LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

Project Evaluation

May 2015 ; Total duration (PART A + PART B) : 2 hours

PART A

Group A1 (6.5 points)

To evaluate a real investment project, the information (in 10^3monetary units) represented in the following table is known:

Years	0	1	2
Investment in Fixed Capital	900		
Working Capital		200	150
Residual Value			450
Operational Cash Flow		550	750

In addition, the following information is known: (1) The reinvestment rate is 5%; (2) Shares (stocks) finance 600,000 of the fixed capital; (3) Bank loans finance 300,000 of the fixed capital; (4) The interest rate of bank credit is 6%; (5) The rate of return required by own funds is 9%.

a) Based on the net present value, indicate whether the project is viable or not. (1.5 points)

b) Calculate the modified internal rate of return. (1.5 points)

c) Calculate the discounted payback period of the project. (1.5 points)

d) Compute the internal rate of the project. (1 point)

e) Compute the profitability index of the project (1 points)

Group A2 (4 points)

An economic group plans to evaluate a new real investment project. Experts hired to evaluate the project considered that the economic life of the project would be five years with the inclusion of the year zero for the project's preparation and the initial investment. The experts assumed that the appropriate rates to the weighted average cost of capital, the reinvestment rate and the risk free rate of return should be equal to 10%, 5% and 3% respectively. Based on other assumptions, the main financial flows of the project are those in the following table.

Years	0	1	2	3	4
Investment in Fixed and Working Capita	1700000	800	250	330	112
Residual Value					900
Operational Cash Flow		720	1880000	1890000	1111200

a) Propose an equivalent coefficient vector for this project and calculate the NPV. (1.5)

b) Compute the NPV profile of this project, knowing that the estimated residual values for years 1, 2 and 3 are, 1600000, 1500000 and 1200000 respectively. (2.5 points)

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PART B

Group B1 (9.5 points)

a) Suppose that you obtained the following results for a project: NPV=500m.u.; Payback period 6 months; Modified IRR 30%; IRR 40% and Profitability Index 1.5. Assuming that the opportunity cost of capital for the project is equal to 20%, comment on the results and explain the meaning of them. (3.5 points)

b) Define briefly the following concepts:
Adjusted Present Value (1 point)
Net Residual Value (1 point)
Tornado Figure (1 point)

c) Explain how the IRR and NPV of two alternative projects can provide different results for selecting one of them. (3 points)