

**Corporate Finance: Assignment 1**  
**ADM 3350 M, N & P (Winter 2016)**  
**Total Marks: 70**

**Due Date for Section (N & P) February 10, 2016 (In class, Hard Copy)**

**Due Date for Section (M) February 11, 2016 (In class, Hard Copy)**

**Note:** All of the group members are required to sign the “Personal Ethics Statement Concerning Telfer School Assignments” as attached at the end of this assignment.

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**Question 1 (6 Marks)**

Fantastic Inc. has been very generous in paying dividends in the recent years. It has just issued a dividend of \$2.00 per share on its common stock. The company paid dividends of \$1.00, \$1.15, \$1.50, and \$1.75 per share in the last four years. The stock currently sells for \$50. The firm has been quite successful over the past years. Its average ROE is 28% and it generally pays out 40% of net income as dividends.

Calculate the dividend growth rates using three methods discussed in the course (Hint: Arithmetic average, geometric average, and  $g = ROE \times \text{retention ratio}$ ).

**Question 2 (14 Marks)**

Complex Inc. has the following balance sheet figures:

	Book Value
Debt (D): 9% coupon rate, annual coupons 12 years to maturity (Par value or Face value of the bond is \$1,000).	\$1.5 million
Preferred shares (P): 10% dividend rate (Par value of preferred equity is \$100; dividend is calculated on par value)	\$1.0 million
Common shares (C/S): 200,000 shares (originally issued at \$20/share) (Beta = 1.5; Risk-free Rate = 3%; Market Index Return = 9%)	\$4.0 million
Retained earnings (RE)	\$1.0 million

Assume the marginal tax rate is 30 percent. The present market conditions are following:

**Preferred Shares:** Similar risk preferred shares are providing yields of 8 percent. (Hint: cost of preferred share is 8 percent)

**Common equity:** Common share price is currently \$22.

**Debt:** The present market rate on similar risk 12-year bonds is 7 percent. (Hint: cost of bond is 7 percent)

- a. What are the market values of Debt, Preferred Equity, and Common Shares?
- b. Find the market value proportions (i.e. weights) of these components. (Hint: remember that for market value weights we do not need to treat retained earnings separately, in general)
- c. Find the book value proportions (i.e. weights) of these components.
- d. Find the cost of capital using (i) market value weights? (ii) book value weights?
- e. Which weighting scheme is more appropriate for cost of capital calculation? Why?

**Question 3 (10 Marks)**

Your company is considering a project that will cost \$2 million. The project will generate after-tax cash flows of \$450,000 per year for 7 years. The WACC is 12% and the firm's target D/E ratio is 0.7.

The flotation cost for equity is 6% and the flotation cost for debt is 4%.

What is the NPV for the project (i) without considering flotation costs? (ii) after adjusting for flotation costs?

**Question 4 (10 Marks) (Hint: Homemade Leverage)**

Sun Inc., a prominent consumer products firm, is debating whether or not to convert its all-equity capital structure to one that is 40 percent debt. Currently there are 5,000 shares outstanding and the price per share is \$65. EBIT is expected to remain at \$37,500 per year forever. The interest rate on new debt is 8 percent, and there are no taxes.

- a. Ms. Robert, a shareholder of the firm, owns 100 shares of stock. What is her cash flow under the current capital structure, assuming the firm has a dividend payout rate of 100 percent?
- b. What will Ms. Robert's cash flow be under the proposed capital structure of the firm? Assume that she keeps all 100 of her shares.
- c. Suppose Sun Inc. does convert, but Ms. Robert prefers the current all-equity capital structure. Show how she could unlever her shares of stock to recreate the original capital structure?
- d. Using your answer to (c), explain why Sun's choice of capital structure is irrelevant.

**Question 5 (10 Marks)**

The Manotek Inc. expects an EBIT of \$5,000 every year forever. It can borrow at 8 percent. Suppose that Manotek Inc. currently has no debt and its cost of equity is 12 percent. Corporate tax rate is 30 percent.

- a. What is the value of the firm (with no debt)?
- b. What will the value be if the firm borrows \$8,000 and uses the proceeds to buy up stocks?
- c. What is the new debt to equity ratio?
- d. What is the cost of equity of the levered firm (i.e. after borrowing)?
- e. What is the WACC of the levered firm?

**Question 6 (10 Marks)**

*Consider the following information:*

Tax rate = 40%; No depreciation; No changes in Capital Spending and Net Working Capital.

Low-risk Inc. earns EBIT = 2,000 in each year (a perpetuity). It does not have any debt. Cost of its equity (or Asset) is 10%.

High-risk Inc. earns EBIT = 2,000 in each year (a perpetuity). It has issued \$3,000 worth of perpetual bonds on which it pays 8 percent interest every year.

- a. What are the net income of Low-risk Inc. and High-risk Inc.?
- b. What are the cash flows for Low-risk Inc. and High-risk Inc.?
- c. How could you explain the differences in cash flows between Low-risk Inc. and High-risk Inc.? Show calculations. (Hint: Interest tax shield)
- d. What is the value of High-risk Inc.?

**Question 7 (10 Marks)**

Good Time Company is a regional chain department store. It will remain in business for one more year. The probability of a boom year is 60 percent and the probability of a recession is 40 percent. It is projected that the company will generate a total cash flow of \$210 million in a boom year and \$85 million in a recession. The company's required debt payment at the end of the year is \$120 million. The market value of the company's outstanding debt is \$94 million. The company pays no taxes.

- a. What payoff do bondholders expect to receive in the event of a recession?
- b. What is the promised return on the company's debt?
- c. What is the expected return on the company's debt?

## Personal Ethics Statement Concerning Telfer School Assignments

### Group Assignment:

By signing this Statement, I am attesting to the fact that I have reviewed not only my own work, but the work of my colleagues, in its entirety.

I attest to the fact that my own work in this project meets all of the rules of quotation and referencing in use at the Telfer School of Management at the University of Ottawa, as well as adheres to the fraud policies as outlined in the Academic Regulations in the University's Undergraduate Studies Calendar. <http://www.uottawa.ca/academic-regulations/academic-fraud.html>

To the best of my knowledge, I also believe that each of my group colleagues has also met the rules of quotation and referencing aforementioned in this Statement.

I understand that if my group assignment is submitted without a signed copy of this Personal Ethics Statement from each group member, it will be interpreted by the Telfer School that the missing student(s) signature is confirmation of non-participation of the aforementioned student(s) in the required work.

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Signature

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Date

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Student Number

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