

Development Theory and Growth Strategies

We can realistically envision a world without extreme poverty by the year 2025, because technological progress enables us to meet basic human needs on a global scale. — Jeffrey Sachs¹

People respond to incentives; all the rest is commentary. — Steven Landsburg²

THIS CHAPTER

- 1 Reviews how economic development and growth theories have evolved over time, including the role of institutions
- 2 Considers the interaction of technology and institutions
- 3 Considers the distinctive characteristics of agriculture as opposed to other sectors as the economy develops

The HISTORICAL EVOLUTION of DEVELOPMENT THEORY

In the previous chapter, we identified potential sources of economic growth and the inevitable structural transformation that accompanies economic development. We turn now to ideas and theories that attempt to explain how these sources of growth can be integrated into transformation processes that produce higher living standards. The search for appropriate theories of economic development has received economists' attention for two centuries. Different theories have led to different implications for what governments, private firms, or individuals might do to achieve their goals. One especially important contrast concerns

¹ Jeffrey Sachs, *The End of Poverty: Economic Possibilities for Our Time* (New York: Penguin, 2005), p. 347.

² Steven Landsburg, *The Armchair Economist: Economics and Everyday Life* (New York: Free Press, 1995).

the relative roles attributed to technology and productivity (reflected in the quotation above from Jeffrey Sachs), as opposed to institutions and incentives (reflected in the quotation above from Steven Landsburg). Emphasis has shifted over time, partly because of changes in constraints that limit economic growth, partly because of changing technological possibilities, and partly because of experiences with what has or has not worked. We consider in this chapter the historical progression of thinking among economists. Over time, a synthesis of ideas has emerged, with increased focus on the interaction between technology and institutions.

The Classical Period

The late eighteenth century is known as the *classical* period in economic thought, and the books written then remain widely debated today. One of the most enduring debates concerns the role of international trade. At the time, conventional wisdom held that a country's wealth, like the wealth of an individual, could be measured by the amount of its gold and other monetary assets. Exports were believed to be better than imports, and this *mercantilist view* provided an important argument for trade restrictions in Britain and elsewhere. **Adam Smith** challenged the mercantilist idea, arguing that freer trade in both directions would produce higher standards of living, especially if combined with a more competitive, equal-opportunity environment at home. Adam Smith's arguments were extended by **John Stuart Mill** and **David Ricardo**, and their ideas about the division of labor and specialization, comparative advantage, and trade remain key concepts in modern economics. Their theories about the value of freer trade were not easily accepted at the time, however, and many mercantilist ideas remain widespread today.

The eighteenth century was a period of both economic expansion and population growth. Many political leaders argued that having more people would help make each country richer. In the early nineteenth century this idea was challenged by **Thomas Malthus**, who argued that population was limited mainly by the food supply, and by a fixed supply of high-quality land. Ricardo agreed with Malthus and was pessimistic that growth could be sustained in the long run in a country because of the implications of population growth, given the law of diminishing returns. Their classical theory in its simplest form proceeds as follows. (1) There are two broad types of people: workers, whose only asset is their labor, and capitalists, who own land and capital. With a certain amount of labor, just enough wages are paid to cover workers' subsistence. (2) If a new invention or some other favorable event creates an increase in production, a surplus above that necessary to pay

the subsistence wage is generated, which is accumulated by capitalists. (3) Such accumulation increases the demand for labor, and, with a given population, in the short run wages tend to rise. (4) As wages exceed the level of subsistence, population grows, generating an increased demand for food. (5) But, if high quality land is essentially fixed, the rise in food demand is met by bringing lower-quality land into production. The price of food rises to cover the higher cost of production on lower-quality land. (6) The effects of increased population (supply of labor) and higher-priced food drive the real wage, or the wage paid divided by food prices, back to the subsistence level, and the rate of population growth declines.

