

Economics 101: International Trade

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Problem Set 2b

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7 External Economies and Export Promotion

There are external economies of scale in providing information technology (IT) services. By historic coincidence, all IT services for the world are currently provided in Silicon Valley.

- Depict world equilibrium in a price-quantity diagram when IT services are provided in Silicon Valley.
- Suppose that, at any quantity, India could provide IT services more efficiently. Depict India's supply curve.
- Why might India be able to supply IT services more efficiently than Silicon Valley at the same scale?
- How large a subsidy must the Indian government provide so that the first IT service provider will locate in India? Show this on your diagram.
- Does the world benefit from export promotion for Indian IT services?

8 International Labor Mobility

Home and Foreign produce output from labor and capital. In the absence of labor mobility, the equilibrium wage in Foreign exceeds the wage in Home.

- a. Graph the labor demand curves for Home and Foreign in a suitable diagram. Show that labor mobility decreases Home's total labor supply, while raising Home's wage. Graph the analogous effects for Foreign.
- b. Show how rents to capital owners change in Home and Foreign with migration.
- c. Does labor mobility increase overall welfare in Home? In Foreign?

9 International Labor Mobility and Barriers to Trade

Suppose that the United States and Mexico are accurately described by the Heckscher-Ohlin model, where the two factors of production are skilled labor and unskilled labor. The United States is skilled-labor abundant.

- a. Do unskilled Mexican workers have incentive to migrate to the United States in free-trade equilibrium? Why or why not?
- b. Now suppose there are barriers to trade between the United States and Mexico. Does your answer to part a change? If so, how?
- c. Now suppose that, in addition to the trade barriers, strong border enforcement eliminates Mexican immigration to the United States. What happens to the amount of interindustry trade between the two countries? Why?

10 Technology Shocks and Labor Mobility

Consider a world where there are two countries, Guatrarica and Costamala, which share an open border such that labor flows freely between the two countries. Total income (GDP) in each country is equal to the sum of wages and rents to capital owners that accrue from production. Costamala experiences a technology shock that increases the marginal productivity of labor.

- a. How does Costamala's *MPL* curve change to reflect this shock?
- b. What happens to the number of workers in each country?
- c. How do wages change in Costamala? In Guatrarica?
- d. What happens to output in each country?
- e. How does the return to capital change in each country?
- f. Suppose both countries experience the same technology shock. What happens to migration, wages, and output relative to the pre-shock equilibrium?

11 Biased Intertemporal Production Possibilities

For each of the following countries, explain whether you would expect it to have intertemporal production possibilities biased toward current consumption goods and or toward future consumption goods. Do you expect it to be a borrower or lender in international capital markets?

- a. A country that has only recently been opened for large-scale settlement and is receiving large inflows of immigrants (e. g., Argentina or Canada in the last century).
- b. A county that leads the world technologically but is seeing that lead eroded as other countries catch up (e. g., the United Kingdom in the late nineteenth century or the United States today).
- c. A country that has discovered large oil reserves that can be exploited with little new investment (e. g., Saudi Arabia).
- d. A country that has discovered large oil reserves that can be exploited only with massive investment (e. g., Norway, whose oil lies under the North Sea).
- e. A country that has developed the capacity for producing more-advanced industrial goods and is rapidly catching up to advanced countries (e. g., South Korea).

12 Foreign Direct Investment

Which of the following are foreign direct investment and which are not? Explain.

- a. A Saudi businessman buys \$10 million of IBM stock.
- b. The same businessman buys a New York apartment building.
- c. A French company merges with an American company; stockholders in the U.S. company exchange their stock for shares in the French firm.
- d. An Italian firm builds a plant in Russia and manages the plant as a contractor to the Russian government.

13 Vertical Direct Investment

A Home monopolist only sells on the domestic market and there are no transportation costs. The monopolist has three options to make or buy its product:

1. Produce at Home at marginal cost $MC = Q$
 2. Acquire a foreign subsidiary and produce abroad at marginal cost $MC^{FDI} = 0.5Q$
 3. Contract with a foreign supplier at marginal cost $MC^{OFF} = \sqrt{Q}$
- a. Briefly provide an example of the hold-up problem. Which of the three options suffers from it?
 - b. If the profit-maximizing quantity is low ($Q_M < 4$), which option does the monopolist choose? Why? If $Q_M > 4$ which option does the monopolist prefer?
 - c. For $Q_M, 4$, is there an advantage to internalization? What about for $Q_M > 4$?