Chapter 14
How Economies Grow and Develop

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Chapter 14: How Economies Grow and Develop

How do economies develop? How does the economic status of countries and the well-being of their peoples change over time? Most of the macroeconomic theory we have presented so far has assumed that we are talking about an advanced economy similar to the United States. But if we think back 100 years, the United States was a very different place from what it is today. Most transportation was still horse-drawn, with only a few cars operating on a poor-quality road system. Most rural areas did not have electricity or telephone service. In 1900, real per capita income in the U.S. was about $5,000 (measured in 2000 dollars). During the twentieth century, real per capita income in the United States rose about 7-fold, to over $35,000.

The median income in the world today is about equal to that of the United States in the early 1900s. Although billions of people still live in intense poverty, many formerly poor nations are rapidly developing. Others have experienced little progress. It is both interesting and important to evaluate how economies grow, how the growth process differs in different cases, and why some countries are very successful at promoting rapid growth, while others seem to be “stuck” at a low level of income.

“Economic growth” refers to increases in aggregate levels of production and income, and is usually measured as the percentage change in GDP or GDP per capita from year to year. “Economic development” is a somewhat more complex concept, referring to the process of moving people from a situation of poverty to material plenty through investments in productive capacity and changes in the organization of work. This chapter evaluates how economies grow, how the economic growth process differs across countries, and why some nations have been very successful at promoting development, while others have not. In the next chapter we’ll consider the (sometimes problematic) relationship of economic growth and development to broader goals including the goal of environmental sustainability and richer conceptions of human well-being.

1. Standard Theory of Economic Growth

As we noted in Chapter 6, there are many criticisms of the use of GDP as a measure of economic progress. Economists’ traditional models of economic growth, however, are all based on this measure, and it is these models we review in this section.

1.1 Defining Economic Growth

The simplest definition of economic growth is an increase in real GDP (that is, GDP adjusted for inflation). The growth rate of real GDP is the percentage change in real GDP from one year to the next. Using what we learned in Chapter 5, we can express the rate of growth in, for example, the period 2004-2005, as follows:

\[
\text{Growth rate of GDP} = \frac{GDP(2005) - GDP(2004)}{GDP(2004)} \times 100
\]
U.S. real GDP in 2004 was 10.76 trillion and in 2005 it was 11.13 trillion. Thus the growth rate of real U.S. GDP from 2004 to 2005 was

\[(11.13 - 10.76) / 10.76 = (0.37) / 10.76 = 0.034 \text{ or } 3.4\%.

For purposes of evaluating how economic growth can feed into economic development it is often helpful to focus on the growth rate of GDP per capita—that is, output per person—rather than simply on overall output. Mathematically, GDP per capita is expressed as:

\[\text{GDP per capita} = \frac{\text{GDP}}{\text{Population}}\]

The growth rates of GDP, population, and GDP per capita are related in the following way:

\[\text{Growth Rate of GDP} = \text{Growth Rate of Population} + \text{Growth Rate of GDP per capita}\]

or:

\[\text{Growth Rate of GDP per capita} = \text{Growth Rate of GDP} - \text{Growth Rate of Population}\]

Thus, for example, an economy that has a GDP growth rate of 4% and a population growth rate of 2% would have a per capita GDP growth rate of 2%. The per capita GDP growth rate is especially important because it indicates the actual increase in average income being experienced by the people of the country. If a country had a 2% GDP growth rate, but a 3% population growth rate, its per capita GDP growth rate would actually be negative, at -1%. The people would on average be getting poorer each year, even though the overall economy is growing. A more positive way of putting it is that, for people’s incomes on average to increase over time, the GDP growth rate must exceed the rate of population growth.

In terms of the Aggregate Supply and Demand (ASR/ADE) graphs we used in Chapter 12, economic growth can be shown as a rightward shift of the ASR, increasing the economy’s maximum capacity (Figure 14.1). If this kind of increase in aggregate supply took place without any shift in ADE, its effects would include growth in output and a declining rate of inflation. In practice, however, economic growth is usually accompanied by, and at least in part is often caused by, an increase in aggregate demand. Thus a more typical pattern for economic growth would be for both the ADE and ASR curves to shift to the right. In this case output clearly rises, but the effect on inflation is ambiguous.
1.2 Modeling Economic Growth

What causes economic output to increase? One way that output can increase is if there is an expansion in the inputs used to produce it. In Chapter 3 we outlined five kinds of capital. Human-produced capital is called manufactured capital to distinguish it from the other kinds of capital. Land and natural resources are natural capital, and all the skills and knowledge possessed by humans are also a kind of capital – human capital. In addition we noted the importance of social and financial capital, which both refer to institutional arrangements that make production possible.

Economists sometimes think about output as being generated according to a "production function," which is a mathematical relation between various inputs and the level of output. In the most general sense we might say that the output of an economy should be expressed as a function of flows from all the different types of capital that make production possible. The inputs to the production function are commonly referred to as factors of production. In the production functions most commonly used by economists, the factors that are emphasized are manufactured capital and labor. Sometimes, but not always, natural resources also are included.

**factors of production:** the essential inputs for economic activity, including labor, capital, and natural resources
One very influential, and more specific, model of economic growth was developed by economist Robert Solow in 1957. In his model, he assumed that an economy-wide production function can be written in the simple form:

\[ Y = A K^{0.3} L^{0.7} \]

where \( Y \) is aggregate output, \( A \) is a number based on the current state of technology as described below, \( K \) is a quantitative measure of the size of the stock of manufactured capital, and \( L \) the quantity of labor used during the period of time.\(^1\) \( K \) and \( L \) are the only factors of production explicitly included in the model. Both capital and labor are needed for the production of output, with the exponents in the equation reflecting their relative contributions.\(^2\)

\( A \) is called **total factor productivity**, and includes all contributions to total production not already reflected in levels of \( K \) and \( L \). Often, “total factor productivity” has been interpreted as reflecting the way in which technological innovation allows capital and labor to be used in more effective and valuable ways. For example, the development of computer word-processing greatly increased efficiency compared to the use of typewriters. Typewriters, which seem antique to us today, were themselves a huge productive advance over clerical work using pen and paper. This process of improved technological methods has resulted in an increase in labor productivity – more output can now be produced with fewer labor-hours.

**total factor productivity** (Solow growth model): a measure of the productivity of all factors of production. It represents contributions to output from sources other than quantities of manufactured capital and labor.

After some mathematical manipulations, the production function above can be converted to an equation for the growth rate of output per worker as a function of “total factor productivity” and the growth rate of manufactured capital per worker:

\[
\text{growth rate of output per worker} = \text{growth rate of total factor productivity} + 0.3 \left( \text{growth rate of manufactured capital per worker} \right)
\]

\(^1\) Sometimes the quantity of labor is expressed in terms of a number of workers, and sometimes as a number of worker hours. We use the former here. The question of what units to use when measuring capital stock is a very tricky one. Usually we think of capital in terms of its dollar value. But since increasing the productivity of a machine can also change its value, this kind of measurement is not unambiguous. This has led to controversies in economic theory, but at too complex a level to be covered here.