Thus, in the classical model, diminishing returns to increments of labor applied to a relatively fixed supply of high-quality land, and higher costs of production on lower-quality land, represent constraints to growth, so that living standards remain at subsistence levels. If technological progress occurs, the situation may change temporarily but not permanently. Ricardo's policy prescription was for Great Britain to remove its corn laws, which would free up trade, and allow food imports to keep the price of food from rising and choking off industrial growth.

History has shown that the classical model underestimates the role of technological progress. It also fails to consider factors that tend to lower birth rates as economic growth occurs. It oversimplifies the forces influencing wages and the complexity of the sharing or distribution objective found in many societies. Nevertheless, as we will see below, certain aspects of the classical model had a significant influence on subsequent theories of economic development, especially its emphasis on diminishing returns and its implications for trade.

Growth Stages: From Marx to Rostow

By the late nineteenth century, there had been enough economic development in Europe and North America for observers to notice a clear shift in the mix of activities. Many economists focused on patterns of such change, arguing that economies moved through sequential *growth stages*. While the suggested sets of stages were based on different principles, most growth stage theories attempted to emphasize that economic development involves a structural (economic and/or social) transformation of a country.

In the late nineteenth century, **Frederick List**, a German economic historian, developed a set of stages based on shifts in occupational distribution. His five stages were savage, pastoralism, agriculture,

agriculture-manufacturing, and agriculture-manufacturing-commerce. Concurrently, another German, **Karl Marx**, visualized five stages of development based on changes in technology, property rights, and ideology. His steps were primitive communism, ancient slavery, medieval feudalism, industrial capitalism, socialism, and communism. He felt that class struggles drive countries through these stages. One class possesses the land, capital, and authority over labor while the other possesses only labor. Class struggles occur because economic institutions allow the exploitation of labor. Prior to reaching the final stage, labor is never paid its full value. For example, if wages rise in the fourth stage (industrial capitalism), labor is replaced by machines, thereby creating a “reserve army of the unemployed” that brings wages back down. Because capitalists derive their profits from labor, more machines and fewer laborers mean lower profit rates. The pressure of lower profits leads to more exploitation, more unemployment, mass misery, and eventually revolution. Labor then gains control over all means of production under communism.

A different kind of thinking about growth stages emerged in the early twentieth century, when **Alan Fisher** and later **Colin Clark** developed a theory in which the transition from agriculture to manufacturing and services occurs not because of government intervention, but because of increases in output per worker, and advances in science and technology. Another growth stage theorist, **Walt W. Rostow**, argued in the 1950s that these changes were closely related to the rate of growth in per-capita incomes, which would experience a “take off” into sustained growth once enough capital had been accumulated. Rostow believed, however, that an eventual slowdown in the rate of growth would be the normal path for any sub-sector in an economy, due to declining price and income elasticities of demand for the goods produced by a sector. In this view, the secret to growth is to find and support emerging or “leading sectors”.

Thinking of the economy in terms of distinct sectors has some advantages, but the idea of distinct growth stages fell out of favor in the 1950s. Countries experienced a wide variety of growth paths during the 1950s and 1960s, and some experienced sharp reversals of fortune. Most economists no longer thought of economic growth as a predetermined sequence of stages, which had relatively little prescriptive power, but instead focused on the gradual accumulation of productive resources, particularly capital.

Capital Accumulation: From the “Financing Gap” to Technology-Driven Growth

The first widely-used theory of growth based on capital accumulation was developed by **Roy Harrod** and **Evsey Domar**. They used mathematical formulas to show how the rate of output growth would be limited by the level of investment and hence the national savings rate, multiplied by the productivity of those investments. The Harrod-Domar model was simple and elegant, and yet could still be fitted to real data using the observed capital/output ratio of the economy to project the productivity of additional investment.

In the 1960s, when the Harrod-Domar approach was applied to low-income countries, it was recognized that national savings was not the only possible source of capital. Borrowing from abroad could add to national savings, permitting an even faster growth of the capital stock. Such “two-gap” models, popularized by **Hollis Chenery** and others, implied that foreign aid to fill a “financing gap” could accelerate growth significantly, as each dollar of aid would have the same productivity as a dollar of savings.

