

TD N=6

Exercise 1: Yield Curve & Investment Decision

Problem:

A bond investor is analyzing the current yield curve:

Maturity: 1 Year | Yield: 3.5%

Maturity: 5 Years | Yield: 4.2%

Maturity: 10 Years | Yield: 5.0%

- Should the investor buy a 1-year, 5-year, or 10-year bond if they expect interest rates to decline?

Exercise 2: Flexibility of Portfolios

Problem:

Compare two portfolios:

- Portfolio A: 80% in 10-year fixed-rate bonds, 20% in cash

- Portfolio B: 40% in 2-year floating-rate bonds, 40% in short-term bonds, 20% cash

- Which portfolio is more flexible to rising interest rates?

Exercise 3: Duration & Price Change

Problem:

A bond has a Macaulay Duration of 7.5 years, Modified Duration of 7.2. Interest rates rise by 1.5%.

- Estimate the percentage change in bond price.

Exercise 4: Sensitivity Comparison

Problem:

Two bonds (same coupon rate):

- Bond X: 2-year maturity

- Bond Y: 20-year maturity

- If interest rates rise by 1%, which bond drops more?

Exercise 5: Convexity Adjustment

Problem:

Bond details:

- Modified Duration = 6.0

- Convexity = 40

- Yield change = +2%

- Estimate % price change with convexity