Spring 2005 Name:

Corporate Finance: Final Exam

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. DayTop Inns is a publicly traded company, with 10 million shares trading at $ 70 a share and $ 300 million in debt (market value as well as book value) outstanding. The firm derives 60% of its value from hotels and the remaining 40% from transportation. The unlevered beta is 0.8 for firms in the hotel business and 1.2 for firms in the transportations business. DayTop is rated A and can borrow money at 5%. The riskfree rate is 4.5% and the market risk premium is 4%; the corporate tax rate is 40%.

a. Estimate the cost of capital for DayTop Inns. (2 points)

b. DayTop Inns is considering acquiring SwissHotels, another hotel company (which derives 100% of its revenues from hotels) for $ 400 million, three quarters of which it plans to fund by a new debt issue (which will cause its rating to drop and its cost of debt to rise to 5.5%) and a quarter by issuing new stock. Estimate the cost of capital after the acquisition. (4 points)

2. Spirit Software Inc. is a computer software company that generated $ 12 million in pre-tax operating income on $ 100 million in revenues last year; the firm is stable and does not expect revenues or operating income to change over the next 10 years. Its inventory management is in shambles and inventory as a percent of revenues amounted to 12% last year. Spirit is considering investing in a new inventory management system, which will cost $ 15 million. The inventory management system is expected to have a 10-year life, over which period it can be depreciated straight line down to a salvage value of zero. The new inventory management system is expected to have two benefits:

- It will immediately reduce the inventory maintained of items that are least sold and lower the inventory/sales ratio to 8% (and stay at that percentage level for the life of the inventory management system)
- By providing salespeople with updated information on what is in stock, it is expected to increase revenues to $ 115 million next year (and operating margins to remain unchanged). The revenues and operating income from year 2 to year 10 will remain unchanged at year 1 levels.
- The reduction in inventory will also allow the company to sell off its existing storage facility (which has a book value of $ 5 million) today for $ 10 million and buy a new storage facility for $ 5 million. Both the old and the new storage facilities will be depreciated straight line over the next 10 years to a salvage value of zero.

The firm has an income tax rate of 40%, a capital gains tax rate of 20% and a cost of capital of 10%.

a. Estimate the cashflows at time 0 (today) from this investment. (2 points)

b. Estimate the NPV of investing in the new inventory management system.

(4 points)

3. PetSmart Inc.. is a publicly traded company involved in selling pet food and accessories. The firm has 15 million shares outstanding, trading at $ 10 a share; it has $ 50 million in 10-year bonds outstanding and interest expenses on the debt amounted to $ 2 million. The firm currently is rated A with a cost of debt of 5% and has a levered beta of 1.56. The riskfree rate is 4.5% and the market risk premium is 4%. The corporate marginal tax rate is 40%.

a. Estimate the current cost of capital for PetSmart. (2 points)

b. PetSmart announces that it will be borrowing $ 50 million and buying back stock at $10.75 a share. This will lower the rating to BB, with a pre-tax cost of debt of 7%. Assuming that all of the existing debt gets refinanced at this new rate, estimate the value per share after this transaction. (You can assume a growth rate of 3% in perpetuity.)

4. Girardo Mowers Inc. is a company that manufactures lawn mowers. It had net income of $ 15 million on revenues of $ 50 million last year, after depreciation charges of $ 10 million. Capital expenditures last year amounted to $ 16 million and total non-cash working capital was $ 10 million. The firm had a cash balance of $ 15 million and paid 50% of its earnings as dividends last year. There is no debt outstanding.

a. Assuming that revenues, capital expenditures and depreciation grow 10% a year and that net income grows 12% a year for the next four years, and that the non-cash working capital as a percent of revenues does not change over this period, estimate the cash balance at the end of year 4, if the company maintains its current payout ratio and borrows no money. (2 points)

b. What proportion of earnings will Girardo Mowers have to pay out as dividends if the firm wants to to preserve its existing cash balance of $ 15 million at the end of 4 years? (2 points)

b. Assuming that Girardo Mowers does not want to issue new stock and wants to maintain its existing payout ratio of 50% what debt ratio will the firm have to utilize over the next four years, to have a cash balance of $ 30 million at the end of the fourth year. (2 points)

5. You are trying to value SafeMoney Inc., a commercial bank, using the dividend discount model. SafeMoney Inc. is expected to pay $ 60 million in dividends on net income of $ 100 million next year. It is in stable growth, expecting to grow 4% a year in perpetuity. The cost of equity for banks is 8%.

a. Value the equity in SafeMoney Inc. (1 point)

b. If the expected growth rate is correct, estimate the return on equity that you are assuming for SafeMoney Inc. in perpetuity. (2 points)

c. Assume now that you are told that SafeMoney can increase its return on equity to 12% in perpetuity, by lending to riskier clients. If the expected growth rate remains unchanged, what would the cost of equity have to be for the equity value to remain unchanged (from your answer in (a)? (2 points)

d. Under which of the following scenarios will increasing the payout ratio for a firm increase its equity value? (Note that this question does not relate specifically to this problem but to the dividend discount model in general)

i. Never
ii. Always
iii. When the return on equity is equal to its cost of equity
iv. When the return on equity is less than the cost of equity
v. When the return on equity is greater than the cost of equity