Solutions for Principles of Economics 7th Edition by Frank

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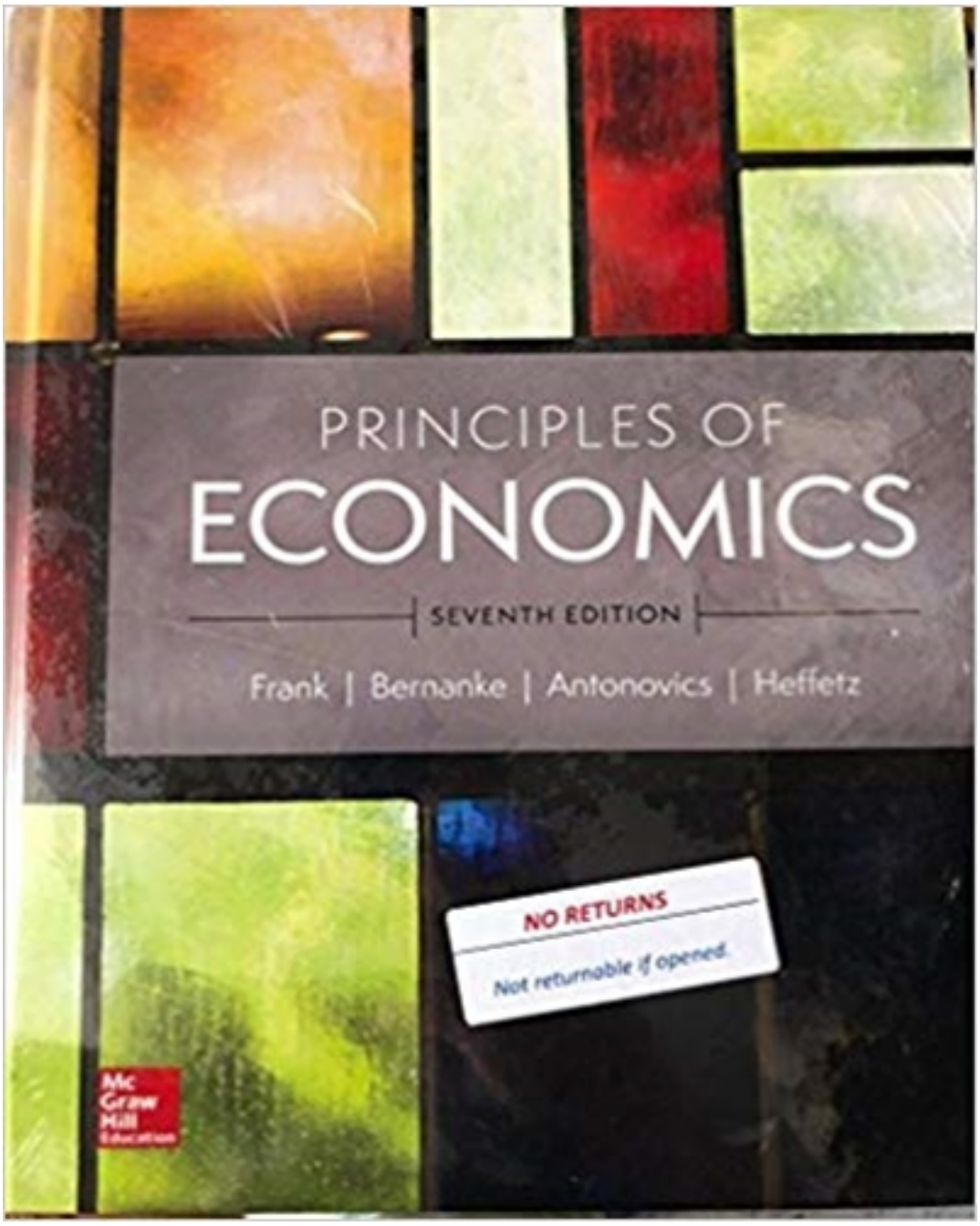


Solutions

Chapter 2

Comparative Advantage

Learning Objectives

1. Explain and apply the ***Principle of Comparative Advantage.***
2. Explain and apply the *Principle of Increasing Opportunity Cost* (also called the ***Low-Hanging-Fruit Principle***).
3. Identify factors that shift the menu of production possibilities.
4. Explain and apply the role of comparative advantage in international trade and describe why some jobs are more vulnerable to outsourcing than others.

