

# International Trade Theory

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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, we focus on **two** goods at a time and hold the quantities of all other goods and services constant.

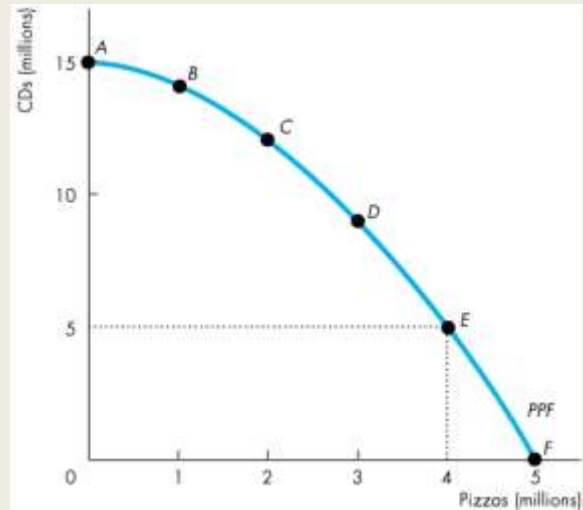
That is, we look at a **model economy** in which **everything remains the same** (ceteris paribus) except the two goods we're considering.

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## Production Possibilities and Opportunity Cost

### ■ Production Possibilities Frontier

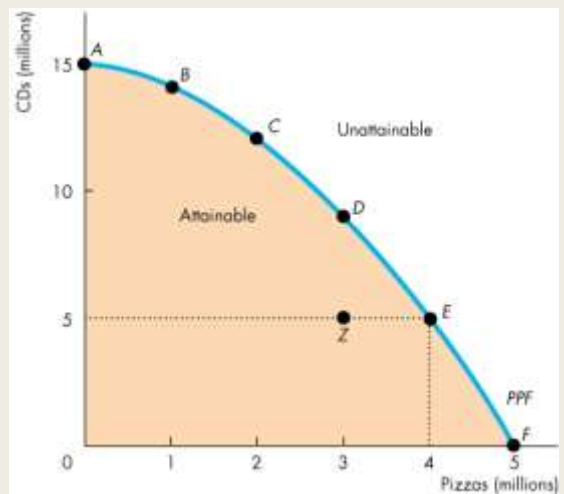
- The Figure shows the PPF for CDs and pizza, which stand for any pair of goods and services.



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- **Points inside** and on the frontier, such as points A, B, C, D, E, F, and Z are **attainable**.

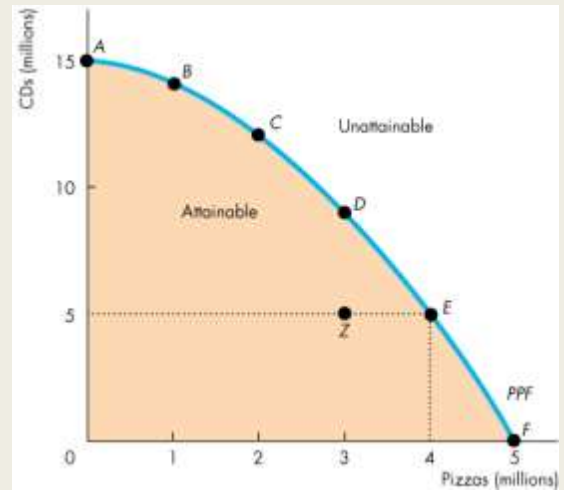
Points **outside** the frontier are **unattainable**.



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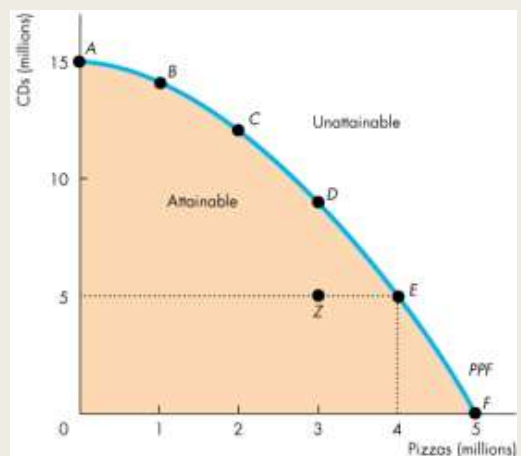
## Production Efficiency

- We achieve **production efficiency** if we **cannot** produce more of one good without producing **less** of some other good.
- ✓ Points on the **frontier** are **efficient**.