The Harrod-Domar-Chenery approach focused primarily on the rate of national savings or borrowing from abroad, with less attention to the efficiency with which additional funds were spent. In the mid-1950s, **Robert Solow** worked out the mathematics of a model in which additional capital earns diminishing returns. In that case, the long-run rate of growth of per-capita income is driven by the rate of technological progress, not savings as such. Solow did not explain how technological progress is generated: he treated new technology (and hence the growth rate of the economy) as exogenous to (outside of) his model. Much later, a new generation of economists would make growth models in which people choose how much to invest in new technologies, so that technical change and hence the growth rate is endogenous, explained by property rights and government policies. Those models are described in the final section of this chapter.

Dual-Economy Models: “Surplus Labor” and Unemployment

The first mathematical models of growth used a single sector to describe the whole economy, and focused on capital accumulation. Soon thereafter, economists produced models with two sectors, in which growth and poverty alleviation depend crucially on the allocation of labor. The most influential *dual-economy* (or two-sector) model was developed by **W. Arthur Lewis**. His model was subsequently modified by **John Fei** and **Gustav Ranis**, **Dale Jorgenson**, and others.

A simplified version of the dual-economy model can be illustrated using the total and marginal product curves shown in Figure 6-1. This version of the model is designed to relate most closely to the situation in large labor-surplus but relatively natural-resource-poor countries in which domestic (as opposed to international) characteristics of the economy dominate. The model could potentially represent (albeit roughly) the situation in a country such as India or China.

The model includes several sources of growth discussed in Chapter 5, and illustrates the potential for using “surplus” labor and technological progress in agriculture to achieve economic growth. It assumes the existence of a large population in the traditional agricultural sector, for which the marginal product of labor is below the wage rate, which is determined by society’s rules about sharing output. There is disguised unemployment in the sense that if the people who appear to be working are removed, production will not drop or will drop very little. In other words, labor is applied in the agricultural sector up to the point where it is redundant in the upper left-hand graph in Figure 6-1; or to the right of N_3 or N_2 in the lower left-hand graph.

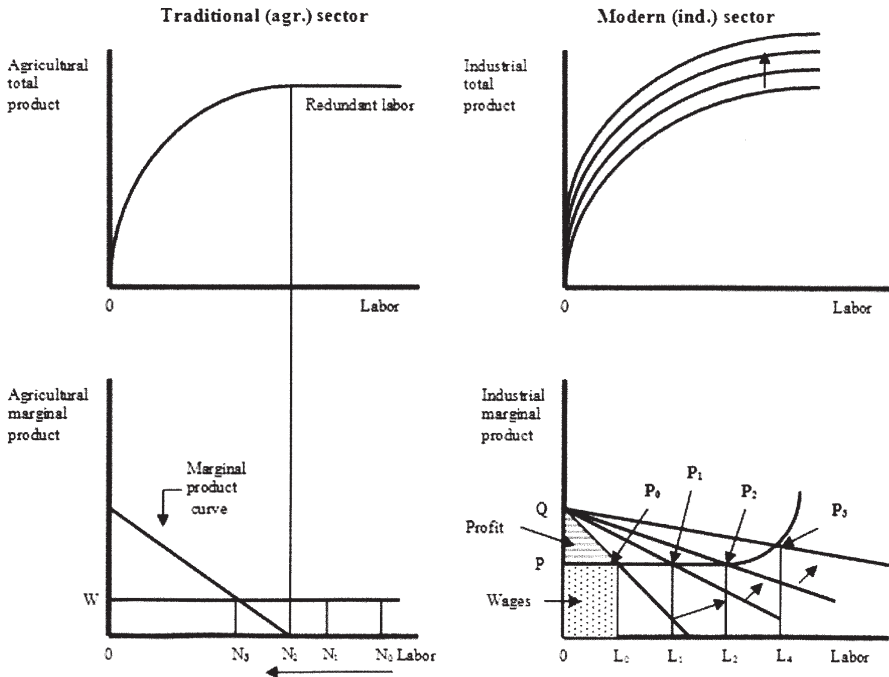


Figure 6-1. Graphical representation of labor-surplus dual-economy model.

