

IE 342 17-18 Spring Semester

Study Set 3

Please do not submit your answers as they will not be graded!!

- 1) Suppose that Türk Traktör is selling stocks at a price of 73 TL per share in 11.30.2016. The expected dividend in 2016 is 5 TL and the dividend payments are expected to increase by 3% for five years (increases by 3% in each year). The expected stock price in 3 years will be 91 TL per share. You expect 12% on your investment. Would you buy the stock or not? Why? Consider only three years.
- 2) Mr. Finch wishes to sell a bond that has a face value of \$2,000. The bond bears an interest rate of 8%, with bond interests payable semiannually. Five years ago, \$820 was paid for the bond. At least 6% return on investment is desired. What must be the minimum selling price?
- 3) You have an opportunity to purchase a bond for 5 years with \$500 par value. With a 6%/year coupon rate paid annually and a yield to maturity 2%/yearly, what is the amount you pay for the bond now?
- 4) Consider the project balances in below table for a typical investment project with a service life of four years :

n	A_n	Project Balance
0	-\$900	-\$900
1	?	-1,000
2	?	-800
3	400	-500
4	?	0

- a) Determine the interest rate used in computing the project balance.
 - b) Reconstruct the original cash flow of the project.
 - c) Would the project be acceptable at $i=15\%$?
- 5) A newly constructed bridge costs \$20,000,000. The same bridge is estimated to need renovation every 12 years at a cost of \$4,000,000. Annual repairs and maintenance are estimated to be \$1,000,000 a year.
- d) If the interest rate is 4%, determine the capitalized cost of bridge.
 - e) Suppose that in (a), the bridge must be renovated every 20 years, not every 12 years. What is the capitalized cost of the bridge?

- f) Repeat (a) and (b) with an interest rate of 12%. What can you say about the effect of interests on results?
- 6) Determine the capitalized cost of \$120,000 at time 0, \$20,000 from year 1 to year 5 and \$50,000 per year from year 6 and on. $i = 12\%$ per year.
- 7) Determine the capitalized cost at 15% interest of a structure with an initial cost of \$200,000 and annual operating and maintenance costs of \$40,000.
- 8) To decrease the costs of operating a lock in a large river, a new system of operation is proposed. The system will cost \$830,000 to design and build. It is estimated that it will have to be reworked every 10 years at a cost of \$120,000. In addition, an expenditure of \$80,000 will have to be made at the end of 5th year for a new type of gear that will not be expected to be available until then. Annual operating costs are expected to be \$70,000 for the first 15 years and \$100,000 a year thereafter. Compute the capitalized cost of perpetual service at $i = 7\%$.
- 9) A technology company's bonds have four years remaining to maturity. Interest is paid annually, the bonds have a \$1,000 par value, and coupon interest rate is 8.75%.
- g) What is the yield to maturity at a current market price of \$1,108?
- h) Would you pay \$935 for one of these bonds if you thought that the market interest rate is 9.5%?