

Corporate Finance, Module 5, "Investment Decisions and Net Present Value"

*Homework*

(The attached PDF file has better formatting.)

A firm invests \$10,000 in a project at the end of year 0. It expects to receive *nominal* cash flows of \$2,500 at the end of year 1, \$3,500 at the end of year 2, and \$7,000 at the end of year 3. Inflation is projected at 9% per year and the *real* interest rate is 6%.

- A. What is the nominal discount rate?  $\{ 1 + R = (1 + \text{inflation}) \times (1 + \text{real interest rate}) \}$
- B. What is the project's net present value? (Use the NPV rule.)

*Question:* Is it common for the discount rate to be in real dollars and the cash flows to be in nominal dollars?

*Answer:* The discount rate is the firm's capitalization rate, which is the risk-free rate plus its beta times the market risk premium. The risk-free rate moves in tandem with the inflation rate. If inflation increases 1%, the risk-free rate increases about 1%. The cash flows are estimated by sales personnel, who use nominal dollars.

*Question:* How does the final exam test this subject?

*Answer:* The final exam gives scenarios with nominal or real discount rates, nominal or real cash flows, and perhaps infinite time horizons.

Convert the discount rate and the cash flows into the same terms. Use either nominal or real terms, but be consistent for all items.