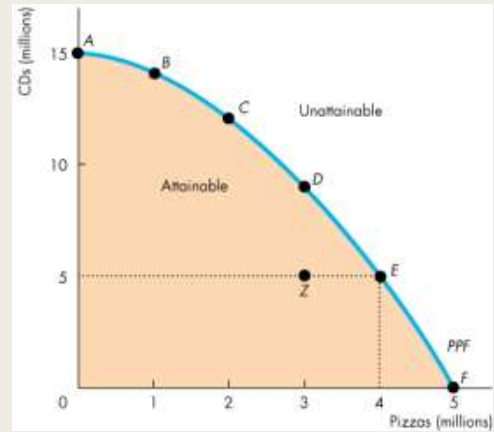
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- Any point inside the frontier, such as point Z, is inefficient.
- At such a point it is possible to produce more of one good without producing less of the other good.
- ✓ At Z, **resources** are either **unemployed** or **misallocated**.



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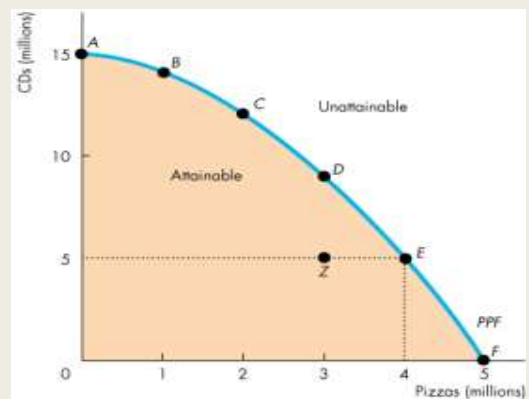
- Tradeoff Along the PPF
  - Every **choice** along the PPF involves a **tradeoff**.
  - On this PPF, we must give up some CDs to get more pizza or give up some pizza to get more CDs.



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## Opportunity Cost

- The PPF makes the concept of opportunity cost precise.
- If we move along the PPF from C to D the opportunity cost of the increase in pizza is the decrease in CDs.



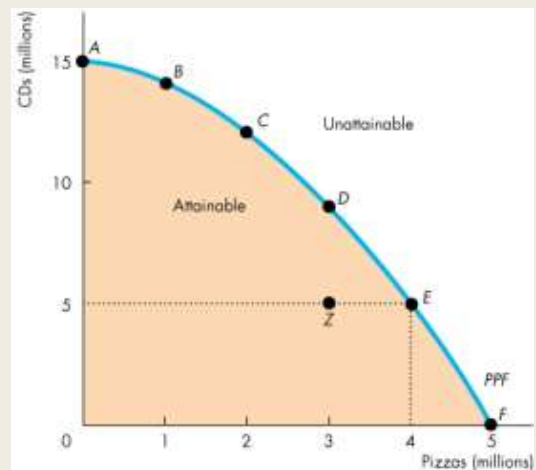
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- A move from *C* to *D*, increases pizza production by 1 million.
- CD production decreases from 12 million to 9 million, a decrease of 3 million.
- The opportunity cost of 1 million pizza is 3 million CDs.
- One pizza costs 3 CDs.