\(^2\) The exponents "0.3" and "0.7" are derived from a combination of facts and assumptions. The facts include information from national data on capital and labor incomes (which historically in the U.S. have run at about 30% and 70% of total income). The principal assumption is the neoclassical assumption that factors of production are paid in proportion to their contribution to production.
For example, if “total factor productivity” grows at 1% per year and capital per worker grows at 2% per year, this equation says that output per worker will grow at 1.6% per year (1% + (0.3)2% = 1.6%). This became known as the “growth accounting” equation.

Note that output per worker is what is commonly referred to as “labor productivity”. While labor productivity and GDP per capita are not quite equivalent (some people in the population do not work, for example), they are obviously closely related. Thus, this model implies that the way to raise income per capita—to achieve economic growth—is to increase the amount of capital that each person works with (the second term) and improve technology (the first term).3

According to the Solow model, growth in per capita income is caused by (1) growth in the amount of manufactured capital per worker and (2) growth in "total factor productivity," which is often associated with technological innovation.

The use of the Solow growth model served to highlight some important factors in economic growth. In particular, the model led to much discussion of the role of savings in providing the basis for growing levels of manufactured capital per worker. Technological change also received attention, since this was thought to be the main driver behind growth in the value of "A." For many years, economists tended to treat growth as primarily a matter of encouraging savings, investment, and the creation and dissemination of technology.

In more recent years, other economists have suggested that perhaps this model has directed too much attention to savings and technology. Some have argued that other factors such as good institutions that support markets, innovations in the organization of work, or access to global markets should be thought of as equally important in promoting economic growth. It is not helpful, they suggest, to fold all issues of social, human, financial and natural capital into just one, rather vague, "A" term. These and other qualifications to the model will be discussed when we look at development policy later in this chapter.

Discussion Questions

1. Locate recent news stories about economic growth in your country or region. Can you find current estimates of GDP growth? What factors are discussed in these stories as fostering (or hampering) economic growth? Are these the same factors included in the Solow growth model?

3 How is the growth rate of “total factor productivity” calculated? The statistical bureaus of most nations calculate the level of output, a measure of the size of the capital stock, and the number of workers on an annual basis. The growth rates of output per worker and of manufactured capital per worker can be calculated directly from these official estimates. The growth rate of “total factor productivity” is then calculated as the missing number, which makes the growth accounting equation balance.
2. In the context of the Solow growth model, discuss ways in which the government can affect the levels of the three explanatory variables (A, K, and L). Which of these three factors do you think public policy can have the most influence upon?

2. Patterns of Growth and Development

To understand present circumstances, and what is possible in the future, it is helpful to look at the past. Events and concepts dating back to the onset of industrialization, beginning about 250 years ago, remain relevant in explaining modern development patterns. Using that history to set the stage, we will then look at more recent records of growth and development around the world.

2.1 The Industrial Revolution

The Industrial Revolution, which began in the British Isles and Western Europe, dramatically changed the nature of economic production. It is important not just as a historical episode, but because the pattern of economic development that it established has become in many ways a model for development worldwide. Although, as we will discuss later, there are criticisms of the applicability of this model to current development issues, its strong influence on standard views of economic growth makes it an important starting point for understanding development.

**Industrial Revolution:** a process of social and economic change, beginning in 18th century England, which developed and applied new methods of production and work organization that resulted in a great increase in output per worker

Several elements were critical in creating the Industrial Revolution. First, new agricultural techniques, along with new kinds of tools and machines, made agriculture more productive. That meant that more agricultural output could be produced per worker and per acre of land. These productivity increases, continuing and eventually spreading across the globe, meant that human populations could grow dramatically – as, indeed they have done, reaching a first billion around 1810, and continuing to increase to the present global numbers of well over six billion. Because of the great increase in agricultural labor productivity, the number of workers needed to produce food for the rest of the population was shrinking even while the population as a whole was growing.

A second outstanding characteristic of the Industrial Revolution was the invention and application of technologies using inanimate sources of power (increasingly, fossil fuels) and machinery for production of goods. Mechanization created jobs in factories, largely replacing the previous patterns of producing goods at home. Railroads and other advances in transportation, as well as the new kinds of work organization, made it possible to assemble large numbers of workers in factories, resulting in huge urban agglomerations.
Another important factor in England’s increasing industrialization was its ability to rely on other countries, including its extensive network of colonies, for supplies of raw materials and as markets for its goods. England imported cotton fiber from India, for example. It discouraged the further development of cotton manufacturing within India by putting high import tariffs on Indian-made cloth, while requiring that India let in British-made cloth tariff-free.

An ever-increasing variety of things were produced in the emerging industrial sector. Some of these were items never seen before, such as bicycles, flushing toilets, machine-loomed cloth, communication by telegraph, early cameras, and steamships. Other products of industry were household goods, such as china dishes and cotton cloth, which had previously been used only by a small, rich elite. Others were, of course, the various kinds of machinery that were used to produce consumer items. These included the cotton gin, steam-powered textile machines, a steam powered printing press that could turn out tens of thousands of copies of a page per day, and rotary mixers to make bread in commercial bakeries.

While the Industrial Revolution began in England, by the nineteenth and early twentieth century it was well along in much of Western Europe and other "early industrializing" countries such as the United States, Canada, and Australia. It is important not just as a historical episode, but because the pattern of economic development that it established has become, in many people's minds, the model for how development should proceed worldwide. The vocabulary of referring to rich countries as "developed" and poorer countries as "developing," for example, involves an implicit assumption that poorer countries are on a path of industrialization, on the road to perhaps eventually "catching up" to rich country lifestyles and levels of wealth.

2.2 Global Economic Growth in the 20th Century

During the twentieth century, real income in the Unites States rose about sevenfold, and world per capita economic output grew about fivefold. Most of this growth came in the second half of the twentieth century. Figure 14-2 shows the record of global growth since 1961. Gross world product more than quadrupled during this period (in inflation-adjusted terms). This was accompanied by more than a tripling in the use of energy, primarily fossil fuels. Even though world population doubled over the period 1961-2003, food production and living standards grew more rapidly than population, leading to a steady increase in per capita incomes.

This economic growth, though rapid, has been very unevenly distributed among countries (as well as among people within countries). Table 14-1 shows the per capita national incomes and rates of economic growth for selected countries and income categories during the period 1990-2005. The table gives national income in purchasing power parity (PPP) terms, comparing nations based on the relative buying power of incomes.
Figure 14.2 World Economic Growth, 1961-2004

*All series are shown using an index of 1 for 1961 levels. During the period 1961-2003, population doubled, food supply more than doubled, energy use more than tripled, and gross world product more than quadrupled.*


As you can see from Table 14-1, the record is very variable, with some countries achieving less than 1% annual per capita economic growth, and others achieving over 4%, with China in the lead at a sizzling 8.7%. Some already poor countries, such as Haiti and the Congo, are growing even poorer. While the table indicates that the low- and middle-income countries are growing slightly faster than high-income countries, this is largely a result of high growth rates in China and India, as we’ll discuss later in the chapter. What accounts for the striking differences in economic fortunes across countries? And can we expect these differences to increase or decrease?