The wage rate in agriculture (W) is assumed to initially approximate the average productivity of labor in that sector (and eventually be determined in an inter-sector labor market). Land is fixed. Wages in the modern industrial sector are assumed to be higher than in the agricultural sector in order to attract labor from the agricultural sector. Firms in the modern sector hire labor up to the point at which the marginal product of labor equals the wage rate. Initially this is the point P_0 in the lower right-hand graph of Figure 6-1. Labor in industry is hired up to L_0 at the wage P .

In a “labor surplus” economy, the development process can be driven by transfer of labor from agriculture to the industrial sector, where it creates a profit that can be used for further economic growth. In the lower right-hand graph in Figure 6-1, total wages initially paid to labor in the industrial sector equal the area PP_0L_0O while profits equal the triangular area QP_0P . This profit, or part of it, is reinvested in capital items such as equipment, machinery, and buildings — items that make labor more productive. This greater productivity shifts the total product of labor in industry upward (see the upper right-hand graph of Figure 6-1) and the corresponding marginal product of labor (demand for labor) out to the right (see the lower right-hand graph of Figure 6-1). This demand for labor is met by drawing more labor out of agriculture.

In the model, a shift of labor from agriculture to industry continues to drive economic growth as long as the marginal cost of labor remains constant (represented by the horizontal line between P_0 and P_2 in the lower right-hand graph in Fig. 6-1). Once the supply of “surplus” labor from the traditional farm sector has been absorbed, the marginal cost of labor supplied to the modern sector turns upward (as it does to the right of L_2), the growth in demand for labor by industry slows, because fewer profits are available for reinvestment.

Why might the wage rate in industry increase and the demand for labor stop shifting out? First, surplus labor in agriculture might be used up so industry would have to offer higher wages to compete with agriculture for labor. Second, food production will start to decline if fewer than N_2 workers are employed in the agricultural sector. If population is increasing and incomes in the industrial sector are rising, then the demand for food will rise. Unless an increase in agricultural production occurs, agricultural prices eventually rise relative to industrial prices. This rise, in turn, raises the wage at which employers are able to obtain workers from agriculture for industry. The major implication is that economic growth becomes constrained unless there is technological improvement in both sectors.

The labor-surplus dual-economy model is a highly simplified view of the situation in countries with underemployed people. It has several limitations. First, evidence indicates that few if any situations exist where the marginal product of labor in agriculture is close to zero. Few countries have excess labor in agriculture. However, Jorgenson and others have pointed out that the presence of an active labor market in which the two sectors compete for labor can generate the same implication of the need for technological improvement in both sectors. Second, the model ignores the possibility of international trade, although it could be added without much difficulty. Third, and more important, the model fails to recognize the cost of resources used in conducting research and educating farmers to produce more and facilitate adoption of new technologies. The issue of how to endogenize (build in the process for self generating) the development of new technologies in a model of economic development was not addressed. Despite these limitations, it is a useful means of thinking about linkages between multiple economic sectors in a developing-country context.

Dependency Theory and Trade Protectionism

In the 1950s and 1960s, a number of theorists saw international trade and investment as a cause rather than a remedy for poverty in low-income regions, arguing that trade made the poor increasingly dependent and weak. **Immanuel Wallerstein**, for example, popularized the idea that prosperity of the “center” was linked to the impoverishment of the “periphery”. *Dependency theory* encompassed a range of arguments, generally leading to the conclusion that the governments of low-income countries should protect their local economies from foreign trade and investment, pursuing self-sufficiency as a form of political and economic independence.

A few dependency theorists, notably **Andre Gunder Frank**, adopted a *Marxist* perspective, arguing that the income of wealthy countries was derived from the output of poor countries. In this view, wealthy countries use military and political power to limit poor countries’ options, and thereby extract income that would otherwise belong to the poor. Some expropriation of this type clearly has occurred, in the colonial period and through other kinds of intervention, but most economic historians believe the output of poor countries can explain only a very small fraction of the wealth we see in industrialized countries.

