John Kiff
Comments Welcome
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Pricing Forward-Dated Transactions

The securities "screen" quotes (on Cantor or GOVPX, for example) are usually based on "regular" next-day settlement, despite the frequency of non-standard settlement trades. However, market conventions do exist for calculating price adjustments that reflect forward and same-day settlement. The recent ten-year global proceeds investment decision will be used as an example of such an adjustment. When the issue was priced (on August 19) the benchmark Treasury off which it was priced (the 7% notes due July 15, 2006) was bid at 102.984375 (as a per cent of par) on a next-day settle basis to yield 6.584%. However, the funds from the global issue were not be available for investment purposes until August 28, which brought into play some forward pricing complications. More particularly, if the EFA had naively purchased the benchmark ten-year bonds at 102.984375 for settlement on the 28th, our dealer counterparties would have enjoyed a repo-related $31,226 "free lunch" on each $100 million purchase. As shown in the table below, the free lunch is obtained by buying the Treasury notes for next-day settlement (08/20), selling them to us at the same price, picking up $152,174 of accrued interest (at the 7% coupon rate) and financing the position for $120,947.

	Principal	Accrued	Total
Buy on 08/20 @ 102.984375	(102,984,375.00)	(684,782.61)	(103,669,157.61)
Sell on 08/28 @ 102.984375	102,984,375.00	836,956.52	103,821,331.52
Pre-financing cost profit	0.00	152,173.91	152,173.91
Finance for 8 days @ 5.25%			(120,947.35)
Dealer Net Profit			31,226.56

Looking at the transaction from the EFA's point of view, the decision to delay settlement is structurally similar to a decision to sell the notes on August 20 (at the 102.984375), invest the proceeds for 8 days (at the 5.25%) and buy the notes on August 28 (at the 102.984375) for a loss of $31,226. Anyways, as shown in the next table, the August 28 forward-settle price must be adjusted downwards by 0.03125 to 102.953125 (to yield 6.587%) to eliminate the dealer's free lunch.

	Principal	Accrued	Total
Buy on 08/20 @ 102.984375	(102,984,375.00)	(684,782.61)	(103,669,157.61)
Sell on 08/28 @ 102.953125	102,953,125.00	836,956.52	103,790,081.52
Pre-financing cost profit	0.00	152,173.91	120,923.91
Finance for 8 days @ 5.25%			(120,947.35)
Dealer Net Profit			(23.44)

More generally, when the yield curve is upward sloping, the forward price must be adjusted downwards for delayed settlement. Also, the greater the spread between the security's yield and the relevant financing rate, the greater the price drop, *ceteris paribus*. In addition, the longer the delay, the greater the drop. To make matters more complex, if the security is on "special" in the repo market, the financing rate should reflect this. Of course, when the yield curve is inverted, the forward price is usually adjusted upwards.

Incidentally, the same calculations must be undertaken for same-day settlement "cash" transactions, in which case the price must be adjusted upwards when the yield curve is upward sloping. This is something we have to deal with almost every day in the EFA. For example, if the EFA wanted to sell $100 million September 26 Treasury bills on September 4, we would be indifferent (on a rate of return basis) between selling them for next-day delivery at a 4.83% discount or for same-day delivery at a 4.85% discount (and investing the proceeds overnight at 5.25%). The calculations are shown in the following table.

Sell 09/26 bills for 09/05 settle at 4.83%	99,718,250.00
Sell 09/26 bills for 09/04 settle at 4.85%	99,703,611.11
Invest proceeds o/n at 5.25%	14,540.11
Proceeds on 09/05	99,718,151.22

The Bloomberg system has a built-in calculator that automatically determines the non-standard-settlement price adjustments. This significantly speeds up the process for us, although we still have to determine the appropriate inputs. This means that, even for the most mundane transactions, one must take into account curve slope and repo market considerations.