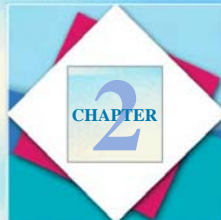


## THE ECONOMIC PROBLEM



### Objectives

- Production Possibilities Frontier & Opportunity Cost
- Efficient Allocation of resources
- Trade-off between current and future production.
- The gains from specialization and trade
- The importance of property rights and markets

### Production Possibilities and Opportunity Cost

The **production possibilities frontier (PPF)** is the boundary between those combinations of goods and services that can be produced and those that cannot.

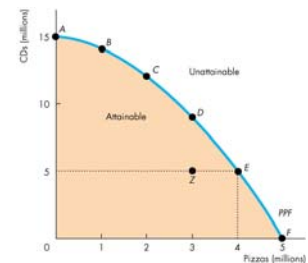
To illustrate the *PPF*,

- Assume economy produces only two goods at a time and hold the quantities of all other goods and services constant.
- Assume everything else remains the same (*ceteris paribus*) except the two goods we're considering.

### Production Possibilities and Opportunity Cost

Combinations of goods can be classified as

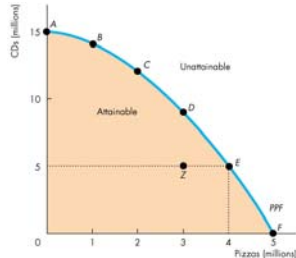
- Attainable
  - Productively efficient
  - Productively inefficient
- Unattainable



## Production Possibilities and Opportunity Cost

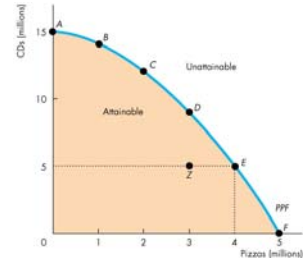
Measuring opportunity cost using the PPF.

- At C, opportunity cost of 1 million pizza is 3 million CDs.
- One pizza costs 3 CDs.
- $|\text{Slope of PPF}| = \text{opportunity cost of pizza}$



## Production Possibilities and Opportunity Cost

- At D, the opportunity cost of 3 million CDs is 1 million pizza.
- One CD costs  $1/3$  of a pizza
- $|\text{Inverse of PPF slope}| = \text{opportunity cost of CDs}$



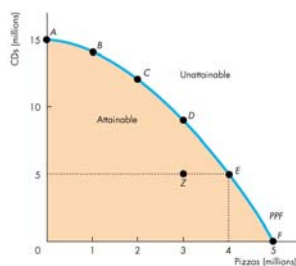
## Production Possibilities and Opportunity Cost

The Law of Increasing Marginal Opportunity Cost:

Because resources are not all equally productive in all activities, the PPF bows outward—is concave.

As the quantity produced of each good increases, so does its opportunity cost.

How does shape of PPF reflect this Law?



## Using Resources Efficiently

All the points on the PPF are productively efficient.

To determine which of the alternative productively efficient quantities to produce, we compare costs and benefits.

### The PPF and Marginal Cost

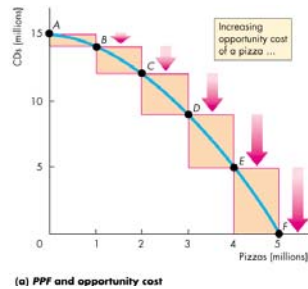
The PPF determines opportunity cost.

The **marginal cost** of a good or service is the opportunity cost of producing *one more unit* of it.

## Using Resources Efficiently

This figure illustrates the marginal cost of pizza.

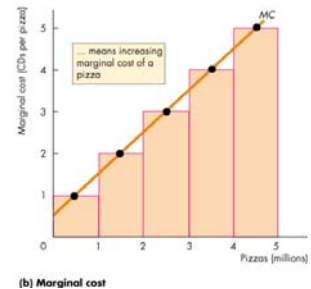
As we move along the *PPF* the opportunity cost and the marginal cost of pizza increases.