A more widely-accepted set of ideas come from *structuralists* such as **Raul Prebisch** and **Hans Singer**, who argued that market forces limit the degree to which poor countries can develop through trade with richer countries. In this view, the terms of trade (the ratio of prices of

exports to prices of imports) tend to turn against developing countries over time, because they produce mainly primary products (agricultural and mineral) for which prices decline over time relative to the manufactured products they import. This deterioration in the *terms of trade* is believed to be generated by (1) low price and income elasticities of demand for primary products compared to manufactured products, (2) slow productivity growth in primary product production, and (3) monopolistic elements in the production of products imported by developing countries while primary products are produced competitively. To the extent that demand for poor countries' exports is price- and income-inelastic, then output expansion in the poor countries or in the world as a whole does indeed worsen poor countries' terms of trade, although again this influence can explain only a fraction of the income gap between rich and poor countries.

The trade restrictions favored by dependency theorists could also be justified by much older arguments in favor of government intervention to protect domestic markets from foreign competitors, notably the idea that *infant industries* can get started only if they are temporarily protected from foreign competition, and the idea that a *big push* to expand many industries simultaneously could help countries take advantage of synergies between them. During the 1970s and 1980s, however, it became increasingly clear that industrialization aimed at replacing imports for the domestic market could generate only a temporary burst of economic growth. Export-oriented industrialization proved to be more successful.

Contemporary Growth Theory: Technological Innovation and Public Institutions

By the mid-1980s, enough statistics on national income across countries were available for researchers to test the basic predictions of the standard growth model, posited thirty years earlier by **Robert Solow**. Results were surprising, and sparked a burst of academic research on economic growth and poverty reduction that continues today.

The Solow model predicted that poor countries would eventually catch up to rich ones, because of diminishing returns to capital. Statistical tests showed that this type of "convergence" did indeed occur, but only among sub-groups of countries. The highest-income group of countries continued to grow with no sign of diminishing returns, while some poorer countries grew even faster to catch up, and other poor countries just stayed poor.

Economic theorists attempted to explain these results. **Robert Lucas**, **Paul Romer**, and others showed how rich countries' growth could

be explained by a flow of new technologies, which help overcome diminishing returns. Their models hinge on the idea that new knowledge is a public good: once discovered, it can be used repeatedly in new technologies without being used up, and so technological innovations can accumulate without limit. But not all countries are able to generate or use these innovations.

What determines whether a country develops and applies appropriate new techniques? Knowledge itself is a public good, whose development and dissemination depends on public education and government-funded research. Individuals and private firms will never have enough incentive to invest as much in these resources as they are worth to society as a whole. But knowledge is economically valuable only when embodied in goods and services that meet consumer needs. Successful countries promote both public knowledge and also private enterprise, encouraging new enterprises with new technologies.

A key question is the degree to which innovators should be given monopoly rights over the sale of new products, through patents and other forms of intellectual property rights. Government-enforced protection from imitators is a double-edged sword: it makes each invention more profitable than it otherwise would be, but it does so by restricting its use! The patent policies that are most economically successful limit the scope and duration of protection, to be just enough to reward past innovators, while encouraging others to make use of the innovation. The British and U.S. patent systems were early pioneers in this regard, offering protection only to a specific product (to allow the entry of other, somewhat similar products), and limiting the time period of protection (to hasten the entry of other firms), while allowing competitors to challenge others' patents in a free and fair judicial system.

The interplay among technology, natural resources, human capital, and institutions remains an active area of research today. It is clear that other sources of growth are only effective if they operate in an institutional environment conducive to growth. The importance of the rule of law, enforceable property rights and contracts, absence of serious government distortions to markets, and relatively low levels of corruption are all important to economic development. The high costs of transacting also seem to prevent many countries from realizing improved levels of living. Improved information flows may help reduce the cost of transacting and make it more difficult for inefficient institutional and political structures to survive. We return to this issue of how to reduce transactions costs in Chapter 11.

