Management V/Financial Managen

Summer Term 2013
Final Exam – Retake – (11065)

Solve **both problems** below. Each problem is worth
The bold figures (in parentheses) indicate the maxim

You are allowed to use a non-programmable pocket
lecture notes, dictionaries, or programmable pocket
exercise sheet will be disregarded during the gradin
working sheets; leave a margin of 3cm.
Undecipherable scribbling will not be graded. Use t
presented in the lecture and the tutorial; **make clear**

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1) In an economy with no taxes, no transaction costs a
equally likely states of nature. In each year till infini
operating income in each state of the economy:

	Stat
	Recession
Operating Income	10,000

The company has no debt and all its operating incon
There are currently 40,000 shares. The perpetual exp

a) Calculate the expected present value of the firm.
b) If the market value of the shares is 500,000.00€
c) Calculate the expected earnings and rate of retur
d) Calculate the variance and the standard deviatio
e) The CEO proposes a restructuring by issuing €1
and using the proceeds to repurchase shares. Wo
capital have an impact on its value? Explain you
f) How many shares are left after the restructuring'
g) Assume that after restructuring, 28,000 shares a
calculate the expected earnings per share and rat
h) Calculate the variance and standard deviation of
i) Compare and interpret the expected returns and
j) Using the second Modigliani Miller theorem exp
condition for the leverage effect? **(4)**

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Prof. Dr. rer. pol. Roland Kirstein
Economics of Business and Law
Faculty of Economics and Management
Vilfredo-Pareto-Bldg. 22, D-003
Otto-von-Guericke-University Universitätsplatz 2
39106 Magdeburg, Germany

ap to 30 points.
m points per question.

alculator. The usage of textbooks,
lculators is **not** permitted. Notes on this
ive answers exclusively in your

terminology and the mathematical tools
w you calculate your results!

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o cost of financial distress there are three
he company A will make the following

f the Economy	
Normal	Boom
60,000	80,000

s paid as dividends to the shareholders.
ted return on assets is 10%.

at is the price of a share? **(2)**
er share worth 12.50€. **(4)**
f the rate of returns per share. **(4)**
000 of debt at an interest rate of 8 percent
l the planned re-structuring of the firm's
nswer. **(2)**
)
eft. Considering the new debt liabilities,
f return on shares! **(4)**
e returns per share of the levered firm. **(4)**
of the firm with and without debt. **(2)**
in the leverage effect. What is the necessary

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2) Consider a bond with a face value of $100, and annual interest rate payment of $20 (in July). The bond matures in 4 years (in July). The bond is rated AAA. The market offers you an interest rate for riskless corporate asset investments of 8%.
   a) Calculate the fair price of the bond today? **(4)**
   b) How would a decrease in the interest rate change the bond's price of today? Why? **(3)**
   c) Using the insights of CAPM explain how a downgrade of the bond from AAA to AA is likely to affect the bond price? **(2)**
   d) Alternatively to issuing bonds, the company can get a loan of 100 € at 8% p.a. interest rate from a bank to be repaid in 4 years as an annuity (payments made in the end of each year). Calculate the annually annuity payment. **(4)**
   e) Assume that the annual payment amounts to 30 €. How much of the first year's payment can be considered as interest payments and how much of the payment is used for actual redemption? **(2)**
   f) If you expect the interest rates to increase in future, do you prefer a loan with high redemption in the beginning or in the end? Why? Give an example! **(2)**

The following table shows the prices of a sample of strips of government bonds (riskless) in January 2013. Each strip makes a single payment of €100 at maturity.

Maturity	Price (€)
December 2015	92.37
December 2018	79.39
December 2019	75.24
December 2020	71.29
December 2043	10.06

   g) Calculate the annually compounded spot interest rate for each year. **(5)**
   h) Is the term structure upward- or downward-sloping? **(2)**
   i) Explain why an investor could have a preference for liquidity and how this would explain an upward sloping term structure. **(4)**
   j) Calculate the annually compounded, one-year forward rate of interest for December 2019. **(2)**