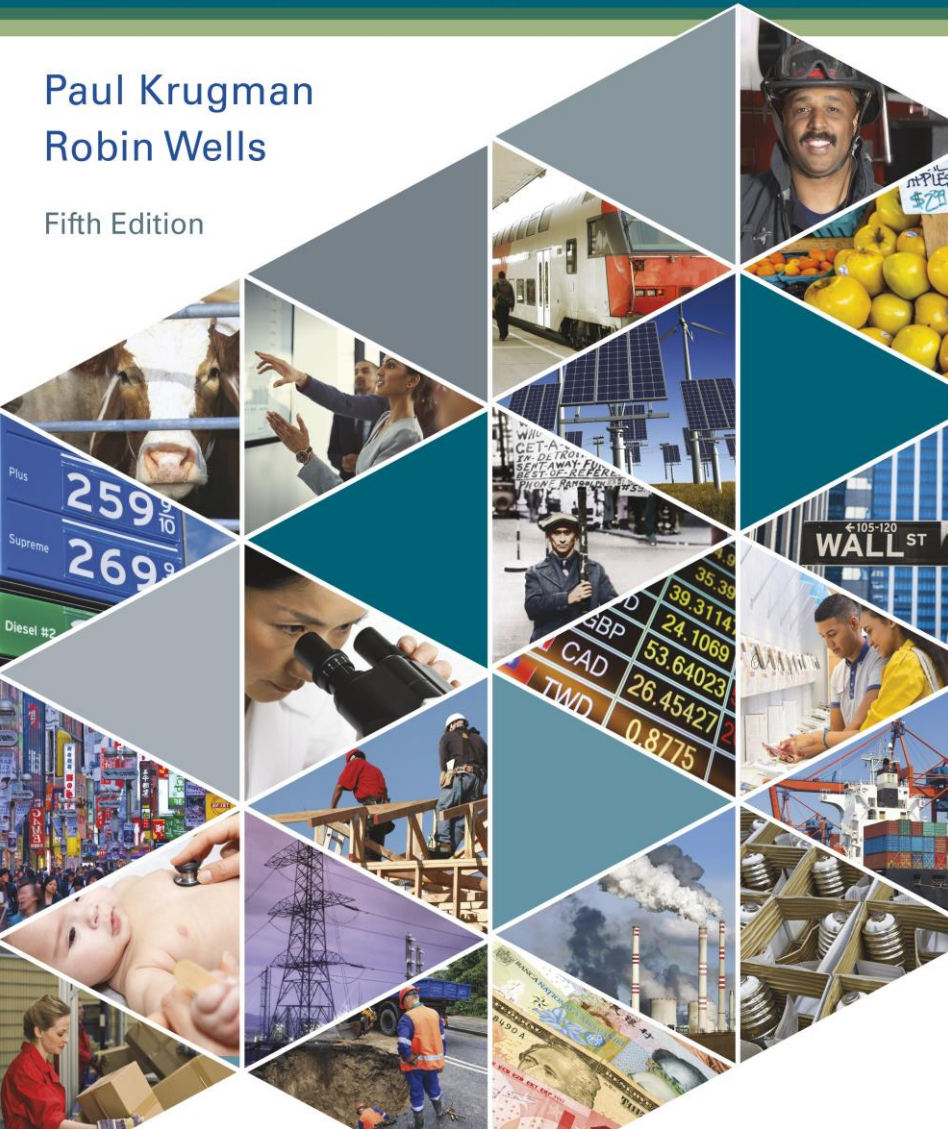


Paul Krugman
Robin Wells

Fifth Edition



2

ECONOMIC MODELS: TRADE-OFFS AND TRADE

Revised by Solina Lindahl

WHAT YOU WILL LEARN IN THIS CHAPTER

- What are economic models and why are they so important to economists?
- How do three simple models—the production possibility frontier, comparative advantage, and the circular-flow diagram—help us understand how modern economies work?
- Why is an understanding of the difference between positive economics and normative economics important for the real-world application of economic principles?
- Why do economists sometimes disagree?

MODELS IN ECONOMICS

- **Model:** a simplified representation of a real situation that is used to better understand real-life situations.

“OTHER THINGS EQUAL”

- ***Other things equal assumption:*** all other relevant factors remain unchanged. (ceteris paribus)
- We try to treat economics as close to a laboratory science as possible—with only one variable allowed to change at a time.