## Using Resources Efficiently

The Law of Increasing Marginal Opportunity Cost:

The marginal opportunity cost of a commodity increases as production of the commodity increases.



## Using Resources Efficiently

### Preferences and Marginal Benefit

**Preferences** are a description of a person's likes and dislikes.

The **marginal benefit** of a good or service is the benefit received from consuming one more unit of it.

We measure marginal benefit by the amount that a person is *willing to pay* for an additional unit of a good or service.

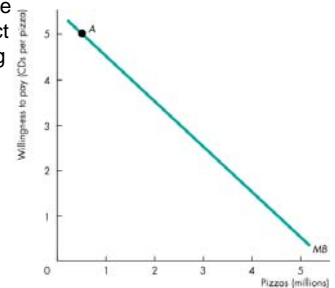
*Law of Decreasing Marginal Benefit (or Law of Diminishing Marginal Utility)*

the more we have of any good or service, the smaller is its marginal benefit and the less we are willing to pay for an additional unit of it.

The **marginal benefit curve** shows the relationship between the marginal benefit of a good and the quantity of that good consumed.

## Using Resources Efficiently

The Marginal Benefit curve slopes downward to reflect the principle of decreasing marginal benefit.



## Using Resources Efficiently

### Efficient Use of Resources

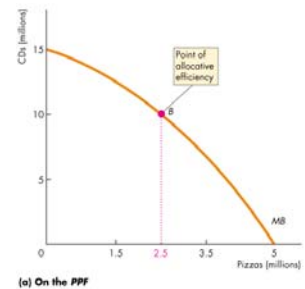
When we cannot produce more of any one good without giving up some other good, we have achieved *production efficiency*, and we are producing at a point on the *PPF*.

When we cannot produce more of any one good without giving up some other good *that we value more highly*, we have achieved **allocative efficiency**, and we are producing at *the* point on the *PPF* that we prefer above all other points.

## Using Resources Efficiently

The point of allocative efficiency is the point on the *PPF* at which marginal benefit equals marginal cost.

This point is determined by the quantity at which the marginal benefit curve intersects the marginal cost curve.



## Economic Growth

The expansion of production possibilities—and increase in the standard of living—is called **economic growth**.

Two key factors influence economic growth:

- Technological change
- Capital accumulation

**Technological change** is the development of new goods and of better ways of producing goods and services.

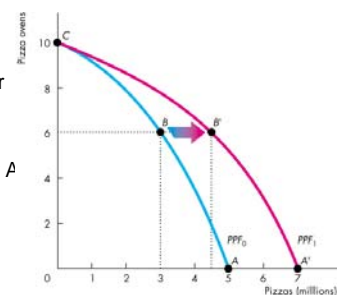
**Capital accumulation** is the growth of capital resources, which includes *human capital*.

## Economic Growth

The graph illustrates the tradeoff we face.

We can produce pizza or pizza ovens along  $PPF_0$ .

How would the choice of A instead of B affect future movement of PPF? C instead of B?



## Gains From Trade

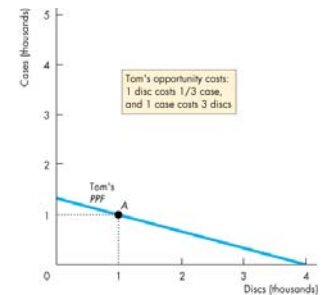
### Comparative Advantage

A person has a **comparative advantage** in an activity if that person can perform the activity at a lower opportunity cost than anyone else.

## Gains From Trade

The graph at right shows Tom's *PPF* for discs and cases. Tom can produce 1,000 discs and 1,000 cases at point A.

Along his *PPF*, Tom's opportunity cost of a disc is  $1/3$  of a case and his opportunity cost of a case is 3 discs.

