FIVE

INTERNATIONAL ECONOMICS

5

Factor Endowments and the Heckscher-Ohlin Theory

Factor-Price Equalization and Income Distribution

2. The factor price equalization theorem

- It follows **directly** from the H–O **theorem** and holds only if the H–O theorem holds.
- It was **Paul Samuelson** (1970 Nobel prize in economics) who proved this factor–price equalization theorem.
- For this reason, it is sometimes referred to as the Heckscher–Ohlin–Samuelson theorem (H–O–S theorem, for short).

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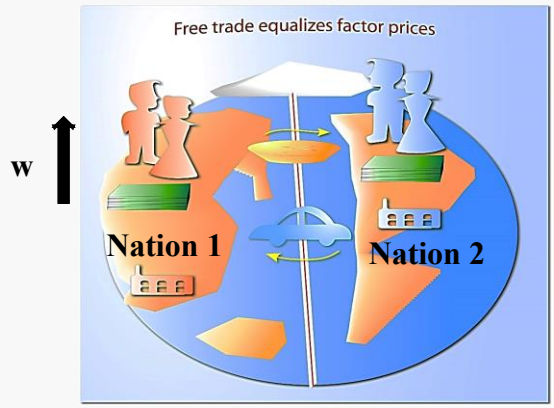
The factor price equalization theorem

International trade → **equalization** in → **relative** and **absolute returns**



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According to the H-O-S theorem,

- **International trade** will bring about **equalization** in the relative and absolute returns to **homogenous factors** across nations.
- In short, **wages** and other factor returns will be the **same** after **specialization** and **trade** has occurred.
- As such, **international trade** is a **substitute** for the **international** mobility of factors.

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- **International** trade causes **w** to **rise** in **Nation_**1 (the low-wage nation) and **fall** in **Nation_**2. (the high-wage nation), **reducing** the pre-trade difference in ***w*** between nations.

Similarly,

- Trade causes ***r*** to **fall** in **Nation_1** (the K-expensive nation) and **rise** in **Nation_2**. (the K-cheap nation), **reducing** the **pre-trade** difference in ***r*** between nations.

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International trade **(causes) redistribution** of income → **From** from the **relatively expensive** (scarce) factor → **To** the relatively cheap (abundant) factor.

We can show **graphically** that relative factor **prices** are **equalized** by **trade** in the **two nations** (if all the assumptions of h-O theory hold).

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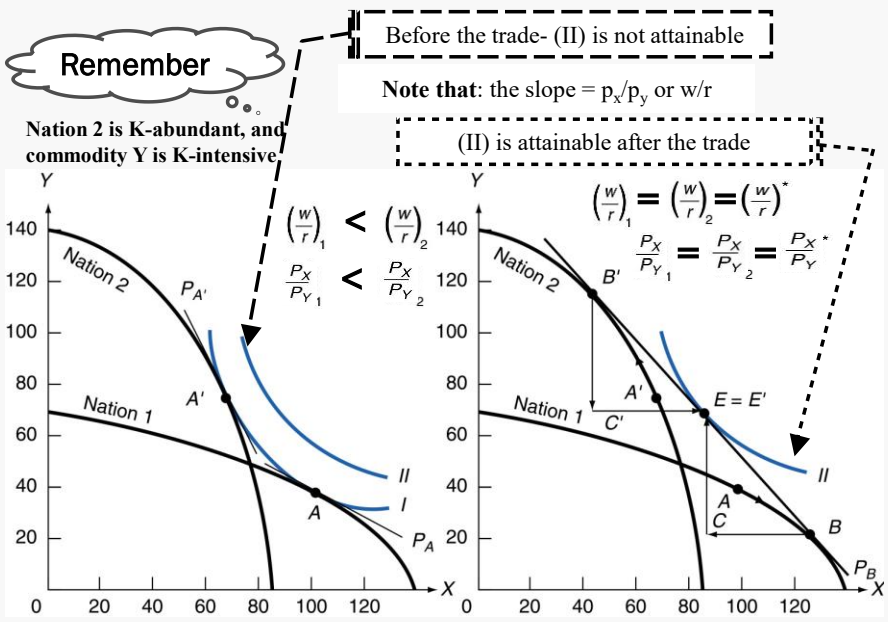

FIGURE 5-4 The Heckscher-Ohlin Model.