THE PRODUCTION POSSIBILITIES FRONTIER

- The **PPF** is a diagram that shows the
- combinations of two goods that are possible for a society to produce at full employment.

TRADE-OFFS: THE PPF (1 of 2)

- **We can use the PPF model to answer questions like:**
 - How much can we produce?
 - What will it cost us to change our mix of production?
 - Does it make sense to import the good from somewhere else?

TRADE-OFFS: THE PPF (2 of 2)

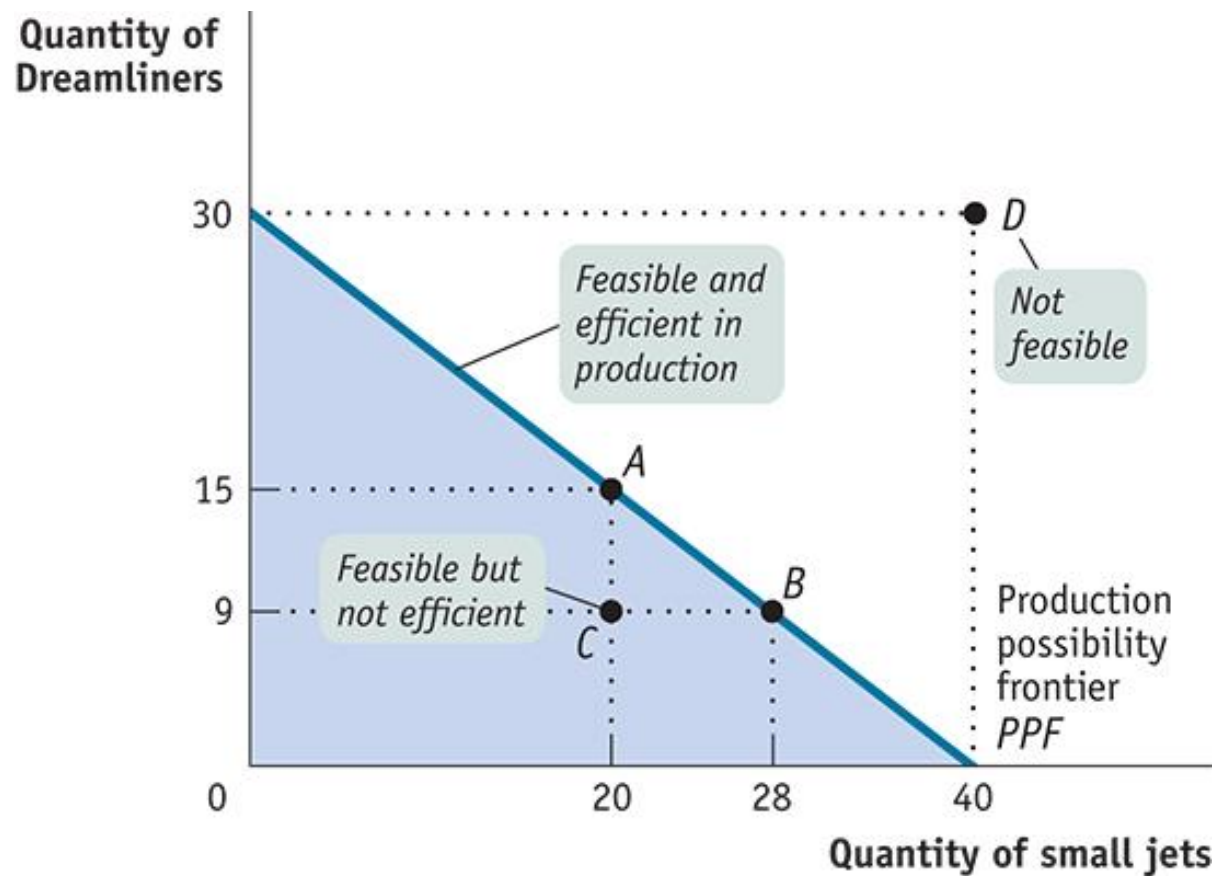


FIGURE 2-1

Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

OPPORTUNITY COST

- **Opportunity Cost:** what must be given up in order to get a good.
- If Boeing decides to change its production from point A to point B, it will produce 8 more small jets but 6 fewer Dreamliners: **each small jet has an opportunity cost of $6 / 8 = 3 / 4$ of a Dreamliner.**

LEARN BY DOING: PRACTICE QUESTION 1

- Suppose you are stranded on an island. Luckily, this island is rich in clams and mangos. **If you devote all of your time to harvesting clams, you can get 100 clams in a week. If you use all of your time to collect mangos, you can find 200 mangos in a week.**
- Assume it is possible to collect fractional amounts of both goods and draw a sketch of your production possibility frontier for a week. (Place mangos on the x-axis and clams on the y-axis.)
- Calculate the opportunity cost of each good.