FROM THEORY to ALTERNATIVE STRATEGIES

The concept of a *development strategy* implies a long-term road map that encompasses a series of fundamental decisions with respect to sector emphasis (agriculture versus industry), factor use (capital-led versus employment-led growth), international market orientation (inward versus outward), concern for growth versus distribution, and the roles of the private versus the public sector. Many of these decisions present conflicting choices that countries must make when designing their development strategies. The appropriate path for a particular country depends on its starting characteristics and global economic conditions.

Industry versus Agriculture

The question of whether to channel public and private investments into the agricultural or industrial sectors has been asked by policymakers for many decades. In most countries, agriculture is initially the dominant sector containing most of society's resources, but it contains the poorest and least politically influential people and so is often relatively neglected by government. Investments in agriculture are slowed by this weak political base, but other factors inhibit such investments. Impacts of agricultural productivity growth can be difficult to observe. As seen in Chapter 5, an increase in farm output generally leads to an increase in *other* activity, as farmers invest their resources in non-farm enterprises, and a lower cost of food helps non-farmers buy more of other things. So agriculture appears to be a slow-growth sector, even as it drives the expansion of other sectors. Politicians generally want to please urban constituents and often adopt policies to lower food prices. Lower food prices, in turn, reduce the profitability of investments in agriculture. There is usually much stronger political pressure for urban investments, and for policies that produce immediate, highly visible results.

The degree to which governments support agriculture as opposed to industry also depends on world market conditions: in the late 1960s and early 1970s, the threat of food scarcity associated with Asian population growth led many countries to invest heavily in irrigation and crop breeding to raise agricultural productivity, especially within Asia. During the 1980s and 1990s, the payoff from those investments produced a relative abundance of food on world markets, which reduced demand for further investment, even in regions such as Africa where food was increasingly scarce. During the current decade, agricultural markets have tightened again, due in part to those lower investments in agriculture in the 1980s and 1990s, and in part due to growth in use

of agricultural products for bio-fuels. The resulting higher prices for food once again appear to be stimulating some public investments in agriculture. In addition, private companies and private foundations such as the Gates Foundation have responded with increased investments in agriculture.

Inward- versus Outward-Led Growth

A persistent debate in the development literature has centered on the merits of an inward (import-substitution, self-sufficiency)–oriented strategy versus an outward (international trade, export promotion)–oriented strategy. Some observers have argued that developing countries are hurt by trade because they produce mainly primary products for which prices decline over time relative to the manufactured products they import. In addition, the colonial heritage in several developing countries included the export of certain primary products to developed countries with the profits going to foreign companies or to small groups of elites in the developing countries. Proponents of an inward strategy have also argued that countries following an inward-oriented path suffer less from debt crises and protectionist policies in the developed countries.

The impact of inward-directed strategies depends largely on the policies used to implement the strategy. Policies such as overvalued exchange rates, import restrictions, and explicit export taxes, which discourage exports and stimulate substitution of domestically produced goods for imports, have generally been shown to be counterproductive. They lead to distortions in resource prices, create monopoly profits, high government budget deficits and, usually, inflationary pressures. Policies supporting production of foods for internal consumption via research, infrastructure, and other public investments can be called inward-oriented, yet are not associated with some of the distortions caused by measures typically used to promote import-substitution.

Proponents of outward strategies argue that by removing the bias against exports, countries can achieve significant economic benefits from specialization and comparative advantage, from the import of products manufactured by highly capital-intensive industries abroad, and from the stimulus to employment provided by reduced pressures to concentrate capital in a limited number of capital-intensive industries. Economies of scale can be achieved due to enlargement of the effective market size. Some countries that have been successful at promoting export-led growth have, in fact, also relied on government interventions in exporting industries.



Many developing countries have a comparative advantage in exporting sugar, but face protectionist sugar policies in developed countries.

