Chapter 3
Classic Theories of Economic Growth and Development

Key Concepts

The overall aim of the chapter is to provide a historical overview of the major development theories put forth during the past half century. The theories are presented in historical sequence. The key features of each theory are presented, along with a discussion of its major contributions and limitations. It is emphasized that, while the theories are often competing in nature, each offers valuable insights into the development process. The comparative case study of South Korea and Argentina at the end of this chapter emphasizes the theories. The chapter also retains the three appendices from the previous edition on Components of Economic Growth, the Solow neoclassical growth model and Endogenous growth theory.

The theories discussed in this chapter include:

- Rostow's theory.
- The Harrod-Domar model. (k variable has been changed to c in the capital-output ratio)
- The Lewis model.
- Chenery's patterns of development.
- Dependency theory.
- Neoclassical theory.

The chapter also emphasizes the basic concepts of economic growth theory, using the production possibilities frontier (Appendix 3.1). The basics of economic growth are covered with a discussion of the role played by capital accumulation, labor force growth, and technological progress. The discussion uses the production possibilities frontier for illustration purposes. Neutral, capital saving and labor saving technological progress are also compared.

The linear stages of growth models share the central role of savings and capital formation as their basic theme. The two examples given are W.W. Rostow's theory and the Harrod-Domar model. The text finds this approach limited since the structural and institutional conditions necessary to effectively utilize savings are often lacking, and the possibilities of development are often conditioned on international factors beyond a developing country's influence. It also draws a distinction between necessary and sufficient condition for economic growth to occur.

Structural change models stress the transformation from a traditional, agricultural economy to a modern, industrial economy. The Lewis model is carefully developed and analyzed as the key theoretical illustration of this approach. Though important for its emphasis on labor transfer between traditional agriculture and modern industry, it is criticized for assuming that real urban wages are constant and that migration and modern sector employment grow proportionately (with urban full employment). Chenery's findings of the patterns of development are presented as an illustration of an empirical approach, and include the shift in production from agriculture to industry and services, the accumulation of physical and human capital, the shift to nonfood consumption and investment, urbanization, and the growth of trade as a share of GNP. The text cautions that country variations are large. Three variants of the international dependence models of the 1970's are explained.

- The neocolonial dependence model emphasizes the unequal power relationships between the developed and less developed countries and blames underdevelopment on conscious or unconscious developed country exploitation, perpetuated by power inequality within each developing country, whereby a small ruling elite controls the means of production.
- Arguments that underdevelopment is fostered by well-meaning but inappropriate advice from aid agencies and other Western trained economists is termed the false-paradigm model.
- ("The Dualistic-Development Thesis") Singer's superior-inferior sectors model is cited as representative of the dualistic development thesis. Despite doubts that developed countries are intentionally keeping the developing countries in a dependent state, the fact that many key international economic decisions are made in the developed countries is acknowledged.

The chapter emphasizes the more recent theories, termed the neoclassical counterrevolution, that focus on the working of markets, inefficiency, and a lack of economic incentives within developing countries as being responsible for the lack of development. The text makes a distinction between three approaches:

- The free market approach argues that markets are efficient and any government intervention is counterproductive.
- The public choice, or new political economy, approach emphasizes inherent government failure and the self-interested behavior of public officials.
- The market-friendly approach recognizes market imperfections, and hence a limited but important role for government through nonselective interventions such as infrastructure, education, and providing a climate for private enterprise.

The Solow growth model is mentioned in the context of traditional neoclassical growth theory, and its implications for the determinants of economic growth are explored further in Appendix 3.2 to the chapter.

This section concludes by identifying three important contributions:

- Market price allocation is usually more efficient than intervention.
- State-owned enterprises have not fulfilled their promise and have been inefficient.
- Incentives must be stressed.

The neoclassical approach is criticized on the grounds that markets in developing countries, when they exist, are far from perfect and cannot be made perfect by any simple formula. Chapter 11 provides more details on market liberalization.

Endogenous growth theory and the Romer model are discussed in Appendix 3.3. Contemporary models of development are discussed in Chapter 4.

