

4.05 Capital Investments and Capital Allocation

Question 1

A company is building a new plant. The NPV of the plant is projected to be €8 million if demand is high, and –€3 million if demand is low. Both scenarios are equally likely. The company has also secured a 1-year lease on some adjoining land, with an option to buy, to expand the facility if demand is high. The costs of the lease and expected cash flows from the expansion option are:

Option cost (1-year lease expense)	0.5 million
Annual net cash inflows over 5 years (Years 2–6), if exercised	0.4 million
Required rate of return	8%

The value of the plant with the option (in EUR) is closest to:

- A. 2.50 million.
- B. 2.74 million.
- C. 3.48 million.

Question 2

A corporation is evaluating two projects with the following cash flows (INR million):

Year	0	1	2	3
Project 1	–10	3	6	8
Project 2	–10	8	6	3

Project 1 has a required rate of return of 3% and an internal rate of return (IRR) of 26.9%, while Project 2 has a required rate of return of 8% and an IRR of 38.8%. If the projects are mutually exclusive, the most appropriate investment decision is to invest in:

- A. Project 1.
- B. Project 2.
- C. both projects.

Question 3

A street vendor sells pizza from a food truck. To accommodate rapidly rising customer demand, the vendor seeks to replace the food truck with a much larger restaurant building. Which of the following capital budgeting categories best describes this project?

- A. Regulatory
- B. Expansion
- C. Replacement

Question 4

A company is using net present value analysis to evaluate an investment that it will finance with borrowed funds. The most appropriate discount rate to use in evaluating the project is the:

- A. project's internal rate of return.
- B. project's opportunity cost of funds.
- C. cost of debt capital borrowed to finance the project.

Question 5

When evaluating mutually exclusive projects, the IRR most likely:

- A. is appropriate for a project with nonconventional cash flows.
- B. does not provide context regarding the scale of the investment options.
- C. provides realistic reinvestment assumptions for projects with conventional cash flows.

Question 6

An automobile manufacturer has a factory producing low-margin compact cars. The company is considering converting the factory to the production of luxury sedans, financed by borrowing the necessary funds. The company is also considering selling the factory. Using net present value (NPV) analysis, which of the following is least likely an incremental cash flow for investing in luxury sedan production?

- A. Potential proceeds from selling the factory
- B. Financing costs of funds borrowed to finance investment
- C. Forgone profits on the compact cars no longer being produced

Question 7

When making capital budgeting decisions, which of the following types of investment projects most likely allow management to have the highest level of confidence?

- A. Expansion projects
- B. Replacement projects
- C. New products and services

Question 8

Which of the following most accurately describes the opportunity cost of funds used in net present value (NPV) analysis of investment projects?

- A. Company's average cost of debt capital
- B. Expected return on comparable investment projects
- C. Discount rate that results in projects having a zero NPV

Question 9

A company plans to retool an automobile factory to produce a new model to replace the existing model. Which of the following is most appropriately considered an opportunity cost?

- A. Forgone revenue from the existing model
- B. Interest expense on money borrowed to finance the project
- C. Decline in sales of another model produced by the company

Question 10

A company's analyst made the following after-tax cash flow projections for two independent investments:

Year	0	1	2	3
Project A	-36,000	14,000	16,000	16,000
Project B	-39,000	15,500	16,500	17,000

The cost of capital is the company's hurdle rate of 12.5%. Based on the internal rate of return (IRR) approach, which of the following actions is most appropriate for the company?

- A. Invest in Project A.
- B. Invest in Project B.
- C. Invest in both Projects A and B.

Question 11

A company considers building a new factory on land that it owns. When deciding whether to proceed with the project, which of the following is most appropriate to include as a cash flow?

- A. The price paid for acquiring the land
- B. The amount the company could realize from selling the land
- C. The company's costs of debt and equity that are used to finance the factory

Question 12

A project has the following forecasted annual cash flows (in ¥ billions):

Year	Cash Flow
0	-5
1	15
2	8
3	-20

Based on this information, which of the following discount rates will produce the lowest net present value (NPV)?

- A. 6%
- B. 8%
- C. 11%

Question 13

A company is evaluating a high-risk investment in a new product line. A facility to produce the new product would be built on land that previously generated rental income of CAD 20,000 per year. The product will benefit from a recently run marketing campaign with a cost of CAD

80,000. Other data related to the investment are as follows:

Initial outlay (in CAD)	700,000
Annual after-tax cash flows for 4 years (in CAD)	240,000
Required return on investment	8.0%
WACC	6.4%

The project's NPV (in CAD) is *closest* to:

- A. 14,910
- B. 28,668
- C. 55,392

Question 14

A company is considering retooling an existing factory to manufacture a new product. Which of the following is most appropriately considered a sunk cost?

- A. The cost of retooling
- B. The original cost of the factory before retooling
- C. The market value of the factory before retooling

Question 15

With regards to capital budgeting, which of the following statements best describes project interactions?

- A. Mutually exclusive projects do not compete directly for resources.
- B. When a company has unlimited funds, all projects should be selected.
- C. Project sequencing refers to undertaking one project based on the outcome of another project.

Question 16

A company is considering the introduction of a new product and expects that, as a result, sales of its existing products will decrease. This is best described as a(n):

- A. sunk cost.
- B. externality.
- C. opportunity cost.

