



# Treasury Yield Curve Introduction



# Treasury Yield Curve



- Treasury yield curve is the term structures of treasury zero rates vs maturities.
- Treasury yield curves are bootstrapped from treasury benchmark curves that contain the most actively traded treasury bills or bonds at some maturities.
- The zero rate is the yield implied by the different between a zero coupon bond's current purchase price and the value it pays at maturity.

# Treasury Yield Curve



- There is a new type of day count in the US Treasury market.
- The day count method is called ACT/ACT, but it is different from that with the same name currently in the swap application.
- In the swap market, the ACT in the denominator refers to the actual number of days in a year.
- In the bond market it refers to the actual number of days in an accrual period, which, for a semiannual period, can range from 180 to 184 days.

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- Bond ACT/ACT day count requires more information than other day count methods.
- To calculate the time between two dates, a period date and a payment frequency must be specified.
- Suppose we want to know the number of years between May 16, 1994 and June 16, 1994, a period of 31 actual days.
- With swap ACT/ACT day count the time between the dates is.

$$31 \text{ days} \times \frac{1 \text{ year}}{365 \text{ days}} = .084932 \text{ years}$$

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- For bond ACT/ACT day count, the answer depends on the start and end date of the accrual period.
- If the accrual period begins on December 16, 1993 and ends on June 16, 1994 there are 182 days in the period and the time between the dates is

$$31 \text{ days} \times \frac{1 \text{ period}}{182 \text{ days}} \times \frac{1 \text{ year}}{2 \text{ periods}} = .085165 \text{ years}$$

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- On the other hand, if the accrual period begins on May 16, 1994 and ends on November 16, 1994 there are 184 days in the period and the time between the dates is

$$31 \text{ days} \times \frac{1 \text{ period}}{184 \text{ days}} \times \frac{1 \text{ year}}{2 \text{ periods}} = .084239 \text{ years}$$

- With bond ACT/ACT day count and a semiannual payment frequency, an accrual period is always half a year. Thus, for non-stub periods, the cash flow is half the annual coupon rate times the notional.



# Thank You

You can find more details at

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