Exchange and Opportunity Cost

- Joe Jamail, a highly successful trial attorney, employs another attorney to write his will
  - Writing your own will: ***2 hours***
  - Opportunity cost of 2 hours: ***$10,000+***
  - Hiring someone to spend 4 hours on your will: ***$800***
- Do It Yourself only when

  Opportunity cost < hired cost

Exchange and Opportunity Cost

- A person has an ***absolute advantage*** at a particular task if he or she can perform the task in fewer hours than the other person
- A person has a ***comparative advantage*** at a particular task if his or her ***opportunity cost*** of performing the task is lower than the other person's opportunity cost
- Comparative advantage doesn't just care about your skill at a task, but about your skill at that task ***compared*** to your skill at other tasks

The Principle of Comparative Advantage

The Principle of Comparative Advantage

Everyone does best when each person (or each country) concentrates on the activities for which his or her opportunity cost is the lowest.

The Principle of Comparative Advantage

- Multiple people are faced with multiple tasks. How should they assign the work?
  - Each should concentrate on the activities for which they have the lowest opportunity cost

  Total value of output increases with ***specialization and trade***

Comparative Advantage Example

Production Times	Web Update	Bike Repair
Mary	20 minutes	10 minutes
Paula	30 minutes	30 minutes

- Paula and Mary can each update web pages and repair bikes
    - Mary has an absolute advantage in both
  - Comparative advantage drives specialization
  - So who has a comparative advantage in what?

Comparative Advantage Example

Production Times	Web Update	Bike Repair
Mary	20 minutes	10 minutes
Paula	30 minutes	30 minutes

Opportunity Cost	Web Update	Bike Repair
Mary	2 repairs	0.5 update
Paula	1 repair	1 update

Comparative Advantage Example

Production Times	Web Update	Bike Repair
Mary	20 minutes	10 minutes
Paula	30 minutes	30 minutes

Hourly Output	Web Update	Bike Repair
Mary	3 updates	6 repairs
Paula	2 updates	2 repairs

Comparative Advantage Example

Hourly Output	Web Update	Bike Repair
Mary	3 updates	6 repairs
Paula	2 updates	2 repairs

- 16 web updates are ordered
  - Mary spends half her time at each activity: 12 updates and 24 repairs
  - Paula produces 4 updates and 12 repairs
  - Total output 16 updates and 36 repairs
- Specialization produces 16 updates and 48 repairs
  - 12 more repairs for the same inputs!

Another Example

Hourly Output	Web Update	Bike Repair
Pat	2 updates	1 repair
Meg	3 updates	3 repairs

- This table shows output per hour
  - Apply the Principle of Comparative Advantage
    - Look at opportunity cost per unit
    - Pat repairs bikes and Meg updates web pages

Opportunity Cost	Web Update	Bike Repair
Pat	½ repair	2 updates
Meg	1 repair	1 update

Where Have All the 0.400 Hitters Gone

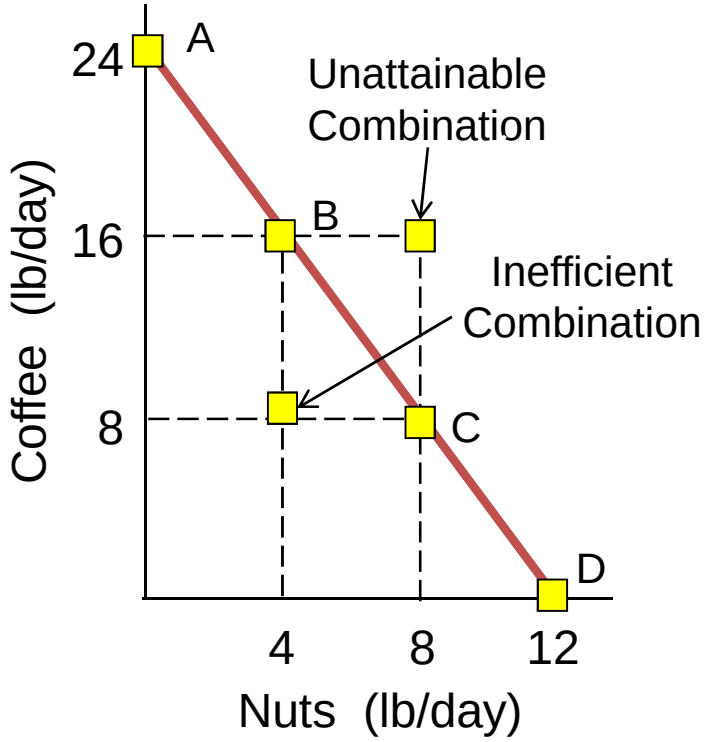
- None since 1941
  - Not a decline in athletic ability
- Specialization keeps averages lower
  - Pitching and fielding skills have improved
    - Pitchers specialize in starters, middle relievers, and closers; right- or left-handed batters; strikeouts
    - Fielders play one position
    - Specialized coaches
    - Detailed analysis of hitters' weaknesses

