

International Trade and Economic Development

chapter

11

LEARNING GOALS:

After reading this chapter, you should be able to:

- Understand the relationship between international trade and economic development
- Understand the relationship between the terms of trade and export instability and economic development
- Compare imports substitution with export orientation as a development strategy
- Describe the current problems facing developing countries

11.1 Introduction

With the exception of a handful of nations in North America, Western Europe, Japan, Australia, and New Zealand, most nations of the world are classified as less developed or, to put it more positively, as developing countries. In relation to developed (or more developed) countries, developing nations are characterized in general by low (and sometimes extremely low) average real per capita income, a high proportion of the labor force in agriculture and other primary activities such as mineral extraction, low life expectancies, high rates of illiteracy, high rates of population growth, and low rates of growth in average real per capita income. There is, however, no sharp dichotomy between developed and developing nations but a fairly continuous spectrum from the very rich to the very poor.

In the past, the economic relationship between the developed and developing nations was characterized by developing nations exporting primarily food and raw materials in exchange for manufactured goods from developed nations. This is still the case for the poorest developing nations, but not for the more advanced ones. In 1980, manufactured products were only 25 percent of developing country exports; by 2010, that figure exceeded 80 percent (UNCTAD, 2011).

Although the level and rate of economic development depend primarily on internal conditions in developing nations, most economists today believe that international trade can contribute significantly to the development process. This was not always the case. Until the 1980s, a sizable and influential minority of economists strongly believed that international trade and the functioning of the present international economic system hindered rather than facilitated development through secularly declining terms of trade and widely fluctuating export earnings for developing nations. These economists contended that standard international trade theory based on comparative advantage was completely irrelevant for developing nations and the development process. Therefore, they advocated industrialization through import substitution (i.e., the domestic production of manufactured goods previously imported) and generally placing less reliance on international trade by developing nations. They also advocated reform of the present international economic system to make it more responsive to the special needs of developing countries.

In this chapter, we examine all of these topics. The presentation will necessarily be brief, since these issues are discussed in detail in courses and textbooks in development economics. In Section 11.2, we examine the relationship between international trade and economic development in general. In Section 11.3, we discuss the terms of trade and their effect on economic development, and we do the same for export instability in Section 11.4. Section 11.5 then focuses on the policy of development through import substitution or through exports. Finally, in Section 11.6, we examine the major problems facing developing countries today.

11.2 The Importance of Trade to Development

In this section, we first analyze the claim that international trade theory is irrelevant for developing nations and to the development process. Then we examine the ways in which international trade operated as an “engine of growth” for the so-called regions of recent settlement in the nineteenth century and the reasons it can no longer be relied on to the same extent by today’s developing nations. We will complete this section on a positive note by examining all of the important ways in which international trade can still contribute to the process of economic development today.

11.2A Trade Theory and Economic Development

According to traditional trade theory, if each nation specializes in the production of the commodity of its comparative advantage, world output will be greater and, through trade, each nation will share in the gain. With the present distribution of factor endowments and technology between developed and developing nations, the theory of comparative advantage thus prescribes that developing nations should continue to specialize primarily in the production of and export of raw materials, fuels, minerals, and food to developed nations in exchange for manufactured products.

While this may maximize welfare in the short run, developing nations believe that this pattern of specialization and trade relegates them to a subordinate position vis-à-vis developed nations and keeps them from reaping the *dynamic* benefits of industry and maximizing their

welfare in the long run. The dynamic benefits (to be distinguished from the static benefits from comparative advantage) resulting from industrial production are a more trained labor force, more innovations, higher and more stable prices for the nation's exports, and higher income for its people. With developing nations specializing in primary commodities and developed nations specializing in manufactured products, all or most of these dynamic benefits of industry and trade accrue to developed nations, leaving developing nations poor, undeveloped, and dependent. This belief is reinforced by the observation that all developed nations are primarily industrial, whereas most developing nations are, for the most part, primarily agricultural or engaged in mineral extraction or the production of simple manufactured goods.

Thus, traditional trade theory was attacked for being static and irrelevant to the development process. According to this thesis, traditional trade theory involves adjustment to existing conditions, whereas development necessarily requires changing existing conditions. In short, traditional trade theory was believed to maximize welfare at one point in time or in the short run but not over time or in the long run.

These are serious charges, which, if true, would indeed make traditional trade theory irrelevant to the process of economic development. However, as shown in Chapter 7 (that dealt with economic growth and international trade), traditional trade theory can readily be extended to incorporate changes in factor supplies and technology over time. What this means is that a nation's pattern of development is not determined once and for all, but must be recomputed as underlying conditions change or are expected to change over time in the nation. For example, as a developing nation accumulates capital and improves its technology, its comparative advantage shifts away from primary products and simple manufactured goods to more sophisticated goods and services. To some extent, this has already occurred in Brazil, Korea, Taiwan, Mexico, and many other developing nations. As a result, traditional trade theory remains very much relevant to developing nations and the development process.

Furthermore, the dynamic benefits from industry can theoretically be incorporated into the original calculations of comparative advantage and into subsequent changes in comparative advantage over time. This may indicate that the expansion of industrial production does not always represent the best use of the developing nation's scarce resources—as some of these nations have now come to realize. Thus, although the need for a truly dynamic theory cannot be denied, comparative statics can carry us a long way toward incorporating dynamic changes in the economy into traditional trade theory. As a result, traditional trade theory, with the qualifications as noted, is of relevance even for developing nations and the development process. At least this is the feeling of most economists who have studied the problem.

11.2b Trade as an Engine of Growth

During the nineteenth century, most of the world's modern industrial production was concentrated in Great Britain. Large increases in industrial production and population in resource-poor Britain led to a rapidly rising demand for the food and raw material exports of the [regions of recent settlement](#) (the United States, Canada, Australia, New Zealand,

Argentina, Uruguay, and South Africa). For example, during the century from 1815 to 1913, Britain's population tripled, its real GNP increased 10 times, and the volume of its imports increased 20 times. The stimulus provided by their rapidly expanding exports then spread to the rest of the economy of these newly settled lands through the familiar accelerator-multiplier process. Thus, according to *Nurkse* (1970), the export sector was the leading sector that propelled these economies into rapid growth and development. That is, international trade functioned as an **engine of growth** for these nations during the nineteenth century.

The regions of recent settlement were able to satisfy Britain's burgeoning demand for food and raw materials (and in the process grow very rapidly) because of several favorable circumstances. First, these countries were richly endowed with natural resources such as fertile arable land, forests, and mineral deposits. Second, workers with various skills moved in great waves from overpopulated Europe to these mostly empty lands, and so did huge amounts of capital. Although data are far from precise, it seems that from 30 to 50 percent of total capital formation (i.e., investments) in such nations as Canada, Argentina, and Australia was financed through capital inflows. The huge inflows of capital and workers made possible the construction of railroads, canals, and other facilities that allowed the opening up of new supply sources of food and raw materials. Finally, the great improvement in sea transportation enabled these new lands to satisfy the rising demand for wheat, corn, cotton, wool, leather, and a variety of other foods and raw materials more cheaply than traditional sources of supply in Europe and elsewhere.

