



# Treasury Benchmark Curve Introduction



# Treasury Curve



- Treasury benchmark curve is the term structures of treasury bill and bond prices vs maturities.
- The two major types of treasury securities are treasury bills and treasury bonds.
- The US treasury uses the treasury bills and bonds to produce time series of rate level data.
- There are approximately 250 US treasury securities traded on the New York Stock Exchange and on the over-the-counter market, which have a fixed maturity date and coupon.

# Treasury Curve



- A times series of data on the yield of one of these bonds is difficult to interpret since the maturity term of a bond with a fixed maturity date decreases with time.
- Every day the Treasury uses the closing market prices of all actual bonds which have been actively traded to estimate the yield-to-maturity on a set of 1, 2, 3, 5, 7, 10, 20, and 30-year treasury bonds with no settlement lags.
- The daily yields, along with the weekly and monthly averages are published weekly by the Federal Reserve.

# Treasury Curve



- Treasury bill is quoted by a discount yield. It takes a spot discount rate  $S$  and converts it to a cash price.

$$N \cdot [1 - S \cdot TF(t_{TD}, T, DC_S)]$$

- The price determined by a zero curve of a bond on the day is given by

$$B(t_0) = \sum_{i=1}^{2N} \frac{d_i}{d_0} \cdot \frac{C}{2} + \frac{d_{2N}}{d_0} \cdot 100$$





# Thank You

You can find more details at

<https://finpricing.com/lib/EqBarrier.html>