FIN325 - Homework 2
Due : September 24

Problem 1 (35pts)

A corporation is going to generate $1,000 in FCFF over the next year ($FCFF_1 = 1,000$.) Expected FCFF then grows by 2% a year, until the corporation dies after exactly T periods. Investors expect a 10% return when they invest in this company.

1. If $T = 10$, what is the market value of operating assets and growth opportunities?
2. If the holy trinity held exactly (it doesn't, of course) and at this market value, what would be the required rate of return?
3. How large must T be for the gap between the true required rate and that predicted by the holy trinity to be less than 1% ?

Problem 2 (35pts)

Consider a project whose EBIT, each period and for ever, is either $80M or $100M with equal probability. The project is financed with an interest-only perpetuity with face value $300M. Debt-holders require a 7% return. Investment is $20M each period, as is depreciation. The company pays $\tau = 30\%$ in income taxes. The project has market value $1bn. What is $E(r^E)$?

Problem 2 (30pts)

A corporation has the option to prepay (call) a bond with 5 years to maturity, $100M in remaining principal, a 10% yearly rate, fixed and monthly payments. It can replace it with a 5-year bond with the same payment structure but a 9% yearly rate. It believes rates will fall no further. Prepayment penalties are 2% of outstanding principal.

The CFO forgot what they heard in FIN325 so they are using the wrong discount rate. Specifically, they are discounting the monthly savings at a 5% rate (yearly terms) because, they say, that's what they can earn on their short term investments. Using that wrong discount rate, compare the NPV of refi when you finance the prepayment penalties using the new bond issue, and when you don't. Which option has the highest NPV according to those wrong calculations? Why?