Thus, all "ingredients" were present for rapid growth in these new lands: The demand for their products was rising rapidly; they had great and unexploited natural resources; and they received huge amounts of capital and millions of workers from Europe. To be sure, there are some economists, notably *Kravis*, who believe (and have presented data that seem to show) that the rapid growth of the regions of recent settlement during the nineteenth century was due primarily to very favorable internal conditions (such as abundant natural resources), with trade playing only an important *supportive* role. Be that as it may, it is generally agreed that today's developing nations can rely much less on trade for their growth and development. This is due to less favorable demand and supply conditions.

On the demand side, it is pointed out that the demand for food and raw materials is growing much less rapidly today than was the case for the regions of recent settlement during the nineteenth century. There are several reasons for this: (1) The income elasticity of demand in developed nations for many of the food and agricultural raw material exports of developing nations is less (and sometimes much less) than 1, so that as income rises in developed nations, their demand for the agricultural exports of developing nations increases proportionately less than the increase in income. For example, the income elasticity of demand for coffee is about 0.8, for cocoa 0.5, for sugar 0.4, and for tea 0.1. (2) The development of synthetic substitutes has reduced the demand for natural raw materials; for example, synthetic rubber has reduced the demand for natural rubber, nylon the demand for cotton, and plastics the demand for hides and skins. (3) Technological advances have reduced the raw material content of many products, such as tin-plated cans and microcircuits. (4) The output of services (with lower raw material requirements than commodities) has grown faster than the output of commodities in developed nations. (5) Developed nations have imposed trade restrictions on many temperate exports (such as wheat, vegetables, sugar, oils, and other products) of developing nations.

On the supply side, *Cairncross* (1962) has pointed out that most of today's developing nations are much less well endowed with natural resources (except for petroleum-exporting nations) than were the regions of recent settlement during the nineteenth century. In addition, most of today's developing nations are over-populated, so that most of any increase in their output of food and raw materials is absorbed domestically rather than exported. Furthermore, the international flow of capital to most developing nations today is relatively much less than it was for the regions of recent settlement in the nineteenth century, and today's developing nations seem also to face an outflow of skilled labor rather than an inflow. (These topics are discussed in Chapter 12.) Finally, it is also true that until the 1990s, developing nations have somewhat neglected their agriculture in favor of more rapid industrialization, thereby hampering their export (and development) prospects.

11.2c The Contributions of Trade to Development

Even though international trade cannot in general be expected to be an "engine of growth" today, there are still many ways (besides the static gains from comparative advantage) in which it can contribute to the economic growth of today's developing nations. *Haberler*, among others, has pointed out the following important beneficial effects that international trade can have on economic development: (1) Trade can lead to the full utilization of otherwise underemployed domestic resources. That is, through trade, a developing nation can move from an inefficient production point inside its production frontier, with unutilized resources because of insufficient internal demand, to a point on its production frontier with trade. For such a nation, trade would represent a [vent for surplus](#), or an outlet for its potential surplus of agricultural commodities and raw materials. This has indeed occurred in many developing nations, particularly those in Southeast Asia and West Africa.

In addition, (2) by expanding the size of the market, trade makes possible division of labor and economies of scale. This is especially important in the production of light manufactures in small economies in the early stages of development. (3) International trade is the vehicle for the transmission of new ideas, new technology, and new managerial and other skills. (4) Trade also stimulates and facilitates the international flow of capital from developed to developing nations. In the case of foreign direct investments, where the foreign firm retains managerial control over its investment, the foreign capital is likely to be accompanied by foreign skilled personnel to operate it. (5) In several large developing nations, such as Brazil and India, the importation of new manufactured products stimulated domestic demand until efficient domestic production of these goods became feasible. Finally, (6) international trade is an excellent antimonopoly weapon because it stimulates greater efficiency by domestic producers to meet foreign competition. This is particularly important to keep low the cost and price of intermediate or semifinished products used as inputs in the domestic production of other commodities.

Critics of international trade can match this impressive list of benefits with an equally impressive list of the allegedly harmful effects of trade. However, since a developing nation can refuse to trade if it gains nothing or loses, the presumption is that it must also gain from trade. It is true that when most of the gains from trade accrue to developed nations, there is a great deal of dissatisfaction and justification for demands to rectify the situation, but this should not be construed to mean that trade is actually harmful. One can, of course, always

find cases where, on balance, international trade may actually have hampered economic development. However, in most cases it can be expected to provide invaluable assistance to the development process. This has been confirmed empirically by many researchers (see Selected Bibliography at the end of the chapter). China, which for security and ideological reasons strove for self-sufficiency during most of the postwar period, during the 1990s came to appreciate the potential contribution of trade to its growth and development and is indeed now reaping major benefits from international trade—as are the former communist countries of Eastern Europe after the fall of communism.

11.2b International Trade and Endogenous Growth Theory

Recent developments in [endogenous growth theory](#) starting with *Romer* (1986) and *Lucas* (1988) provide a more convincing and rigorous theoretical basis for the positive relationship between international trade and long-run economic growth and development. Specifically, the new theory of endogenous economic growth postulates that lowering trade barriers will speed up the rate of economic growth and development in the long run by (1) allowing developing nations to absorb the technology developed in advanced nations at a faster rate than with a lower degree of openness, (2) increasing the benefits that flow from research and development (R&D), (3) promoting larger economies of scale in production, (4) reducing price distortions and leading to a more efficient use of domestic resources across sectors, (5) encouraging greater specialization and more efficiency in the production of intermediate inputs, and (6) leading to the more rapid introduction of new products and services.

To be sure, many of these ways by which freer trade can stimulate growth and development had been recognized earlier (see Section 11.2c). Previous theorizing, however, was much more casual and less rigorous. The new endogenous growth theory probes deeper and seeks to spell out more rigorously and in greater detail the actual channels or the ways by which lower trade barriers can stimulate growth in the long run. In particular, endogenous growth theory seeks to explain how *endogenous* technological change creates externalities that offset any propensity to diminishing returns to capital accumulation (as postulated by neoclassical growth theory). Diminishing returns arise when more units of a variable input are used with fixed amounts of other inputs.

In spite of the progress made by the new endogenous growth theory in spelling out theoretically the channels through which freer trade leads to faster economic growth and development in the long run, it has been difficult to test these links explicitly in the real world because of a lack of more detailed data. In fact, as *Edwards* (1993) and *Pack* (1994) point out, most empirical tests to date have been based on broad cross-sectional data for groups of countries and are not very different from the empirical studies conducted earlier. That is, these new empirical studies (see the references in Selected Bibliography) have generally shown that openness leads to faster growth, but they have not been able to actually test in detail the specific channels by which trade is supposed to lead to faster growth in the long run—which is the major theoretical contribution of endogenous growth theory. For this, more specific country studies examining the relationship among innovation, trade, and growth are needed (see Case Study 11-1).

■ CASE STUDY 11-1 The East Asian Miracle of Growth and Trade

Table 11.1 shows the average growth rate of real GDP and trade in the **High-Performance Asian Economies (HPAEs)**. These include Hong Kong, Korea, Singapore, and Taiwan (the so-called four “tigers,” which started rapid growth in the 1960s), as well as Malaysia, Indonesia, Thailand, and especially China, which followed them in the high-growth path in the 1970s and 1980s. Because of its spectacular growth, China is a class by itself. Data on Taiwan (Chinese Taipei) were not available.

The table shows that real GDP grew at the average rate of 6.9 percent in the HPAEs during the 1980–1990 decade and 7.7 percent in the 1990–1995 period. The growth of real GDP in China was even greater—10.2 percent and 12.8 percent, respectively. At these rates, the growth of real GDP would double every ten years or so in the HPAEs and every six or seven years in China.

