Columbia Business School

Capital Markets & Investments

Session 6: Fixed Income (3) – Managing Rate Risk Part 1

Spring 2026

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Recap

- **Macaulay Duration (MaD)** = How long you have to wait to get your money back
  - How to compute? Take an average of the timing of each cash flow, using the present values of each cash flow as weights
- **Modified Duration (MoD)** = % bond price drop when interest rates rise by 1%
  - How to compute? Divide MaD by (1+ytm/2)
- **Dollar Duration** = $ bond price change when interest rates rise by 1%
  - How to compute? Multiply MoD by the size of the position in $

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Recap

- The relationship between a bond's coupon and yield determine whether the bond is…

Type	Price Level	Coupon vs Yield
premium	Face Value < Price	Coupon > Yield
par	Face Value = Price	Coupon = Yield
discount	Face Value > Price	Coupon < Yield

Duration = 0

Duration = ∞?


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& BANK STOCK

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Duration = 30-50 years

Duration ≈ 100 years...?

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Alphabet lines up 100-year sterling bond sale

Deal comes as Google parent steps up AI borrowing rush with $20bn sale of dollar bonds

The so-called century bond will form part of a debut sterling issuance this week by Google's parent company © Annegret Hilse/Reuters

Coupon rate = 6.125%