Theoretical arguments support either position. However, over the past 30 years, empirical evidence is weighted in favor of an outward-looking strategy that biases the economy neither for nor against exports. Evidence shows that policies often used to create an inward-looking strategy can lead to inefficiency. The economic efficiencies sacrificed in attempts to insulate a country from world market forces can be significant. Open markets expose a country to the effects of protectionist policies and interest rate fluctuations abroad. However they also offer insurance against risks originating at home.

Outward-looking strategies will be most successful if international markets are truly competitive and if access to markets is unrestricted. International trade agreements, covered later in this book, have moved the world markets toward more transparency and fewer trade restrictions. Many restrictions, however, still exist.

Growth versus Equity

The persistence of abject poverty even in countries experiencing rapid rates of economic growth has spurred a debate over the appropriate focus of development efforts. Most of us accept the goal of lifting as many people as possible out of extreme poverty, but there are many competing ideas on how to do it. Essentially three general approaches have been suggested, sometimes in combination. The first is to make direct transfer payments (money, goods, services) from the more well-to-do to the poor. The second is for the country to concentrate entirely

on growth as a goal, no matter who receives the income, in the expectation that part of the benefits will trickle down to the poor. A third approach is to direct specific efforts toward raising the productivity of the poorest segments of society during the growth process.

Direct transfer payments are difficult for developing countries to afford unless obtained as grants from international sources. The most important role of direct transfers can occur (1) during short-run weather-induced famines, unusually high food price spikes, or other emergency situations and (2) among the perpetually disadvantaged elderly, orphaned, and handicapped.

The majority of the poor in most developing countries, however, are the unemployed and underemployed rural landless. Even unskilled urban workers are usually better off than the rural landless. The landless live close to the margin and may fall below it during bad crop years. Therefore the important question is whether the benefits of growth will trickle down to the poor or whether development efforts must be directed at the poor.

During rapid growth, some benefits are captured by the poor. However, the income distribution often will worsen (become more unequal) during initial stages of growth unless specific efforts are directed toward incorporating the poor into productive activities. The poor can be bypassed by growth-oriented investments especially when possession of assets, particularly land and education, is skewed. Countries that begin with a more equal distribution of assets tend to experience growth with equity more than others. Growth can actually stagnate under conditions of extremely inequitable asset distribution. Growth itself can be affected by the wider spread of assets, institutional changes, and employment-creating activities.

The mere widening of the income distribution as development occurs is not as much a concern as what happens to income *levels* of the poor. Neither the level nor the distribution of income will be improved for the poor in most countries unless they have improved access to assets such as land and education which can make their primary asset, labor, more productive during the growth process. Development strategies that increase employment opportunities and promote the supply of wage goods (mainly food) will have the best chances for reducing poverty under virtually all circumstances.

Private versus Public

The appropriate mix of public and private activity varies by country, and by sector. Some services are almost always best funded through the public sector, such as an independent judicial system and roads.

These are *public goods*, whose provision is limited by *free rider* problems: people can benefit without paying, so government intervention is needed to force everyone to pay a share of their costs. Other activities can be funded voluntarily through private activity, but must be regulated by the public sector or they will be provided inefficiently.

Activities that are typically regulated by government, if not provided directly in the public sector, include *natural monopolies* such as water supplies, or services with *positive externalities* such as sanitation and health. Too little of these services would be provided by private firms if they were not regulated in some way by government. On the other hand, unregulated firms would provide too many goods that generate *negative externalities* such as pollution.

The outcome of interactions between the public and private sectors is often determined not by who does what, but by the degree of transparency and accountability in what they do. Private firms that can be held accountable to their investors and customers tend to work efficiently, as do public institutions that are accountable to voters and taxpayers. Either kind of institution can become corrupt and inefficient, in the absence of appropriate checks and balances, within and between each sector.

A useful way to explain the degree of accountability in the economy, over both public and private institutions, is through the relative size of *transaction costs* in the market or political system. Lower transaction costs typically make either system more accountable to a larger number of people. Easier transactions between customers and suppliers make the market more efficient, and easier transactions between citizens and their government usually make the public sector more efficient.