Sources of Comparative Advantage

- **Talent**
- **Natural resources**
- **Cultures or societal norms**
  - Languages
  - Institutions
    - Value placed on craftsmanship
    - Support for entrepreneurship

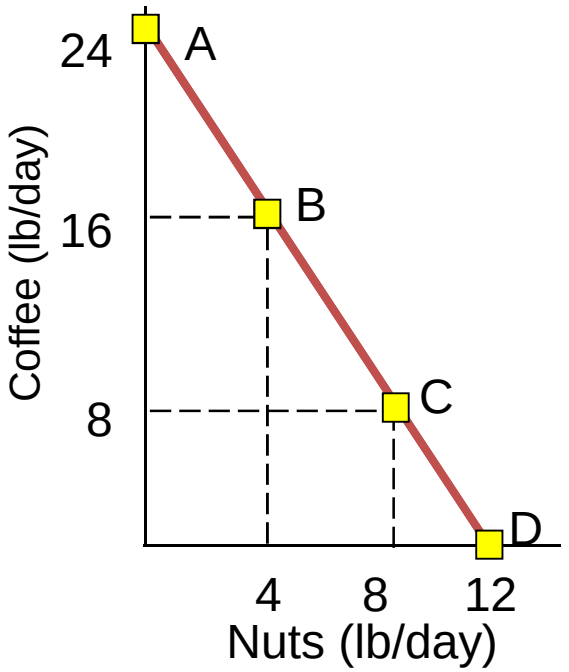
Production Possibilities Curve

- A **production possibilities curve** illustrates the combinations of two goods that can be produced with given resources
- Definitions:
  - **Unattainable point**
  - **Attainable point**
    - **Inefficient point**
    - **Efficient point**
- *Scarcity Principle*
  - Give up one good to get another



Susan's Production Possibilities

- Two goods: coffee and nuts
  - Work 6 hours per day
- 1 hour of labor
  - = 4 pounds of coffee OR
  - = 2 pounds of nuts
  - Graph shows options
    - Negative slope



Susan's Opportunity Costs

- Marginal cost: – 8 coffee
- Marginal benefit: 4 nuts

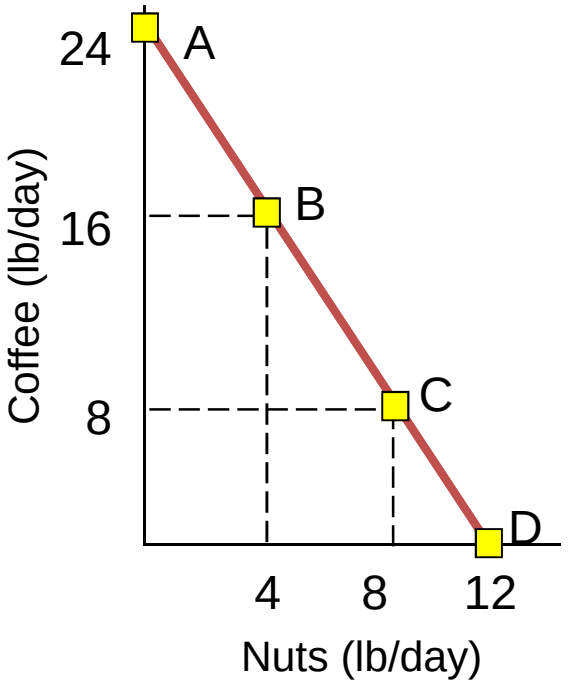
$$\frac{\text{Loss in coffee}}{\text{Gain in nuts}}$$