LEARN BY DOING: PRACTICE QUESTION 2

- With a partner, create your production possibilities curve for the following two activities: **(a) drawing happy faces and (b) drawing elephants:**
 1. Take turns timing each other for 30 seconds and recording the following:
 - **The maximum number of happy faces drawn**
 - **The maximum number of elephants drawn**
 2. Now construct your PPF with elephants on the vertical axis and faces on the horizontal axis.
 3. Calculate your opportunity cost for each good.

INCREASING OPPORTUNITY COST

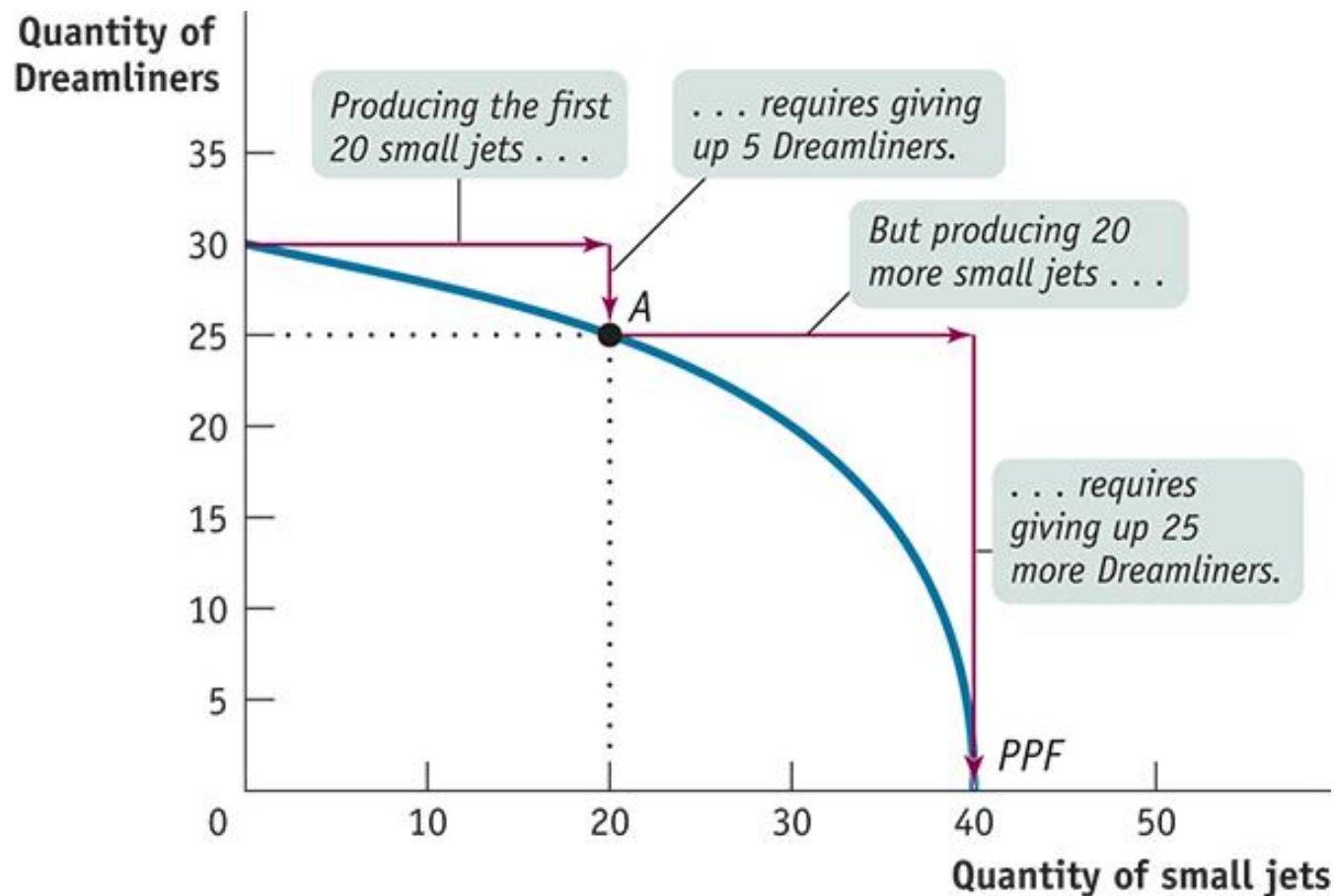


FIGURE 2-2

Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

ECONOMIC GROWTH

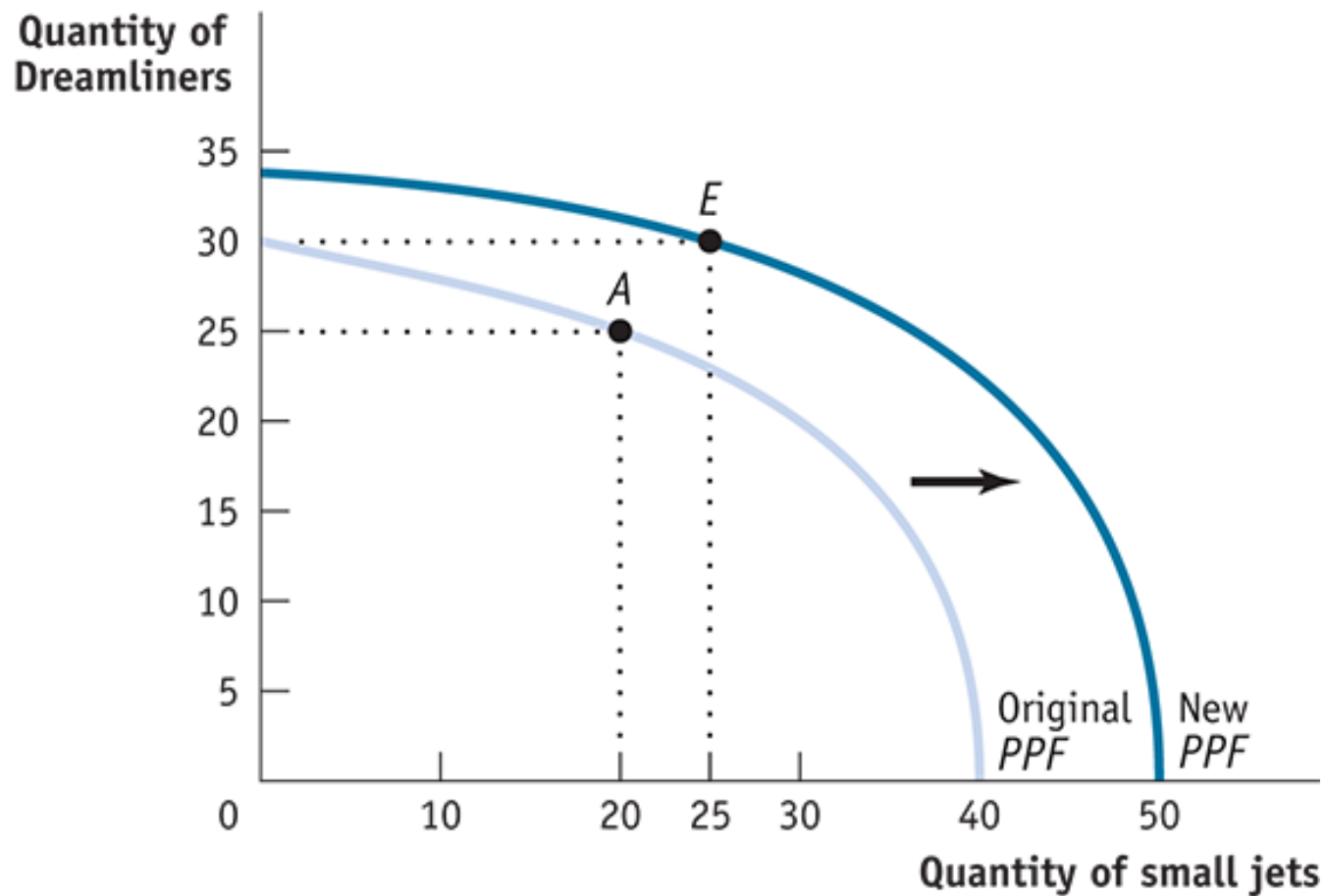


FIGURE 2-3

Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

WHAT CAUSES ECONOMIC GROWTH?