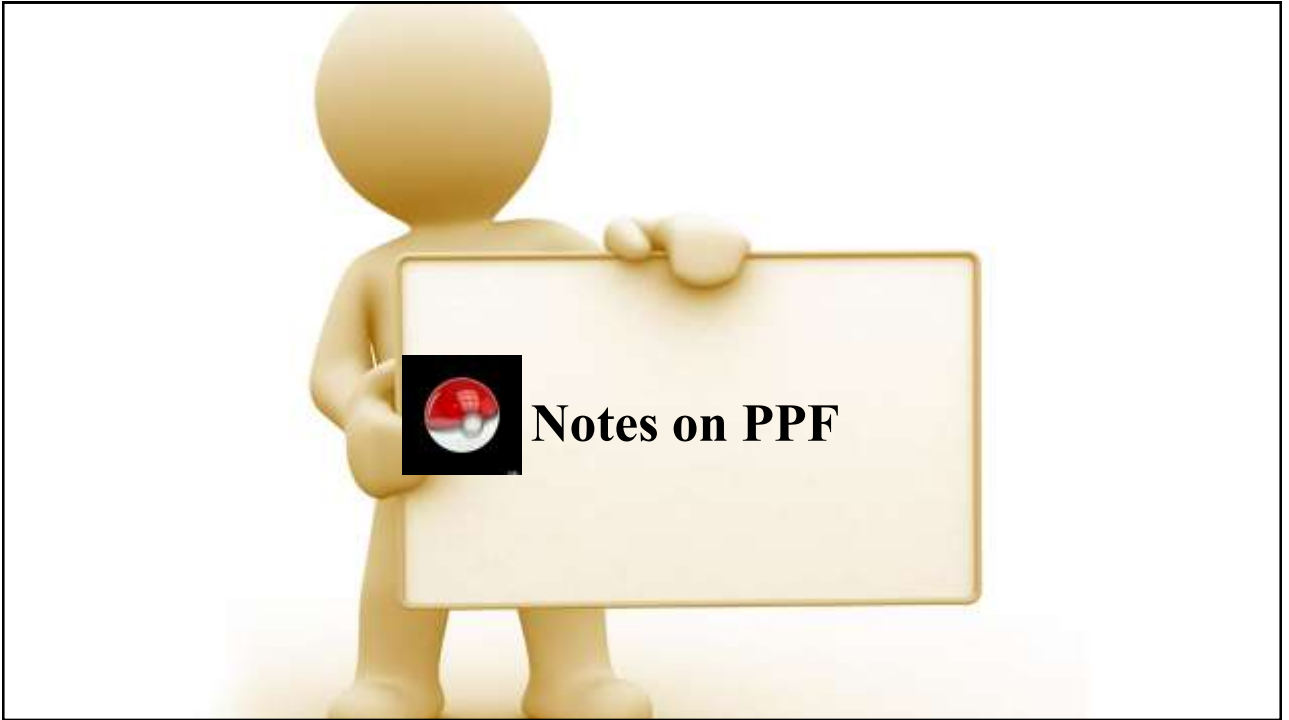


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- A move from *D* to *C*, increases CDs production by 3 million.
- Pizza production decreases by 1 million.
- The opportunity cost of 3 million CDs is 1 million pizza.
- One CD costs 1/3 of a pizza.



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## Note 1:

- If we have two goods (A) and (B), and the opportunity cost of the good A = 3 good B, then the opportunity cost of good B is 1/3 of good A.
- That
  - ✓ If One unit of good A costs 3 units of good B.
  - Then,
  - ✓ One unit of good B costs 1/3 of good A.

**The opportunity cost of A is the inverse of the opportunity cost of good B.**

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## Note 2:

- ✓ The PPF bows outward—it is **concave**.
- ✓ The outward **bow** of the PPF means that as the **quantity** produced of each good **increases**, so does its **opportunity cost (Marginal Cost)**.

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## Example:

if you have the following table show GPA and Recreation for an individual:

| Possibility | Recreation<br>(hours per day) |     | GPA<br>(points) |
|-------------|-------------------------------|-----|-----------------|
| A           | 0                             | and | 4.0             |
| B           | 1                             | and | 3.9             |
| C           | 2                             | and | 3.7             |
| D           | 3                             | and | 3.4             |
| E           | 4                             | and | 3.0             |
| F           | 5                             | and | 2.5             |
| G           | 6                             | and | 1.9             |
| H           | 7                             | and | 1.2             |
| I           | 8                             | and | 0.4             |

- **Given, the following information, calculate the marginal cost?**
  - All the points along the PPF are efficient.
  - To determine which of the alternative 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.