Question 17

A company has a budget of \$100 million for its next fiscal year and is evaluating multiple independent, profitable projects in which to invest. The sum of the projects' initial investments surpasses \$100 million, and none are mutually exclusive. Which of the following is most appropriate for the company to employ when evaluating the projects?

- A. Post-auditing
- B. Capital rationing
- C. Project sequencing

Question 18

An analyst is evaluating the profitability of a five-year expansion project. Which of the following should be used to value the project according to the principles of capital budgeting?

- A. Net income
- B. Operating profit
- C. After-tax cash flows

Question 19

A manufacturer is evaluating a plan to replace an existing product with a new product. For the capital budgeting decision, an externality is most appropriately considered to be the company's:

- A. borrowing costs to finance the plan.
- B. lost net cash flow from the product replaced.
- C. increased sales of a complementary product.

Question 20

A company plans to replace its old equipment. The replacement equipment would cost AUD 20 million, and the cash flows (in AUD millions) are expected to be:

Projected Cash Flows (AUD)				
Year	1	2	3	4
Cash Flow	4	8	8	4

Based on this information, the internal rate of return (IRR) for replacing the equipment is *closest* to:

- A. 4.7%
- B. 7.7%
- C. 13.5%

Question 21

A company is analyzing two mutually exclusive three-year projects with conventional cash flows:

Cash Flows (£ millions)					
Year	0	1	2	3	IRR
Project A	-60	12	30	55	22.2%
Project B	-80	60	45	5	24.3%

If the hurdle rate is 8% and there are no other cash flows, then based on the IRR and NPV criteria, the best investment decision is to invest in:

- A. A only.
- B. B only.
- C. both A and B.

Question 22

In forecasting cash flows for capital budgeting decisions, managers most appropriately exclude:

- A. sunk costs.
- B. externalities.
- C. opportunity costs.

Question 23

When establishing a company's investment decision-making process, which of the following recommendations would be most appropriate?

- A. Ignore sunk costs as part of the investment analysis.
- B. Use ROE as a key determinant in investment decisions.
- C. Rely primarily on allocation templates to improve turnaround.

Question 24

A company has spent \$2 million on market research to determine whether to sell or renovate an existing building. If the company sells the building, it will receive \$500 million today. If the company renovates the building, it will have to invest \$100 million immediately. The company also will have to borrow the \$100 million at a 6% annual interest rate. If the company decides to renovate, the project's initial cash outlay (\$ millions) is *closest* to:

- A. 600
- B. 602
- C. 606

Question 25

A corporation is investing in a three-year project that generates the following after-tax cash flows:

Year	0	1	2	3
Cash flow (€)	-20,000	10,000	15,000	17,000

If the weighted average cost of capital (WACC) is 10%, the net present value (NPV) is *closest* to:

- A. €14,260
- B. €22,000
- C. €34,260

Question 26

A finance manager collects the following data on three projects:

Year	Cash Flows (CHF millions)						NPV	IRR	Discounted Payback Period (years)
	0	1	2	3	4	5			
Project A	-100	15	18	35	45	55	15.6	15.8%	4.15
Project B	-100	40	50	30	5	5	4.8	13.6%	3.01
Project C	-100	5	5	5	10	165	16.7	14.8%	4.70

The weighted average cost of capital is 11%. The company has limited capital and the projects are mutually exclusive. Which project is the company's *best* choice?

- A. Project A
- B. Project B
- C. Project C

Question 27

All else equal, the net present value (NPV) analysis for which of the following types of projects correctly uses the highest discount rate?

- A. Expansion projects
- B. Replacement projects
- C. New products and services

Question 28

A company invests in Project X in 20X8 and plans to invest in Project Y in 20X9 only if Project X is financially successful. This project interaction is *best* described as:

- A. capital rationing.
- B. mutually exclusive.
- C. project sequencing.

Question 29

In capital budget decisions, which of the following best describes a project sequencing interaction?

- A. Ranking investment selections based on projects' net present values
- B. Choosing projects with shorter payback periods to speed reinvestment of capital
- C. Investing in a project today to create the option to invest in another, future projects

Question 30

A company is evaluating the production of a new product that requires an initial outlay of CHF 1 billion. The product is expected to produce after-tax cash flows of CHF 250 million for six years. The company anticipates that the new product will reduce existing product sales, net of variable costs, by CHF 50 million each year the new product is sold. Based on only this information, the project's IRR is *closest* to:

- A. 5.5%
- B. 7.9%
- C. 13.0%

Question 31

A project with an initial investment of CNY 7.0 million generates the following after-tax cash flows:

(CNY millions)	
Year	Year-end Cash Flow
1	3.50
2	-4.50
3	12.75

If the required rate of return is 15%, the net present value (in CNY millions) is *closest* to:

- A. 1.0
- B. 7.8
- C. 8.0

Question 32

A company undertakes an average-risk project, which is 100% financed with debt and generates relevant overhead costs. One year later, the CFO realizes that the project's NPV had been significantly overestimated. Which of the following capital allocation mistakes would most appropriately explain this overestimation?

- A. Overestimating overhead costs
- B. Disregarding ROE when analyzing the project
- C. Using the cost of debt to discount the projected cash flows

Question 33

A company considers whether it should increase its production capacity based on a 50% probability that export restrictions will be lifted and demand will increase. Managers gather the following data (in SEK millions):

Current production facility NPV	30
Cost of license to expand production facility	10
Value of option to expand	20

The value of the production facility with the option (in SEK millions) is closest to:

- A. 20
- B. 30
- C. 40