Opportunity cost of 1 nut is 2 coffee

- Marginal cost: – 8 nut
- Marginal benefit: 16 coffee

$$\frac{\text{Loss in nuts}}{\text{Gain in coffee}}$$

Opportunity cost of 1 coffee is ½ nut



Tom's Production Possibilities

Work 6 hours per day

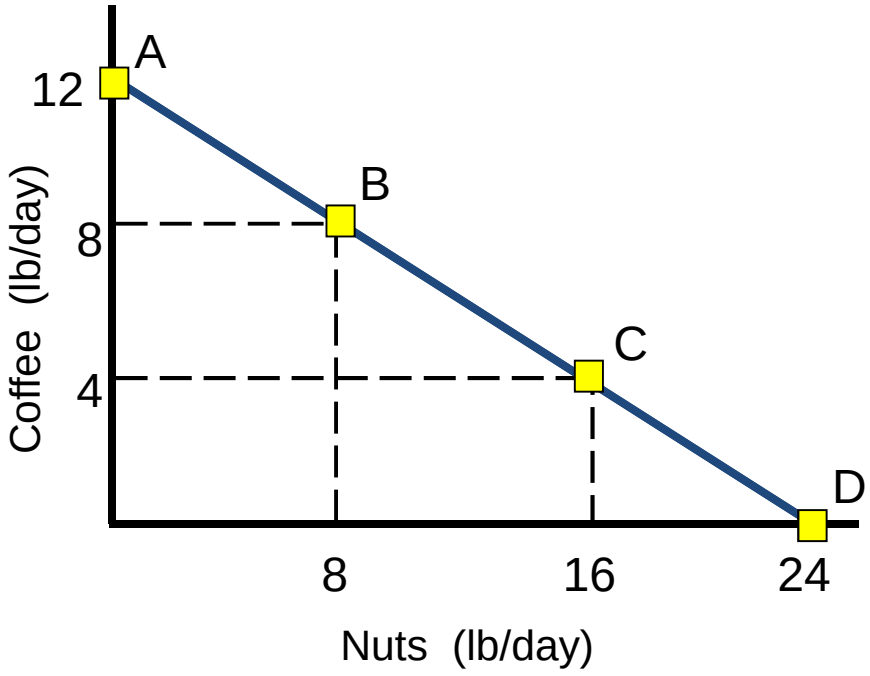
- Productivity determines the slope of the PPC

– 1 hour of labor
  = 4 pounds of nuts OR
  = 2 pounds of coffee

- Opportunity cost

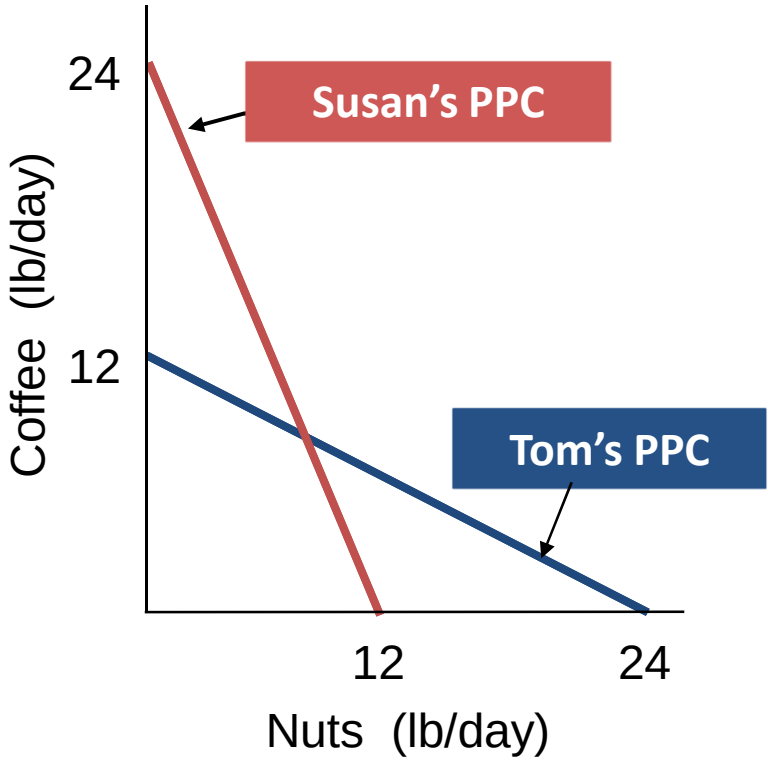
– Marginal cost: – 4 coffee
– Marginal benefit: 8 nuts