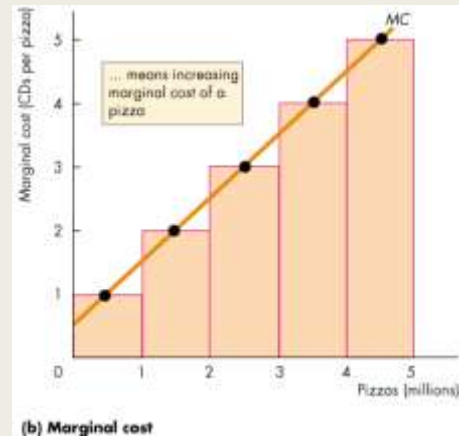
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## The Opportunity Cost (Marginal Cost) Curve

The line labeled *MC* show the marginal cost of pizza.

- As we are moving to the right, the opportunity cost of pizza increases.

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



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## Preferences and Marginal Benefit

**Preferences** are a description of a person's **likes** and **dislikes**. They are represented by **Marginal Benefit** of consuming goods.

### The marginal benefit of a good

- The **benefit** received from **consuming** one more unit of it.
- The **marginal benefit** is measured by the amount that a person is **willing to pay** for an additional unit of that good.

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## Rule

The **more** we have of any good or service



The **smaller** is its marginal benefit



The **less** we are willing to pay for an additional unit



The principle of decreasing marginal benefit.

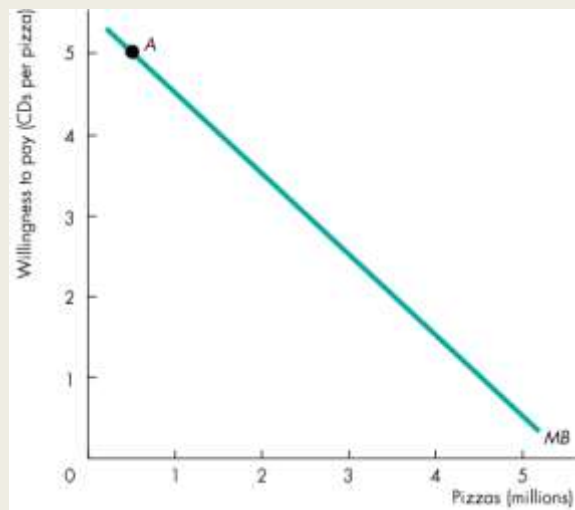
The **marginal benefit curve** shows the **relationship** between the **marginal benefit** of a good and the **quantity** of that good consumed.

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## The Marginal Benefit Curve

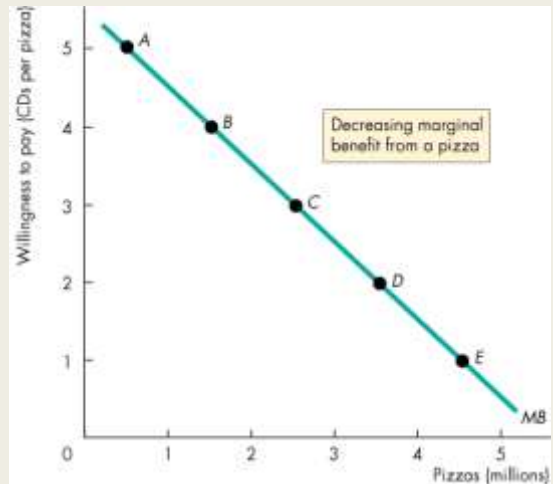
- The curve **slopes downward** to reflect the principle of **decreasing marginal benefit**.

The **more units of pizza** are consumed, the **lower the marginal benefit**, and the **lower people are willing to pay** (in terms of the other good).



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- ✓ **At point B**, with pizza production at 1.5 million, people are willing to pay 4 CDs per pizza.
- ✓ **At point E**, with pizza production at 4.5 million, people are willing to pay 1 CD per pizza.



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## Production Efficiency

- A situation achieved when we **cannot produce** more of one good without giving up some other goods. **Thus**, we are producing at a point on the PPF.
- Production efficiency is concerned with the **optimal method of producing goods**.

