral. The difference between the resale price and t purchase price represents the interest earned by the dealer on t loan.

The relevant rate is called the *overnight reverse repo rate* for U Government securities. The same procedure used to deannualize t repo rate applies to the reverse rate. Assume that there are 360 da in a year and multiply the reverse rate (in decimal form) by the leng of the loan in days divided by 360. It follows that the resale ar purchase prices for an overnight reverse are related by

$$\textit{resale price} = \textit{purchase price} \times \left(1 + \frac{R_V}{360}\right)$$

where R_V denotes the annualized overnight reverse repo rate in de mal form. A reverse agreement that extends for at least 30 days called a *term reverse.*

Some Features of Repos and Reverses

Which rate would you expect to be higher, R_V or R_P? Since t dealer's repo desk acts like a bank, lending and borrowing on colla eral, one should expect its lending rate to exceed its borrowing rat Since the repo desk lends at R_V and borrows at R_P, you will see th R_V exceeds R_P. There are exceptions. If the dealer needs a specif security to cover an uncomfortable short position, the R_V offered f that particular loan on that security may be several hundred bas points below the repo rate.

Another point worth understanding relates to the Federal Reser Board's use of repos and reverses in conducting open market oper tions. When the Fed wishes to increase the money supply for sho time periods, one to seven days, it will often do so by purchasir U.S. Treasury securities from the various dealers and simultaneous entering into an agreement to resell those securities in one to seve days; the exact number of days is specified at the onset of the transa tion. In this way, the Fed increases bank reserves by the amount paid for the securities until the time arrives when the securities are resold to dealers.

Because the Fed is purchasing securities with an agreement to sell them, this set of transactions can be characterized as the Fed undertaking a reverse repo position. However, in the terminology of Wall Street, "the Fed is doing repos." Why? Because all transactions between the Fed and the government dealers are viewed from the government dealers' point of view. In this case, when the Fed is first purchasing, then reselling securities, the dealers are, in turn, first selling and then repurchasing the securities. The government dealers, in response to the Fed's actions, are doing repos. It is because the market views all actions from the dealers' perspective that, when the Fed is in reality doing reverses, it is said to be doing repos. So remember, when the announcement is made that the Fed is doing repos, it is the dealers who are doing repos with the Fed.

When the Fed wishes to contract the money supply, it often sells U.S. Treasury securities to dealers under an agreement to repurchase those same securities in one to seven days; again, the exact maturity is specified upon the initiation of the transaction. While the Fed is doing repos, the dealers are doing reverses—buying from the Fed under an agreement to resell. So, when the Fed undertakes the set of transactions that begins with a security sale and ends with a repurchase, the Fed, while doing repos, is said to be doing reverses, because the market's view is from the dealer's vantage point. By the way, a phrase more often used than "the Fed is doing reverses" is "the Fed is doing matched sales." In this instance, *matched sales* is a synonym for *reverses*.