2.3 Growth in Industrialized Countries

Economies such as those of the United States, Europe, and Japan have benefited from many decades of economic growth. This growth has not been uniform; periods of expansion have alternated with periods of slowdown or recession. But overall, GDP in these countries has increased due to a combination of factors including growth in aggregate demand and labor productivity, technological innovation, and investment in manufactured capital. In addition, successful economic growth has often resulted from taking advantage of trade opportunities. Although industrialized countries have generally
Table 14.1: Income, Growth, and Population Comparisons, Selected Countries and Country Groups

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High Income</td>
<td>29,041</td>
<td>1.8</td>
<td>15.7</td>
</tr>
<tr>
<td>United States</td>
<td>37,437</td>
<td>1.8</td>
<td>4.6</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>28,643</td>
<td>2.6</td>
<td>0.1</td>
</tr>
<tr>
<td>Japan</td>
<td>27,568</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>France</td>
<td>26,941</td>
<td>1.4</td>
<td>0.9</td>
</tr>
<tr>
<td>South Korea</td>
<td>19,560</td>
<td>5.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Middle Income</td>
<td>6,535</td>
<td>3.1</td>
<td>47.7</td>
</tr>
<tr>
<td>Argentina</td>
<td>12,899</td>
<td>1.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Mexico</td>
<td>9,132</td>
<td>1.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Russia</td>
<td>9,747</td>
<td>-0.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Brazil</td>
<td>7,808</td>
<td>0.8</td>
<td>2.9</td>
</tr>
<tr>
<td>China</td>
<td>5,878</td>
<td>8.7</td>
<td>20.3</td>
</tr>
<tr>
<td>Low Income</td>
<td>2,253</td>
<td>3.1</td>
<td>36.6</td>
</tr>
<tr>
<td>India</td>
<td>3,118</td>
<td>4.1</td>
<td>17.0</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1,786</td>
<td>2.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Haiti</td>
<td>1,642</td>
<td>-2.4</td>
<td>0.1</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1,058</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>896</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Congo, Dem. Rep.</td>
<td>679</td>
<td>-5.4</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Source: World Bank, World Development Indicators Database, 2006
benefited from openness to trade, they have also typically also used protectionism to foster the development of important domestic industries.

These same factors have contributed to growth in all currently industrialized economies, but the patterns of growth have varied in many ways. Japan’s extremely rapid growth in the period 1950-1980 was often referred to as an “economic miracle”. More recently, the so-called "Asian Tigers" of South Korea (see Case Study below), Singapore, Taiwan, and Hong Kong, have experienced similar “miracle” growth rates (at least until the Asian financial crisis of 1997).

A major cause of Japan’s extraordinary growth was its high savings rate, which peaked at more than 20% of household income in the mid-1970s. High savings were encouraged through low tax rates and a relatively modest Social Security system. The government played an active role in directing the national savings towards investments in particular industries targeted for expansion through subsidized loans.

Japan and the other “Asian Tigers” have demonstrated a pattern of virtuous cycles in which high savings and investment lead to greater productivity, a competitive export industry, and growth of domestic industries. The financial capital that results can be invested in machines, tools, factories, and other equipment that can further enhance productivity – and the cycle begins again. In addition, as the economy grows, more resources are available to invest in the development of health and educational systems. This sounds simple and obvious – yet many nations have had great trouble in achieving such virtuous cycles.

| virtuous cycles (in development): | self-reinforcing patterns of high savings, investment, productivity growth, and economic expansion |

As is often the case when studying economic development, an approach that appears to drive growth in one case does not necessarily apply elsewhere. A counter-example to the importance of savings in the Asian experience is U.S. economic growth, which in recent decades cannot be attributed to high savings rates. Net national savings (gross savings by individuals, corporations, and governments, minus the consumption of fixed capital) has fallen from around 10% of GDP in the 1970s to only about 1% in 2004, one of the lowest rates in the industrial world.

However, a factor that appears to be essential in almost every case for promoting growth and development is human capital. While U.S. savings are low, American investment in human capital is relatively high. For example, only Sweden, Korea, and Finland have college enrollments beyond high school that are higher than that of the U.S. The Asian Tigers have also benefited from generally excellent educational systems, along with industrial structure that (especially in Japan) motivated workers with good employment benefits linked to company profitability.

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4 The exceptions are a few oil-exporting countries that have a temporary wealth stream that does not require much human capital.
Case Study: South Korea

South Korea is one of the “East Asian Tigers” (along with Singapore, Hong Kong, and Taiwan) which maintained consistently high rates of economic growth from the early 1960s until the 1997 Asian Financial Crisis. As shown in Table 14.1, South Korea now has a GDP per capita approaching that of major developed nations such as France and Japan.

Economists agree on several factors that helped produce South Korea’s “miracle.” First, South Korea invested heavily in human capital. By 1960 South Korea had achieved universal primary education, and incentives were created to promote investment in higher education. Second, investment in physical capital was also encouraged through policies that increased household savings and private domestic investment. The gross domestic savings rate in South Korea has been approximately one-third of GDP since the mid-1980s, among the highest rates in the world. Third, South Korean growth has been “export-led,” with exports rising from less than 10% of GDP in the early 1960s to about 40% by the mid-1980s.

Some economists point to South Korea to illustrate that an open economy is an important ingredient for economic growth, especially for countries with relatively small domestic markets. But the country clearly did not follow a purely free-market approach to development. Instead, the government targeted specific industries for growth, such as petrochemicals in the 1960s and consumer durables in the 1970s, and protected these industries with high import tariffs and other trade barriers. Exporters could also benefit from tax reductions and preferential interest rates. As the country has developed it has gradually reduced its tariffs (from an average of about 40% in the 1960s to around 10% now) but its average tariff levels are still relatively high.

Another notable feature of South Korea’s economic growth is that it occurred in conjunction with an egalitarian distribution of income. In 1960 the country had one of the most equal distributions of income in the world and inequality generally fell even further as economic growth accelerated. Relative equality may have facilitated economic growth because the government could institute policies without pressure from entrenched powerful elites.

South Korea’s economic growth faltered in 1997 with the onset of the Asian Financial Crisis. Unable to pay its foreign debt obligations as a result of its currency devaluation, South Korea accepted a loan from the IMF in exchange for implementing structural reforms to increase foreign investment, reduce the links between business and government, and dismantle monopolies. The South Korean economy has rebounded in recent years but growth has been significantly less than before the crisis (GDP growth averaged 4.2% over 1998-2004, compared to 7.1% during 1993-1997).
Another critical factor in Japan’s growth was the way in which it encouraged the production of specific goods for export. Investment in technology-intensive industries, along with export-favorable policies, allowed Japan to quickly become a world leader in technology goods. While domestic aggregate demand in Japan was initially low, Japan was able to take advantage of growing world demand for its rapidly expanding output. But Japan also used tariffs and other barriers to promote their businesses, as well as channeling investment capital to government-favored industries.

