

Principles of Microeconomics

Chapter 2:



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Thinking Like an Economist



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Thinking Like an Economist

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In This Chapter

- ▶ Economists as *scientists* vs. *policy advisors*
- ▶ What are **models**? How do economists use them?
- ▶ Examples of models
 - ▶ The circular-flow diagram
 - ▶ The production possibilities frontier (PPF)
- ▶ Microeconomics vs Macroeconomics
- ▶ Positive vs Normative statements

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The Economist as a Scientist

- ▶ Economists play two roles:
 1. Scientists: try to explain the world
 2. Policy advisors: try to improve it
- ▶ As scientists, economists employ the **scientific method**.
 - ▶ Objectively establishing and testing of theories about how the world works
 - ▶ Devise theories, collect data, and analyze these data to verify or refute their theories

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The Economist as a Scientist

- ▶ Economists make assumptions.
 - ▶ Focus on the most essential features
 - ▶ Simplify the complex world and make it easier to understand.
 - ▶ For example, to study international trade, assume only **two** countries producing **two** goods
- ▶ Economists use **models** to study economic issues.
 - ▶ Simplified representation of a more complicated reality

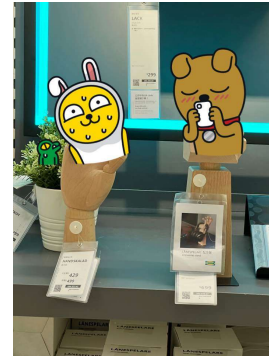
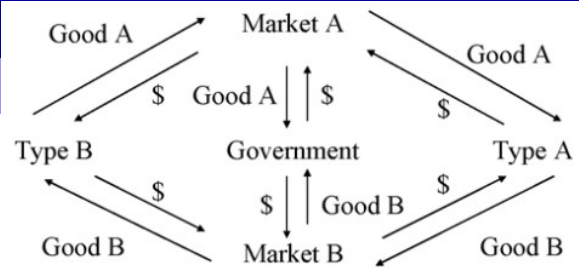
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Models

- ▶ Simplified representation of a more complicated reality



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Market Design

- ▶ How do we best allocate resources?
- ▶ Market economy works well for some goods
- ▶ But what about these resources?
 - ▶ Spots for popular lectures
 - ▶ Matching organ donors with patients
 - ▶ Re-allocation of electromagnetic spectrum
- ▶ Not obvious if we can use the market economy here

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Nobel Prize on Market Design Studies

- ▶ Leonid Hurwicz & Eric Maskin & Roger Myerson (2007)
 - ▶ The foundation of mechanism design theory
- ▶ Lloyd Shapley & Alvin Roth (2012)
 - ▶ Theory of stable allocations and the practice of market design
- ▶ Paul Milgrom & Robert Wilson (2020)
 - ▶ Auction theory and inventions of new auction formats

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The Circular-Flow Diagram

- ▶ Visual model of the economy
- ▶ Shows how dollars and commodities flow through markets among households and firms
- ▶ Two decision makers
 - ▶ Firms and households
- ▶ Interacting in two markets
 - ▶ Market for goods and services
 - ▶ Market for factors of production (inputs)

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The Circular-Flow Diagram

Households:

- Own the factors of production, sell/rent them to firms for income
- Buy and consume goods and services

Firms

Households

Firms:

- Buy/hire factors of production, use them to produce goods and services
- Sell goods and services