Table 11.1 also shows that the rate of growth of exports was even greater than the growth of GDP. The growth of exports is certain to have provided a great stimulus to the growth of GDP and in turn to have been stimulated by it. There were, of course, other forces at work that contributed to the extraordinary growth of HPAEs and China. These were extremely high rates of savings and investments, significant improvement in education and

training, the rapid rate of adoption of new technologies, and the shift from agrarian to industrial economies. This “East Asian miracle” of growth and trade has to be compared with much lower average growth rates of real GDP and exports for all developing countries and for industrial countries (see Table 11.1).

In July 1997, however, Thailand suddenly plunged into a deep economic crisis that quickly spread to the other HPAEs (with the exception of China, which had maintained a tight control over its economy). The cause of the crisis was excessive borrowing of short-term funds in dollars and yen on international capital markets and using a great deal of these funds for real estate speculation and other unproductive investments. When local banks and firms were unable to repay their loans, foreign banks refused to extend new loans. Local banks then stopped making loans to local businesses, causing many of them to fail and plunging the nations into deep recession. At the height of the crisis in 1997–1998, the real GDP of Korea, Hong Kong, Thailand, and Malaysia declined by more than 5 percent and by nearly 15 percent in Indonesia. By 1998–1999, however, the worst of the crisis was over and growth had resumed, but at lower than the precrisis levels (except for China).

■ **TABLE 11.1.** Average Growth of Real GDP and Trade in HPAEs, 1980–1995 (Percentages)

	Growth of Real GDP		Growth of Exports	
	1980–1990	1990–1995	1980–1990	1990–1995
Korea	9.4%	7.2%	12.0%	13.4%
Hong Kong	6.9	5.6	14.4	13.5
Singapore	6.4	8.7	10.0	13.3
Thailand	7.6	8.4	14.0	14.2
Indonesia	6.1	7.6	5.3	21.3
Malaysia	<u>5.2</u>	<u>8.7</u>	<u>10.9</u>	<u>14.4</u>
Average	6.9	7.7	11.1	15.0
China	10.2	12.8	11.5	15.6
Developing countries	2.8	2.1	7.3	5.2
Industrial countries	3.2	2.0	5.2	6.4

Source: World Bank, *World Bank Development Report, 1997–2009*.

11.3 The Terms of Trade and Economic Development

In this section, we first define the various terms of trade. We then analyze the alleged reasons for expecting the commodity terms of trade of developing nations to deteriorate. Finally, we present the results of some empirical studies that have attempted to measure the change in developing nations' commodity and income terms of trade over time.

11.3A The Various Terms of Trade

In Section 4.6, we defined the commodity, or net barter, terms of trade. However, there are several other types of terms of trade, notably, the income terms of trade, the single factorial terms of trade, and the double factorial terms of trade. We will define each of these terms of trade, give an example of each, and explain their significance.

In Section 4.6, we defined the **commodity, or net barter, terms of trade** (N) as the ratio of the price index of the nation's exports (P_X) to the price index of its imports (P_M) multiplied by 100 (to express the terms of trade in percentages). That is:

$$N = (P_X/P_M) 100 \quad (11-1)$$

For example, if we take 1980 as the base year ($N = 100$), and we find that by the end of 2010 the nation's P_X fell by 5 percent (to 95), while its P_M rose by 10 percent (to 110), then this nation's commodity terms of trade declined to

$$N = (95/110)100 = 86.36$$

This means that between 1980 and 2010 the nation's export prices fell by 14 percent in relation to its import prices.

A nation's **income terms of trade** (I) are given by

$$I = (P_X/P_M) Q_X \quad (11-2)$$

where Q_X is an index of the *volume* of exports. Thus, I measures the nation's export-based capacity to import. Returning to our example, if Q_X rose from 100 in 1980 to 120 in 2010, then the nation's income terms of trade rose to

$$I = (95/110)120 = (0.8636)(120) = 103.63$$

This means that from 1980 to 2010 the nation's capacity to import (based on its export earnings) increased by 3.63 percent (even though P_X/P_M declined). The change in the income terms of trade is very important for developing nations, since they rely to a large extent on imported capital goods for their development.

A nation's **single factorial terms of trade** (S) are given by

$$S = (P_X/P_M) Z_X \quad (11-3)$$

where Z_X is a *productivity* index in the nation's export sector. Thus, S measures the amount of imports the nation gets per unit of domestic factors of production embodied in its exports. For example, if productivity in the nation's export sector rose from 100 in 1980 to 130 in 2010, then the nation's single factorial terms of trade increased to

$$S = (95/110)130 = (0.8636)(130) = 112.27$$

This means that in 2010 the nation received 12.27 percent more imports per unit of domestic factors embodied in its exports than it did in 1980. Even though the nation shares part of its productivity increase in its export sector with other nations, the nation is better off in 2010 than it was in 1980 (by more than indicated by the increase in I and even though N declined).

The concept of the single factorial terms of trade can be extended to measure the nation's **double factorial terms of trade** (D), given by

$$D = (P_X/P_M)(Z_X/Z_M) 100 \quad (11-4)$$

where Z_M is an *import* productivity index. Thus, D measures how many units of domestic factors embodied in the nation's exports are exchanged per unit of *foreign* factors embodied in its imports. For example, if Z_M rises from 100 to 105 between 1980 and 2010, then D rises to

$$D = (95/100)(130/105) = (0.8636)(1.2381)(100) = 106.92$$

Of the four terms of trade defined, N , I , and S are the most important. D does not have much significance for developing nations and is very seldom, if ever, measured. (It was included here only for the sake of completeness.) The most significant terms of trade for developing nations are I and S . However, since N is the easiest to measure, most of the discussion in the economic literature has been in terms of N . Indeed, N is often referred to simply as "the terms of trade." As we have seen in the above examples, I and S can rise even when N declines. This is generally regarded as favorable to a developing nation. Of course, the most favorable situation is when N , I , and S all increase. On the other hand, the worst possible situation from the point of view of a developing nation occurs when all three terms of trade deteriorate. This may lead to *immiserizing growth*, discussed in Section 7.5B.

11.3B Alleged Reasons for Deterioration in the Commodity Terms of Trade

According to such economists as *Prebisch*, *Singer*, and *Myrdal*, the *commodity terms of trade* of developing nations tend to deteriorate over time. The reason is that most or all of the productivity increases that take place in developed nations are passed on to their workers in the form of higher wages and income, while most or all of the productivity increases that take place in developing nations are reflected in lower prices. Thus, developed nations, so the argument goes, have the best of both worlds. They retain the benefits of their own productivity increases in the form of higher wages and income for their workers, and at the same time they also reap most of the benefits from the productivity increases taking place in developing nations through the lower prices that they are able to pay for the agricultural exports of developing nations.

The very different response to productivity increases in developed and developing nations is due to the widely differing conditions in their internal labor markets. Specifically, because labor is relatively scarce in developed nations and labor unions are strong, most of the productivity increases in developed nations are extracted by labor in the form of higher wages, leaving costs of production and prices more or less unchanged. Indeed, labor in these nations was often able to extract wage increases that are even higher than their productivity increases. This raised costs of production and the prices of the manufactured

goods that developed nations export. On the other hand, because of surplus labor, large unemployment, and weak or nonexistent labor unions in most developing nations, all or most of the increases in productivity taking place in these nations are reflected in lower production costs and in lower prices for their agricultural exports.