Early theories of development assumed that the lessons from industrialized economies simply needed to be applied to nations at lower levels of income, so that they could follow a similar path of economic growth. But the global record of uneven development and inequality, as well as some recently recognized resource and environmental problems, makes the picture significantly more complex. In the rest of this chapter we will explore issues of global growth, inequality, and differing strategies for economic development; in the next chapter, we will deal with environmental and social issues related to development.

2.4 Global Growth and Inequality

The global distribution of per capita GDP across countries is shown in Figure 14.3, where each country’s per capita GDP in 2004 has been translated into real 2000 U.S. dollars and adjusted for purchasing power for comparability. The United States, along with Canada, most of Europe, Australia, New Zealand, Japan, and a few other countries, enjoys a per capita GDP of more than $25,000. The poorest countries on earth tend to be in Africa and Asia, where income per capita can be below—sometimes much below—$2,500.

Figure 14.4 gives us more information about how income is distributed across households (using per capita GDP as our indicator). In this figure, the world’s population is organized into successive income quintiles, each representing 20% of the world’s population. Thus the bottom quintile represents the poorest 20% of humanity, the next quintile represents the second-poorest 20%, and so on. The area associated with each quintile is in proportion to how much of the world’s income that they receive. As we can see in the figure, nearly three-quarters of the world’s income goes to the richest 20%. Meanwhile, the poorest 40% only receive 5% of the world’s income.5

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5 Figure 14-4 is based on a household-level analysis, showing unequal distribution among people, rather than among countries. It is thus similar to the Lorenz curve analysis used in Chapter 3 to measure inequality within a population, but presented in a different format.
Traditionally, many economists have taken an optimistic view concerning the future of global income inequality. A pattern of faster growth in poorer countries is predicted by the traditional Solow growth model. According to elaborations of that theory, a given increase in the manufactured capital stock should lead to a greater increase in output in a country that is capital-poor than in a country that is already capital-rich. Therefore, some economists have reasoned, it is just a matter of time until “less developed” countries catch up with the countries that have already “developed”. The idea that poorer countries or regions are on a path to “catch up” is often referred to as convergence. Describing low-income countries as “developing” assumes that they are on a one-way path towards greater industrialization, labor productivity, and integration into the global economy.

Figure 14.3 GDP per capita in 2004 (in constant 2000 PPP $ per person)
Income per person is highest in the industrialized countries of North America and Europe, along with Japan, Australia, and New Zealand. Income per person is lowest in many African and Asian countries.

The uneven pattern of past economic growth means that a small proportion of the world's population now benefits disproportionately from global production.


**convergence**: (in reference to economic growth) the idea that underlying economic forces will cause poorer countries and regions to “catch up” with richer ones.

Is it true that “developing” countries are, in general, catching up with the “developed” countries? A number of studies of GDP per capita growth rates have concluded that lower-income countries are catching up to higher-income countries (as shown by the data for country groups in Table 14.1). However, this has largely been due to the strong growth rates experienced by the very populous countries of China (categorized as a middle-income nation) and India (a low-income nation). Because these two countries have such large populations, they have a disproportionate influence on the average growth rates for low- and middle-income nations shown in Table 14.1. If, on the other hand, we count each country equally, the results suggest that convergence is not occurring in the majority of developing countries. In fact, if we count each country equally the average annual growth rate of real GDP per capita (PPP) over 1990-2005 was 0.8% in the low-income nations, 2.0% in the middle-income nations, and 2.1% in the high-income nations – suggesting further divergence rather than convergence.

We can see what has happened to some “developing” country incomes relative to high income countries better in Figure 14.5. Here, GDP per capita is expressed as a proportion of average GDP per capita in the high income countries. While India’s per capita income rose in absolute dollar terms, India made only slow gains in comparison to
the high income countries (though its growth has accelerated recently). Other countries fared worse. Nigeria, along with many other countries in Sub-Saharan Africa, actually lost ground. Income per capita went from about 6% of the rich country level to an even lower level – around 4% of the rich country average in 2005. In China, on the other hand, the movement has clearly been towards “convergence,” with PPP-adjusted per capita income rising from 4% to 20% of the rich country average during this period.

**Figure 14.5 Per Capita GDP Expressed as a Percentage of Per Capita GDP in High Income Countries**

*If poor countries are “converging” or “catching up” to rich countries, their incomes should be rising when expressed as a percentage of rich country incomes. This has happened for China, but is happening only slowly for India, while for Nigeria the income gap is actually growing.*

Source: World Bank’s Word Development Indicators

2.5 Current Patterns of Growth

How fast are countries growing now? Figure 14.6 summarizes a wealth of information about the twenty-year period leading up to the turn of the century. The horizontal axis measures GDP per capita in 1980, so that the United States and other industrialized countries are represented by spheres off to the right, and poorer countries are represented by spheres off to the left.

The vertical axis measures average annual per-capita growth rates from 1980 to 2000. Thus faster-growing countries, including China and India, are high on the graph, while slower-growing countries are represented by dots closer to the horizontal axis. Some countries have experienced negative growth—that is, their levels of income per person have actually fallen in recent years. High income countries have generally
experienced moderate, positive average growth rates (on the order of 1% to 2%), while growth rates diverge much more as one moves down the income scale. At very low incomes, average growth rates diverge dramatically (ranging from about -2.5% to 6%).

The size of the spheres are proportional to the population of the country represented, so that the United States shows up as a medium-sized sphere, while China and India—together, home to nearly 40% of the world's population—are represented by very large spheres. China and India represent the "good news" side of the development story. While many people in these countries remain desperately poor, at least the trend is going in the right direction. Because of strong growth in these two very populous countries, a large number of people have been lifted out of poverty in recent decades.

The countries of Sub-Saharan Africa, which have been particularly hard-hit by AIDS and war, are represented by solid dots in Figure 14.6. They account for a large proportion of the very low and negative growth rates. This is the very "bad news" side of the contemporary development story (see the Case Study below). Far from "developing," such countries have actually become poorer in recent decades.

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**Figure 14.6 The Relation Between Average Annual Growth (1980-2000) and Real GDP Per Capita, with Area Proportional to Population**

Some countries have achieved high levels of income per person, but many—which contain the bulk of the world's population—remain poor. China and India have recently experienced strong rates of growth, while most of the countries of Sub-Saharan Africa (shown as solid dots) have grown slowly or lost ground.

Case Study: Sub-Saharan Africa

Sub-Saharan Africa (SSA) is the poorest region of the world. Twenty-three of the 25 poorest nations in the world are found there, including Ethiopia, Niger, Kenya, and Rwanda. According to the economic theory of convergence, poorer regions will grow faster than richer regions as globalization promotes the spread of technology and nations with low input costs (especially labor) increase exports. However, in the case of Sub-Saharan Africa not only has convergence failed to occur, but the last few decades show a period of divergence instead – where Sub-Saharan Africa has fallen further behind developed nations.

