Project Appraisal

23.05.2013

Exercise 01

An economic group wants to evaluate economically and financially a certain new investment which is the manufacture of an industrial product. Experts contracted to determine the viability of the project considered that the duration of this project is five years including the year zero of project preparation. The experts concluded that the appropriate value of the weighted average cost of capital is 9% and the reinvestment rate is 6%. Furthermore, the risk free rate is 5%. Taking into account the degree of risk aversion of the investors, the experts found that the coefficients of the certainty equivalent should decrease annually 5% from the end of the year zero. Based on different assumptions, financial flows determined in constant euros are the follows:

	Year 0	Year 1	Year 2	Year 3	Year 4
Fixed Capital Investment	2.000	500			
Working Capital	0	100	100	500	500
Residual Value					1.100
Operational Cash Flow		500	600	2.000	2.600

a. Compute the net present value of the project using the certainty equivalent method.

b. Based on calculations in 1. , conclude if the project is economically viable. Justifying if this is the most appropriate method for selecting real investments.

c. Calculate, for this project, the non-discounted payback period. Review and discuss the results.

d. Compute the modified internal rate of return.

e. Present the algebraic expression for the computation of the internal rate of return of this project.

f. Now consider the hypothesis of an increased of the degree of uncertainty perceived by investors resulting from adverse external shocks on the economy with a sharp increase in the cost of raw materials essential to the production of industrial product that the project proposes to produce. Indicate the possible effects of this event on the financial flows of the project previously determined. Explain what changes should be admitted to the assumptions of the analysis of the evaluation of investment and the most appropriate methods for this analysis.

Exercise 02[1]

An economics consultancy employs five economists who charge their services at 42000 /year. The gross profit margin is 65%. The consult employs a number of administrative staff and have other expenses related with overheads. The overheads are 50% of the gross margin. The consultancy recently purchased furniture and office equipment for $1000,000, which is depreciated on a straight-line basis over five year. The company paid for this with a loan, which carries an interest rate of 9%. Tax is charged at 35%. Forecast the income statement over the next six years if the consultancy adds a new economist to their staff each year.

YEAR	1	2	3	4	5	6

[1] Source:Crundwell(2008) p.88 adapted.