Two possibilities:

1. **An increase in factors of production:** resources used to produce goods and services.
2. **Better technology:** the technical means for producing goods and services.

FACTORS OF PRODUCTION

1. **Land** includes natural resources, such as mineral deposits, oil, natural gas, water, and actual land acreage.



FACTORS OF PRODUCTION PART 2



2. **Labor** is the mental and physical abilities of the workforce.

FACTORS OF PRODUCTION PART 3

3. **Physical capital** is manufactured items used to produce other goods and services.



FACTORS OF PRODUCTION PART



4. **Human capital** is the educational achievements and skills of the labor force (which increase labor productivity).

COMPARATIVE ADVANTAGE AND GAINS FROM TRADE (1 of 2)

- **Theory of Comparative Advantage:**
- It makes sense to produce the things you're especially good at producing... and buy everything else from others.

HOW COMPARATIVE ADVANTAGE CREATES GAINS FROM TRADE (1 of 2)

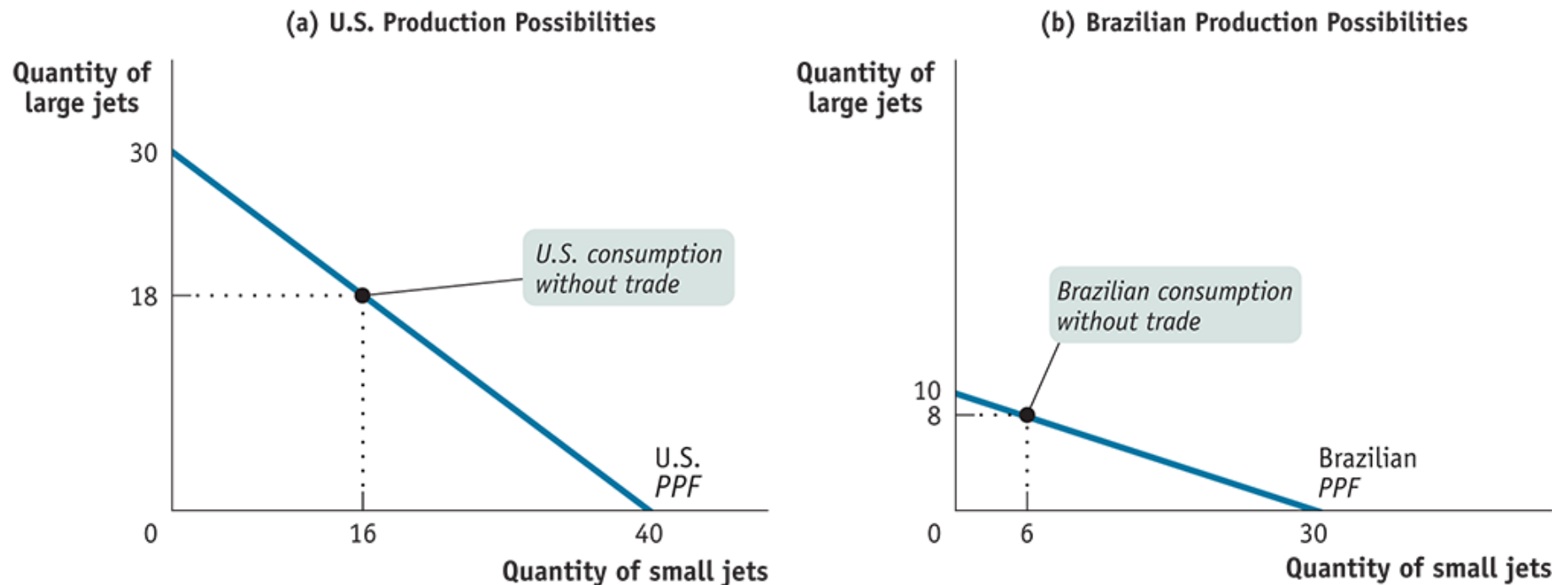


FIGURE 2-4

Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

HOW COMPARATIVE ADVANTAGE CREATES GAINS FROM TRADE (2 of 2)

	U.S. Opportunity Cost	Brazilian Opportunity Cost
1 small jet	$\frac{3}{4}$ large jet	$\frac{1}{3}$ large jet
1 large jet	$\frac{4}{3}$ small jets	3 small jets

- Since each country has a different opportunity cost, it makes sense to specialize and trade...