- Tom's opportunity cost of 1 coffee is 2 nuts
- His opportunity cost of 1 nut is ½ coffee



Tom, Meet Susan

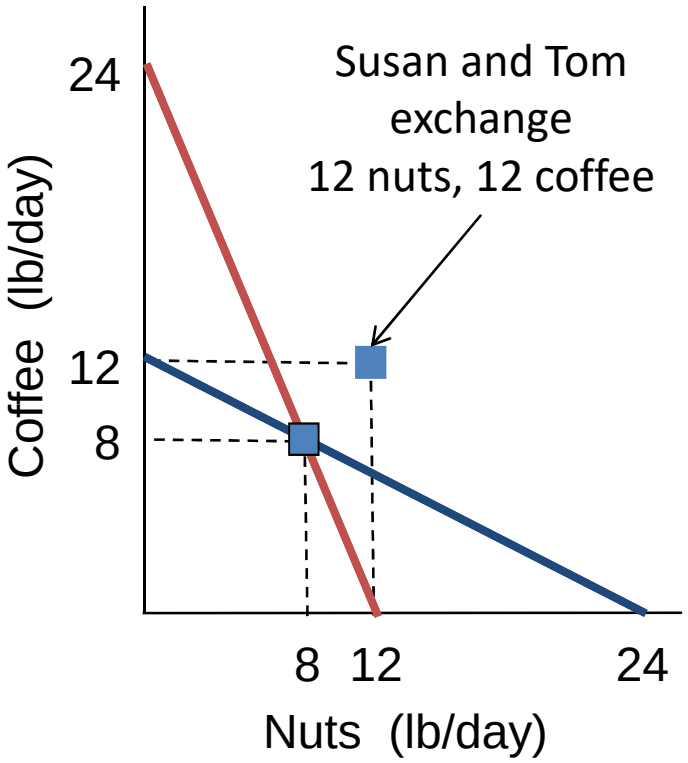
- PPCs show comparative advantage
  - Sue's curve is steeper, better for coffee
  - Tom's curve is flatter, better for nuts
- Comparative advantage is a comparison
- To get 1 coffee
  - Sue gives up ½ nuts
  - Tom gives up 2 nuts



Gains from Specialization and Trade

- Without trade, each person can consume along his production possibilities curve
  - What you produce determines what you consume
- With trade, each person's consumption can be greater than production
  - Produce according to comparative advantage
  - Trade to get what you want

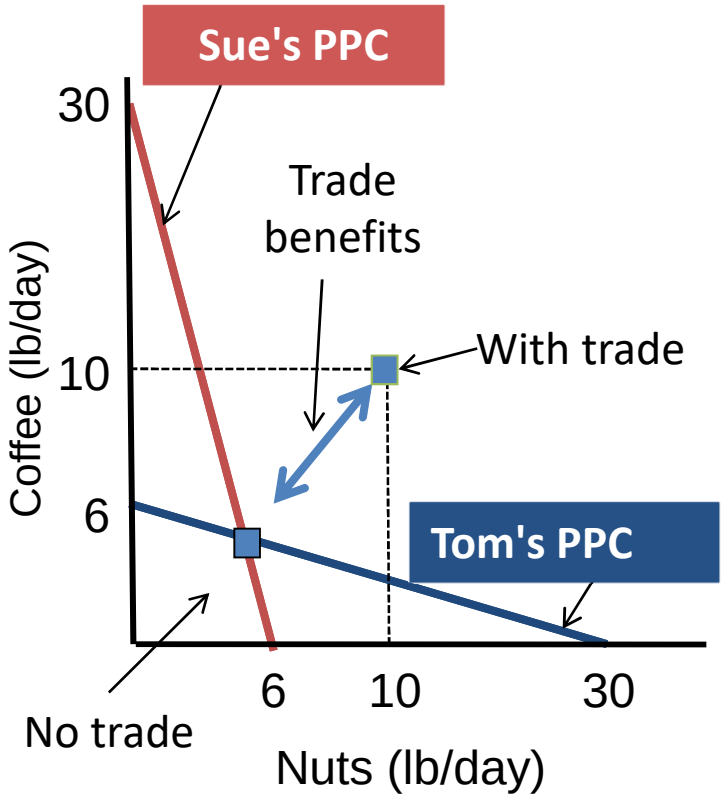
Gains from Specialization and Trade



- Preferred diet is half nuts, half coffee
  - No trade: 8 pounds of coffee and 8 pounds of nuts