Since the early 1980s, real GDP per capita and life expectancy in SSA have fallen, while the rates of poverty and undernourishment have remained about the same or increased. The World Bank estimates that the total number of people living in extreme poverty (below $1 per day) in SSA increased from 217 million to 291 million between 1987 and 1998. Meanwhile, the spread of HIV/AIDS and the ongoing civil strife in countries such as Sudan and Somalia have made a bad situation even worse.

Why has economic development failed in Sub-Saharan Africa? It seemed evident that since SSA was too poor to save and invest, this investment shortfall could be filled by international aid. But while aid to Africa did increase during the 1970s and 1980s, the evidence suggests that this money was used for consumption purposes, often by elites and corrupt bureaucrats rather than for investment in produced or human capital. Economists agree that SSA remains in need of either foreign investment or international aid. Few economic sectors are currently capable of attracting foreign investment so it appears that further aid is needed, but it must be accompanied with an increase in the efficiency of investment. Sub-Saharan Africa’s difficulties are compounded by trade policies implemented by richer nations that discriminate against Africa’s exports. Rich countries often protect their own agricultural sectors, such as cotton production, to the detriment of African growers.

One way to increase the efficiency of investment is to improve a nation’s financial system. Statistical analysis has shown that those SSA nations that improved their financial systems also tended to grow the fastest. Another impediment to growth in SSA is the existing debt of many countries. The United Nations advocates a moratorium on debt payments along with no further accumulation of interest.

Economic development and poverty alleviation in SSA will likely require both standard development policies and new policies that improve income equity and delivery of basic services. Changes in industrialized nations’ trade policies could help promote export growth – but rich nations, though often preaching free trade, have generally been slow to open their own markets to products from the developing world.
Discussion Questions

1. Do you have any firsthand experience with economic circumstances in a developing country? What seem to be the living conditions of the average citizen in the country (or countries) you are familiar with? If you are familiar with discussions about the development process there, what are the issues that concern people?

2. Many economists believe that economic development can be promoted in poor countries without reducing economic growth rates in wealthy countries – or even that development in poor countries depends on economic growth in wealthy countries. Do you agree with this perspective? On the other hand, do you think that wealthy countries should be willing to forego some amount of economic growth in order to promote economic development and reduce global inequities?

3. What Explains the Variety in Growth Experiences?

What accounts for the striking differences in economic fortunes across countries? If there were just one, simple story about how economic growth occurs, economic analysis would be much easier. In fact, however, one can point to a great variety of factors, all of which may play a role in development. But their significance—and even the direction of their effect, positive or negative—which may vary greatly from country to country.

3.1 Savings and Investment

Investment in manufactured capital requires savings—or financial capital: Some of a country's current output might not be immediately consumed, but rather set aside and spent on assets that will increase productivity in the future. So one reason why a country may do well is if it has high levels of savings and investment.

Investment in industrial manufactured capital, however, is not the only important kind of investment. Investments in agriculture, through improvement of seeds, irrigation, and the like have also often contributed to growth. Nations can also invest in human capital by improving their country's systems of education and health care. Workers who are skilled and healthy are more able to be productive. Many economists stress that education in science and technology, in particular, is likely to have significant effects on growth.

However, additions to capital do not automatically lead to growth. Unwise development projects have sometimes led to waste or even harm. Inappropriate factories have sometimes been left to rust, while misguided irrigation projects have sometimes destroyed fields through salinization. Investment must be well directed in order to have long-term benefits. Governments have often been the culprits when major investment schemes have gone awry; but, in different cases, governments have also been the designers of very successful, country-wide investment policies.
3.2 Technological Innovation and Entrepreneurship

Countries often enhance productivity by adopting technology that was originally developed elsewhere. They may obtain this technology by buying machinery, by having their workers or engineers trained in foreign countries, or by welcoming foreign-owned businesses that will introduce more advanced technologies. Other countries have jumped ahead in economic growth by nurturing strong domestic programs of research and development, often supported by government funds.

Advances in technology in China and India have been particularly interesting. According to conventional economic wisdom, such labor-rich developing countries should follow their natural comparative advantage and export relatively low-tech, labor-intensive goods. Yet these countries have deliberately broken into international markets in sophisticated products such as high-tech electronic equipment and computer software, exporting goods and services that embody a far higher level of technology than one might expect from them. This pattern may be a crucial factor in explaining their strong economic growth.

Along with investment in capital, change in the social organization of production is one of the hallmarks of development. For a country to experience change someone, somewhere, must be willing to "do something different." This has often been an advantage of private entrepreneurship. The prospect of earning profits can be a strong motivation for an innovator to gather together the necessary resources and inputs to start a new production process, even while knowing that he or she also faces a substantial risk of failure.

Sometimes development can be assisted by ensuring that financial capital gets to the people who have "good ideas." Recently, some development projects have focused on distributing "micro-credit" to very small-scale entrepreneurs, often women, so that they can build up their businesses. In other cases, foreign companies are welcomed to a country because it is believed that their experience in organizing production, marketing, and the like (as well as the capital and technology they may bring) will cause domestic resources to be put to fuller use. It is hoped that their risk-taking example and their management knowledge will have positive "spillover" effects on domestic businesses.

Advances in management and organization can, however, be short-circuited by bad policies, whether active or passive. In some cases, business innovation has been discouraged by government imposition of very high tax rates or excessively burdensome regulations. Governments may also discourage entrepreneurship by failing to create good infrastructure such as roads and communication facilities, or to invest in the health and education of their citizens, or when they have tolerated traditions of bribery or other corrupt practices.

At the same time, some governments have played crucial roles in encouraging organizational innovation. Many currently high-income countries used industrial policies to boost development, by selecting certain industries to receive special governmental
support. A massive industrial push, on the scale seen, for example, during Japan's industrialization, or currently in China and India, is an operation that is generally both too large and too risky to be accomplished solely by private, decentralized businesses.

3.3 Macroeconomic Policy and Trade

Since there would be little point in increasing production if what is made cannot find a market, the level of aggregate demand in an economy is also important for growth. Macroeconomic policies to stabilize aggregate demand—and particularly, to prevent or aid recovery from recessions—are thus also crucial. Many nations, however, have suffered from bad macroeconomic policies which, though often intended to promote growth, have actually damaged the economy. A common policy error is to use excessive government spending to stimulate demand. Large budget deficits can offer short-term stimulation, but if continued almost always lead to severe inflation, which undermines stability and growth. On the other hand, strict budget-balancing policies, often forced on developing countries by international lending agencies, can undercut essential investment in human capital and infrastructure. Striking a good macroeconomic balance is often difficult for countries struggling to cope with the many difficulties involved in development.

Access to international markets for inputs, and for places in which to sell products, has also been an important factor in increasing production and aggregate demand. As mentioned earlier, England built up its manufacturing industry in part by relying on its colonies for cheap inputs, and selling its manufactured goods to them. Countries like Japan and South Korea broke into the ranks of more advanced economies by developing powerful export industries. China is now following this same path. A growing export market provides steadily increased demand for production, boosting GDP. It also provides foreign exchange to purchase investment goods and gain access to new technologies.