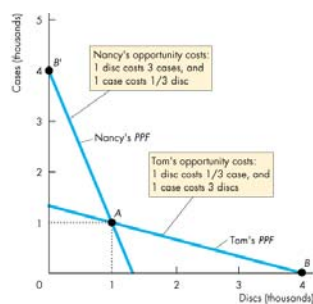


## Gains From Trade

Nancy's *PPF* for discs and cases.

Nancy can produce 1,000 discs and 1,000 cases at point A.

Along her *PPF*, Nancy's opportunity cost of a disc is 3 cases and her opportunity cost of a case is  $1/3$  of a disc.



## Gains From Trade

If Tom and Nancy produce discs and cases independently, they can produce 1,000 CD cases and discs each (2,000 total).

Tom has a comparative advantage in disc production.

Nancy has a comparative advantage at producing cases.

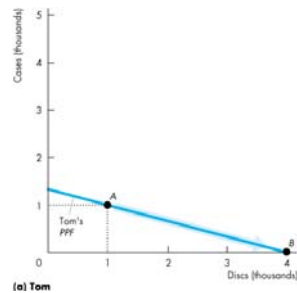
Tom and Nancy can gain from trade.

## Gains From Trade

### Achieving the Gains from Trade

The graph shows what happens if Tom and Nancy specialize in what they do best and trade with each other.

Tom moves along his *PPF* and produces 4,000 discs at point *B*.

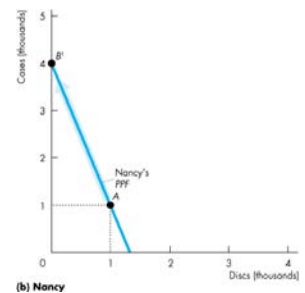


## Gains From Trade

Nancy moves along her *PPF* and produces 4,000 cases at point *B'*.

Tom and Nancy are now producing 4,000 discs and cases—double what they can achieve without specialization.

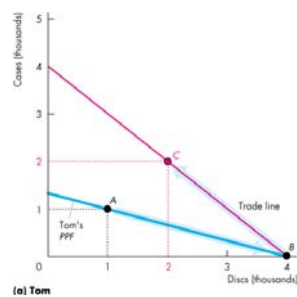
They can now trade discs for cases.



## Gains From Trade

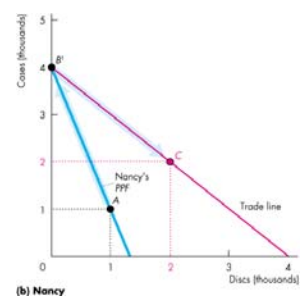
If Tom and Nancy exchange cases and discs at one case per disc (one disc per case) they exchange along the Trade line.

Tom ends up at point *C* with 2,000 CD discs and cases—double what he can achieve without specialization and trade.



## Gains From Trade

Nancy also ends up with 2,000 Discs and Cases each—double what she can achieve without specialization and trade.



## Gains From Trade

Nations can gain from specialization and trade, just like Tom and Nancy can.

### Absolute Advantage

A person (or nation) has an **absolute advantage** if that person (or nation) can produce more goods with a given amount of resources than another person (or nation) can.

Because the gains from trade arise from *comparative* advantage, people can gain from trade even if they have an absolute advantage.

## Gains from Trade

Suppose there is a small island economy with 20 Irish and 10 Germans. Each Irish can catch either 10 fish or gather 40 coconuts in a day. Each German can catch either 6 fish or 30 coconuts in a day.

### 1. Who has comparative advantage in:

- fish
- coconuts

### 2. Draw the PPF for this island economy.

### 3. If 120 fish are to be caught per day:

- What is maximum possible number of coconuts?
- Who produces the fish?
- Who produces the coconuts?

## The Market Economy

Trade is organized using two key social institutions:

- Property rights
- Markets

### Property Rights

**Property rights** are the social arrangements that govern ownership, use, and disposal of resources, goods or services.

### Markets

A **market** is any arrangement that enables buyers and sellers to get information and do business with each other.