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The Circular-Flow Diagram

Markets for
Goods and
Services

- Goods and services are bought and sold.
- Sellers: firms
- Buyers: households

- Inputs are bought and sold.
- Sellers: households
- Buyers: firms

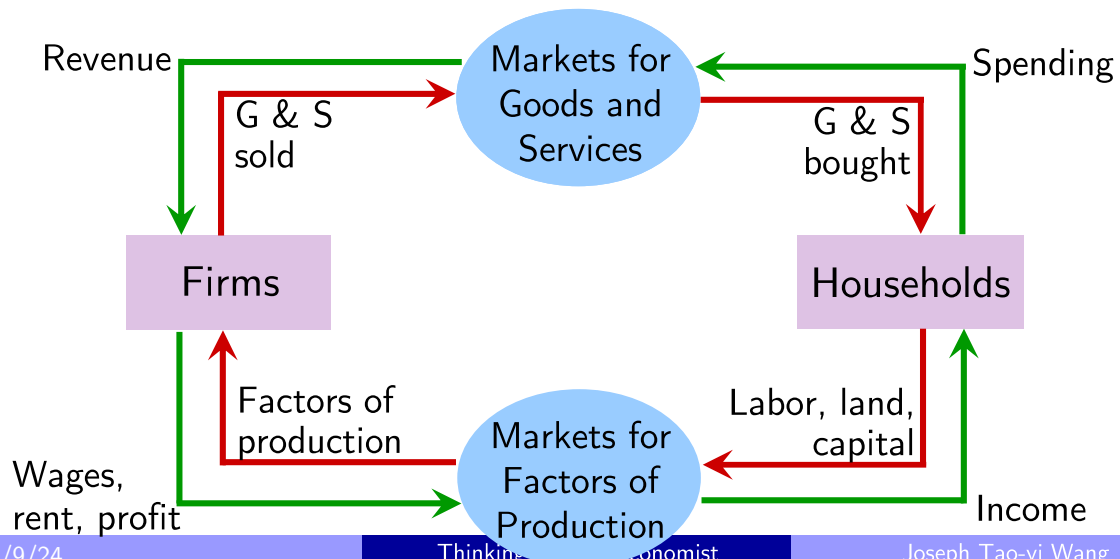
Markets for
Factors of
Production

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The Circular-Flow Diagram



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The PPF

- ▶ Production Possibilities Frontier (PPF)
 - ▶ A graph that shows
 - ▶ various combinations of outputs that the economy can possibly produce,
 - ▶ given the available factors of production and the available production technology.

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EXAMPLE 1: The PPF

- ▶ Assume a country produces only two goods:
 - ▶ chipsets and tea
 - ▶ It has a fixed amount of resources (labor).
 - ▶ It has a fixed amount and quality of technology.
- ▶ The available resources and technology can be used to produce:
 - ▶ Only tea (5,000 tons)
 - ▶ Only chipsets (100 chipsets)
 - ▶ Or a combination of tea and chipsets

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EXAMPLE 1: The PPF and Output Combinations