    Total output is 32 pounds
- Specialization gives each person 12 pounds of each good
  - 48 total pounds

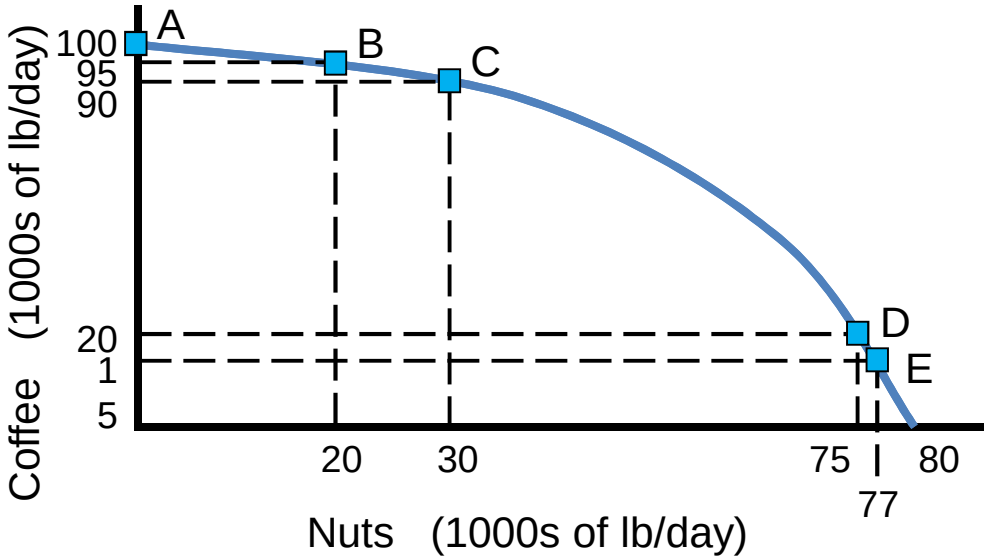
Gains from Specialization and Trade



- Benefits increase when differences in opportunity cost increase
  - Sue's opportunity cost of one pound of nuts increases to 5 coffee
  - Tom's opportunity cost of one pound of coffee increases to 5 nuts
- No trade: 5 nuts and 5 coffee each
- With trade: 10 nuts and 10 coffee each

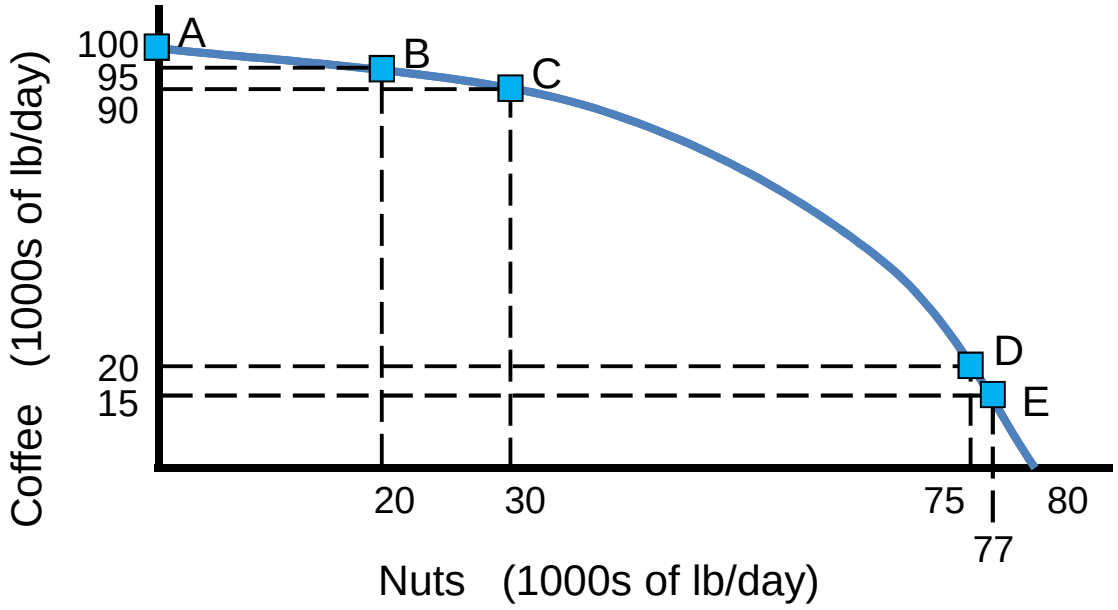
Production Possibilities for an Economy

- Two goods: coffee and nuts
- Multiple people
  - Different opportunity costs
- Intercepts show maximum production of one good
- Some resources better at coffee, some better at nuts

