

Treasury notes, on-the-run premia, and repo specialness

Chris Lamoureux
September 22, 2019

As of September 2019, the US Treasury sells 10-year Treasury notes that mature on the February, May, August, and November cycle. For example, in May 2019, it auctioned new May 2029 notes. These notes make semi-annual coupon payments equal to one-half of the stated coupon rate times the par value. There are re-opening auctions in each of the next two months.

Trading in the new May note will start a week before the announcement. On May 1, 2019, the Treasury announced that it will be selling \$27 billion in a new May 15, 2029 note at auction at 1:00 pm on May 8, 2019. At that point trading in the new note starts in the when-issued market. I could buy \$5 million par value of the note in the when-issued market, and this transaction would settle immediately following the auction.

Bidders may submit competitive and non-competitive bids. A competitive bid specifies a par amount and a yield. For example, \$5 million at 2.03% yield. At 1:00 the New York Federal Reserve Bank, acting as agent for the Treasury, will first subtract the non-competitive bids from the specified amount of the offering. For example, suppose that the offering is specified for \$27 billion, and there are \$500 million in non-competitive bids. This means they have to find the first \$26.5 billion in bids –ranked from lowest yield (highest value). In the May 8 auction, the winning bid was 2.479%. The Treasury then sets the coupon as the nearest 1/8 of a percent, from below (so the note is sold from the auction at a slight discount). In this case the note’s coupon was set at $2\frac{3}{8}\%$ (i.e., 2.375%). The May29Note spreadsheet shows that at this bond equivalent yield, the price of the note is 99.03877 (% of par, expressed in decimal terms). So if you placed a competitive bid for \$1 billion at 2.2%, then on May 15 your account would be credited for \$1 billion of the May 2029 $2\frac{3}{8}\%$ notes. Your cash account would be debited \$990,387,700. If you placed a non-competitive bid for \$25,000 through your TreasuryDirect account, then on May 15 you would be credited with \$25,000 of the May 2029 $2\frac{3}{8}\%$ notes, and your cash balance would fall by \$24,759.69.

Once it is issued the May 2029 note becomes the on-the-run 10-year note. That is, of all the 10-year notes outstanding, this is the one with the longest term (and the most recently issued). The auction documents show that this auction sold \$27 billion of the new notes to the public, and roughly \$9.2 billion to the Federal Reserve (in its System Open Market Account). On June 6, 2019, the Treasury announced that it would auction an additional

\$24 billion of the May 15, 2029 note at a reopening auction on June 12. We see that the winning bid at that auction was 102.176713 (clean price). The accrued interest on this date is .212976. So if you placed a competitive bid for \$50 million at 2.075%, then your account would be credited with \$50 million of the May 2029 $2\frac{3}{8}\%$ notes and debited \$51,194,844.27 on June 17, 2019. At this point there is \$60,198,000,000 outstanding of this note.

On June 21, 2019, the Treasury announced that it would auction an additional \$25 **million** of the May 15, 2029 note at a reopening auction on June 21. The Treasury announced that this was a special live small-value contingency auction. Only primary dealers were allowed to submit bids at this auction – by phone to the FRBNY. Dealers bought \$25 million of the May 15, 2029 note at this auction, at a clean price of 102.757204.

On July 3, 2019 the Treasury announced another reopening auction of \$24 billion of the on-the-run 10-year note. This auction was held on July 10, 2019, and the clearing price was 102.752671 (expressed on a clean basis). After this auction, there are roughly \$90 billion of this note outstanding.

Dealers often find themselves in a net-short position in the new note after its opening auction. In this case, that means that on May 15, there is heightened demand to borrow the new notes to maintain these short positions. This demand can increase the cost of shorting. Recall that shorting the note entails making a repo loan with the security as collateral from the cash borrower. So when a security has heightened shorting demand, the interest rate that the security owner pays to borrow cash using that security as collateral is lower than the “general collateral” rate. When this happens we say that the security is trading on special in repo. Notice that it means that owning the security entails a higher value than its discounted cash flows, so it may sell at a premium to reflect this “convenience yield.” It also becomes more expensive to short.

In May 2009, because repo rates were close to 0, the Treasury introduced a penalty of 300 basis points for failing to deliver the security upon the termination of a repo. This meant that special rates could (and did) become negative. This penalty has become smaller as rates have risen, and in July 2019, the Treasury Market Practice Group agreed to impose a minimum penalty for delivery failure of 100 basis points.

So suppose that the overnight general collateral repo rate is 2.2%. A security that trades on special in repo for 150 basis points allows its owner to borrow money in repo using that security as collateral for 70 basis points. She could then take that cash and invest it in

another money market instrument (e.g., a banker's acceptance) earning a nice spread.

On August 7, 2019, the US Treasury auctioned the August 15, 2029 notes. These were issued on August 15, 2019. On that date the May 2029 notes went off-the-run, and the August note is on-the-run.