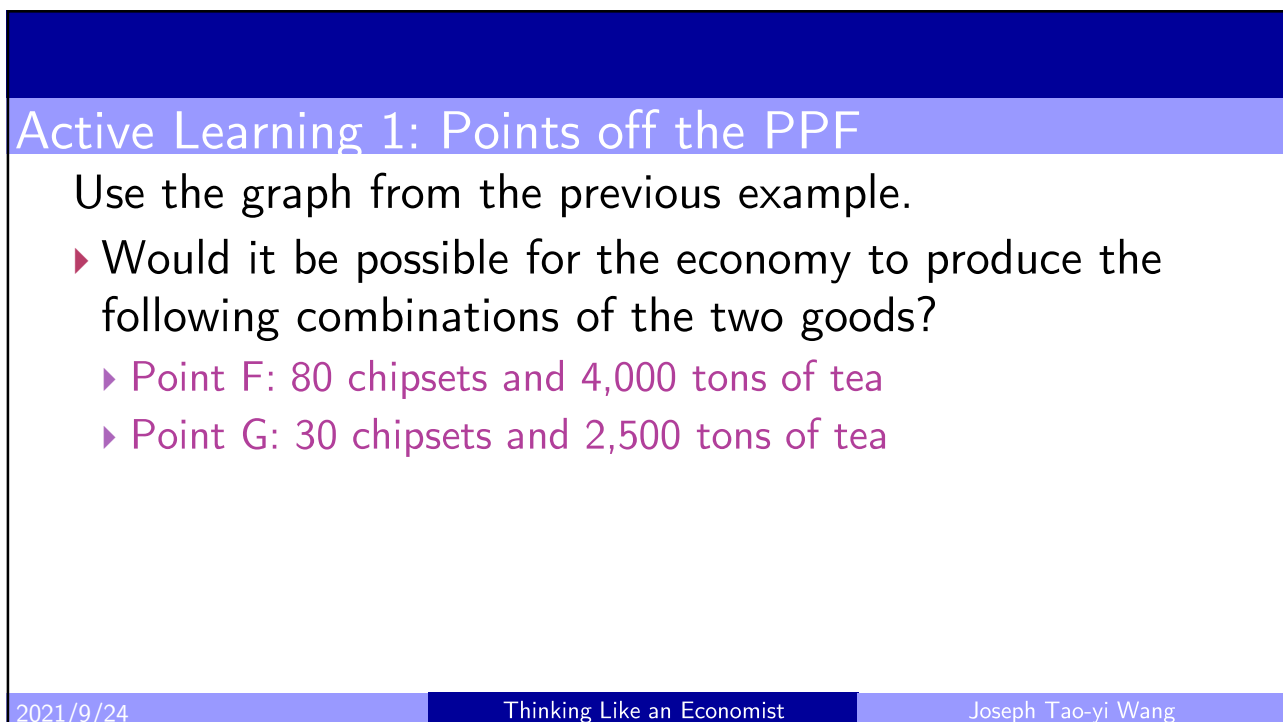
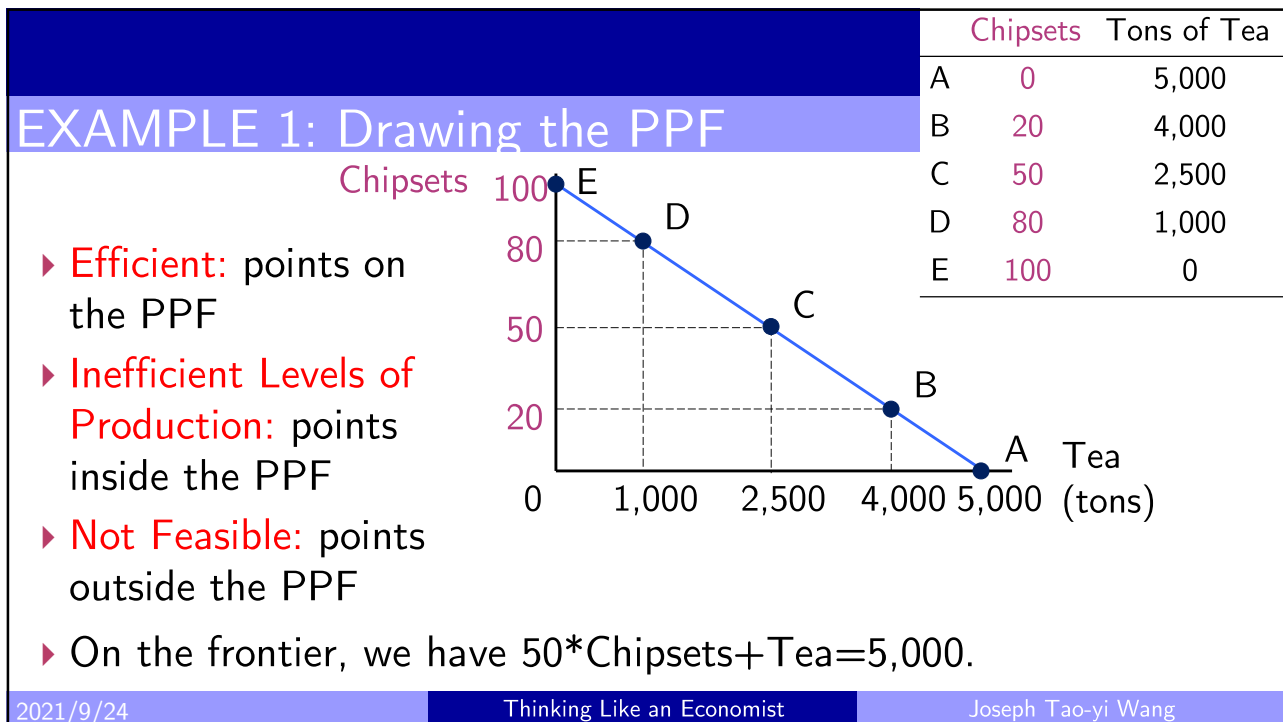
	Chipsets	Tons of Tea
A	0	5,000
B	20	4,000
C	50	2,500
D	80	1,000
E	100	0

- ▶ These are just a few of the possible production combinations.
- ▶ To increase the production of chipsets from 0 to 20, how many tons of tea do we have to give up?
 - ▶ Ans: 1,000 tons (drop from 5,000 to 4,000!)