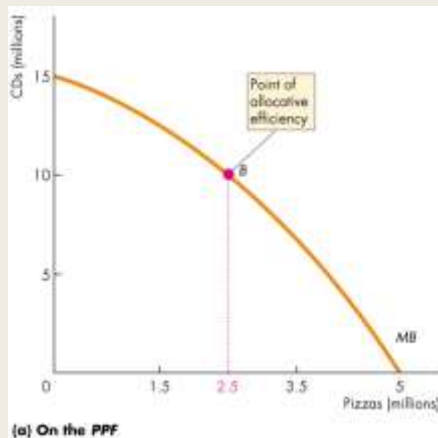
## Allocative Efficiency

- A situation achieved when we **cannot produce** more of one good without giving up some other goods that we value more highly. **Thus**, we are **producing** at the point on the PPF that we prefer above all other points.
- Allocative efficiency is concerned with the optimal distribution of goods and services. It is a point where **MC=MB**

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## Allocative Efficiency

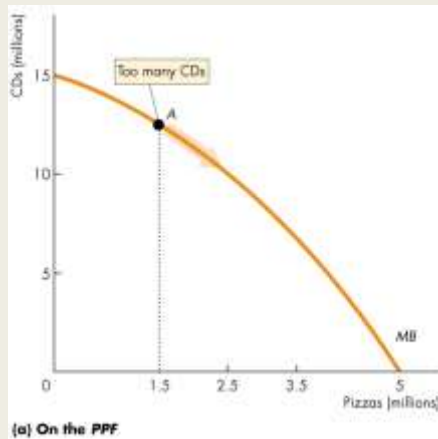
- ✓ The point of allocative efficiency is the point on the PPF at which **marginal benefit** equals **marginal cost**.
- ✓ **Graphically**, this point is determined by the quantity at which the **marginal benefit curve intersects** the **marginal cost curve**.



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## Using Resources Efficiently

- ✓ If we produce **less than 2.5** million pizza, marginal benefit exceeds marginal cost.
- ✓ We get **more value** from our resources by producing more pizza.
- ✓ On the PPF at point A, we are producing too many CDs, and we are better off moving along the PPF to produce more pizza.



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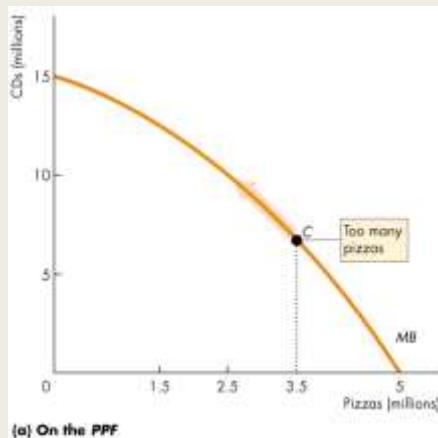


## Important Note:

If **marginal cost** of one good exceeds its **marginal benefit**, then the society produce more pizza than required.

Thus, the society get more value from available resources by producing less pizza.

**Graphically**, we are **better off** moving along the PPF to produce less pizza.



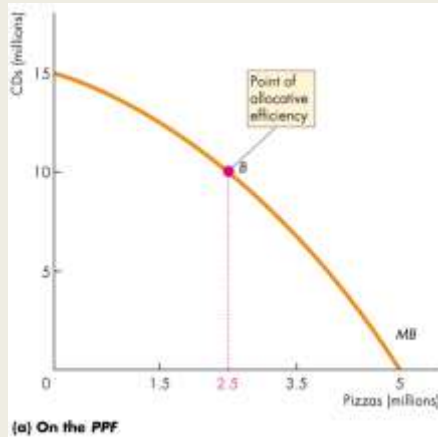
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✓ If society produce at point B, where **marginal cost equals marginal benefit**.

✓ The society cannot get more value from our resources.

✓ Graphically, the point B On the *PPF*, the **society** is producing the **efficient quantities** of CDs and pizza.

✓ (achieving **allocative efficiency**)



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## Using Resources Efficiently


| Recreation (hours per day) | Marginal cost (GPA points per hour) | Recreation (hours per day) | Willingness to pay (GPA points per hour) |
|----------------------------|-------------------------------------|----------------------------|--|
| 0.5                        | 0.1                                 | 0.5                        | 0.7                                      |
| 1.5                        | 0.2                                 | 1.5                        | 0.6                                      |
| 2.5                        | 0.3                                 | 2.5                        | 0.5                                      |
| 3.5                        | 0.4                                 | 3.5                        | 0.4                                      |
| 4.5                        | 0.5                                 | 4.5                        | 0.3                                      |
| 5.5                        | 0.6                                 | 5.5                        | 0.2                                      |
| 6.5                        | 0.7                                 | 6.5                        | 0.1                                      |
| 7.5                        | 0.8                                 | 7.5                        | 0  |

