

CHAPTER 6

CAPITAL STOCKS AND RESOURCE MAINTENANCE

Microeconomics in Context (Goodwin, et al.), 2nd Edition

Chapter Overview

This chapter deals with the concepts associated with resource maintenance and capital stocks. The text examines the five types of capital that underlie economic activity: natural, human, social, manufactured, and financial capital. This chapter focuses primarily on definitions and concepts, rather than on graphic or numerical problems.

Chapter Objectives

After reading and reviewing this chapter, you should be able to:

1. Define the difference between stocks and flows.
2. Define the five types of capital.
3. Discuss the limitations of substitutability with respect to natural capital.
4. Describe why social capital is important for economic activities.
5. Distinguish between the two types of financial capital.
6. Understand the importance of maintaining capital stocks.

Key Terms

capital stock	investment
stock	flow
stock-flow diagram	natural capital
manufactured capital	financial capital
human capital	social capital
physical capital	intangible capital
renewable resource	nonrenewable resource
substitutability	precautionary principle
sustainable socioeconomic system	fixed manufactured capital
depreciation	inventories
labor	labor productivity
technology	embodied technology
disembodied technology	social organization
equity finance	debt finance
loan	principal
interest	

Active Review

Fill in the Blank

1. Assets that are tangible are known as _____ capital.

2. A gardener hears that a pesticide he has been using may have toxic effects on birds. Rather than wait to find out what further studies show about its effects, he finds another way of controlling insects in his garden. By taking action to protect birds, despite uncertainty about the dangers of the pesticide, the gardener is exercising the _____ principle.
3. An oil executive states he is not concerned about the eventual depletion of fossil fuel resources. "When we run out of oil," he says, "we'll just switch to nuclear." The oil executive is basing his argument on the notion of _____.
4. Manufactured goods that yield a flow of productive services over an extended period of time are known as _____ manufactured capital.
5. Everybody in Springfield knows that when an irrigation system malfunctions, the first thing you should do is turn off the power connection to the irrigation pump. This knowledge is an example of _____ technology.
6. Gary's Gasoline Station is for sale. Gary hopes to get a good price for the station in part because he has built up a good reputation with customers. The good will of Gary's customers is a form of _____ capital.
7. Financial capital exists in two forms: _____ finance and _____ finance.
8. Taking out a loan is equivalent to (choose one: renting/purchasing) _____ financial capital.
9. Amy takes out a loan. In taking out the loan, she agrees to repay both the _____ (the original amount) and interest. (principal)
10. The term "capital" is often used by non-economists to refer only to _____ capital.

True or False

11. In a sustainable socioeconomic system, flows of goods and services come largely from judicious use of renewable capital stocks.
12. Fixed manufactured capital stocks eventually become part of the product they are used to make.
13. A business that finances investments for its future production out of its own funds is said to be using debt finance.
14. Equity finance is essentially free, because it does not involve interest payments.

15. The number of fish sold per day at Big City Fish Shop is an example of a stock.
16. The *principal* is the original amount of a loan plus interest.
17. Embodied technology refers to technology that relates to human health.

Short Answer

18. Name the five forms of capital.

19. Alice is good at learning foreign languages, and has already studied Latin and Greek. She decides to sign up for an intensive summer course in intermediate German. Describe the scenario using the terms "human capital stock" and "investment."

20. Match the following items from column 1 with the appropriate examples from column 2:

Column 1:

- a) natural capital
- b) human capital
- c) social capital
- d) equity finance

Column 2:

- 1) clean water
- 2) a company's good reputation
- 3) a company uses its own funds to pay for new machinery
- 4) literate workers

Self Test

1. Which of the following is an example of a stock?
 - a. The number of haircuts you got last year
 - b. The amount of water that passes over a waterfall per second
 - c. The number of screwdrivers sold by a hardware store each week
 - d. The number of fish produced at a hatchery each day
 - e. The number of goldfish in the pet store's aquarium

2. Which of the following is an example of investment?

- a. A business sponsors an educational program for its employees.
 - b. A farmer sets aside seeds to plant next year.
 - c. A group of neighbors construct a new day care facility.
 - d. A worker puts half her paycheck into a savings account.
 - e. All of the above.
3. Which of the following statements is *false*?
- a. A nonrenewable resource is a stock that diminishes as it is used over time.
 - b. Renewable resources can be eliminated through over-use.
 - c. Financial capital refers to purchasing power, or money.
 - d. Natural capital refers to both renewable and nonrenewable resources.
 - e. Human capital refers to buildings, machines, and inventories of produced goods.
4. Which of the following would be referred to as social capital?
- a. money in the bank
 - b. heavy machinery
 - c. one person's training in engineering
 - d. a forest
 - e. trust and mutual understanding
5. Which of the following activities would be described as a resource maintenance effort?
- a. Limiting use of fossil fuels in an effort to limit global warming
 - b. Harvesting fish at a high rate
 - c. Extracting oil from known oil reserves
 - d. Using a well-designed machine to process leather for shoes
 - e. Selling seeds on the international market
6. Many public health and environmental policy experts believe that when an activity poses a threat to human health or the environment, action should be taken to address that threat even when there is some scientific uncertainty about the issue. This approach is known as
- a. substitutability
 - b. the renewable resource rule
 - c. the precautionary principle
 - d. the sustainability principle
 - e. the fixed capital principle
7. Which of the following is *not* an example of manufactured capital?
- a. roads
 - b. computers
 - c. a plow

