Chapter 7
International Factor Movements

■ Chapter Organization

■ Key Themes

Trade in goods and services reflects one form of economic integration. This chapter introduces an additional aspect of integration, international factor movements, most notably labor and financial capital mobility across countries. Among the most important points emphasized in this chapter is that many of the same forces which trigger international trade in goods between countries, will, if permitted, trigger international flows of labor and assets. The chapter proceeds in three main sections. First, it presents a simple model of international labor mobility. Next, it analyzes intertemporal production and consumption decisions in the context of international borrowing and lending. Finally, it considers the role of multinational corporations and direct foreign investment in economic integration.

To demonstrate the forces behind international labor mobility, the chapter begins with a model which is quite similar to that presented in Chapter 3. In each country of the world, the real return to labor is equal to the marginal product of that labor. There are perfectly competitive markets in each of two countries which produce one good using two factors of production. Labor relocates until its marginal product is equalized across countries. While the redistribution of labor increases world output and provides overall gains, it also has important income distribution effects. Workers in the country that originally had higher wages are made worse off since wages fall with the inflow of additional workers; workers in the originally low wage country are made better off. The case study notes that while immigration into the United States is a highly contentious *political* issue, on purely economic grounds, the aggregate impact on the United States economy is probably relatively small.

While labor mobility influences the levels of current production between countries, the analysis of international capital mobility influences consumption and production trade-offs between current and future periods. An analysis of international capital movements really involves the consideration of intertemporal trade. Analogous to the way in which real wage differentials were used to motivate the international mobility of workers, the important point here is that differences in the real rate of interest (or real returns to invested capital) across countries motivates the international mobility of capital. These international factor movements provide gains to both borrowers and lenders.

When considering international capital mobility, instead of choosing between consumption of goods at any point in time, the analysis focuses on a one good world where the choice at a point in time is between future and present consumption. There is now a clear parallel to be drawn with the standard trade model developed in Chapter 5. Once international borrowing and lending are introduced, the relative price of future consumption is determined (which implies that the real interest rate is also determined) by the world relative demand for and supply of future consumption. An intertemporal production possibilities frontier replaces the PPF and the intertemporal price line replaces the relative price line. With these tools one can analyze the gains from intertemporal trade, from the size of borrowing and lending, and also consider the effects of taxes on capital transfers using techniques similar to those presented in previous chapters. (The appendix presents this model in greater detail.)

The final issue addressed in this chapter concerns the motives for and the effects of direct foreign investment and multinational firms. Direct foreign investment differs from the other types of capital transfers discussed above in that it involves the acquisition of control of a company. While the theory of multinational firms is not well developed, some of the key points of existing theory are that decisions concerning multinationals are based upon concerns involving (a) location and (b) internalization. Location decisions are based upon barriers to trade and transportation costs. Internalization decisions focus on vertical integration and technology transfers. Multinationals facilitate shifts in factors of production such that factor prices move in the direction which free trade would cause. There are many politically charged issues related to foreign direct investment including the associated income distributional effects and the fear of foreign investors having control over employment decisions or owning culturally important assets.

■ Key Terms

Define the following key terms:

1. Intertemporal Production Possibility Frontier _____

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2. Real Interest Rate _____

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3. Direct Foreign Investment _____

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4. Technology Transfer _____

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5. Vertical Integration _____

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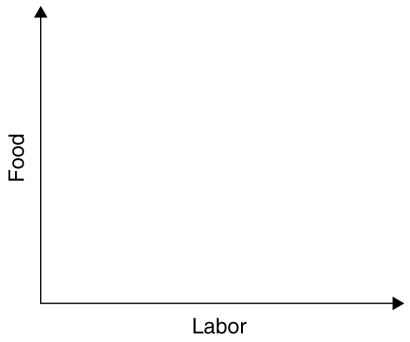
■ Review Questions

1. Assume that the Home country produces one good, food, using two factors of production, land and labor.
   a. Holding the supply of land fixed, what would the typical production function for food look like?



   b. Why is the production function shaped as it is?

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c. Suppose that the marginal productivity of labor is described by the table below.

Labor	Marginal Product
1	$12
2	10
3	8
4	6
5	4
6	2

What does the real wage of labor depend upon?

_____

_____

_____.

d. If a landlord employs 2 workers on his land, what will be his wage bill? How could you determine the rent earned by the landlord?

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e. How does the real wage, total wage bill, and rental bill change if 4 more workers are hired?

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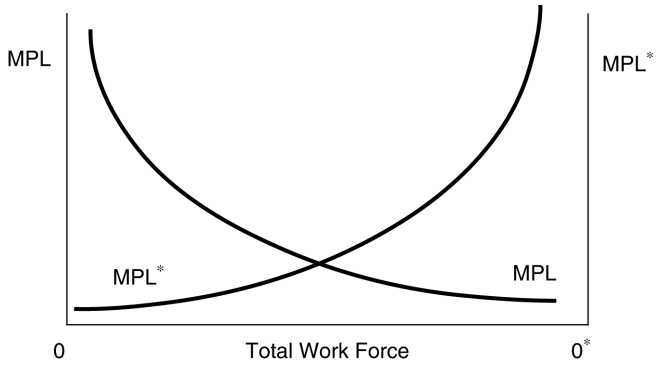
2. Suppose the world consists of two countries, Home and Foreign, each of which have two factors of production, land and labor, and produce only one good, food. Consequently, trade is limited to the movement of labor between the two countries. Assume that Home is land abundant and Foreign is labor abundant. The figure below describes the MPL of each work force. The distance 00^* represents the sum of the work forces of the two countries.



a. When would labor have an incentive to move between countries? Explain your answer.

