A

LISBOA SCHOOL OF ECONOMICS & MANAGEMENT

SINCE 1911

CORPORATE INVESTMENT APPRAISAL

MASTERS IN FINANCE

EXAM

26 JANUARY 2015

2 HOURS + 15minutes

INSTRUCTIONS TO READ BEFORE STARTING ANSWERING THE QUESTIONS

1. Please fill in your name and student number.
2. The exam has 5 groups of questions, with marks clearly indicated.
3. You may use one A4 sheet of paper with notes.
4. The cumulative Normal distribution table is attached at the end.
5. You may un-staple the Normal table, and the scrap paper. Nothing else.

Good Luck!

Name____ No. ___________

PROFESSOR CLARA RAPOSO'S VIP AREA:

GROUP	GRADE	COMMENT
I		
II		
III		
IV		
V		
TOTAL		

GROUP I (4 points)

GoGo Motors currently produces 500,000 electric motors a year and expects output levels to remain steady in the future. It buys armatures from an outside supplier at a price of $2.50 each. The plant manager believes that it would be cheaper to make these armatures rather than buy them. Direct in-house production costs are estimated to be only $1.80 per armature. The necessary machinery would cost $700,000 and would be obsolete in 10 years. This investment would be depreciated to zero for tax purposes using a 10-year straight line depreciation. The plant manager estimates that the operation would require additional annual working capital of $40,000 but argues that this sum can be ignored since it is recoverable at the end of the ten years. The expected proceeds from selling the machinery after 10 years are estimated to be $10,000. GoGo Motors pays tax at a rate of 35% and has an opportunity cost of capital of 14%.

(I.a) (1.5 points) What are the annual Free Cash Flows of the decision to go ahead with the project of producing direct-in-house armatures? Explain.

(I.b) (1.5 points) Based on the cash flows estimated in part (I.a) should GoGo Motors go ahead with this project? Explain.

(I.c) (1 point) Without making any further computations, what can you say about the IRR of this project? Explain.

GROUP II (6 points)

IRYNASH Industries is a well-known company in the entertainment industry. Its market capitalization is currently €20 million, and it has debt of €10 million. The company holds cash and equivalents of €5 million and its Other Assets are worth €25 million. The company has 500,000 shares outstanding. IRYNASH is currently considering investment in a new project for 4 years, in its usual line of business. Project MA2 requires immediate investment of €650,000 and has the following estimated annual free cash flows:

t	1	2	3	4
FCFt	€220,000	€260,000	€230,000	€150,000

IRYNASH's cost of debt is 1 percentage point above the risk-free interest rate, and the beta of its shares is around 1.25. The company pays taxes of 40% on its income. Current market conditions are such that the risk-free interest rate is 1.5% and the market risk premium is 4%.

(II.a) (2 points) Suppose that IRYNASH Industries intends to finance the new project with a target ratio of debt-to-equity, which is the same that the company currently has. Should the company invest in this new project? Explain.

(II.b) (1 point) What will happen to the stock price of IRYNASH once the new project MA2 is announced and investors have the same information that we have? Explain.

(II.c) (1.5 points) Now suppose that IRYNASH decides to use a different capital structure, with a higher ratio of debt-to-value, equal to 0.5. In this scenario the beta of the shares would increase to 1.4. By how much does the cost of debt change? Explain.

(II.d) (1.5 points) Suppose that IRYNASH finally decides to finance the project with the target capital structure presented in question (II.a). If the stock price goes up to €40.02, what is your estimate of the present value of the costs of financial distress? Explain.

GROUP III (3 points)

Suppose you want to perform the valuation of a large listed company such as The Coca-Cola Company. Describe and justify which steps you would follow, which method(s) you would choose, which elements you would estimate and which sources of information you would use for your purposes.

GROUP IV (4 points)

IRYNASH Industries has just announced a rights issue. Each share receives a right convertible into two new shares in 9 weeks' time, when it is expected that the company will raise € 18,000,000 with the exercise of the rights. IRYNASH Industries currently has 2,000,000 shares with a market cap of € 20,000,000. Suppose the company currently is unlevered. The volatility of its equity has been estimated as 25%, and the annual risk-free interest rate is 1.5% (in continuous time).

(IV.a) (2 points) If you are a shareholder of IRYNASH Industries, by how much are you willing to sell your rights? Explain.

(IV.b) (1 point) Once the rights are traded in the market, what happens to the price of your share? Is this good or bad news to you? Explain.

(IV.c) (1 point) How much would you be willing to pay for a firm commitment service? Explain.

GROUP V (3 points)

In the context of Merton's model consider the valuation of IRYNASH Industries' debt, knowing that the company owes € 10,000,000 to its creditors, to be repaid in year 2. The current market capitalization of this company is € 20,000,000, with a volatility of the stock returns of 25%. The current annual (continuous) risk-free interest rate is 1.5%. The tree presented below represents a guess made by Mr. Creditor on the value of IRYNASH Industries' assets (values in Euros):

t=0	t=1	t=2
29704455	X	Y
	25102617	29704455
		Z

(V.a) (1 point) Complete the tree that Mr. Creditor is building (values X, Y, and Z), and estimate the underlying volatility of the assets that he is considering. Explain.

(V.b) (2 points) Is it credible to you that the current value of the debt of this company is approximately € 9,704,455? Explain.

ADDITIONAL SPACE TO ANSWER ANY QUESTION, IF REQUIRED

SCRAP PAPER

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