If all productivity increases were reflected in lower commodity prices in both developed and developing nations, the terms of trade of developing nations should have improved over time. The reason is that productivity increases in agriculture are generally smaller than in industry. Therefore, the cost and prices of manufactured goods should fall in relation to the prices of agricultural commodities. Since developed nations export mostly manufactured goods and import mostly agricultural commodities and raw materials, their terms of trade should deteriorate, so that the terms of trade of developing nations (the inverse, or reciprocal) should improve over time. It is because productivity increases are reflected in higher wages in developed countries but in lower prices in developing countries that, according to *Prebisch* (1962), *Singer* (1950), and *Myrdal* (1959), we can expect a secular deterioration in the collective terms of trade of developing nations.

Another reason for expecting the terms of trade of developing nations to deteriorate is that their demand for the manufactured exports of developed nations tends to grow much faster than the latter's demand for the agricultural and raw material exports of developing nations. This is due to the much higher income elasticity of demand for manufactured goods than for agricultural commodities and raw materials. While these arguments seem to make some sense, it is difficult to evaluate them on theoretical grounds alone. Furthermore, the fact that many developing nations have experienced a large increase in the share of manufactured exports in their total exports during the past decades makes the calculations much more difficult and the results obtained less useful.

11.3c Historical Movement in the Commodity and Income Terms of Trade

Prebisch and Singer based their belief that the (commodity) terms of trade of developing nations tend to deteriorate on a 1949 United Nations study that showed that the terms of trade of the United Kingdom rose from 100 in 1870 to 170 in 1938. Since the United Kingdom exported manufactured goods and imported food and raw materials while developing nations exported food and raw materials and imported manufactured goods, Prebisch and Singer inferred from this that the terms of trade of developing nations (the inverse of the terms of trade of the United Kingdom) had fallen from 100 to $100/170 = 59$.

This conclusion was seriously challenged on several grounds. First of all, since the prices of exports and imports were measured at dockside in the United Kingdom, a great deal of the observed relative decline in the price of food and raw material imports of the United Kingdom reflected the sharp decline in the cost of ocean transportation that occurred over this period and not lower relative prices received by exporting nations. Second, the higher relative prices received by the United Kingdom for its manufactured exports reflected the greater quality improvements in manufactured goods than in primary commodities. For example, a typewriter or PC today does many more things automatically than a typewriter of 20 or 30 years ago, whereas a pound of coffee today is not much different from a pound of coffee of previous years. Therefore, it is only natural that the price of some manufactured goods should rise in relation to the price of primary commodities. Third, developed nations also exported some primary commodities (witness the large agricultural

exports of the United States), and developing nations also exported many manufactured goods. Consequently, measuring the terms of trade of developing nations as the price of traded primary commodities divided by the price of traded manufactured goods is not entirely valid. Fourth, the study ended in a depression year when prices of primary commodities were abnormally low, so that the increase in the terms of trade of the United Kingdom (and therefore the decline in the terms of trade of developing nations) was greatly overestimated.

Such criticisms stimulated other empirical studies that attempted to overcome the shortcomings of the United Nations study. One of these is the study published in 1956 by *Kindleberger*, in which he concluded that the terms of trade of developing nations vis-à-vis Western Europe declined only slightly from 1870 to 1952. However, he also could not take quality changes into account. A 1963 study by *Lipsev* found that the terms of trade of developing nations in relation to those of the United States did not suffer any continuous downward trend from 1880 to 1960. They rose before World War I and from World War II to 1952 and declined after that. More recently, *Spraos* (1983) confirmed that the commodity terms of trade of developing nations had deteriorated from 1870 to 1938, but by much less than was found in the United Nations study, after correcting for transportation costs and quality changes. By including the postwar period until 1970, however, *Spraos* found no evidence of deterioration. *Grilli and Yang* (1988) found that the terms of trade *between primary products and manufactures* (the approximate terms of trade of developing nations at the time) declined by about 0.6 percent per year over the 1900–1986 period and since 1953 when petroleum products were excluded. These results are confirmed by *Reinhart and Wickham* (1994) for the 1900–1990 period. *Cashin and McDermott* (2002) showed that real commodity prices deteriorated by about 1 percent per year over the 140-year period from 1862 to 1999. They also found evidence of rising amplitude of price fluctuations since the early 1900s and more frequent fluctuations since the early 1970s. These results were confirmed by *Harvey et al.* (2010). Finally, *Zanias* (2004) showed with Figure 11.1 that the price of primary commodities with respect to the price of manufactured goods (measured

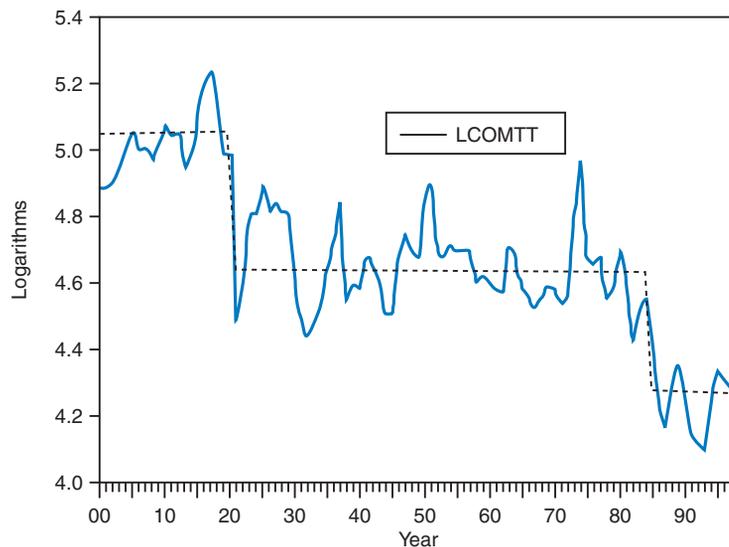


FIGURE 11.1. Commodity Terms of Trade and Structural Breaks, 1900–1998.

along the vertical axis in logarithms, so that equal distances refer to equal percentages) dropped to nearly one-third from 1900 to 1998, but that this occurred during structural breaks (1915–1920 and 1975–1993) rather than gradually over time.

Several important conclusions emerge from these studies. First, estimating the change in the secular terms of trade inevitably faces serious statistical difficulties. For example, results are very sensitive to which years are taken as the beginning and the end of the data series and the way the price indices of exports and imports are calculated. Second, the movement in the overall terms of trade of all developing nations does not have much relevance for individual developing nations. For example, a developing nation that exported food experienced terms of trade that increased much less than one that exported primarily petroleum trade. Thus, what is important is the type of products that each developing nation exports and the change in the price of those products over time (see Case Study 11-2). Third, most studies found that, regardless of the secular movement in the *commodity terms of trade*, the overall *income terms of trade* of developing nations as a group have increased substantially over time because of sharply rising volumes of exports. For example, *Grilli and Yang* (1988) found that between 1953 and 1983 the commodity terms of trade of developing nations declined by about 20 percent, but their income terms of trade increased by about 165 percent (and as pointed out earlier, the income terms of trade are more important than the commodity terms of trade for developing nations). Finally, attempts to measure the factorial terms of trade have been seriously hampered by the difficulty of obtaining measures of productivity changes.

