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ARCATAUR CAPITAL

Arcataur Capital Management LLC
A Registered Investment Advisor

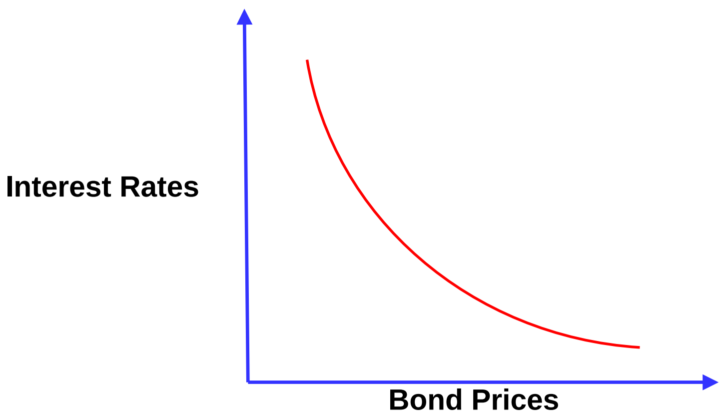
High Quality Investment Management
For Individuals and Institutions

Duration

What is Duration?

Duration is a term used by investment professionals when referring to individual bonds or a portfolio of bonds. It provides a way to measure the sensitivity of a bond price to changes in interest rates. Duration is measured in years and typically shorter than the average maturity for a bond portfolio, as it accounts for the receipt of interest payments throughout the life of the bond.

As discussed in our Bond Basics piece, bond prices change as interest rates change. Bond prices rise as interest rates fall and decline as interest rates increase.



Originally developed by Frederick McCauley in 1938, duration is a weighted average term-to-maturity of a bond's cash flow. Duration was further refined (Modified Duration) to incorporate different bond structures including callable bonds.

The table below contains duration information for various U.S. Treasury bonds:

Bond	Coupon/Maturity	Modified Duration
A	6%, 5-year	4.27
B	6%, 20-year	11.55
C	9%, 5-year	4.01
D	9%, 20-year	10.51

Longer maturity bonds have longer durations and higher coupon bonds have shorter durations. Duration reflects the % change in bond price for every 1% change in interest rates. Using the example above:

Duration

Bond A - If interest rates rose 3% the price of the bond would **fall** 12.81% (3% times its duration of 4.27)

Bond B - If interest rates fell 3% the price of the bond would **increase** 34.65% (3% times its duration of 11.55)

Bond C - If interest rates declined 2% the price of the bond would **rise** 8.02% (2% x its duration of 4.01)

Bond D - If rates increased 5% the price of the bond would **fall** 52.55% (5% times its duration of 10.51)

As evidenced above, bonds with the same maturities, but different coupon rates (cash flow streams) have different durations.

As duration of a single bond is the weighted average term to maturity of its cash flows, duration can be calculated for an entire bond portfolio. This is simply the weighted average of cash flows for all the fixed income investments in a portfolio. Again, this provides information regarding the portfolio's sensitivity to interest rates.

In Summary

- Duration measures the sensitivity of a bond's price to changes in interest rates.
- The longer the duration, the larger the changes in prices relative to changes in interest rates.
- If you have two bonds with identical maturities, but different coupons, the bond with the higher coupon will have a shorter duration.
- Duration can be calculated for a single bond or a portfolio of fixed income securities.

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