■ Lecture Suggestions

Having focused on (1) the point that economic development is more than just growth, (2) questions of measurement and the extent of development and (3) previewed the various topics to be covered during the course chapters 3 and 4 can be presented as attempts to address the first key similarity of developing countries, low levels of productivity. It might be best to begin class discussion of chapter 3 with the Solow model (as presented in section 3.5 and Appendix 3.2). The model can then be used in conjunction with Figure 2.3.You could ask students to explain what the Solow model would imply must be true, all else equal, about depreciation rates, workforce growth, and/or the savings ratio.
Having done this, you could draw attention to the highly aggregated structure of the Solow model and transition to the Lewis model as presented in section 3.3. As proof that Lewis provides insights that the highly aggregated Solow model cannot, the model can be illustrated by reference to the massive exodus from countryside to industry taking place in China during the past two decades.

Following this discussion of the Lewis model a discussion of how Solow provides the foundation for the neoclassical revisionists who argue that underdevelopment is an internally induced phenomenon can be used to transition to a class discussion of section 3.4 on dependency theory where in direct opposition to this view. It would be a great shame to not spend a considerable amount of time discussing the points raised by the authors on page 139 regarding how the two schools of thought represent two fundamentally different views of the causes of underdevelopment (external versus internal).
It will take two or three class periods to present the Solow model, the Lewis model, and to discuss dependency theory. A handout going through an arithmetic example of how the equilibrium capital per worker ratio is found and a simulation showing how equilibrium k determines y may be helpful. It would be a mistake to spend any more than, at most, the two or three class periods already mentioned. As needed, you can refer back to both models later in the term. For example, the Lewis model, because it highlights many of the important topics to come including migration, the use of capital intensive technologies, the existence of minimum wages, the lack of rural development, and rapid population growth can be reviewed and used again in chapters 6 (on population), chapter 7 (on migration) and chapter 9 (on agriculture).

There is much to be covered and how much time at this point should be devoted to Rostow's stages of growth or the Harrod-Domar model is a real question. Many students who have taken AP Human Geography will be familiar with Rostow's stages. Regardless, you can easily define the five stages and briefly discuss them. The Harrod-Domar model will take some time to develop although considerably less time having already presented the Solow model. You might consider reviewing Domar's 1946 *Econometrica* article where Domar's version of the H-D model was first presented. Domar's focus was not so much focused on the growth in output that investment generated but how investment had a dual role to play as it not only generated added capacity over time but also helped, via the expenditure multiplier, to generate the demand for that added capacity as well. A discussion of how much of development theory focuses on the supply side and how effective demand is also important might be one reason for considering Domar's version of Keynesian growth theory. This will take additional class time and require a review of the basic Keynesian macro model

Regardless, there is much covered in this chapter and its three appendices and so some hard choices must be made given the limits of time. An excellent way to draw things together is to examine the comparative case study of South Korea and Argentina that illustrate the four groups of theories for these two countries. .

■ Discussion Topics

- What type of technology is most appropriate for developing countries, capital intensive or labor intensive? What are the advantages and disadvantages to the developing country of borrowing technologies from developed countries as opposed to developing their own technologies?
- Why are complementary inputs to capital so important and often lacking?

■ Sample Questions

Short Answer

1. What are the main differences between the linear stages and international dependency models of development?

   Answer: Lack of development is generated internally with the linear stages model, and is attributed to a lack of savings and investment. It is generated externally in the dependency model, and is the result of actions taken by the developed countries.

2. Why is the debate between the international dependence and the neoclassical counter-revolution schools referred to as "finger pointing?"

   Answer: The text stresses that most members of the former school tend to be developing country economists, while most members of the latter school are developed country economists. The former blames underdevelopment on policies adopted by the developed countries, while the latter blames policies adopted by the developing countries.

3. Describe some of the advantages and disadvantages of each of the following schools: linear stages, structural change, dependence and neoclassical.

   Answer: Discussed in detail in the chapter and in the comparative case study at the end of the chapter.