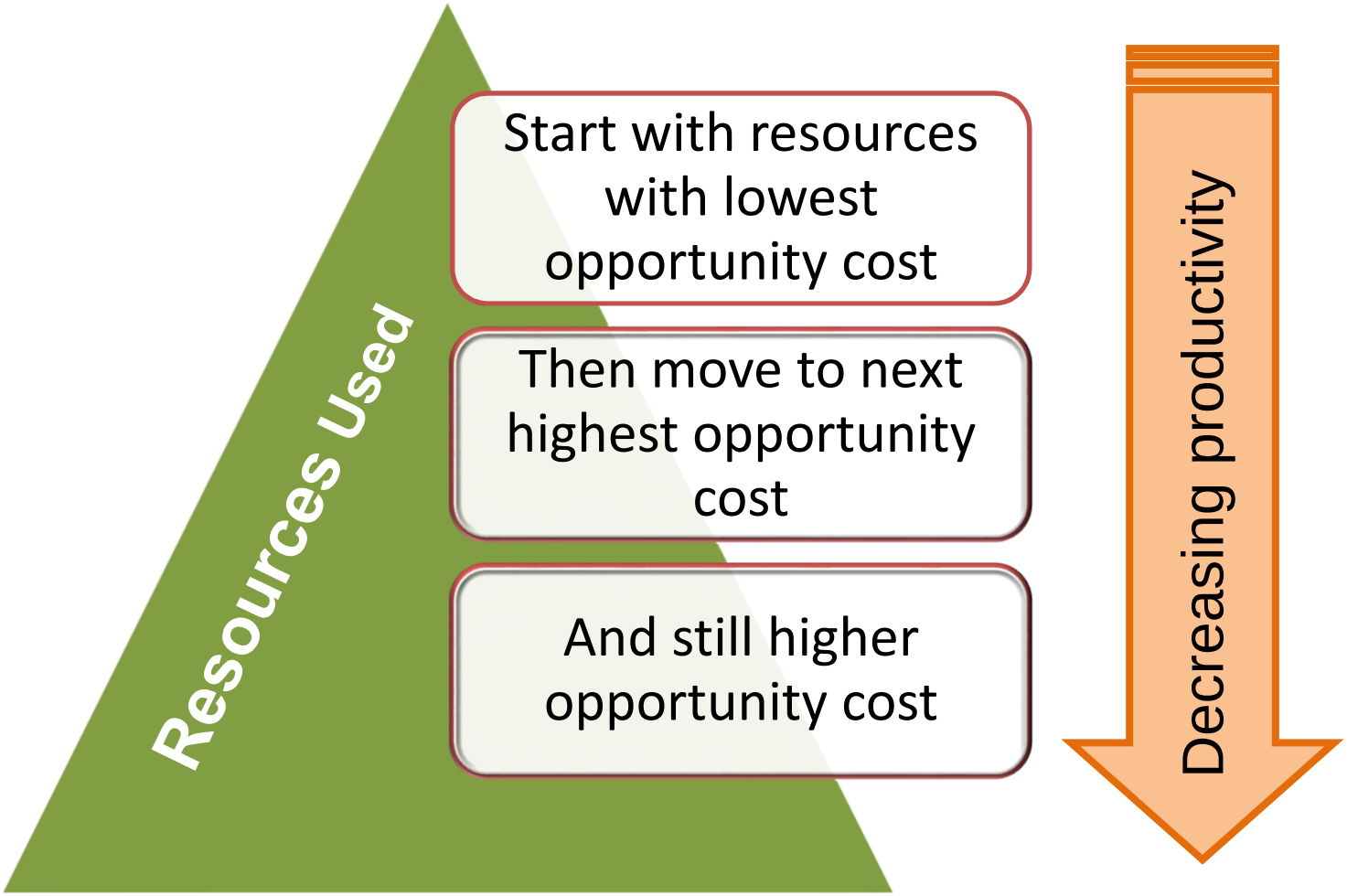


The Principle of Increasing Opportunity Cost

- Maximum coffee: 100,000 lb. / day
  - Give up 5,000 pounds coffee, get 20,000 pounds of nuts
  - Give up another 5,000 pounds of coffee, get 10,000 additional pounds of nuts