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Relative and Absolute Factor–Price Equalization

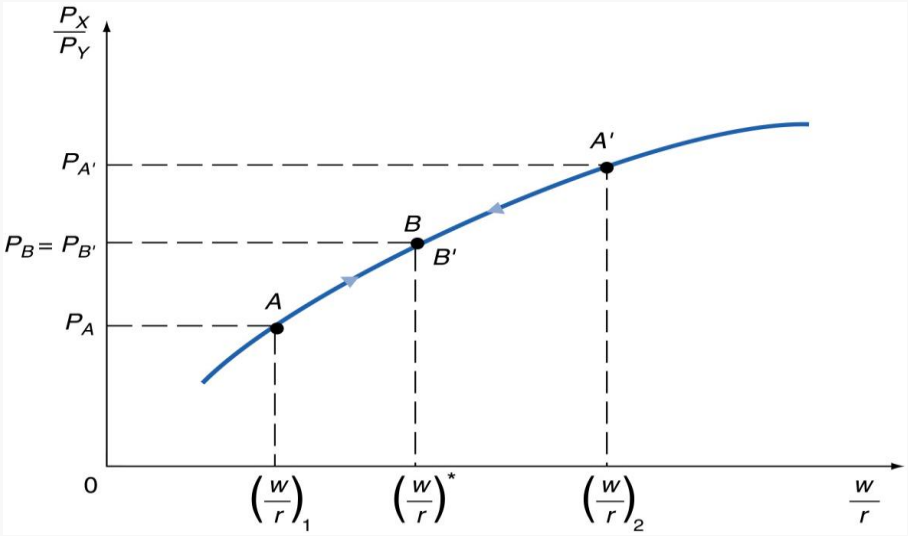

FIGURE 5-5 Relative Factor–Price Equalization.

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- The preceding analysis shows the **process** by which **relative**, not absolute, factor prices are **equalized**.

In addition to the previous conclusion, we find that:

- **Given the following assumptions that states:**
  - ✓ **Trade** equalizes **relative factor prices**,
  - ✓ And that **perfect competition** exists in all commodity and factor markets,
  - ✓ and that **both nations** use the **same technology** and face **constant returns** to **scale** in the production of both commodities,
- It follows that trade also equalizes the **absolute returns** to homogeneous factors.

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To Summarize

- **Trade** acts as a **substitute** for the **international mobility** of **factors** of production in its effect on factor prices.
- **With perfect mobility**, **labor** would **migrate** from the **low-wage** nation to the **high-wage** nation until wages in the two nations became equal. Similarly, capital would move from the **low-interest** to the **high-interest** nation until the rate of interest was equalized in the two nations.
- While **trade** operates on the **demand** for factors, factor **mobility** operates on the **supply** of **factors**.
- In either case, the result is **complete equalization** in the **absolute** returns of **homogeneous factors**

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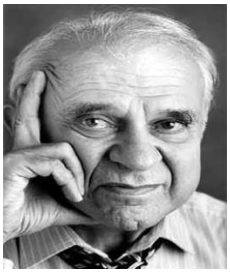
Empirical Tests of the Heckscher-Ohlin Model

The Leontief Paradox

The first empirical test of the Heckscher–Ohlin model was conducted by Leontief in **1951** using U.S. data for the year **1947**.



He Showed that the **pattern** of trade **did not** fit the **conclusions** of the H-O theorem.

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The Leontief Paradox

- Since the United States was the most **K-abundant** nation in the world, **Leontief expected** to find that it **exported** K-**intensive** commodities and **imported** L-intensive commodities.

Contrary, he found that:

- Exports in the U.S. **seemed** to be **labor intensive** when they should have been capital intensive.

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Source of the Leontief Paradox Bias

- Assumed a **two factor** world which required assumptions about what is **capital** and what is **labor**.
- Only **physical capital** included as **capital**, ignoring **human capital** (education, job training, skills).
- Most heavily **protected industries** in U.S. were **L-intensive**, this caused increased **domestic production** and reduced imports of **L-intensive** goods.

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The End

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