4. Describe one important criticism of Rostow's stages of economic growth theory.

   Answer: The stages are only necessary and not sufficient conditions, savings is too aggregate a measure, the theory does not take into account the constraints of the international economic order, and there are counter-examples such as Argentina.

5. Dependency theory characterizes countries as being either in the center or on the periphery. Explain these two concepts. If this theory is correct, what are the implications for development strategy?

   Answer: Grading would depend on what is covered in lecture, but an answer might include inward looking trade policies, regional economic integration, collective action to increase bargaining power in relation to multinational corporations, as well as creation of state-owned enterprises.

6. Apply what you have learned about development and development theories so speculate on the following thought experiment: What if anything might be different about today's international economic order if the Spanish had colonized North America and the English had colonized South America?

   Answer: You may wish to note for students that there may be more than one correct answer. Careful reasoning and application of the material is necessary.

7. Does it follow from the false-paradigm model that World Bank economists are intentionally trying to keep developing countries from realizing genuine development? Why or why not?

Answer: It does not exclude this possibility, but suggests that this may be done unwittingly as a result of having to work within narrow policy parameters defined by the international economic system.

8. Patterns of development or structural change analysis stress internal change in a developing country's economic, industrial, and institutional structure. What are some of the most important changes?

   Answer: Discussed in the text.

9. Explain the concept of the "idea gap" in development economics.

   Answer: Developing countries lack knowledge, information, and skills for production and productivity in comparison to more developed countries.

10. Assume a closed economy, perfectly elastic labor supply, and linear technology. Suppose the incremental capital-output ratio (ICOR) is 3, the depreciation rate is 3%, and the gross savings rate is 10%. Use the Harrod-Domar growth equation to determine the rate of growth. What would the gross savings rate have to be to achieve 5% growth? Assuming a perfectly elastic labor supply, state one criticism of this model from an exogenous growth theory viewpoint and another criticism of this model from an endogenous growth theory viewpoint.

    Answer: This question may be asked later in the course or may be broken up into several questions. Whether to use it at this stage will depend on how much coverage you gave this topic in lecture, especially for the last part of the question and also whether the Harrod-Domar model was covered assuming a zero depreciation rate (as in the text) or a positive depreciation rate. Answer: growth rate of 0.003, that is 0.3%, and 0.24, or 24% savings rate. Exogenous: does not allow factor substitution; endogenous: does not address sources of productivity growth, or the savings decision.

11. What are the key assumptions of the Lewis model that give rise to its conclusions? How would the theory's conclusions differ if these assumptions do not hold?

    Answer: There may be a variety of answers depending on what was emphasized in the lecture. The answer should include the existence of surplus labor in the rural sector that guarantees an infinitely elastic labor supply in industry until the surplus is exhausted and a propensity to save by industrialists equal to one. The lack of rural surplus labor (and infinite labor supply) would imply that when industrialists reinvest their profits there is no guarantee that their surplus increases. A low marginal propensity to save by industrialists puts a break on the labor transfer process.

12. During the past decade, India has invested about 22% of its GDP while China's investment rate has been double that of India's. India's annual growth rate has been about 6% while that of China has been about 9%. What conclusions can you draw?

    Answer: Students are asked to relate investment rates to the rate of economic growth through the Harrod-Domar model. The students should calculate the ICOR for the two countries and note that India's ICOR (about 3.67) is lower than China's (about 5).

■ Multiple Choice

1. Which of the following is not a policy proposal of the neoclassical counter-revolution school?

   (a) promoting free trade
   (b) privatizing state-owned enterprises
   (c) welcoming multinational corporations
   (d) promoting trade unions

   Answer: D

2. Which of the following is an assumption of the Lewis two-sector model?
   (a) surplus labor in the rural sector
   (b) high unemployment in the urban modern sector
   (c) rising real urban wages
   (d) rising marginal product of labor in the rural sector

   Answer: A

3. The false paradigm model attributes lack of development to
   (a) inadequate attention to price incentives.
   (b) inappropriate advice from rich country economists.
   (c) low levels of savings and investment.
   (d) a lack of government regulation.

