Finance Final Exam

Management V-Financial Management (5077)
WS 2005/2006

There are five (5) pages to the exam. Make sure you have five (5) consecutively numbered pages.

You will have 2 hours and 20 minutes (140 minutes) to work the examination.

You may use the lecture script PPoints together with your individual notes and any textbook as reference. You cannot share **anything** during the exam. Calculators and any other electronic equipment are only permitted in accordance with the regulations of the Board of Examiners (Prüfungsausschuss). Also, no "Telephone/SMS Jokers" during the examination— i.e. switch off all cell phones.

To receive full credit for an answer that requires computations YOU MUST show your work/calculations—do not extensively label them. To be clear: If you only write down the answer—EVEN IF IT IS CORRECT, you will receive NO CREDIT for that answer.

When there is an explanation called for there will also be noted the approximate number of words that *should* be necessary to express the idea completely. This is a general GUIDE for you. If you write more, that is OK, but you may be trading valuable time. DO NOT COUNT THE WORDS.

Also, if you want to correct something—you may simply strike it out and continue. DO NOT TAKE VALUABLE TIME TO ERRASE or WHITE-OUT, BLOW-DRY and THEN CAREFULLY RE-WRITE WHAT YOU WANT TO SAY.

If you think something is "tricky", you are probably reading too much into the question. The exam is a straightforward attempt to cover the important aspects that we discussed during the semester. **We cannot answer ANY questions during the examination.**

The Final counts 70% of the final grade. The Take-home mid-term counts 30% of the final grade.

Good Luck, and thanks for an interesting semester *Ed* and **Dirk**.

Part A.
Case Study
Total Points [55 pts]

This is, for the most part, a real case study. Therefore, the information has not been organized to produce a particular result.

You are consulting to OrKa, an American-German venture, which produces semi-conductors. They are considering expanding their production to Poland, a low-salary-zone, because they believe that there is likely to be severe price competition in the next few years from various Chinese-ventures. The have conducted a study regarding their cash _inflows_ under two different scenarios: Minimum Total Sales probable—i.e., under the most likely unfavorable market circumstances, and Maximum Total Sales probable i.e., under the most likely favorable market circumstances. Following, in Table 1, are the particulars of OrKa's five year plan. The US Treasury Bills rates are: 30-Day Certificates 2.78% and for 90-Day Certificates 3.04%.

Table 1: Five Yearly Projections: The OrKa Venture

Year	1	2	3	4	5
Minimum Total Sales in Units	5,500	5,700	5,000	4,500	4,000
Maximal Total Sales in Units	27,400	22,500	20,000	15,000	15,000
Cash InFlow per unit: Min	$3.72	$4.78	$3.72	$3.25	$3.20
Cash InFlow per unit: Max	$2.87	$3.43	$4.78	$2.75	$2.50

Assume that the Cash InFlows per unit are associated with the total units sold by scenario. For example, the dollar _Cash InFlow per unit: Min_ relates _only_ to the _Minimum Total Sales in Units_.

OrKa estimates the Total _Present Value_ [PV] of their cash OutFlows for the five year planning horizon as follows:

Table 2: Total PV of OutFlows for the Five Year Period

Scenario	PV of OutFlows
Minimum	$90,500
Maximum	$194,300

1. Assuming that the fixed component of the PV Outflows is $33,600 find the PV-Break-Even point [BEP] in Units. Defend any assumptions that you are making. [20 Pts]

2. After you set up the problem to solve for the BEP, how can you prove that there will be a break-even point by inspection? 25 Words [5 Pts]

3. Assume that there has been important economic change during the eight months while the plan presented in Tables 1 and 2 was being prepared. OrKa does a <u>current</u> market penetration study and determines that the possible range for *Total Sales* into this new market for the five-year period is "Normally" distributed in the BC-WC Range of [19,500 units to 35,000 units]. Advise OrKa's senior management. 100 Words [20 Pts]

4. OrKa management says that it is possible to change the prices of the product and so change the cash-flow equivalents as they have been presented in Table 1. The CFO says that the cash flow equivalents are really expectations and that they are probably in the interval: [Expectation ± 15%]. So for example, for Table 1 for the Minimum probability case for year 1 the range would be [$3.162 to $4.278]. Suggest two (2) ways that you would use this information. DO NOT DO WHAT YOU SUGGEST—Only explain what you would recommend doing and why—but be specific about how you would use the information that you would generate! 75 Words [10 Pts]

End of Part A. Part B is on the next page.

5. Consider the IRR issues that we discussed in class. Recall the form of the IRR equation: $0 = \sum_{i=0}^{n} \dfrac{a_i}{p^i}$ where: p is one plus the internal rate of return: $p = 1 + IRR$ and $a_i \in \Re$. Solving for the IRR may lead to no real roots or more than one real root. Explain to a senior manager, in simple economic terms, the economic reality for two possible cases with no real roots.
[7 pts]

6. Why would the price of a Call option be an increasing function of the standard deviation of the returns of the underlying? [5 Pts]

7. We mentioned the term "Operational Reality" during the course for both Break Even Analyses [BEA] and with respect to the CAPM. For the BEA and for the CAPM define this term and discuss why it is important. [5 Pts]

8. Regarding the Break-even Analysis for the Holiday Hotel case what will be the effect (if any) of misclassifying some fixed cost as variable costs? Is the result that you have found always true? Discuss. [8 Pts]

9. You have the following Variance/Co-variance matrix for Intel and the S&P500:

	Intel	S&P500
Intel	0.337	?
S&P500	?	0.291

You form the 90% CI for β as [1.038 1.215].

  i.) If possible determine the co-variation of Intel with the S&P500. If it is not possible, state why not. (5 Pts)

  ii.) If possible determine the value of Jensen's α. If it is not possible, state why not. (5 Pts)

10. Assume that you are an Alpha-trader and have produced the following hurdle categories from a simulation run 187 times of the possible values of Jensen's α for the Monsanto Corporation:

Category	Frequency
Consider a Trade	67
Make a Trade	32
Do Not Trade	88

i.) What is the 90% CI for the Do Not Trade category? (5 Pts)
ii.) Explain this to a technical colleague. (5 Pts)

This is the END of the Examination.