

August Examination Period 2021-22

ECOM049 Commercial & Investment Banking

Duration: 3 hours

Answer ALL questions

Provide ALL necessary calculations & brief comments for exercises 1-8

THIS IS AN OPEN BOOK EXAMINATION TO BE CONDUCTED ONLINE. YOU MAY REFER TO ANY OF THE COURSE MATERIALS, OR ANY OTHER SOURCE OF INFORMATION. YOU MAY ALSO USE A SPREADSHEET OR CALCULATOR.

YOU CANNOT SUBMIT HANDWRITTEN ANSWERS

**ANSWERS ARE TO BE TYPED AND SUBMITTED TO BOTH QMPLUS & EMAILED TO:
ECOM049@qmul.ac.uk**

PLEASE ENSURE THAT YOUR WORKING IS CLEARLY SHOWN WITH ALL STEPS OF YOUR CALCULATION INCLUDED IN YOUR ANSWER DOCUMENT, INCLUDING ANY FORMULA USED.

When writing formulas, please note the following:

- It is acceptable to use the standard alphabet rather than greek letters. The following are recommended: m for μ , s for σ , w for ω , r for ρ , d for Δ , b for β .
- For mathematical operators: add +, subtract -, multiply *, and divide /.
- Where appropriate, use an underscore to indicate a subscript, Eg r_f for r_f .
- Use the ^ character for power, eg x^2 for x^2 , x^0.5 for \sqrt{x} .
- As an alternative to x^0.5 you may type sqrt(x).
- Use brackets as necessary. To make your answer clearer use different brackets where appropriate, eg [] { } ().

Examiner: Y. Makedonis

Question 1.

Assume that the duration of a soon to be approved loan of £11 million is four years. The 99th percentile increase in risk premium for bonds belonging to the same risk category of the loan has been estimated to be 6 percent. Calculate the capital (loan) risk of the loan assuming the current average level of interest rates for this category of bonds is 11 percent.

[5 marks]**Question 2.**

Work again with the same assumptions of the soon to be approved loan in **Question 1.** above. Calculate the expected income on this loan for the current year assuming the fee income on this loan is 0.5 percent and the spread over the cost of funds to the bank is 1 percent.

[5 marks]**Question 3.**

Work again with the same assumptions of the soon to be approved loan in **Question 1.** above. Calculate its expected percentage fee income in order for this loan to be approved, assuming the minimum risk-adjusted return on capital acceptable to the bank is 7 percent, what should be its expected percentage fee income in order for it to approve the loan.

[5 marks]**Question 4.**

Assume that a publicly traded firm has provided the following financial information in its application for a loan (all numbers are in thousands).

<u>Assets</u>		<u>Liabilities and Equity</u>	
Cash	£18	Accounts payable	£27
Accounts receivables	80	Notes payable	36
Inventory	80	Accruals	27
		Long-term debt	135
Plant and equipment	452	Equity (ret. earnings = £270)	405
Total assets	£630	Total liabilities and equity	£630

Calculate the Altman discriminant function value for this firm assuming that the sales of the firm worth £450,000, the cost of the goods sold amount to £324,000, and that the market value of equity is equal to the book value.

[5 marks]**Question 5.**

Work again with the same firm in **Question 4.** above. Based on the Altman's Z score only, would you have approved this firm's application to your bank for a \$450,000 capital expansion loan? If sales of the firm were 50 percent less, the market value of equity was only half of the book value, and all other values were unchanged, would your credit decision have changed?

[5 marks]

Question 6.

Assume that a one-year, £200,000 loan carries a coupon rate, a market interest rate of 11 percent, and that requires payment of accrued interest and one-half of the principal at the end of six months. Calculate the cash flows at the end of six months and at the end of the year, given the remaining principal and accrued interest are expected at the end of the year.

[5 marks]

Question 7.

Work again with the same assumptions in **Question 6.** above and calculate the present value of each cash flow discounted at the market rate.

[5 marks]

Question 8.

Work again with the same assumptions in **Question 6.** above and calculate the duration of this loan.

[5 marks]

Question 9.

With reference to the factors affecting their growth, discuss the topic of Loan Sales and how the current inflationary pressures affect them.

[20 marks]

Question 10.

Define the three purposes of money and discuss whether cryptocurrencies fulfil any of them.

[20 marks]

Question 11.

Discuss the trade-off faced by a financial institutions' manager in structuring the liability side of this institution's balance sheet.

[20 marks]

End of Paper