A range of institutional arrangements can keep transactions costs low and sustain checks and balances over time. Private markets must be regulated by public institutions, and the public sector must be kept accountable to the private individuals. Otherwise, even if new technologies are available, growth can be hindered by an inefficient or inequitable institutional structure.

Many examples of insufficient institutional structures exist in the world. In developing countries, these inefficient or insufficient institutions constrain economic growth continually and contribute to short-term economic crises. In developed countries they also can cause periodic problems, such as the recent financial crisis that was facilitated by lax financial regulations with limited oversight. Achieving the appropriate balance of institutional efficiency and accountability is difficult but critical for economic development.

SUMMARY

The classical model of economic growth stressed the importance of diminishing returns to labor as a constraint to growth, and the mid-twentieth-century Solow model stressed diminishing returns to capital. Contemporary experience, however, shows how countries with institutions that reward innovation can sustain rapid economic growth far beyond these constraints.

Growth-stage theories attempted to categorize the growth process into successive stages through which countries must pass as they develop. Dual-economy models focused on movement of labor out of agriculture and how the agricultural transformation can be smoothed by balanced growth in both sectors. Dependency theorists argued that developing countries became increasingly exploited as they become more integrated into world markets, and so should withdraw into self-sufficiency. Each of these classes of theories provides some insights into the development process, but does not provide a comprehensive theory of growth and development.

Contemporary development strategies recognize the role of agriculture as an engine of economic growth. Agricultural growth frees up labor and other resources that can be used in other sectors. It helps alleviate poverty by improving food availability and stimulating broad-based employment growth. Most economists agree that international trade should be kept relatively open, and that governments should provide public goods, promote innovation, regulate monopolies, and make markets more efficient. The exact development strategy for each country depends on its resource mix, stage of development, and institutional structure. New institutional arrangements will have to be designed in many countries to enhance information flows and lower transactions costs, to make markets more efficient and promote accountability in the public and private sectors.

IMPORTANT TERMS and CONCEPTS

Accountability	Import substitution
Capital-led growth	Income distribution
Center and periphery	Institutional arrangements
Classical model	Integrated rural development
Comparative advantage	Labor-surplus dual-economy
Dependency theory	Open versus closed economy
Employment-led growth	Public good
Export-led growth	Stage of development
Growth stage theory	Terms of trade
Growth versus equity	Transactions costs
Harrod-Domar model	

Looking Ahead

In this chapter, the roles of agriculture in economic development were mentioned along with the need for countries to have development strategies. In much of the rest of the book we will be examining how to develop the agricultural sector itself. Before we do that, however, it is important to discuss the nature of existing agricultural systems in developing countries. In the next chapter, we discuss the characteristics of traditional agriculture and agricultural systems.

QUESTIONS for DISCUSSION

- 1 What is the major factor that is hypothesized to constrain economic growth in the classical model?
- 2 What are the major features of the labor-surplus dual-economy model and what are its primary weaknesses?
- 3 Why might the wage rate eventually increase in the industrial sector in the labor-surplus dual-economy model?
- 4 What implications does technological change in the agricultural sector have in the labor-surplus dual-economy model?
- 5 What is the distinguishing feature of dependency theories? What are the policy implications of dependency theories?
- 6 Why is agricultural development important in most developing countries?
- 7 What is employment-led growth and why is employment important to development?
- 8 What are the arguments for and against inward- versus outward-oriented development strategies?
- 9 What are the three general approaches that have been suggested for alleviating abject poverty?
- 10 Why might both the private and public sectors have important roles to play in development?

RECOMMENDED READINGS

- Hayami, Yujiro, and Vernon W. Ruttan, *Agricultural Development: An International Perspective* (Baltimore: Johns Hopkins University Press, 1985), Chapter 2.
- North, Douglas, "Institutions, Transactions Costs, and Economic Growth," *Economic Inquiry*, vol. 25, 1987, pp. 415–8.
- Olson, Mancur, Jr., "Big Bills Left on the Sidewalk: Why Some Nations Are Rich and Others Are Poor," *Journal of Economic Perspectives*, vol. 10, Spring, 1996, pp. 3–24.