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Would it be possible for the economy to produce the following combinations of the two goods?
Point F: 80 chipsets and 4,000 tons of tea

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Would it be possible for the economy to produce the following combinations of the two goods?
Point G: 30 chipsets and 2,500 tons of tea

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Active Learning 1: Answers

Point F

(chipssets, tea)

= (80, 4,000 tons):

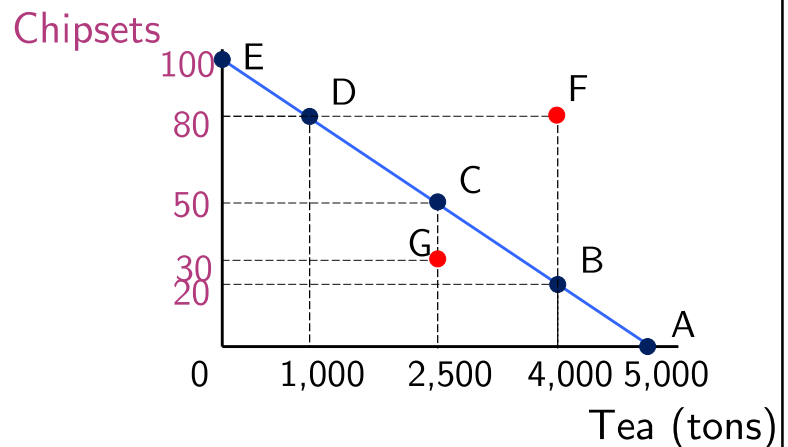
Not Possible

Point G

(chipssets, tea)

= (30, 2,500 tons):

Possible But Not Efficient (can produce more)



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The PPF: What We Know So Far

- ▶ Points on the PPF (like A – E): Efficient
 - ▶ Efficient: all resources are fully utilized
- ▶ Points under the PPF (like G): Possible
 - ▶ Not efficient: some resources are underutilized (e.g., workers unemployed, factories idle)
- ▶ Points above the PPF (like F)
 - ▶ Not Possible

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Moving Along the PPF

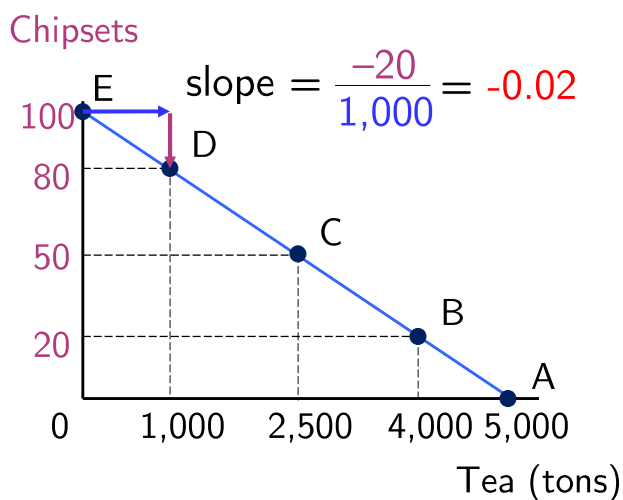
- ▶ Involves shifting resources from the production of one good to the other
- ▶ Society faces a tradeoff.
 - ▶ Getting more of one good requires sacrificing some of the other.
- ▶ The slope of the PPF
 - ▶ The opportunity cost of one good in terms of the other

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EXAMPLE 2: The PPF and Opportunity Cost



To produce the first 1,000 tons of tea: give up 20 chipsets

- ▶ Opportunity cost of 1 ton of tea = 0.02 chipsets
- ▶ Opportunity cost of 1 chipset = 50 tons of tea