■ CASE STUDY 11-2 Change in Commodity Prices over Time

Table 11.2 shows the change in commodity price indices in selected years from 1972 to 2011. Setting the price in 2000 equal to 100, the table shows that the price of nonfuel commodities rose from 44 in 1972 to 238 in 2011, or by 138 percent (note that percentage changes are calculated by using the average of the initial and ending prices). Over the same 1972–2011 period, food prices rose by 115 percent, beverages by 128 percent, raw materials by 141 percent, and metals by 160 percent, as compared with 188 percent for petroleum. Note,

however, that the price indices shown in Table 11.2 fluctuate a great deal over time and that we should get very different results if we compared any other set of years. The data also imply that the terms of trade of primary exporters depend very much on the commodity they export. (See Table 4.3 in Case Study 4-4 for the change in terms of trade of advanced countries, of developing countries as a whole, and of Asia, the Middle East, and the Western Hemisphere.)

■ **TABLE 11.2.** Changes in Commodities Prices, Selected Years, 1972–2011 (2000 = 100)

Commodity	1972	1974	1980	1986	1990	1995	2000	2005	2010	2011	% Change 1972–2010
Nonfuel commodities	44	85	114	85	106	125	100	126	202	238	138
Food	59	133	139	90	113	127	100	122	182	218	115
Beverages	60	92	191	195	102	154	100	132	233	272	128
Raw materials	27	44	80	64	94	124	100	102	127	156	141
Metals	43	79	110	79	122	122	100	160	323	366	160
Petroleum	10	41	130	50	82	61	100	189	276	314	188

Source: International Monetary Fund, *International Financial Statistics*, (Washington, D.C.: IMF, various issues).

11.4 Export Instability and Economic Development

Independently of deteriorating long-run or secular terms of trade, developing nations may also face large *short-run fluctuations* in their export prices and earnings that could seriously hamper their development. In this section, we concentrate on this short-run instability. We first analyze from a theoretical point of view the causes and effects of short-run fluctuations in the export prices and earnings of developing nations. Then we present the results of some empirical studies that have attempted to measure the magnitude of these short-run fluctuations and their actual effect on development. Finally, we discuss briefly international commodity agreements directed at stabilizing and increasing the export prices and earnings of developing nations.

11.4A Cause and Effects of Export Instability

Developing nations often experience wild fluctuations in the prices of their primary exports. This is due to both inelastic and unstable demand and supply. In Figure 11.2, D and S represent, respectively, the steeply inclined (inelastic) hypothetical demand and supply curves of developing nations' primary exports. With D and S , the equilibrium price is P . If for whatever reason D decreases (shifts to the left) to D' or S increases (shifts to the right) to S' , the equilibrium price falls sharply to P' . If both D and S shift at the same time to D' and S' , the equilibrium price falls even more, to P'' . If then D' and S' shift back to D and S , the equilibrium price rises very sharply and returns to P . Thus, inelastic (i.e., steeply inclined) and unstable (i.e., shifting) demand and supply curves for the primary exports of developing countries can lead to wild fluctuations in the prices that these nations receive for their exports.

But why should the demand and supply curves of the primary exports of developing nations be inelastic and shifting? The demand for many primary exports of developing nations is price inelastic because individual households in developed nations spend only

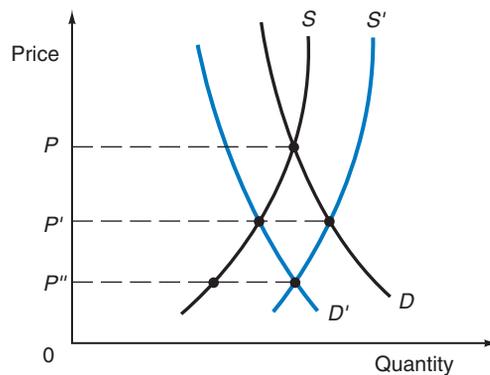


FIGURE 11.2. Price Instability and the Primary Exports of Developing Nations.

D and S refer, respectively, to the demand and supply curves of the primary exports of developing nations. With D and S , the equilibrium price is P . If D shifts to D' or S to S' , the equilibrium price falls sharply to P' . If both D and S shift to D' and S' , the equilibrium price falls even more, to P'' . If, subsequently, D' and S' shift back up to D and S , the equilibrium price moves back up to P . Thus, price inelastic and unstable D and S curves may lead to wild price fluctuations.

a small proportion of their income on such commodities as coffee, tea, cocoa, and sugar. Consequently, when the prices of these commodities change, households do not significantly change their purchases of these commodities, resulting in a price-inelastic demand. On the other hand, the demand for many minerals is price inelastic because few substitutes are available. At the same time, the demand for the primary exports of developing nations is unstable because of business cycle fluctuations in developed nations.

Turning to the supply side, we find that the supply of the primary exports of developing nations is price inelastic (i.e., the quantities supplied do not respond very much to changes in their prices) because of internal rigidities and inflexibilities in resource uses in most developing nations, especially in the case of tree crops that involve long gestation periods. Supplies are unstable or shifting because of weather conditions, pests, and so on.

Because of wildly fluctuating export prices, the export *earnings* of developing nations are also expected to vary significantly from year to year. When export earnings rise, exporters increase their consumption expenditures, investments, and bank deposits. The effects of these are magnified and transmitted to the rest of the economy by the familiar multiplier-accelerator process. The subsequent fall in export earnings results in a multiple contraction of national income, savings, and investment. This alternation of boom and bust periods renders development planning (which depends on imported machinery, fuels, and raw materials) much more difficult.

11.4B Measurements of Export Instability and Its Effect on Development

In a well-known study published in 1966, *MacBean* found that over the 1946–1958 period the index of instability of export earnings (defined as the average percentage deviation of the dollar value of export proceeds from a five-year moving average and measured on a scale of 0 to 100) was 23 for a group of 45 developing nations and 18 for a group of 18 developed nations for which data were available.

These empirical results seem to indicate that, while **export instability** is somewhat larger for developing nations than for developed nations, the degree of instability itself is not very large *in an absolute sense* when measured on a scale of 0 to 100. MacBean also showed that the greater instability of export earnings of developing nations was not due, as previously believed, to the fact that these nations exported only a few commodities or exported these commodities to only a few nations (i.e., to commodity and geographic concentration of trade) but depended primarily on the type of commodities exported. For example, those nations exporting such commodities as rubber, jute, and cocoa faced much more unstable export earnings than developing nations exporting petroleum, bananas, sugar, and tobacco.

MacBean further showed that the greater fluctuation in the export earnings of developing nations did not lead to significant fluctuations in their national incomes, savings, and investments and did not seem to interfere much with their development efforts. This was probably due to the relatively low absolute level of instability and to the fact that very low foreign trade multipliers insulated the economies of developing nations from fluctuations in their export earnings. These results led MacBean to conclude that the very costly international commodity agreements demanded by developing nations to stabilize their export earnings were not justified. The same resources could be used more profitably for truly

developmental purposes than to stabilize export earnings, which were not very unstable to begin with. Subsequent studies by *Massell* (1970), *Lancieri* (1978), *Love* (1986), *Massell* (1990), *Ghosh and Ostry* (1994), and *Sinha* (1999) confirm for later periods MacBean's results that export instability was not very large and that it has not hampered development.