INDIVIDUAL AND COUNTRY COMPARATIVE ADVANTAGE

- A **country has a comparative advantage** in producing a good or service if its opportunity cost of producing the good or service is lower than other countries’.
- An **individual has a comparative advantage** in producing a good or service if his or her opportunity cost of producing the good or service is lower than for other people.

HOW BOTH SIDES CAN GAIN FROM TRADE

Table 2-2 How the United States and Brazil Gain from Trade

		Without Trade: Production	Without Trade: Consumption	With Trade: Production	With Trade: Consumption	Gains from Trade
United States	Large Jets	18	18	30	20	2
United States	Small Jets	16	16	0	20	4
Brazil	Large Jets	8	8	0	10	2
Brazil	Small Jets	6	6	30	10	4

Through specialization and trade, both countries produce more and consume more than if they were self-sufficient.

COMPARATIVE ADVANTAGE AND GAINS FROM TRADE (2 of 2)

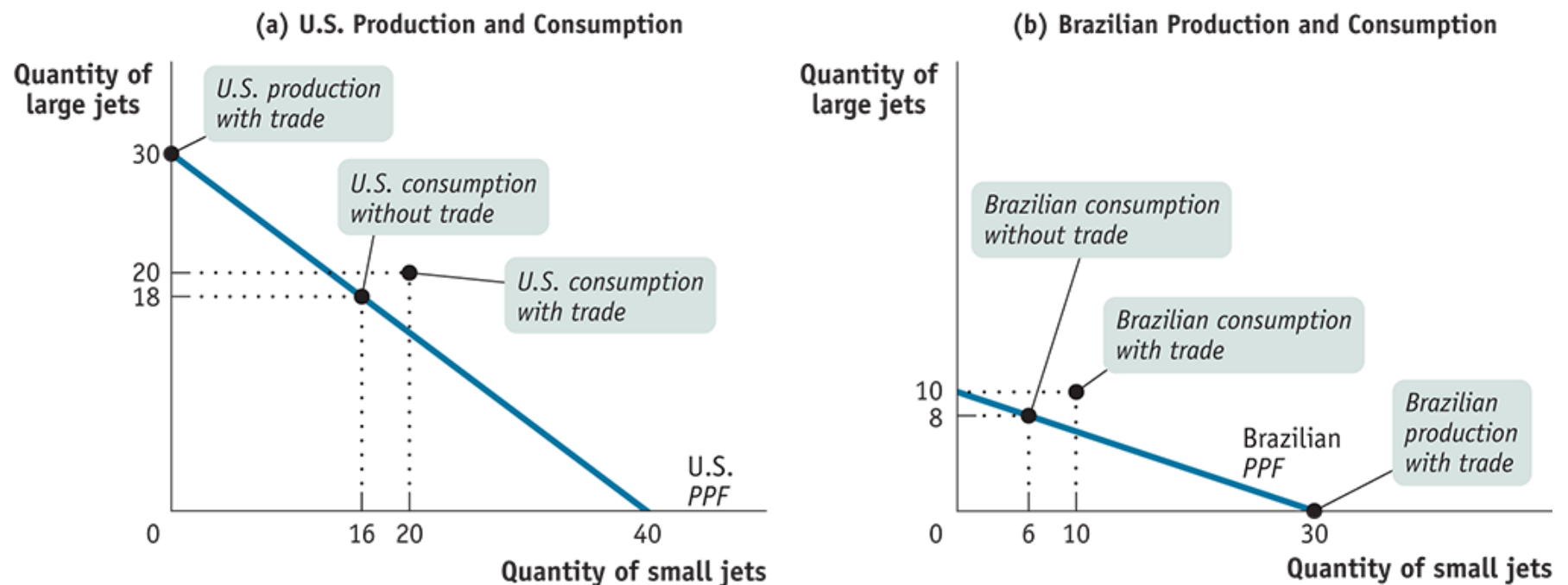


FIGURE 2-5
Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

ABSOLUTE VS. COMPARATIVE ADVANTAGE

- **Don't confuse absolute with comparative advantage.**
 - Just because the United States can produce more of both goods doesn't mean we're better off without trade.
- Pay attention to opportunity costs:
 - If it's cheaper for Brazil to produce small jets than it is for the United States, the United States will want to import small jets from Brazil.