Export dependence, however, can also be a trap that stifles economic development when countries depend on products for which world demand is limited. Producers of agricultural exports, in particular, often suffer when world terms of trade turn against them, so that the value of what they can sell on the world market drops relative to the value of what they want to import. Successful industrializers have also tended to make use of strategies of infant industry protection and import substitution (discussed in Chapter 13)—limiting the penetration of trade in some parts of their economies—to build and diversify their industrial base. Once again, the issue is not just what a government chooses to do, but how it does it. The strategies just mentioned have worked when applied well, and not worked otherwise.
3.4 Natural Resources

Natural resources are an important asset for development, but the overexploitation of natural resources can lead both to environmental degradation and to economic distortion. Large expanses of arable land, rich mineral and energy resources, good natural port facilities, and a healthy climate may make it easier for a country to prosper, while a poor natural endowment, such as a climate that makes a country prone to malaria or drought, can be a serious drag on development.

But here again, as mentioned before the historical record includes some surprises. Hong Kong and Singapore have prosperous trade-based economies, even though they have very scant domestic resources, with little land or energy of their own. Resource-rich Russia, on the other hand, is struggling. Countries like Nigeria have found that oil reserves, seemingly a source of wealth, can easily be misused with very damaging effects on development. Uncontrolled oil revenues can lead to massive corruption and waste, while other sectors of the economy are starved of investment and resources, as available resources go primarily towards oil production. And since oil is a depletiable resource, the country can eventually run out of oil and find itself worse off than before.

3.5 Foreign Capital

What happens if a country is not able to finance the investments it needs to develop out of its own domestic savings? In this case, grants, loans, or investments from abroad might finance investments in manufactured or human capital. The sources of foreign capital for development can be either public or private.

Public aid for development can take the form of either bilateral assistance or multilateral assistance. **Bilateral development assistance** consists of grants or loans made by a rich country government to a poorer nation. Many developing nations also receive **multilateral development assistance** from institutions such as the World Bank and regional development banks such as the Inter-American Development Bank. Countries may also borrow from the IMF, particularly during times of crisis.

| **Bilateral development assistance**: aid (or loans) given by one country to another to promote development |
| **Multilateral development assistance**: aid or loans provided with the announced intention of promoting development by the World Bank, regional development banks, or United Nations agencies such as the United Nations Development Program (UNDP) |

Private foreign investment is carried out by private companies or individuals. Foreign direct investment (FDI) occurs when a company or individual acquires or creates assets for its own business operations (for example, a German company building a factory to produce televisions in Mexico). FDI may or may not actually increase capital stock in the recipient nation, since it can include acquisitions of existing capital. Private flows also include loans from private banks.
In recent years, private capital flows have become increasingly important in supplying financial capital to developing countries, as shown in Figure 14.7. Net private flows to developing countries, including both FDI and loans, have risen as investors have sought high returns in "emerging markets." Figure 14.7 also includes a line for workers’ remittances, since funds sent home by emigrant workers are an important source of income and foreign exchange for many countries. Studies have shown that these remittances are often spent on household investments in education, health, and small-scale entrepreneurship. Their importance has also been increasing. Meanwhile bilateral aid grants have risen only slightly, while multilateral flows turned negative in 2005. This was largely due to multi-billion dollar repayments sent by middle-income developing countries (including Argentina and Brazil) to the IMF. This analysis should not be taken to overstate the importance of foreign investment, however. For most countries, the volume of investment financed by domestic funds is still considerably higher than FDI—on the order of ten times as much, on average.

![Figure 14.7 Net Capital Flows to Developing Countries, 1997-2005](image)

**Figure 14.7 Net Capital Flows to Developing Countries, 1997-2005**

In recent years, official flows have diminished, and in 2005 flowed towards the industrialized world. Meanwhile private loans and investments have risen dramatically. Official flows and bilateral aid grants together are less than one fifth of private flows.

Source: World Bank, 2006, Global Development Finance: The Development Potential of Surging Capital Flows, Table 1

The empirical evidence concerning the contribution of public and private foreign capital economic growth is, however, very mixed. Some of the countries that are still among the poorest have also been the heaviest recipients of concessional aid. In some cases, aid went to corrupt leaders who spent it on luxury living rather than on benefits for their people. Many poor countries are now highly indebted, and spend more on debt service than on health care for their own populations.
Welcoming foreign businesses also can have a downside. When a large, powerful transnational corporation moves into a developing country, not all of the effects are necessarily positive. Foreign enterprises may "crowd out" local initiatives, by competing with them for finance, inputs, or markets. They may also be disruptive politically or culturally. Some of the most oppressive actions in development history (such as peasants being forcibly turned off their land, or union organizers repressed with violence) have come about through alliances of large transnational corporations with corrupt governments.

3.6 Financial, Legal, and Regulatory Institutions

Recently, policymakers have come to a greater appreciation of the role played by financial, legal, and regulatory institutions (which fit into the category of social capital) in encouraging—or discouraging—growth. Very poor countries sometimes have banking and legal systems that do not reach very far into rural areas, and provide credit only for the well-connected, making financing difficult for small businesses and entrepreneurs. The Japanese banking crisis of 1989, which sent the country into recession, brought renewed attention to issues of banking regulation and corporate governance. The experience of Russia, which experienced a fall in GDP of over 40% during its emergence from communism in the 1990s, highlighted the need for markets to be based in a good institutional framework.

Countries that have been successful in maintaining growth generally have effective systems of property rights and contract enforcement, which allow entrepreneurs to benefit from their investments, as well as effective corporate and bank regulation. Even in the case of property rights, however, the conventional wisdom does not always hold. China and Vietnam, for example, have been able to attract significant amounts of investment even though, being at least nominally still communist countries, they do not have a system of private property rights. Nevertheless they are able to assure firms that they will benefit from their investments by other means.

Some developing nations suffer from severe corruption, internal conflict, and other factors that make it difficult for effective institutions to take root. Political instability leads to economic inefficiency, difficulty in attracting foreign investment, and slow or no growth. This in turn means that less savings are available for future investment, reinforcing the problems. Breaking this vicious cycle is essential for development, but can be very difficult in practice.

Discussion Questions

1. In Chapter 9 ("Aggregate Demand and Economic Fluctuations"), saving was labeled as a "leakage" from the income-spending-production cycle, and it was pointed out that an increase in saving could cause an economy to go into a recession. Section 3.1 above, however, claims that savings are necessary for growth. So is a high savings
rate good or bad? Can a high savings rate ever be compatible with high aggregate demand?

2. If you were the representative of a transnational corporation seeking to do business in a poor country, what arguments might you use to try to convince the country's government to allow you to operate freely there? If, on the other hand, you were a government official in that country, what concerns would you raise about having the corporation in your country?