- d. a primitive digging stick
 - e. a fresh-water spring
8. A city government builds a new road. After five years the road develops some potholes, making it less useful. This decline in the value of the road over time is an example of
- a. fixed inventory
 - b. flows of capital services
 - c. depreciation
 - d. substitutability
 - e. a renewable resource
9. Hal's Hardware has a backup supply of 100 cans of paint thinner in its warehouse. The cans of paint thinner, which Hal's Hardware is holding until they can be used, are
- a. an inventory
 - b. a flow
 - c. fixed manufactured capital
 - d. renewable resources
 - e. financial capital
10. Which of the following is an example of fixed manufactured capital?
- a. A delivery truck.
 - b. Oil reserves.
 - c. A chemical compound that will be incorporated into a product.
 - d. Nails that will be used to build a playground.
 - e. Both a and d are correct.
11. Which of the following would be considered a type of social capital?
- a. technology
 - b. good nutrition
 - c. roads
 - d. factories
 - e. financial assets
12. Which of the following statements is *false*?
- a. Crude oil stocks are natural capital.
 - b. Mutual understanding is a type of social capital.
 - c. Knowledge about how to operate a machine is intangible capital.
 - d. Physical capital is synonymous with natural capital.
 - e. Education is an investment in human capital.

13. A farmer takes a course to learn about crop rotation methods. In taking this course, she is investing in
- substitutable capital
 - human capital
 - natural capital
 - nonrenewable resources
 - fixed manufactured capital
14. Which of the following is an example of a stock of natural capital?
- The number of trucks owned by company.
 - The new growth in a forest over a year.
 - The knowledge you have gained from your past education.
 - The amount of oil in an underground reserve.
 - Efforts to remove the effects of pollution from a river.
15. A diagram that shows how flows change the level of a stock over time is known as a(n)
- flow chart
 - flow diagram
 - stock-flow diagram
 - input-output model
 - capital stock diagram
16. Which of the following forms of capital would be likely to increase if there is an influx of new funding for literacy training?
- human capital
 - social capital
 - stock capital
 - financial capital
 - physical capital
17. Which of the following activities is an example of maintaining a capital stock?
- Replenishing soil quality through crop rotation.
 - Harvesting a crop of corn.
 - Withdrawing money from a checking account.
 - Paying a phone bill.
 - None of the above.
18. Which of the following is an example of an inventory?
- A freezer full of ice cream to be served at a party next week.

- b. Taking out a loan from a bank.
 - c. A shopping cart.
 - d. A house that is for sale by the owner.
 - e. Both a and b are true.
19. The possibility of using one resource instead of another is known as
- a. the precautionary principle
 - b. substitutability
 - c. sustainability
 - d. manufacturing advantage
 - e. comparative advantage
20. Manufactured goods that yield a flow of productive services over an extended period of time are referred to as
- a. capital services
 - b. capital flows
 - c. fixed manufactured capital
 - d. manufactured flows
 - e. inventories

Answers to Active Review Questions

- 1. physical
- 2. precautionary
- 3. substitutability
- 4. fixed
- 5. disembodied
- 6. social
- 7. equity; debt
- 8. renting
- 9. principal
- 10. financial
- 11. True.
- 12. False.
- 13. False. A business that finances investments for its future production out of its own funds is said to be using *equity* finance.
- 14. False. Although there are no interest payments, equity finance does involve opportunity costs.
- 15. False. The number of fish sold per day is an example of a flow.
- 16. False. The principal refers to the original amount of the loan, and does not include interest.
- 17. False. Embodied technology refers to technology that is incorporated into forms of manufactured capital.
- 18. Natural, manufactured, human, social, financial.

19. Alice's innate abilities and prior training, which contribute to her ability to learn a new language, are part of her *human capital stock*. Taking the German course is an *investment* that will increase her stock of knowledge.
20. a) 1; b) 4; c) 2; d) 3

Answers to Self Test Questions

1. e
2. e
3. e
4. e
5. a
6. c
7. e
8. c
9. a
10. a
11. a
12. d
13. b
14. d
15. c
16. a
17. a
18. a
19. b
20. c