   Answer: B

4. Which of the following is a criticism of the neoclassical counter-revolution school's approach?
   (a) markets are not competitive in developing countries.
   (b) externalities are common in developing countries.
   (c) inequality may worsen when interventions are removed in developing countries.
   (d) all of the above.

   Answer: D

5. Which of the following approaches does not offer an international dependence explanation of underdevelopment?
   (a) the false paradigm model
   (b) the neoclassical counter-revolution
   (c) the dualistic development model
   (d) the neocolonial dependence model

   Answer: B

6. The neoclassical counter-revolution school supports
   (a) trade restrictions.
   (b) state-owned enterprises.
   (c) eliminating government regulations.
   (d) limitations on foreign investors.

   Answer: C

7. Implicit assumptions from which theories evolve are known as
   (a) a paradigm.
   (b) biases.
   (c) stylized facts.
   (d) normative economics.

   Answer: A

8. On which of the following does the neoclassical counter-revolution school most blame underdevelopment?
   (a) misguided government policies
   (b) relatively rigid cultural traditions
   (c) the legacy of colonialism
   (d) unfair trade practices on the part of developed countries

   Answer: A

9. According to the theory of structural patterns of development, which of the following tends to occur as a country develops?
   (a) a shift from agriculture to industry and services
   (b) an increase in the percentage of income spent on food
   (c) growth of the rural sector
   (d) a decline in trade as a share of GNP

   Answer: A

10. In the public choice (or new political economy) approach to development the emphasis is on
    (a) growth in the rural sector.
    (b) the self-interested behavior of public officials.
    (c) the dependence of LDCs on former colonial powers.
    (d) the inherent efficiency of developing country markets.

    Answer: B

11. A situation in which government intervention in the economy worsens the economic outcome is termed
    (a) neoclassical failure.
    (b) socialism.
    (c) government failure.
    (d) dependency revolution.

    Answer: C

12. According to the dependence theory, the developing world is known as the
    (a) backward areas.
    (b) periphery.
    (c) first world.
    (d) center.

    Answer: B

13. The underlying assumption of the Harrod-Domar growth model is that
    (a) the incremental capital-output ratio is given by $k = Y/K$.
    (b) growth is mainly determined by capital accumulation.
    (c) growth can be sustained only if agricultural productivity rises.
    (d) developing countries save too much and invest too little.

    Answer: B

14. The supply curve of labor to industry in the Lewis model is horizontal if there is surplus labor in agriculture. This condition persists as long as
    (a) the marginal product of labor is less than the average product of labor in agriculture.
    (b) the marginal product of labor in agriculture is less than the marginal product of labor in industry.
    (c) there are diminishing returns to labor in agriculture.
    (d) the marginal product of labor in agriculture is zero.

    Answer: D

15. International dependence theories distinguish between two groups of countries known as
    (a) rich-poor.
    (b) developed-developing.
    (c) center-periphery.
    (d) independent-dependent.

    Answer: C

16. Which of the following is an assumption of the Lewis two-sector model?
    (a) surplus labor in industry.
    (b) positive marginal product of labor in agriculture.
    (c) an upward sloping labor supply curve in industry.
    (d) none of the above.

    Answer: D

17. The market-friendly approach to development emphasizes
    (a) self-interested behavior of public officials in LDCs.
    (b) the dependence of LDCs on former colonial powers.
    (c) the inherent efficiency of markets in developing countries.
    (d) that markets in LDCs fail sometimes and selective interventions can promote economic development.

    Answer: D

18. The linear stages theory of economic growth fails to recognize that increased investment is
    (a) both a necessary and a sufficient condition.
    (b) a necessary but not a sufficient condition.
    (c) a sufficient but not a necessary condition.
    (d) neither a necessary nor a sufficient condition.

    Answer: B

19. Which of the following are components of economic growth
    (a) growth in labor force.
    (b) technological progress.
    (c) investment.
    (d) all of the above.

    Answer: D