11.4c International Commodity Agreements

The stabilization of export prices *for individual producers* in developing nations could be achieved by purely domestic schemes such as the **marketing boards** set up after World War II. These operated by purchasing the output of domestic producers at the stable prices set by the board, which would then export the commodities at fluctuating world prices. In good years, domestic prices would be set below world prices so that the board could accumulate funds, which it would then disburse in bad years by paying domestic producers higher than world prices. Examples are the cocoa marketing board of Ghana and the rice marketing board of Burma (now Myanmar). However, only a few of these marketing boards met with some degree of success because of the great difficulty in correctly anticipating the domestic prices that would average out world prices over time and because of corruption.

Developing nations, however, were most interested in **international commodity agreements** because they also offered the possibility of *increasing* their export prices and earnings. There are three basic types of international commodity agreements: buffer stocks, export controls, and purchase contracts.

Buffer stocks involve the purchase of the commodity (to be added to the stock) when the commodity price falls below an agreed minimum price, and the sale of the commodity out of the stock when the commodity price rises above the established maximum price. Buffer stock agreements have certain disadvantages: (1) Some commodities can be stored only at a very high cost; and (2) if the minimum price is set above the equilibrium level, the stock grows larger and larger over time. An example of a buffer stock arrangement is the *International Tin Agreement*. This was set up in 1956, but, after a number of years of successful operation, it collapsed in 1985. The *International Natural Rubber Agreement* was set up in 1979 and was terminated in 1998, while the *International Cocoa Agreement* was set up in 2001 and is still in operation.

Export controls seek to regulate the quantity of a commodity exported by each nation in order to stabilize commodity prices. The main advantage of an export control agreement is that it avoids the cost of maintaining stocks. The main disadvantage is that (as with any quota system) it introduces inefficiencies and requires that all major exporters of the commodity participate (in the face of strong incentives for each of them to remain outside or cheat on the agreement). An example is the *International Sugar Agreement*. This was negotiated in 1954 but has generally been unable to stabilize and raise sugar prices because of the ability of developed nations to increase their own production of beet sugar. The *International Coffee Agreement*, set up in 1962, did succeed in stabilizing coffee prices during the 1980s. This agreement, however, collapsed in 1989 as did coffee prices, but it was revived in 1993. Since the late 1990s, however, coffee prices have collapsed in the face of excessive supplies that the global export retention scheme of the Association of Coffee Producing Countries failed to curtail sufficiently. As pointed out in Section 9.3c, OPEC was in disarray during the 1980s and most of the 1990s as oversupply of petroleum products and contained growth

in demand caused large price declines, after the sharp increases of the 1970s. Since the start of the last decade, however, petroleum prices have risen sharply (see Table 11.2).

Purchase contracts are long-term multilateral agreements that stipulate a minimum price at which importing nations agree to purchase a specified quantity of the commodity and a maximum price at which exporting nations agree to sell specified amounts of the commodity. Purchase contracts thus avoid the disadvantages of buffer stocks and export controls but result in a two-price system for the commodity. An example is the *International Wheat Agreement*, which was signed in 1949. This agreement, however, affected primarily the United States, Canada, and Australia rather than developing nations, and it became inoperative when, as a result of the huge wheat purchases by the Soviet Union since the early 1970s, wheat prices rose sharply above the established price ceiling. The agreement was terminated in 1995.

The international commodity agreements mentioned earlier are the only ones of any significance to have been operational at one time or another since World War II. However, as already noted, with the exception of the International Coffee Agreement, they either failed or have had very limited success in stabilizing and increasing the export prices and earnings of developing nations. One reason for this is the very high cost of operating them and the general lack of support by developed nations since they would have to shoulder most of the burden of setting up and running these international agreements. To be noted is that in the evaluation of international commodity agreements, it is important to determine whether prices or earnings are to be stabilized and whether instability results from shifts in the demand curve or in the supply curve. (This is left as an end-of-chapter problem.)

A modest compensatory financing scheme was set up in 1969 by the International Monetary Fund (IMF) for developing nations whose export earnings in any one year fell below the previous five-year moving average (this is discussed in Chapter 21). A similar scheme to stabilize export earnings was set up in 1975 with a \$400 million fund by the European Union (EU) for the 57 Lomé Convention countries in Africa, the Caribbean, and the Pacific. However, these were very modest programs and fell far short of what developing nations demanded. Nevertheless, compensatory financing schemes could provide many of the benefits and avoid most of the problems associated with international commodity agreements.

11.5 Import Substitution versus Export Orientation

We now examine the reasons why developing nations want to industrialize and the advantages and disadvantages of industrialization through import substitution versus exports. We will then evaluate the results of the policy of import substitution, which most developing nations chose as their strategy for industrialization and development during the 1950s, 1960s, and 1970s. Afterward, we will examine the subsequent trend toward trade liberalization in most developing countries.

11.5A Development through Import Substitution versus Exports

During the 1950s, 1960s, and 1970s, most developing nations made a deliberate attempt to industrialize rather than continuing to specialize in the production of primary commodities (food, raw materials, and minerals) for export, as prescribed by traditional trade theory.

Industrialization was relied on to provide (1) faster technological progress, (2) the creation of high-paying jobs to relieve the serious unemployment and underemployment problems faced by most developing nations, (3) higher multipliers and accelerators through greater backward and forward linkages in the production process, (4) rising terms of trade and more stable export prices and earnings, and (5) relief from balance-of-payments difficulties that result because the demand of developing nations for manufactured products rises faster than their export earnings. The desire of developing nations to industrialize is natural in view of the fact that all rich nations are industrial while most poor nations are primarily agricultural.

Having decided to industrialize, developing nations had to choose between industrialization through import substitution or export-oriented industrialization. Both policies have advantages and disadvantages. An **import-substitution industrialization (ISI)** strategy has three main advantages: (1) The market for the industrial product already exists, as evidenced by imports of the commodity, so that risks are reduced in setting up an industry to replace imports. (2) It is easier for developing nations to protect their domestic market against foreign competition than to force developed nations to lower trade barriers against their manufactured exports. (3) Foreign firms are induced to establish so-called tariff factories to overcome the tariff wall of developing nations.

Against these advantages are the following disadvantages: (1) Domestic industries can grow accustomed to protection from foreign competition and have no incentive to become more efficient. (2) Import substitution can lead to inefficient industries because the smallness of the domestic market in many developing nations does not allow them to take advantage of economies of scale. (3) After the simpler manufactured imports are replaced by domestic production, import substitution becomes more and more difficult and costly (in terms of the higher protection and inefficiency) as more capital-intensive and technologically advanced imports have to be replaced by domestic production.

Export-oriented industrialization also has advantages and disadvantages. Advantages include the following: (1) It overcomes the smallness of the domestic market and allows a developing nation to take advantage of economies of scale. This is particularly important for the many developing countries that are both very poor and small. (2) Production of manufactured goods for export requires and stimulates efficiency throughout the economy. This is especially important when the output of an industry is used as an input of another domestic industry. (3) The expansion of manufactured exports is not limited (as in the case of import substitution) by the growth of the domestic market.

On the other hand, there are two serious disadvantages: (1) It may be very difficult for developing nations to set up export industries because of the competition from the more established and efficient industries in developed nations. (2) Developed nations often provide a high level of effective protection for their industries producing simple labor-intensive commodities in which developing nations already have or can soon acquire a comparative advantage.

