Yield Curve

The term structure of interest rates, also known as yield curve, is defined as the relationship between the yield-to-maturity on a zero coupon bond and the bond's maturity. Zero yield curves play an essential role in the valuation of all financial products.

Yield curves can be derived from government bonds or LIBOR/swap instruments. The LIBOR/swap term structure offers several advantages over government curves, and is a robust tool for pricing and hedging financial products. Correlations among governments and other fixed-income products have declined, making the swap term structure a more efficient hedging and pricing vehicle.

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The current methodology in capital markets for marking to market securities and derivatives is to estimate and discount future cash flows using rates derived from the appropriate term structure. The yield term structure is increasingly used as the foundation for deriving relative term structures and as a benchmark for pricing and hedging.

Yield curves are derived or bootstrapped from observed market instruments that represent the most liquid and dominant interest rate products for certain time horizons.

Normally the curve is divided into three parts. The short end of the term structure is determined using LIBOR rates. The middle part of the curve is constructed using Eurodollar futures or forward rate agreements (FRA). The far end is derived using mid swap rates.

The objective of the bootstrap algorithm is to find the zero yield or discount factor for each maturity point and cash flow date sequentially so that all curve instruments can be priced back to the market quotes.

Reference:

https://finpricing.com/lib/IrCurveIntroduction.html