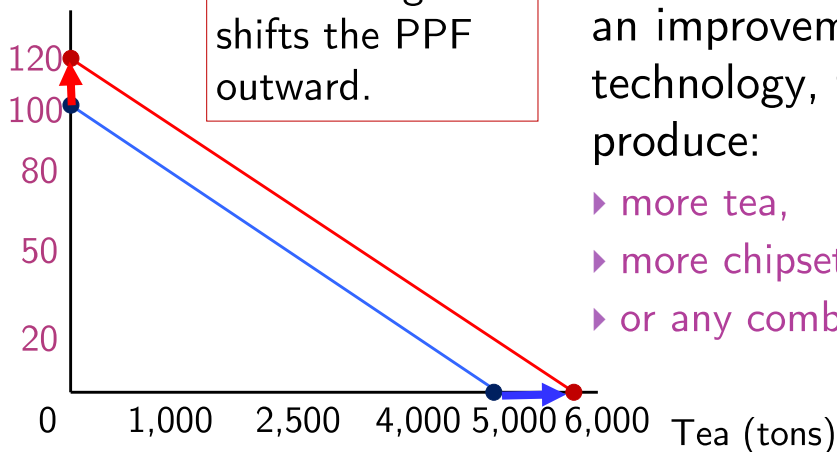
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Economic Growth and the PPF

Chipsets



▶ With additional resources or an improvement in technology, the economy can produce:

- ▶ more tea,
- ▶ more chipsets,
- ▶ or any combination in between.

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The Shape of the PPF

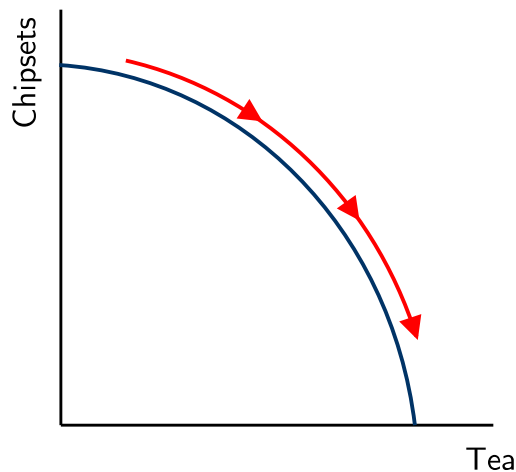
- ▶ Straight line: constant opportunity cost
 - ▶ Previous example: the opportunity cost of 1 chipset is 50 tons of tea
- ▶ Bowed outward: increasing opportunity cost
 - ▶ As more units of a good are produced, we need to give up increasing amounts of the other good produced.
- ▶ Bowed inward: decreasing opportunity cost
 - ▶ When we have the opposite

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Why the PPF Might Be Bowed Outward



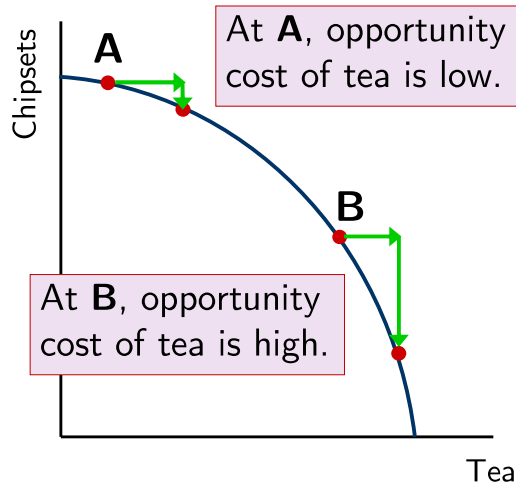
- ▶ As the economy shifts resources from chipsets to rice:
 - ▶ PPF becomes steeper
 - ▶ and the opportunity cost of tea increases.

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Why the PPF Might Be Bowed Outward



At **A**, opportunity cost of tea is low.

At **B**, opportunity cost of tea is high.

- ▶ At point A, most workers are producing chipsets,
 - ▶ even those who are better suited to farming.
- ▶ At point B, most workers are producing tea.
 - ▶ The few left in chipset manufacturing are the best technicians.

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Why the PPF Might Be Bowed Outward

- ▶ The PPF is bowed outward when:
 - ▶ Workers have different specializations
 - ▶ It becomes harder to produce an additional product after producing many units of the same product
 - ▶ Different products need different resources
 - ▶ E.g., different types of land suited for different uses
 - ▶ The economy exhibits complementarities in production of different goods

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Why the PPF Might Be Bowed Inward

- ▶ The PPF is bowed inward when:
 - ▶ Production needs specialization
 - ▶ E.g., nutty foods and nut free foods
 - ▶ Workers learn quickly and become more productive with experience (Learning by doing)
 - ▶ E.g., paintings and sculptures

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Ch.2: Circular Flow Diagram and PPF

Questions about this part?