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b. Given that Home has a smaller work force and hence higher MPL than Foreign, what would the initial allocation of labor look like in this figure?

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c. If labor is permitted to move across borders, what would be the equilibrium allocation of labor, wages and labor marginal product in each country?

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d. Who are the winners and losers when labor is permitted to move across countries?

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3. Consider the intertemporal production possibility frontier faced by most nations.

a. A common topic of discussion in the context of the debt crises is the comparison between the Latin American debtors, often described as having squandered their borrowings on luxury and consumption goods, and the nations of Southeast Asia, often described as having invested their money wisely in future capacity. What does this statement imply about the position of each region on the intertemporal frontier?

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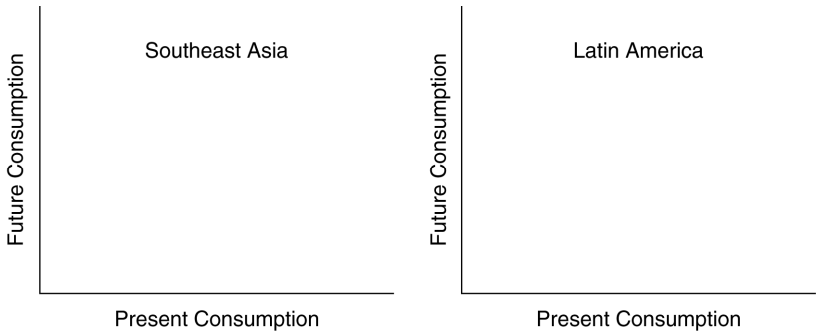
b. Given the bias of each of these regions toward present versus future output, draw realistic intertemporal PPFs for each region.



c. In which country would you expect the relative price of future consumption to be higher?

d. What type of "trade pattern" would these differences in "prices" suggest?

e. Can you think of any other reasons why Latin American countries might be charged higher interest rates for their credit than Asian nations?

4. Which of the following represents direct foreign investment?
   a. McDonald's corporation sets up a subsidiary in Vietnam.
   b. An Australian beverage firm Blass acquires Beringer Winery.
   c. Japanese investors purchase a large share in Rockefeller Center in New York City.
   d. The International Monetary Fund loans Argentina $5 billion in aid.
   e. JP Morgan sets up a line of credit for a Brazilian company.

5. How does direct investment differ from international borrowing and lending?

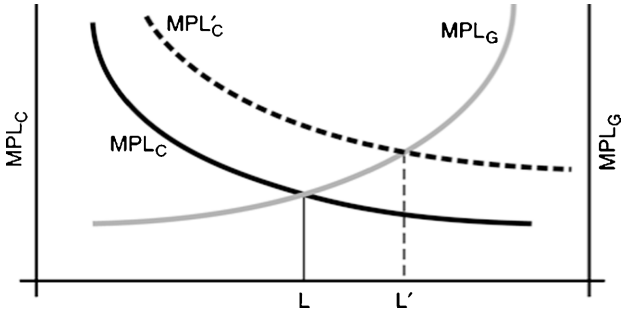
6. Why do corporations engage in foreign direct investment (and hence become multinational) instead of simply exporting their products?

■ Answers to Odd-Numbered Textbook Problems

1. The marginal product of labor in Home is 10 and in Foreign is 18. Wages are higher in Foreign, so workers migrate there to the point where the marginal product in both Home and Foreign is equated. This occurs when there are 7 workers in each country, and the marginal product of labor in each country is 14.

3. Direct foreign investment should reduce labor flows from Mexico into the United States because direct foreign investment causes a relative increase in the marginal productivity of labor in Mexico, which in turn causes an increase in Mexican wages, and reduces the incentive for emigration to the United States.

5.



   a. From the diagram we see that the number of workers in Guatarica declines and the number of workers in Costamala increases.
   b. Wages in Guatarica and Costamala both increase.
   c. GDP increases in Costamala but decreases in Guatarica.
   d. Capital rents decline in Guatarica, but the change is ambiguous in Costamala.

7. Foregoing current consumption allows one to obtain future consumption. There will be a bias towards future consumption if the amount of future consumption which can be obtained by foregoing current consumption is high. In terms of the analysis presented in this chapter, there is a bias towards future consumption if the real interest rate in the economy is higher in the absence of international borrowing or lending than the world real interest rate.
   a. The large inflows of immigrants means that the marginal product of capital will rise as more workers enter the country. The real interest rate will be high, and there will be a bias towards future consumption.

b. The marginal product of capital is low and thus there is a bias towards current consumption.

c. The direction of the bias depends upon the comparison of the increase in the price of oil and the world real interest rate. Leaving the oil in the ground provides a return of the increase in the price of oil whereas the world real interest rate may be higher or lower than this increase.

d. Foregoing current consumption allows exploitation of resources, and higher future consumption. Thus, there is a bias towards future consumption.

e. The return to capital is higher than in the rest of the world (since the country's rate of growth exceeds that of the rest of the world), and there is a bias toward future consumption.

9. A company might prefer to set up its own plant as opposed to license it for a number of reasons, many of which relate to the discussion of location and internalization discussed in the chapter. In many cases it might be less expensive to carry out transactions within a firm than between two independent firms. Often, if proprietary technology is involved or if the quality reputation of a firm is particularly crucial, a firm may prefer to keep control over production rather than outsource.