4. Development Policies

Development policies have evolved as a combination of domestic policy and foreign interventions, including aid, loans, and trade agreements. International institutions such as the World Bank have played a major role, both as sources of capital and policy advice. In fact, the World Bank and other international agencies have often gone beyond advice, putting great pressure on developing nations to adopt particular policies as a condition of receiving loans. This has led to considerable controversy as to which policies are best – and indeed whether some policies promoted by international agencies may do more harm than good. In this section, we review some of the elements of these controversies.

4.1 International Aid

During much of the 20th century, the dominant view among most economists and policymakers was that the key bottleneck to development in poorer countries was a lack of adequate financial capital. Development theorists believed that if countries were provided with more financial capital—mostly as loans, though sometimes as outright grants—the countries would then be able to buy the goods and services need to build up their stocks of human and manufactured capital. This would make their economies more productive, and they would then be able to pay back the loans out of their increased GDP. This was the guiding principle behind the founding of the World Bank after World War II – to provide capital to help less developed countries “catch up.”

Many people—especially in the United States—are under the impression that rich countries give a great deal of money in "foreign aid." The amounts, however, are generally quite small as a percent of the GDP of the donor countries—generally only a fraction of 1% (see Table 14.2.) The uses of international aid vary both in intention, and in the kind of impact they have. Some bilateral aid is motivated by the donor’s wish to increase its own exports and is “tied” to requirements that the money be spent to make purchases from the donor country. Some has political motives, such as buying friends in countries that are important to the donor, because of their natural resources (such as oil), or for other reasons of geo-political advantage. While the category “development aid” is not supposed to include military aid, it may sometimes be used directly or indirectly to acquire weapons.
Some bilateral aid is crediting with achieving more clearly development-related objectives, such as increased school attendance, better health, and increased agricultural productivity. In other cases, aid serves primarily to promote the strategic interests of the donor nations, and may even create greater dependence rather than economic progress in the recipient nations.

Table 14.2 Net Official Development Assistance, 2005, Selected Countries

<table>
<thead>
<tr>
<th>Donor</th>
<th>Amount Given in 2005, Billions US $</th>
<th>Amount Given in 2005 as a Percentage of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>27.5</td>
<td>0.22%</td>
</tr>
<tr>
<td>Japan</td>
<td>13.1</td>
<td>0.29%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>10.8</td>
<td>0.49%</td>
</tr>
<tr>
<td>France</td>
<td>10.1</td>
<td>0.48%</td>
</tr>
<tr>
<td>Germany</td>
<td>9.9</td>
<td>0.36%</td>
</tr>
<tr>
<td>Italy</td>
<td>5.1</td>
<td>0.30%</td>
</tr>
<tr>
<td>Canada</td>
<td>3.7</td>
<td>0.33%</td>
</tr>
</tbody>
</table>


Most multilateral support comes in the form of loans which must be repaid with interest. In fiscal 2005, the World Bank provided $22 billion in loans, of which $8.7 billion went to the poorest nations as “concessional” loans (loans on easy terms) or outright grants. Some of World Bank financed investments have succeeded, but sometimes the projects promoted by multinational institutions have not been very beneficial to the countries involved. Regardless, the loans must still be repaid, and it is easy for countries to get heavily indebted.

Developing countries as a group currently have over $2 trillion in debt, on which they must pay over $300 billion in interest and principal repayment (debt service) each year. Of course, they can also receive new loans, but even taking this into account the net flows associated with the debt burden mean that developing nations are currently paying out more than they take in each year (as shown by the recently negative official flows in Figure 14.7). While more successfully developing countries can afford some debt service, it can be a crippling burden for the poorest nations. In 2005, Latin America, South Asia, and Sub-Saharan Africa, including some of the world’s poorest nations, together owed over a trillion dollars in outstanding debt.

In addition to bilateral and multilateral aid, funds from non-government organizations (NGOs), including church-related charities and independent medical groups, play an important role. These sources are usually smaller in volume than government funds, but they often finance “pilot” projects that demonstrate to potentially larger donors – rich nations and multilateral institutions – a variety of models of how development assistance can be applied in better ways.
Some loans and grants have truly supplied just the missing factor that was needed, at the right time, and have achieved significant success. In other cases, however, such interventions are made without sufficient attention to the many, complex factors that go into development, and are often far less effective than intended.

4.2 Structural Reforms

The failure of aid to stimulate sustained growth in many countries caused a great deal of frustration among policymakers. By the 1980s, the idea that countries should engage in “structural reforms” as a precondition for being granted aid gained ground. Multilateral institutions began to insist that all recipient governments undertake a broad swath of policy changes in order to qualify for further loans.

The set of favored policies came to be known as the “Washington Consensus” (as mentioned in Chapter 13). The main principles of the Washington Consensus were:

- **Fiscal discipline.** Developing countries were urged to end fiscal deficits and balance government budgets by developing reliable sources of tax revenue and limiting spending.

- **Market liberalization and privatization.** Abolition of government-controlled industries, price controls and other forms of intervention in domestic markets were seen as essential to promoting growth.

- **Trade liberalization and openness to foreign investment.** Countries were pressured to remove tariffs and other barriers to trade, as well as capital controls and other restrictions on foreign investment flows.

Loans from the World Bank, IMF, and other institutions were made conditional on moving towards making such "structural reforms" or "structural adjustments" in a country’s economy. The slogan “stabilize, privatize, and liberalize” governed the thinking of development policymakers. The implicit promise was that if these policies were followed, the conditions for rapid growth would be created.

The results of structural adjustment policies during the 1980s and 1990s were not nearly as positive as was hoped. Some countries progressed, but the countries that most strictly followed the World Bank’s market-oriented development path, including many of the formerly communist economies, suffered the most severe crises. In Africa, where investment in health and education is desperately needed, stringent financial policies often forced cutbacks in these areas of social investment. The idea of “fiscal discipline” made it impossible for countries to use fiscal policy for macroeconomic stabilization.

Meanwhile, countries such as China and India, which experienced high levels of economic growth during this period, generally did not follow the Washington Consensus policies. While these countries did increase their market-orientation, they combined this
with high levels of trade protection, continued state control or guidance of important sectors of the economy, and divergent fiscal policies.

After two decades of Washington Consensus policies, overall rates of growth have generally been lower than in previous decades. The mixed results of the policies promoted by the World Bank and other international institution have led to an ongoing debate between critics and defenders of the Washington Consensus.

4.3 Current Controversies

In 2005 the World Bank published a report, *Economic Growth in the 1990s: Learning from a Decade of Reform*, in which it accepted some of the arguments made by the critics of the Washington Consensus. Market reform, the report concluded, is not enough. Strengthening institutions, promoting greater social equity, and investing in human capital are also essential. Perhaps most importantly, the Bank acknowledged that there is no “one size fits all” set of policies for economic growth. Different countries have different needs, and policymakers in these countries have sometimes been more aware of these specific needs than World Bank economists seeking to impose a particular set of reforms. According to the report’s preface:

Unquestionably, macroeconomic stability, domestic liberalization, and openness lie at the heart of any sustained growth process. But the options for achieving these goals vary widely . . . In dealing with the growth process, economists have no formula. They have broad principles and tools . . . the manner and sequence in which economic principles and tools are used will determine whether specific country growth strategies will succeed or not.