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Audience Q&A Session

Micro- and Macroeconomics

- ▶ **Microeconomics**
 - ▶ The study of how households and firms make decisions and how they interact in markets
- ▶ **Macroeconomics**
 - ▶ The study of economy-wide phenomena, including inflation, unemployment, and economic growth
- ▶ But the two approaches are united with recent progress providing **micro-foundation** to macro

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The Economist as Policy Adviser

- ▶ **Positive Statements: Descriptive**
 - ▶ Attempt to describe the world as it is
 - ▶ Confirm or refute by examining evidence: “Minimum-wage laws cause unemployment.”
- ▶ **Normative Statements: Prescriptive**
 - ▶ Attempt to prescribe how the world should be: “The government should raise the minimum wage.”

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Active Learning 2: Positive or Normative?

- ▶ Which of these statements are “positive” and which are “normative”? How can you tell the difference?
 - A. Prices rise when the government increases the quantity of money.
 - B. The government should print less money.
 - C. A tax cut is needed to stimulate the economy.
 - D. An increase in the price of peanut butter will cause a decrease in consumer demand for jam.

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“Positive” or “Normative”?

Prices rise when the government increases the quantity of money.

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“Positive” or “Normative”?
The government should print less money.

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Active Learning 2: Answers

- ▶ Prices rise when the government increases the quantity of money.
 - ▶ Positive—describes a relationship, could use data to confirm or refute.
- ▶ The government should print less money.
 - ▶ Normative—this is a value judgment; cannot be confirmed or refuted.

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“Positive” or “Normative”?
A tax cut is needed to stimulate the economy.

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“Positive” or “Normative”?
An increase in the price of peanut butter will cause a decrease in consumer demand for jam.

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Active Learning 2: Answers

- ▶ A tax cut is needed to stimulate the economy.
 - ▶ Normative—another value judgment.
- ▶ An increase in the price of peanut butter will cause a decrease in consumer demand for jam.
 - ▶ Positive—describes a relationship.
- ▶ **Note: A statement need not be true to be positive.**

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Economists in Washington

- ▶ Council of Economic Advisers
 - ▶ Advises the president
 - ▶ Writes the annual Economic Report of the President
- ▶ Office of Management and Budget
 - ▶ Helps formulate spending plans and regulatory policies
- ▶ Department of the Treasury
 - ▶ Designs tax policy
- ▶ Federal Trade Commission
 - ▶ Prevents anti-competitive and unfair business practices

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Economists in Washington

- ▶ Department of Labor
 - ▶ Analyzes data on workers and those looking for work
 - ▶ Formulates labor-market policies
- ▶ Economists at the Department of Justice
 - ▶ Enforce the nation's antitrust laws
- ▶ Congressional Budget Office
 - ▶ Helps the Congress
- ▶ The Federal Reserve
 - ▶ Sets monetary policy

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Why Economists' Advice Is Not Always Followed

- ▶ The president receives advice from:
 - ▶ Economists
 - ▶ Communication advisers
 - ▶ Press advisers
 - ▶ Legislative affairs advisers
 - ▶ Political advisers
- ▶ The president makes the decision.

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Why Economists Disagree

- ▶ Economists often give conflicting policy advice:
 - ▶ Can disagree about the validity of alternative positive theories about the world
 - ▶ May have different values and, therefore, different normative views about what policy should try to accomplish
- ▶ Yet, there are many propositions about which most economists agree.

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Ask The Experts

Ticket Resale

- ▶ “Laws that limit the resale of tickets for entertainment and sports events make potential audience members for those events worse off on average.”
 - ▶ Do you Agree or Disagree?
- ▶ Do you think Economists Agree or Disagree?

Source: IGM Economic Experts Panel, April 16, 2012.

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Do you "Agree" or "Disagree"?
"Laws that limit the resale of tickets for entertainment and sports events make potential audience members for those events worse off on average."

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Do Economists "Agree" or "Disagree"?
"Laws that limit the resale of tickets for entertainment and sports events make potential audience members for those events worse off on average."

