

**FIN325 - Homework 6**  
**Due : practice only**

**Problem 1 (25pts)**

The following table shows recent quarterly data for overall debt and the market value of equity for corporation X. This is a corporation with no cash.

Quarter	$D$	$E$
1	10.1	6.0
2	11.9	7.0
3	14.1	8.0
4	14.9	8.3
5	15.0	8.7
6	14.0	8.6

Corporation X has a target capital structure  $\left(\frac{D}{V}\right)^*$  where  $V = D + E$ . Use a regression approach to jointly estimate  $\left(\frac{D}{V}\right)^*$  and the quarterly speed of adjustment towards  $\left(\frac{D}{V}\right)^*$ .

**Problem 2 (25pts)**

An untaxed corporation is going to generate cash-flows for one final period. In this final period, given its current assets, absent any new investment, it will generate either \$80M or \$100M, each with equal probability. Existing debt holders are owed \$90M. The corporation can add a new project at a cost of  $C$ . The project would generate net cash-flows \$17M in the final period with probability one. Investors into this new project require an expected return of 5%. Existing debt-holders have priority over any remaining share-holders next period. How low must be  $C$  be to justify investing into the new project?

**Problem 3 (25pts)**

Below are the close and adjusted close price of the stock of a given corporation over the past 7 days, in dollars. (It was a unique week of 7 consecutive trading days :) .) There was no split during the period. Two questions:

1. How many times did the corporation go ex-dividend during the period?

2. What are the size (in dollars, with two decimals) of each of the associated dividends?

Date	Closing price	Adjusted close
12/21	100.00	100.00
12/20	100.00	95.00
12/19	95.00	90.25
12/18	90.00	85.50
12/17	85.00	77.90
12/16	85.00	77.90
12/15	85.00	77.90

**Problem 4 (25pts)**

Consider an investment project whose continuation value at date 1 is either  $200M$  or  $150M$ . The projects can be scrapped (instead of operated) at date 1 for a salvage value of  $175M$ . The project has a market value of  $190M$ . What would be the market value of the project without the scrapping option?