During the 1950s, 1960s, and 1970s, most developing nations, particularly the larger ones, strongly opted for a policy of import substitution to industrialize. They protected their infant industries or stimulated their birth with effective tariff rates that rose sharply with the degree of processing. This was done at first to encourage the relatively simple step of assembling foreign parts, in the hope that subsequently more of these parts and intermediary products could be produced domestically (backward linkage). Heavy protection of domestic industries also stimulated the establishment of tariff factories in developing nations.

11.5B Experience with Import Substitution

The policy of industrialization through import substitution generally met with only limited success or with failure. Very high rates of effective protection, in the range of 100 to 200 percent or more, were common during the 1950s, 1960s, and 1970s, in such nations as India, Pakistan, Argentina, and Nigeria. These led to very inefficient domestic industries and very high prices for domestic consumers. Sometimes the foreign currency value of imported inputs was greater than the foreign currency value of the output produced (negative value added).

Heavy protection and subsidies to industry led to excessive capital intensity and relatively little labor absorption. For example, the capital intensity in the production of steel was almost as high in capital-poor nations such as India as it is in the capital-rich United States. This quickly exhausted the meager investment funds available to developing nations and created only a few jobs. The result was that most of the yearly increase in the labor force of most developing countries had to be absorbed into agriculture and the traditional service sector, thus aggravating their unemployment and underemployment problem. In addition, the hope of finding high-paying jobs in the modern urban sector attracted many more people to the cities than could find employment, leading to an explosive situation. The highest priority was given to the construction of new factories and the purchase of new machinery, with the result of widespread idle plant capacity for lack of funds to purchase needed raw material and fuel imports. One-shift operation of plants also contributed to excessive capital intensity and low labor absorption in developing nations.

The effort to industrialize through import substitution also led to the neglect of agriculture and other primary sectors, with the result that many developing nations experienced a decline in their earnings from traditional exports, and some (such as Brazil) were even forced to import some food products that they had previously exported. Furthermore, the policy of import substitution often aggravated the balance-of-payments problems of developing nations by requiring more imports of machinery, raw materials, fuels, and even food.

The overall result was that those developing nations (such as India, Pakistan, and Argentina) that stressed industrialization through import substitution fared much worse and grew at a much slower rate than those developing economies (such as Hong Kong, Korea, and Singapore) that from the early 1950s followed an export-oriented strategy (see Case Study 11-3). It has been estimated that the policy of import substitution resulted in the

■ CASE STUDY 11-3 The Growth of GDP of Rich Countries, Globalizers, and Nonglobalizers

Table 11.3 shows that globalizing developing countries (the so-called globalizers) grew much faster than rich countries and nonglobalizing developing countries (i.e., than the nonglobalizers) since the beginning of the 1980s, but not earlier. The rich countries were defined as the 24 OECD industrial countries plus the early globalizers (and relatively high-income economies) of Chile, Hong Kong, Singapore, South Korea, and Taiwan. Of the remaining 73 countries for which data were

available, the top one-third of these developing countries (about 24 of them) in terms of growth of trade as a share of their GDP and in terms of reduction in their average tariff rates were defined as globalizers, while the remaining two-thirds of the countries (49 of them) were defined as nonglobalizers. Growth was measured as the weighted average increase of real GDP. Thus, globalization was clearly associated with more rapid growth since the beginning of the 1980s.

(continued)

■ CASE STUDY 11-3 Continued

■ **TABLE 11.3.** Average Growth of Real GDP of Rich Countries, Globalizers, and Nonglobalizers, 1960s–2000s (Percentage)

	1960s	1970s	1980s	1990s	2000s
Rich countries	4.7	3.1	2.3	2.2	1.6
Globalizers	1.4	2.9	3.5	5.0	5.0
Nonglobalizers	2.4	3.3	0.8	1.4	2.3

Sources: D. Dollar and A. Kraay, "Trade Growth and Poverty," *World Bank Research Paper*, March 2001, p. 38; and D. Salvatore, "Globalization, International Competitiveness, and Growth: Advanced and Emerging Markets, Large and Small Countries," *Journal of International Commerce, Economics and Policy*, April 2010, pp. 21–32.

waste of up to 10 percent of the national income of developing nations. It must be pointed out, however, that a policy of import substitution may be of some benefit in the early stages of development (especially for larger developing nations), while an export orientation becomes an absolute necessity later in the development process. Thus, rather than being alternatives, policies of import substitution and export orientation could profitably be applied to some extent sequentially, especially in the larger developing nations. This was in fact what Korea did.

11.5c Trade Liberalization and Growth in Developing Countries

Starting in the 1980s, many developing nations that had earlier followed an import substitution industrialization (ISI) strategy began to liberalize trade and adopt an outward orientation. The reforms were spurred by the debt crisis that began in 1982 (see Section 11.6B) and the evident success of the outward-oriented countries. Table 11.4 shows some trade-liberalizing measures adopted by some developing countries in Latin America, Africa, and Asia during the 1980s and early 1990s. In general, the reforms involved a dramatic reduction and simplification in average tariff rates and quantitative import restrictions. These, in turn, resulted in a much higher degree of openness, as measured by the sum of exports plus imports as a ratio of GDP, a sharp increase in the ratio of manufactures in total exports (see Case Study 11-4), and higher rates of growth for the liberalizing economies. Trade reforms were most successful when launched in a single bold move rather than with a number of small hesitant steps over time and when accompanied by anti-inflationary measures.

The World Bank has greatly facilitated the planning and carrying out of trade liberalization programs with technical assistance and loans. The World Bank began its lending for structural adjustment in 1980, and by 1995 it had lent more than \$20 billion to more than 60 countries for the purpose of implementing structural or sectoral reforms. The largest number of loans went to Sub-Saharan African countries, but since these loans were generally small, a much larger amount went to other developing countries. The fact that many of the liberalizing developing countries have joined the General Agreement on Tariffs and Trade (GATT, see Section 9.6B) and that the Uruguay Round was successfully concluded

■ **TABLE 11.4.** Trade Reforms in Selected Developing Countries

Country	Reforms
Argentina	Average tariff levels were reduced from 18 percent to 11 percent and import licensing restrictions were substantially eased in 1991. The highest tariff rate was cut by another 15 percentage points in 1992.
Brazil	Major trade reforms were announced in March 1990 to replace almost all quotas with tariffs. Average tariff rates were reduced from 37 percent to 25 percent in 1990, to 21 percent in 1992, and to 14 percent in 1994.
Chile	In 1973 all quotas were removed, and a uniform tariff of 10 percent was imposed on all goods except automobiles. The tariff was raised to 15 percent following the economic crisis of the early 1980s.
China	A 1992 agreement began significant import liberalization, including a phaseout of almost 90 percent of all NTBs by 1998.
Egypt	The import quota on all tradable goods was reduced from 37 percent in 1990 to 23 percent in 1991 and 10 percent in 1992, and in 1993 the highest tariff rate was reduced from 100 percent to 80 percent.
India	Restrictive import licensing requirements covering 70 percent of all imports were eliminated in 1992, and the peak tariff was reduced from 110 percent to 85 percent in 1993.
Mexico	Quotas were substantially reduced starting in 1985. By 1988, tariffs were reduced to an average of 11 percent, with a maximum rate of 20 percent.
Philippines	Trade reform was adopted in 1991 to reduce the average tariff rate from 28 percent to 20 percent by 1995. Some quotas were also lifted.
Turkey	Quotas and other NTBs barriers have been substantially reduced starting in 1980 and tariff reduced substantially in 1992.