LEARN BY DOING: PRACTICE QUESTION 3

- If **Texia** specializes in food, it can produce **1,000 units of food and 0 units of clothing this year**. If it specializes in clothing, it can produce **500 units of clothing and 0 units of food**. This year **Urbania** can produce either **500 units of food and 0 units of clothing** or **200 units of clothing and 0 units of food**. (*assume linear production possibility frontiers*)
- _____ has the ***absolute advantage*** in the production of clothing and _____ has the ***absolute advantage*** in the production of food.
 - a) Texia; Texia
 - b) Texia; Urbania
 - c) Urbania; Texia
 - d) Urbania; Urbania

LEARN BY DOING: PRACTICE QUESTION 4

- If **Texia** specializes in food, it can produce **1,000 units of food and 0 units of clothing this year**. If it specializes in clothing, it can produce **500 units of clothing and 0 units of food**. This year **Urbania** can produce either **500 units of food and 0 units of clothing** or **200 units of clothing and 0 units of food**. (*assume linear production possibility frontiers*)
- _____ has the **comparative advantage** in the production of clothing and _____ has the **comparative advantage** in the production of food.
 - a) Texia; Texia
 - b) Texia; Urbania
 - c) Urbania; Texia
 - d) Urbania; Urbania

LEARN BY DOING: PRACTICE QUESTION 5

- If a country specializes according to its own comparative advantage and then trades with other nations:
 - a) it will operate at a point inside its production possibilities frontier.
 - b) it can consume at a higher level than the domestic production possibilities frontier.
 - c) its production possibilities frontier will shift or rotate inward.
 - d) it can consume at the same level as the domestic production possibilities frontier.

LEARN BY DOING: PRACTICE QUESTION 6

- Write down, then discuss with a partner:
- What do you think? **Would the U.S. economy be better off if we did not import so much clothing from China?**
- **List the groups who you think would gain and the groups who would lose** if Chinese clothing imports were restricted.

LEARN BY DOING: PRACTICE QUESTION 7

- Suppose that in Australia, it takes 2 hours to harvest 10 bushels of apples and 4 hours to harvest 10 bushels of tomatoes. Suppose a worker in Brazil can harvest 10 bushels of apples in 4 hours or 10 bushels of tomatoes in 5 hours. Which of these statements is *TRUE*?
 - a) Brazil has a comparative advantage in producing tomatoes.
 - b) Brazil has a comparative advantage in producing apples.
 - c) Brazil has an absolute advantage in producing both goods.
 - d) In trade between these two countries, Australia would gain and Brazil would lose.

TRANSACTIONS: THE CIRCULAR-FLOW DIAGRAM PART 1

- Trade takes the form of **barter** when people directly exchange goods or services that they have for goods or services that they want.
- The **circular-flow diagram** represents the transactions in an economy by flows around a circle.
- A **household** is a person or a group of people that share their income.
- A **firm** is an organization that produces goods and services for sale.