**what is allocative efficiency?**

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**Exercise**

**Quiz 1**



EUROPEAN COMMISSION  
DIRECTION GENERALE  
ECONOMIQUE ET FINANCIERE

Bruxelles, 27/08/2018

**ALLOCATIVE EFFICIENCY IN THE EURO AREA**  
*THEMATIC DISCUSSION ON GROWTH AND JOBS*

Note for the Eurogroup

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**Economic Growth**

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## Economic Growth

- The **expansion of production possibilities**—and increase in the standard of living.
- **Two key factors** influence economic growth:
  - ✓ Technological change
  - ✓ Capital accumulation

### Factor 1 Technological change

- is the development of new goods and of better ways of producing goods and services.

### Factor 2 Capital accumulation

- is the growth of capital resources, which includes human capital.

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## What is the Cost of achieving higher Economic Growth?

The society must **decrease** the production of **consumption goods** and services.

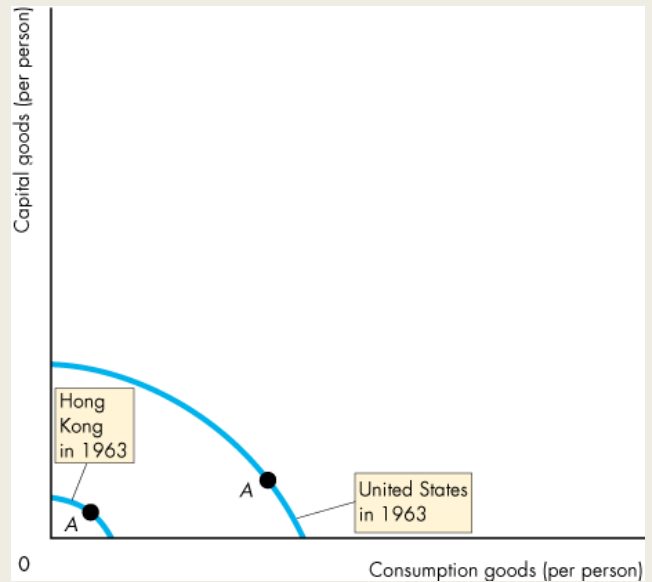
In order to

Use **resources in research** and development and to **produce new capital**,

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## Graphically,

- Higher Economic growth is represented by higher PPF.

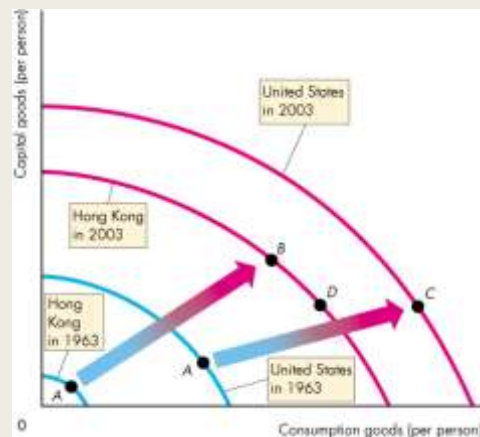


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## Economic Growth

- By 2003, **Hong Kong's** production possibilities (per person) were still **smaller** than those in the United States.

**But** Hong Kong grew faster than the United States grew **by** devoting more of its resources to **capital accumulation**.



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# Exercise

## Quiz 2

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### The main determinants affecting economic growth

Florin Teodor BOLDEANU<sup>1</sup>, Liliana CONSTANTINESCU<sup>2</sup>

*Abstract:* Growth theories highlight the evolution and trends in economic thought that shaped the way economic growth is perceived. From the early works of Adam Smith and Malthus to the present day researchers have tried to find the most important determinants that influence growth by formulating new and improved theories and models. In this article we try to offer our point of view in the evolution of the main factors that have an impact on economic growth. There is still not a consensus on the key determinants of growth and an all-encompassing model that includes all the influences has not yet been elaborated.

*Key-words:* economic growth, public expenditure, growth theory

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# Thank you

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