



DEPARTMENT OF THE TREASURY
BUREAU OF THE PUBLIC DEBT
WASHINGTON, D.C. 20239-0001

Rec'd 18 Mar 00
Note: 1/12/00
in Fed Summers, TRS
1/12/00
Sent: Summers, TRS / 18 May 00

March 1, 2000

Mr. Joel R. Anderson

Dear Mr. Anderson:

Your letter of January 12, 2000, to Mr. Lawrence Summers was forwarded to my office for response. I am pleased that you would consider using *TreasuryDirect*. I also appreciate the time you have spent validating our postings. The suggestion in your letter that we made a mistake in the "Discount Rate" published on the Bureau of the Public Debt's website concerned me a great deal. I had one of my staff validate these tables as well. I hope the explanation below will satisfy your concerns and that you will use *TreasuryDirect* for your investing needs.

Prior to April 18, 1983, Treasury bills were sold on a price-basis, in which bids were submitted in dollar prices. The equivalent discount rates were then calculated from the prices and were rounded to three decimal places, using normal rounding. The formula that you referred to, describing how a discount rate is calculated, applies to this old price-based auction.

Since that time, however, bills have been sold only on a discount rate basis. Until 1997, bids were submitted as discount rates with two decimals. Treasury then instituted a change to three-decimal bidding in minimum increments of .005 %, and this type of auction is in use at the present time. The equivalent price is determined from the discount rate, using the formula shown below. For this example on the succeeding page, we have used the discount rate that resulted from the January 10, 2000, auction that you said was in error in your letter to Secretary Summers.

Formula: $P = 100 (1 - dr / 360)$

Where d = discount rate, in decimal

r = number of days remaining to maturity

P = price per 100 (dollars)

Example:

Definition $d = 5.235\%$ or $.05235$ (discount rate awarded in auction)
 $r = 91$ days (January 13, 2000, to April 13, 2000)

Resolution:

- 1) $P = 100 [1 - (.05235) (91) / 360]$
- 2) $P = 100 (1 - .013232917)$
- 3) $P = 100 (.986767083)$
- 4) $P = 98.6767083$
- 5) $P = 98.677$

required to round & produce correct investment rate substituting the unrounded price produces a different investment rate

Again, I hope this information is of assistance. Thank you for your interest in Treasury securities. If you have any questions, please feel free to call either me, Barbara Charles or Linda Martinez at (202) 691-3550.

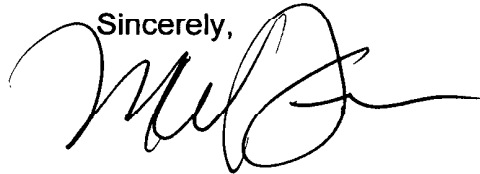
13 & 26 wk bills

only 3 & 6 mo are sold at a discount.

Price of longer bills & notes?

*See: Treasury site for latest #s
www.publicdebt.treas.gov/service/Bills
longer pay interest every 6 mos? yes
How is interest payment calculated?*

Sincerely,



Michael W. Sunner
Deputy Assistant Commissioner
(Financing)

A 366-day timebase is used to calculate the investment rate only when the Feb 29 is included in the days-to-maturity.

$$\text{discount Rate} \times \frac{\text{day 2 Maturity}}{360} = \text{discount on } \$100$$

$$5.775 \times \frac{91}{360} = 1.46$$

$$100 - 1.46 = 98.540 = \text{Price per } \$100$$