

FIN325 - Homework 1
Due : upload pdf to Canvas by February 9th

Problem 1 (20pts)

A corporation has the option to prepay (call) a bond with 4 years to maturity, \$50M in remaining principal, a 10% yearly rate, fixed and monthly payments. It can replace this bond with a 4 year bond with the same remaining payment structure. Prepayment penalties are $c = \$750,000$.

1. How low must the yearly rate on the new bond be to justify calling the old bond (ignoring the option value of waiting to refi)?
2. What yield maintenance rate r_{ym} is equivalent to the above prepayment penalty?

Problem 2 (20pts)

Company XYZ just reported the following balance sheet and income statement for the past year:

Income statement		Assets				Liabilities and equity	
Sales	6M	Cash	2M	Current liabilities (oper.)	2M		
COGS	2M	Other current assets	5M	ST Debt	5M		
SG&A	1M	PP&E	10M	LT Debt	10M		
Depreciation	2M	Intangible Assets	7M	Preferred equity	2M		
Interest paid	1M			Common equity	5M		
Net Income before taxes	0M						
Taxes on net income	0M						
Net Income	0M						

1. Calculate and report the company's EBIT and EBITDA, using the common approach
2. The company is trading at a trailing EBITDA multiple of 10. The market value of its liabilities equals their book value. All assets other than cash are operating, as are all current liabilities. What is the market value of its common equity?

Problem 3 (30pts)

This problem's goal is to compare and contrast the EBITDA multiples of Facebook (FB) and Boston Properties (BXP).

1. Report the most recent EBITDA multiple computed by Yahoo finance for both companies
2. Calculate EBIT and EBITDA (ttm). Report the details of your calculations.
3. Using Yahoo's estimate of enterprise value for each company and your EBITDA calculation, compute each company's EBITDA multiple.
4. Until the onset of the COVID crisis in the United States, these very different corporations traded at similar high EBITDA multiples. Give plausible reasons (no more than 3 sentences per company) for why, at least until then, both BXP and FB displayed high multiples
5. BXP's multiple has now been halved. Do you think that's going to last? (Again, no more than 3 sentences.)

Problem 4 (30pts)

Download the 3-statement projection assignment dataset from my webpage. Fill-up all 3 statements for 2020 and 2021 given the assumptions and conventions provided at the top of the file. I strongly recommend you use the supporting schedule template provided at the bottom of the file as part of your calculations. In your printed answer, only show your completed statements.