

SMN224 - Tutorial assignment for topic 5

Topic 5: Capital Budgeting Analysis

You are considering the following two mutually exclusive projects. Both projects will be depreciated using straight-line depreciation to a zero book value over the life of the project. Neither project has any salvage value.

Project A		Project B	
Year	Cash flow	Year	Cash flow
0	-£75,000	0	-£70,000
1	£19,000	1	£10,000
2	£48,000	2	£16,000
3	£12,000	3	£72,000

Required rate of return	10%	13%
Required payback period	2.0 years	2.0 years
Required AAR	8%	11%

- Based on the net present value method of analysis and the given information in the problem, you should:
 - accept both project A and project B.
 - accept project A and reject project B.
 - accept project B and reject project A.
 - reject both project A and project B.
 - accept whichever one you want as they represent equal opportunities.
- Based upon the internal rate of return (IRR) and the given information in the problem, you should:
 - accept both project A and project B.
 - reject both project A and project B.
 - accept project A and reject project B.
 - accept project B and reject project A.
 - ignore the IRR rule and use another method of analysis.
- Based upon the discounted payback period and the information provided in the problem, you should:
 - accept both project A and project B.
 - reject both project A and project B.
 - accept project A and reject project B.
 - accept project B and reject project A.
 - require that management extend the payback period for project A since it has a higher initial cost.
- Based upon the profitability index (PI) and the information provided in the problem, you should:
 - accept both project A and project B.
 - accept project A and reject project B.
 - accept project B and reject project A.
 - reject both project A and project B.
 - disregard the PI method in this case.

5. Based upon the average accounting return (AAR) and the information provided in the problem, you:
 - a. should accept both project A and project B.
 - b. should accept project A because the AAR exceeds the required rate.
 - c. should accept project A because the AAR is less than the required rate.
 - d. should accept whichever project you prefer as they are equivalent from an AAR perspective.
 - e. cannot compute the AAR of either project.

2015/16 Exam Question 4

You are currently employed at a major investment bank and are making £50,000/year (and expect to make that amount each year for the next five years). A friend comes to you with an idea for a project to make soundproof glass shields for cars to protect people from noise. You will have to quit your job, and the project will require an initial investment in equipment of £350,000 (which can be depreciated straight line over five years to a salvage value of £100,000).

You expect to sell 10000 units at £50/unit each year for the next five years. It will cost you £20 per unit to manufacture and other fixed costs will amount to £50,000/year. You own a house (which you are renting out right now for £14,000/year) that you think you can use for this project. (You cannot depreciate this house if you rent it, but you can claim depreciation of £10,000 a year if you take this project) In addition your tax rate is 40% and your discount rate is 10%.

- a. What is the opportunity cost of using your house for this project?
- b. What is the opportunity cost of having to quit your job to take this project?
- c. What is the after-tax cashflow each year from this project?
- d. What is the NPV of this project?
- e. How many units would you have to sell to break even?