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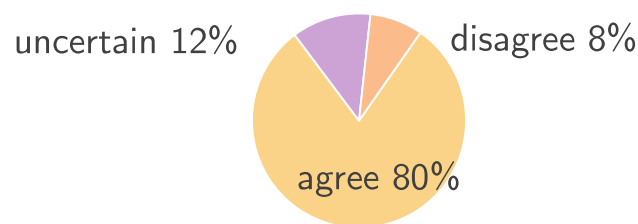
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Ask The Experts

Ticket Resale

- ▶ “Laws that limit the resale of tickets for entertainment and sports events make potential audience members for those events worse off on average.”

What do economists say?



Source: IGM Economic Experts Panel, April 16, 2012. 

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Propositions About Which Most Economists Agree

- ▶ A ceiling on rents reduces the quantity and quality of housing available. (93%)
- ▶ Tariffs and import quotas usually reduce general economic welfare. (93%)
- ▶ The United States should not restrict employers from outsourcing work to foreign countries. (90%)
- ▶ The United States should eliminate agricultural subsidies. (85%)

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Propositions About Which Most Economists Agree

- ▶ Local and state governments should eliminate subsidies to professional sports franchises. (85%)
- ▶ Cash payments increase the welfare of recipients to a greater degree than do transfers in-kind of equal cash value. (84%)
- ▶ A large federal budget deficit has an adverse effect on the economy. (83%)

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Propositions About Which Most Economists Agree

- ▶ The United States should not ban genetically modified crops. (82%)
- ▶ A minimum wage increases unemployment among young and unskilled workers. (79%)
- ▶ Government subsidies on ethanol (as motor fuel) in the United States should be reduced or eliminated. (78%)

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Think-Pair-Share

You are Watching PTS Talk (公視有話好說) at Home...

- ▶ The first focus segment is a discussion of the pros and cons of free trade.
- ▶ For balance, there are two economists present—one in support of free trade and one opposed.
- ▶ Your dad says, “Those economists have no idea what’s going on. They can’t agree on anything:
 - ▶ One says free trade makes us rich.
 - ▶ The other says it will drive us into poverty.

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Think-Pair-Share

You are Watching PTS Talk (公視有話好說) at Home...

- ▶ If the experts don’t know, how is the average person ever going to know whether free trade is best?”
- A. Can you give your dad any insight into why economists might disagree on this issue?

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Why Economists Might Disagree on Free Trade?

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Think-Pair-Share

You are Watching PTS Talk (公視有話好說) at Home...

- B. Suppose you discover that 93 percent of economists believe that free trade is generally best (which is the greatest agreement on any single issue).
- ▶ Could you now give a more precise answer as to why economists might disagree on this issue?
- C. What if you later discovered that the economist opposed to free trade worked for a labor union.
- ▶ Would that help you explain why there appears to be a difference of opinion on this issue?

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What if you later discovered that the economist opposed to free trade worked for a labor union.

Would that help you explain why there appears to be a difference of opinion on this issue?

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Chapter in a Nutshell

- ▶ Economists are scientists.
 - ▶ Make appropriate assumptions and build simplified models
 - ▶ Use the circular-flow diagram and the production possibilities frontier
- ▶ **Microeconomists** study decision making by households and firms and their interactions in the marketplace.
- ▶ **Macroeconomists** study the forces and trends that affect the economy as a whole.

Chapter in a Nutshell

- ▶ A **positive** statement is an assertion about how the world is.
- ▶ A **normative** statement is an assertion about how the world ought to be.
- ▶ As policy advisers, economists make normative statements.
- ▶ Economists sometimes offer conflicting advice.
 - ▶ Differences in scientific judgments
 - ▶ Differences in values

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Chapter 2: Thinking Like An Economist

- ▶ See how Economists think
- ▶ Key Idea:
 - ▶ Circular Flow Diagram
 - ▶ Production Possibility Frontier
- ▶ Suggested Homework:
 - ▶ Mankiw, Chap. 2, Problem 3, 4

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Ch.2: Thinking Like an Economist

Questions about chapter 2?

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Audience Q&A Session

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Principles of Microeconomics

Ch.2

The End

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