The Principle of Increasing Opportunity Cost

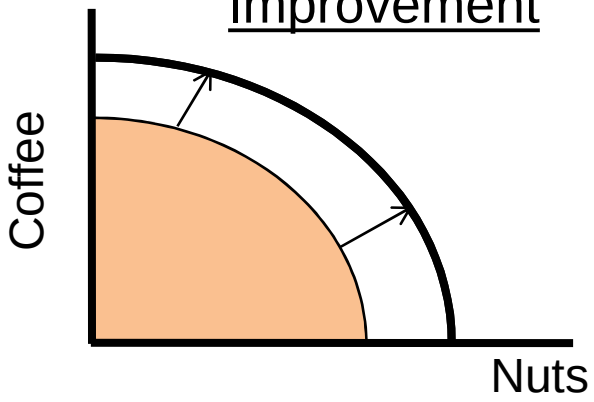


The Dynamic Economy

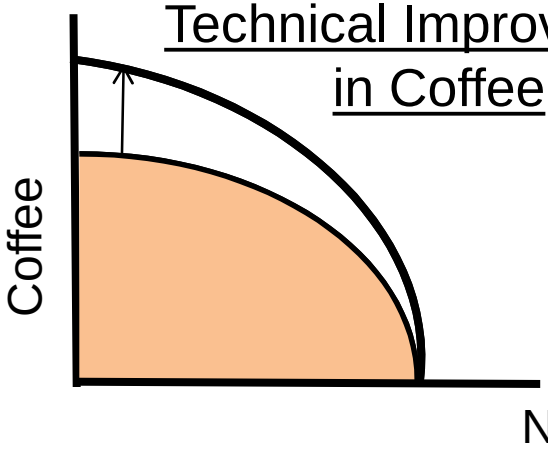
- A PPC represents current choices
  - Changes in choices occur over time due to
    - More resources
      - Investment in capital
      - Population growth
    - Improvements in technology
      - More specialization: start-up and switching costs
    - Increases in knowledge

Shifts in PPC

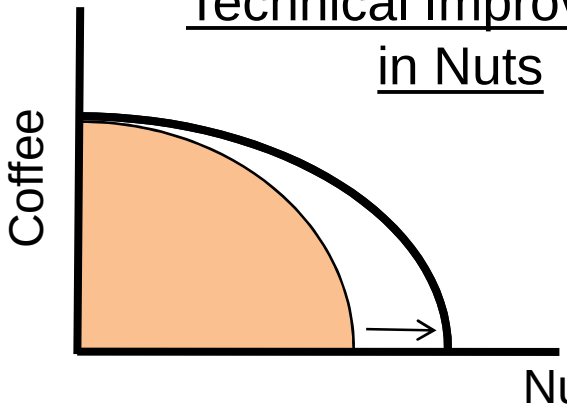
Neutral Technical Improvement



Technical Improvement in Coffee



Technical Improvement in Nuts



Some Countries Resist Specialization

- Specialization is easier when
  - Population density passes a threshold
  - Markets are connected
    - Transportation for goods
    - Communications for services
  - Legal framework supports business
  - Financial markets enable start-ups

Too Much Specialization

- Imagine this:
  - Your hair stylist only cuts blonde hair
  - An expert in tropical diseases opens a practice in a town of 500 people in Wisconsin
  - Seven bookstores, each open a different day of the week

Comparative Advantage and International Trade

- Principle of Comparative Advantage and gains from trade apply worldwide
  - Potentially large gains from trading with different and distant countries
- Trade can be controversial
  - Trade benefits society broadly
  - Costs are concentrated
    - Some industries suffer
    - People lose their jobs

Outsourcing

- Service work performed overseas by low wage workers has been termed ***outsourcing***
  - Medical transcription
  - Customer call centers
  - Medical tourism
  - Technical writing
- Limits to outsourcing
  - Quality control
  - Physical presence (haircuts)
  - Complex communications
  - Understand nuance
- Greatest security for workers is the ability to adapt quickly to changing circumstances

Comparative Advantage