

Financial Management ***Warsaw School of Economics***

Exam, 28 January, 2003

STUDENT'S NAME:

For each of the questions in parts A and B, indicate your answer by circling the letter which identifies the best choice

Part A: Each of the following questions is worth 1 point.

Problem 1

A device is for sale that will save you 20% of your utility bill every year. Your time value of money is 10%, and your utility bill is \$1000 per year. Assuming that your utility bill remains constant and you will be around forever to enjoy the benefits of this device, how much should you be willing to pay for it ?

- a. 1000
- b. 1500
- c. 2000
- d. 2432
- e. none of the above

Problem 2

The CAPM implies that low beta assets will have low _____.

- a. realized returns
- b. required returns
- c. unsystematic risk
- d. brokerage fees
- e. none of the above

Problem 3

The appropriate discount rate to use when evaluating a project is

- a. the average return of the firm.
- b. the treasury bill rate.
- c. the highest return on the firm's other projects.
- d. the rate that could be earned by investing in similar-risk securities.
- e. none of the above

Problem 4

In the margin account drops below the _____, the holder of the futures contract gets a _____.

- a. maintenance margin, margin call
- b. exercise price, margin call
- c. maintenance margin, default option
- d. exercise price, put option
- e. none of the above

Problem 5

The value of the tax shield offered by permanent debt is:

- a. always less than the value of the next year's tax shield.
- b. less than the value of the next year's tax shield.
- c. always greater than the value of the next year's tax shield.
- d. always equal to the value of the next year's tax shield.
- e. none of the above.

Problem 6

The Alpha Corp. had net operating income last month of \$1000, an interest expense of \$200. The DOL was 2. What is the DFL ?

- a. 0,75
- b. 1,00
- c. 1,25.
- d. 5
- e. none of the above

Part B: Each of the following questions is worth two points.

Problem 7

A growing annuity starts off with a payment of \$100 and the subsequent annual payments grow at the annual rate of 4%. The discount rate is 10% and there are four annual payments. The present value is close to:

- a. 285
- b. 335
- c. 385
- d. 421
- e. none of the above

Problem 8

A year ago you purchased some stock that had a beta of 1.6. You have not noticed how well your stock has done during the year, but you do know that the T-bill rate has remained at 5% throughout the year. As you are driving down the road, you hear on the radio that the market return was 12% during the year. What do you expect your return on your stock to be ?

- a. 5,0%
- b. 8,4%
- c. 16,2%
- d. 19,2%
- e. none of the above

Part C: Each of the following problems is worth five points.

Please be sure to show your calculations

Problem 9

Alpha Corp., plans to liberalize its credit policy by extending its current 7-day credit period to 30 days. The company expects that this will increase its current sales (all credit) of \$180,000 by 10%. Unfortunately, however, bad debts are also expected to rise to 5% up from the current level of 1% of total sales. The company's operating cost of 40% of sales and its credit collection costs of \$6,200 are expected to remain the same. The company is in the 20% tax bracket, and it requires all investments to return 10%. How much richer or poorer will the company be if it relaxes its credit policy ?

Problem 10

Tetra Corp. is considering the acquisition of 30 personal computers. The computers can be purchased for \$1,000 each and would be depreciated straight line over 5 years. Their anticipated value at the end of 5 years is \$ 0. Alternatively, the 30 computers can be leased for \$8,000 annually, payable at the end of each year. The tax deduction is recognized as the payments are made. Before-tax cost of debt is 10%.

- (a) What initial outlay is associated with purchase ? What are the annual tax savings from depreciation if the tax rate is 30% ?
- (b) What annual after-tax cash flow is associated with leasing if the tax rate is 30% ?
- (c) What net financing is provided by the lease ? What is the decremental cash flow from the lease ?
- (d) Find NPV. Should Tetra Corp. lease or buy the computers ?

10 (d)

At least one of the following results may be useful.

$$PV (7\% ; 5 ; -1800) = 7\,380,4$$

$$PV (7\% ; 5 ; -5600) = 22\,961,1$$

$$PV (7\% ; 5 ; -7400) = 30\,341,5$$

$$PV (10\% ; 5 ; -1800) = 6\,823,4$$

$$PV (10\% ; 5 ; -5600) = 21\,228,4$$

$$PV (10\% ; 5 ; -7400) = 28\,051,8$$

$$PV (12\% ; 5 ; -1800) = 6\,488,6$$

$$PV (12\% ; 5 ; -5600) = 20\,186,7$$

$$PV (12\% ; 5 ; -7400) = 26\,675,3$$

- 1 c
- 2 b
- 3 d
- 4 a
- 5 d
- 6 c

$$7 \text{ b } PV_{GA} = \frac{CF_1}{i - g} \left[1 - \left(\frac{1 + g}{1 + i} \right)^n \right]$$

8 c

9

	Proposed	Current	Change in Cash Flows
Revenues	198 000	180 000	18 000
Operating Costs	79 200	72 000	7 200
Bad debts	9 900	1 800	8 100
Coll costs	6 200	6 200	0
CFBT	102 700	100 000	2 700
Taxes	20 540	20 000	540
CFAT	82 160	80 000	2 160
A/R	16 500	3 500	13 000
Change in the firm's market value			
NPV =	21 600	-13 000 =	8 600

10

(a)	Initial outlay	30 000
	Depreciation	6 000
	Tax savings TD=	1 800
(b)	CFAT from leasing	
		8 000
		*
	(1-T)=	0,700
	=	
		<u><u>5 600</u></u>

(c)

	0	1	2	3	4	5
Initial outlay	30 000					
TD		-1 800	-1 800	-1 800	-1 800	-1 800
Lease payments after tax		-5 600	-5 600	-5 600	-5 600	-5 600
Decremental CF	30 000	-7 400				

RRR= 10% * 0,700 = 7,0%
 NPV= -341,461 Tetra Corp. should purchase the computers.