THE CIRCULAR-FLOW DIAGRAM

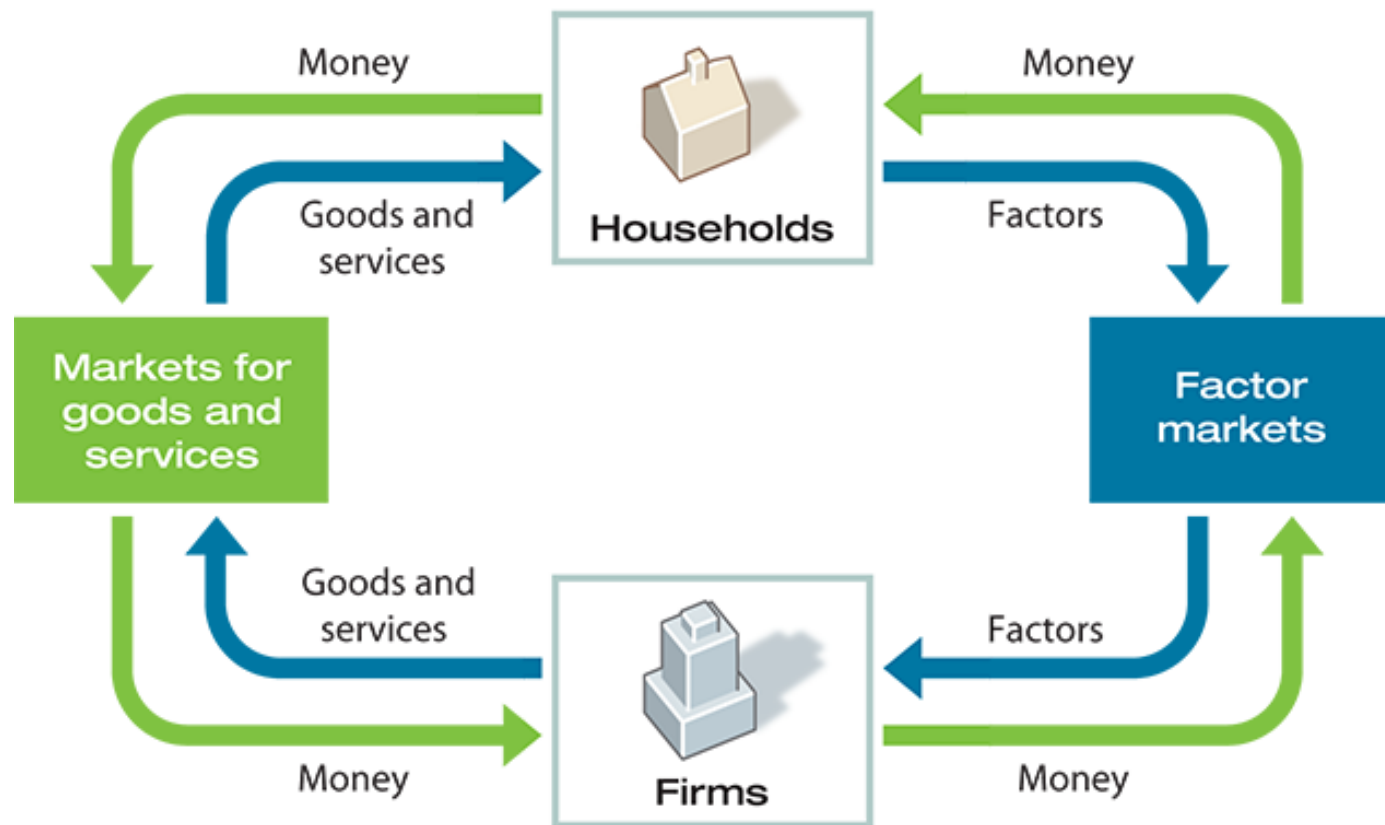


FIGURE 2-6

Krugman/Wells, *Microeconomics*, 5e, © 2018 Worth Publishers

TRANSACTIONS: THE CIRCULAR-FLOW DIAGRAM PART 2

- Firms sell goods and services that they produce to households in **markets for goods and services**.
- Firms buy the resources they need to produce goods and services in **factor markets**.
- An economy's **income distribution** is the way in which total income is divided among the owners of the various factors of production.

LEARN BY DOING: PRACTICE QUESTION 8

- With a partner, trace the following events through the circular flow:
 - a) the introduction of a **new technology** that boosts productivity
 - b) the decision of consumers to **save more money**
 - c) an **increase** in **government spending**

USING MODELS: POSITIVE VERSUS NORMATIVE ECONOMICS

- **Positive economics** is the branch of economic analysis that describes the way the economy actually works.
- **Normative economics** makes prescriptions about the way the economy should work.
- Positive economics is about **description**; normative economics is about **prescription**.
- A **forecast** is a simple prediction of the future.

LEARN BY DOING: PRACTICE QUESTION 9

- **Label each of the following statements as normative (a) or positive (b):**
 1. More than 60% of women are in the labor market.
 2. Rent control laws should be implemented because they help to achieve equity or fairness in housing.
 3. Society should take measures to end gun violence.
 4. People who smoke pass on increased medical costs to the whole society.
 5. Single mothers are more than twice as likely as married mothers to be in poverty.

USING MODELS: WHEN AND WHY ECONOMISTS DISAGREE

- **Media coverage tends to exaggerate the real differences in views among economists.**
- **Economics is often tied up in politics.**
 - *Powerful interest groups find and promote economists who profess supportive opinions.*
- **Diverse people have diverse values.**
 - *Reasonable people can come to different conclusions because of their values.*
- **Economic modeling requires simplifying assumptions.**
 - *Two economists can legitimately disagree about which simplifications are appropriate.*