Meanwhile, the IMF has replaced its "structural adjustment" policies with an emphasis on "poverty reduction" policies which are intended to give countries more voice in creating their own development plans.

For many critics, these reforms do not go far enough. They suggest that the policies of liberalization and openness advocated by the World Bank and IMF go in the wrong direction. For successful development, they say, countries need to engage in active industrial policy: promoting particular industries, using tariffs, subsidies, and other economic tools as needed, even when this implies active government modification of market outcomes. They point out that currently high-income economies *all* used such policies in earlier stages of growth; it is only now that they have grown wealthier that they preach free trade and fiscal reform to others. In addition, according to this alternative perspective, government policies aimed at improving the equity of income distribution should be an important element of development, balancing free-market forces which may tend to increase inequality.

Critics also point out that recent developments in the World Trade Organization may further threaten—rather than encourage—growth in poor economies. WTO
agreements increasingly forbid the sorts of tariffs and subsidies used by developed countries during their own industrializing periods. In addition, the "trade-related aspects of intellectual property rights" (TRIPS) provisions of the WTO increase enforcement of patents and copyrights held by rich-country corporations. This could make it more difficult for poor countries to access needed technology. Some analysts suggest that changes in trade regimes, such as reduced rich-country tariffs on poor-country products (and particularly, manufactured products), would go much farther in increasing poor country incomes than most programs of aid.

The debate on development continues. Undoubtedly, a combination of market and government-led policies will be used as countries continue to strive to develop. The unsettled question is how to determine the combination that will work best for a particular country, and how best to promote a combination of economic development and social goals.

Discussion Questions

1. What sorts of "foreign aid" programs, either official or private, are you familiar with? Would you characterize current levels of aid from rich to poor countries as generous, moderate, or stingy? What responsibilities, if any, do you think wealthy people should have towards those in developing countries? What institutions would you recommend, if any, for assuring that these responsibilities are met?

2. What have you heard about current debates over the roles of the World Bank, WTO, and IMF? Do you think these organizations are sincere in their efforts to promote economic development, or do you think they serve other interests?

4. Conclusion: Economic Development in Perspective

The world has seen dramatic economic growth over the past century, but the benefits of this growth have been unevenly distributed. Some developing nations, such as India and China, are now experiencing rapid growth rates. Others, such as much of Sub-Saharan Africa and some countries in Latin America and Central Asia, are still struggling with low, or negative, growth rates. In terms of living standards and well-being, much of the world’s population has been left out of the significant progress that appears in aggregate statistics. For the future, further development is clearly essential, but simple models of economic growth may fail to capture important elements of the development challenge.

In this chapter, we have focused on traditionally-defined economic growth and economic development. But this perspective leaves out consideration of some broader goals. One of these is the goal of ecologically sustainable development. Another important question is whether economic growth, where it is achieved, will always bring greater well-being. Most of the economic analysis we have studied focuses on marketed goods, but once people have achieved a reasonable standard of living, their happiness
may depend more on other factors, such as healthy communities, social harmony, free
time, and a clean environment, rather than more consumption.

Fundamental to any measure of economic success is the issue of social justice. If
economic growth does indeed bring benefits, but these benefits are very unequally
distributed, leaving billions in poverty, this can hardly be seen as a success. Great
inequalities also feed social tensions and conflicts, often leading to violence that can
undermine and reverse economic gains.

In the next chapter, we will consider some of these issues, in an attempt to
understand the meaning of development in the twenty-first century. The fundamental
concepts of economic growth which we have outlined here will certainly remain relevant,
but they will need to be balanced with broader concerns of environmental and social
sustainability.

**Review Questions**

1. What two variables can be added together to obtain the growth rate of GDP in a
country?
2. How can economic growth be represented using the ASR/ADE graphs discussed in
Chapter 12?
3. According to the Solow growth model, what does the output in an economy depend
on?
4. What is the growth accounting equation?
5. What was the Industrial Revolution? What factors were essential to creating the
Industrial Revolution?
6. How evenly has economic growth been distributed among different countries in
recent decades?
7. What factors are generally considered to be responsible for GDP growth in developed
nations? Have the factors responsible for growth been the same in all developed
countries?
8. About how much of the world’s income goes to the richest 20%? How much goes to
the world’s poorest 40%?
9. What is the concept of convergence in economic growth?
10. What is the evidence for and against economic convergence?
11. How can investment be used to promote economic development?
12. Is an abundance of natural capital a prerequisite for economic development?
13. How can export development both promote and threaten economic growth?
14. In what different methods can foreign capital be provided to promote economic
development?
15. What has been the most significant source of foreign capital for economic
development in recent years?
16. About how much foreign aid do rich countries give to poor countries?
17. What are the main principles of the Washington consensus?
18. What is the evidence regarding the performance of the Washington Consensus recommendations?
19. What recent reforms have been instituted at the World Bank and IMF in recent years?

**Exercises**

1. Suppose the real GDP of Macroland is $1.367 trillion in Year 1 and $1.428 trillion in Year 2. Also, assume that population in Macroland also grew from 128 million in Year 1 to 131 million in Year 2.
   
   a. What is the growth rate of real GDP in Macroland during this period?
   b. What is the growth rate of real GDP per capita in Macroland?
   c. What is real GDP per capita in Macroland in Year 2?

2. Suppose we know that the growth rate of output per worker in Macroland is 1.7% per year and the growth rate of total factor productivity is 0.8% per year. Using the growth accounting equation, calculate the growth rate of manufactured capital per worker in Macroland.

3. Using the data for each country in Table 4.1, create a graph similar to Figure 14.6 showing real GDP per capita in 2005 on the horizontal axis and the rate of real GDP per capita growth for 1990-2005 on the vertical axis. (You don’t need to include the three country income groups.) Draw each data point as a sphere approximately equal to the population of the country. Does your graph support economic convergence? Explain.
4. Match each concept in Column A with a definition or example in Column B.

a. The percent of GDP that rich countries give to poor countries as aid
   i. Nigeria

b. A country that has shown significant economic convergence in recent decades
   ii. Public aid from one country to another

  iii. Singapore

   iv. 5%

   v. A characteristic of the Industrial Revolution

   vi. 3%

   vii. The variable in the Solow growth model that reflects technology

   viii. A structural reform under the Washington Consensus

   ix. Less than 1%

   x. China

   xi. 74%

   xii. A common factor in the economic development of the “Asian Tigers”

   xiii. United States

   xiv. Over 400%

   xv. A European company purchases a factory in an African country

f. An example of a country that has grown despite a low savings rate

  g. Total factor productivity

  h. The percentage of global income going to the top 20% of households

  i. 5%

  j. A country that has grown despite a lack of natural resources

  k. High savings and investment rates

l. Growth in GDP per capita if population grows by 1% and GDP grows by 4%

  m. A country that has not shown economic convergence in recent decades

  n. The use of inanimate sources of power

  o. The percentage increase in world gross product from 1961-2004