Chapter 4
Contemporary Models of Development and Underdevelopment

■ Key Concepts

The chapter retains the models of economic development that are more sophisticated versions of the older models from the previous edition including the Hausmann-Rodrick-Velasco growth diagnostic framework. These new models relax many assumptions such as diminishing returns, constant returns to scale, and perfect competition. Major topics in the chapter include:

- Coordination failure as an explanation for underdevelopment
- The existence and implication of multiple equilibria
- Kremer's O-Ring Theory
- Hausmann-Rodrick-Velsco growth diagnostic framework

Section 4.1 discusses underdevelopment as a coordination failure and introduces the concepts of coordination failure and multiple equilibria. Some interesting non-technical examples are presented.

The existence of multiple equilibria is illustrated graphically using an S-shaped curve to reflect the benefits of some action. Stable and unstable equilibria are discussed. It is noted that markets cannot be expected to arrive at the best equilibrium point, and furthermore, that some help from the government may be necessary.

Section 4.3 reviews the original "Big Push" model and describes an updated version of this model. The six key assumptions are explained, followed by a graphical explanation of how multiple equilibria are possible, depending on the wage level in the modern sector. A big push might be required to achieve the desired equilibrium point. Other cases in which a big push might be required are mentioned, and include the existence of intertemporal effects, urbanization effects, infrastructure effects, and training effects.

Section 4.5 introduces the Kremer's O-ring theory to explain the existence of poverty traps. The model is presented in some detail and its implications are discussed. This model assumes strong complementarities between the inputs.

Section 4.6 discusses the concept of economic development as a process of self-discovery regarding the discovery of one's comparative advantage and the associated market failures in this self-discovery process.

Section 4.7 presents the Hausmann-Rodrick-Velsco growth diagnostic framework and focuses on identifying a country's binding constraints on economic growth and alleviating the most pressing constraints. The HRV framework highlights that there is no "one size fits all" in development policy. Particular economic development strategies are most effective depending on the social and private rates of return on economic activities and the constraints facing the economy.

Box 4.1 discusses efforts in Ecuador to change the culture of arriving late for public events, business meetings etc. This is by way of illustrating the idea of multiple equilibria and Ecuador is seen as attempting to move from an inferior to a superior one. Box 4.2 presents another example of efforts to address coordination failure in health care delivery in Uganda. The end of the chapter includes a case study on the sources of economic growth in China during the last two decades. Several explanations for the exceptional Chinese economic performance are offered as a means to illustrating the different approaches to economic development discussed in this chapter. The authors conclude that while the record of Chinese economic performance has much to teach us, it would be almost impossible for other countries to emulate the Chinese example. In addition challenges faced by China are also revisited including the growing environmental crisis and product safety standards.

Sample Questions

Short Answer

1. What three factors distinguish models of endogenous growth from their neoclassical counterparts?

   Answer: There are increasing returns to capital investment (as opposed to decreasing), there are increasing returns to scale (as opposed to constant), and externality effects are included.

2. What is meant by the term *technological spillover?*

   Answer: Technological spillovers are present when investment generates external economies. The knowledge component of the firm's capital stock is like a public good that spills over to other firms in the economy.

3. Explain what is meant by the term *coordination failure* and provide an example.

   prisoner's dilemma

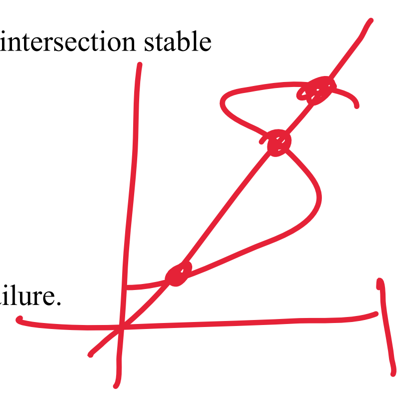
   Answer: This is a state of affairs in which agents are unable to coordinate their efforts, and hence end up in an equilibrium that leaves them worse off than they would be if they were able to coordinate. There are several examples offered in the text, or the students may come up with their own.

4. Suppose that a developing country devotes extensive resources towards improving the education and skill level of the labor force. How might this help the country avoid a coordination failure? Is this strategy likely to be successful? Why or why not?

   Answer: See page 166 for an answer to the first part. The answer to the second part is more open ended and will depend on lecture coverage.

5. Show in a diagram an S-curve and a 45-degree line. Are all three points of intersection stable equilibrium points? Explain.

   Answer: Explained in the text.



6. Explain how the S-curve reflects the typical nature of complementarities?

   Answer: See pages 168-171 for a good explanation.

7. Explain how the government can help the economy avoid a coordination failure.

   Answer: Discussed in the chapter.

8. Is a coordination failure a type of market failure? Explain.

   Answer: Yes, because an equilibrium can be reached that is not the true social equilibrium.

9. Explain the basic idea behind the Big Push model?

   Answer: What you expect for an answer depends on what you cover in lecture.

10. Explain how relatively high wages in the modern sector, as compared to the traditional sector, can lead to a coordination failure.

    Answer: See the section on the Big Push.

11. Is it possible for a super-entrepreneur to solve all of the coordination failure problems within a developing economy? Discuss.

    Answer: Open ended essay.

12. How can the O-ring theory help explain the existence of a low-level equilibrium that an economy may find itself in?

    Answer: Explained on page 191.

13. According to the HRV growth diagnostic framework why is there no "one size fits all" development policy?

    Answer: Explained on page 194.

14. Based on the HRV growth diagnostic framework and the case study in Box 4.2, what are the binding constraints faced by Brazil, El Salvador and the Dominican Republic and how can these constraints be overcome?

    Answer: Explained on page 196.

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \varepsilon$$

■ Multiple Choice

1. The Solow residual helps explain growth that derives from
   (a) increasing the size of the labor force.
   (b) increasing the size of the capital stock.
   (c) increasing the capital-labor ratio.
   (d) anything except increases in the size of the labor force or the capital stock.

   Answer: D

2. In endogenous growth models, it is assumed that
   (a) there are external economies from public or private investments.
   (b) there are diminishing marginal returns to capital.
   (c) growth is explained by forces outside the model.
   (d) the capital-labor ratio is constant.

   Answer: A

exogeneous
endogeneous

3. In contrast to the earlier neoclassical models of economic growth, in endogenous growth models, there is more emphasis on
   (a) human capital.
   (b) externalities.
   (c) increasing returns to scale.
   (d) all of the above.

Answer: D

4. The new growth theory attempts to explain
   (a) the rate of population growth within a country.
   (b) the rate of capital accumulation within a country.
   (c) the factors that determine the size of the Solow residual.
   (d) why there are diminishing returns to capital.

   Answer: C

5. The S-curve is used to illustrate
   (a) the typical path taken by the current account over time.
   (b) economic fluctuations in the economy.
   (c) the typical growth path of a developing economy.
   (d) the existence of multiple equilibria.

   Answer: D

6. The big-push theory argues that coordination failures may arise because of
   (a) pecuniary externalities.
   (b) technological externalities.
   (c) lack of human capital.
   (d) all of the above.

   Answer: A

7. The O-ring theory places emphasis on
   (a) education of the labor force.
   (b) skill complementarities.
   (c) purchases of machinery and equipment by firms.
   (d) none of the above.

   Answer: B