Sources: D. Rodrik, "The Rush to Free Trade in the Developing World: Why So Late? Why Now? Will It Last?" *NBER Working Paper No. 3947*, January 1992, pp. 3–4; and S. Hickok, "Recent Trade Liberalization in Developing Countries," *Quarterly Review*, Federal Reserve Bank of New York, Autumn 1993, p. 3.

■ **CASE STUDY 11-4** Manufactures in Total Exports of Selected Developing Countries

Table 11.5 gives the percentage of manufactured exports in the total merchandise exports of selected developing countries in Africa, Asia, and Latin America in 1983 and 2010. The table shows that the structure of exports of all the countries shown in the table changed dramatically toward manufactures during the period examined. This is especially true for South Africa and Malaysia (where it nearly tripled) and in Thailand, Argentina, and

Mexico (where it doubled). Thus, the stereotype of developing countries exporting raw materials and foods and importing manufactured goods is no longer true. Even the conclusion that most manufactured exports of developing countries are simple, labor-intensive products is no longer valid, especially for the most advanced of the developing countries, such as Malaysia and Brazil (among the countries listed in the table).

(continued)

■ CASE STUDY 11-4 Continued

■ **TABLE 11.5.** Manufactures Exports as Percent of Total Merchandise Exports, Selected Developing Countries, 1983 and 2010

Africa	1983	2010	Asia	1983	2010	Latin America	1983	2010
Egypt	12	43	India	52	64	Argentina	16	33
Kenya	15	35	Malaysia	25	67	Brazil	39	37
South Africa	18	47	Pakistan	63	74	Chile	7	13
Tunisia	44	76	Thailand	31	75	Mexico	37	76

Source: World Bank, *World Development Indicators*, Various Issues.

(see Section 9.7A) consolidated the reforms already undertaken and encouraged further reforms. These promoted higher productivity and growth in most developing countries during this decade.

11.6 Current Problems Facing Developing Countries

In this section, we examine the most serious problems facing developing countries today. These are: (1) the conditions of stark poverty prevailing in many countries, particularly those of sub-Saharan Africa; (2) the unsustainable foreign debt of some of the poorest developing countries; and (3) the remaining trade protectionism of developed countries against developing countries' exports. Let us briefly examine each of these problems.

11.6A Poverty in Developing Countries

Table 11.6 gives the population and the per capita income in 2010, the growth in real per capita income from 1990 to 2010, and infant mortality and life expectancy in 1990 and 2010 in various groups of countries. The table shows that the average per capita income of all developing economies and former communist countries was only \$3,304 in 2010 (\$1,340 and \$4,260 for India and China, respectively) as compared with \$38,658 in high-income advanced economies. Worse still, the average growth of real per capita income was only 1.1 percent in sub-Saharan Africa (as a result of drought, wars, rapid population growth, the spread of the HIV virus, and the general failure of the development effort), 1.8 percent in the developing countries of Europe and Central Asia (because of economic restructuring after the collapse of communism), and 2.3 percent in the Middle East and North Africa (because of wars, political turmoil, and the sharp decline in petroleum prices during the 1990s).

The average growth of real per capita income was also relatively low (2.2 percent) in Latin America and the Caribbean between 1990 and 2010 because of political turmoil and failure in the development effort. Only in East Asia and the Pacific economies (and in particular, in China) did the real per capita income increase very rapidly from 1990 to 2010. In South Asia, the growth of real per capita income, although not as spectacular as in

■ TABLE 11.6. Population and Economic and Health Indicators, 1990–2010

Country/Region	Population in 2010 (Millions)	Income per Capita		Infant Mortality Rate per 1,000 Live Births		Life Expectancy Birth (years)	
		Dollars 2010	Growth Rate 1990–2010 (% per year)	1990	2010	1990	2010
Low and middle income	5,732	3,304	3.8	69	45	63	68
Sub-Saharan Africa	862	1,165	1.1	109	76	50	54
East Asia and Pacific	1,957	3,691	7.9	42	20	67	72
of which China	1,338	4,260	9.9	37	16	68	73
South Asia	1,591	1,213	4.7	89	52	58	65
of which India	1,171	1,340	5.3	84	48	58	65
Europe and Central Asia	408	7,214	1.8	41	19	68	71
Middle East and N. Africa	337	3,839	2.3	58	27	64	72
Latin America and Caribbean	578	7,802	2.2	42	18	68	74
High-income economies	1,123	38,658	1.7	10	5	75	80
World	6,855	9,097	1.6	64	41	65	70

Sources: World Bank, *World Bank Report*, 2012 and *World Development Indicators*, 2012.

East Asia, was very respectable. The table also shows that infant mortality was much higher and life expectancy much lower in low-income developing countries than in high-income developed countries, but major improvements were made in both measures throughout the world from 1990 to 2010.

Despite the fact that the number of poor people in the world (defined by the World Bank as people who live on less than \$1.25 per day) has been cut drastically during the past two-and-half decades of rapid globalization, there are still more than one billion poor people in the world today and more than 20,000 children die of starvation each day (see *Salvatore*, 2007 and 2010). The recent sharp increase in world food prices and the global financial crisis are now threatening to undo the achievements of the past in reducing world poverty and is a tragedy for the world poor.

It must be pointed out, however, that using exchange rates to convert the per capita income of other countries into dollars without taking into account differences in the purchasing power of money in each country greatly exaggerates differences in per capita incomes between high- and low-income economies—and this exaggeration is larger the lower the level of development of the country. A new measure of real per capita income based on the purchasing power of the currency in each nation indicates, for example, that the real per capita income of China was \$7,570 in 2010 rather than \$4,260 (as indicated in Table 11.6) and in India it was \$3,560 rather than \$2,580. Thus, per capita incomes adjusted for *purchasing-power parity (PPP)* greatly reduce measured differences in standards of living between high- and low-income countries; nevertheless, they remain very large (see the appendix to this chapter). Furthermore, income inequality is generally also much higher in developing countries than in developed ones (see *Campano and Salvatore*, 2006, and *Salvatore*, 2010).

11.6B The Foreign Debt Problem of Developing Countries

During the 1970s and early 1980s, developing countries accumulated a total **foreign debt** exceeding \$1 trillion, which they found very difficult to service (i.e., repay the principal or even the interest on the debt). When Mexico was unable to service (pay the interest on) its foreign debt in August 1982, the world was plunged into a foreign debt crisis. As part of the deal to renegotiate their debts, developing nations were required by the International Monetary Fund (IMF) to adopt austerity measures to reduce imports and to cut inflation, wage increases, and domestic programs. By 1994 the foreign debt problem was more or less resolved (i.e., made manageable) for middle-income developing countries but not for the poorest heavily indebted developing countries (most of which were in sub-Saharan Africa). In June 1999, the G-7 group of seven leading industrial nations wrote off up to 90 percent of the debt that the world's most indebted nations owed to their governments.

The financial crisis in East Asia in 1997–1998, Russia in 1998, Brazil in 1999 and 2002, and Turkey and Argentina in 2000–2002 caused the foreign debt of these nations to shoot up. This required rescue packages (promises of financial aid) by the International Monetary Fund, the World Bank, and private banks of \$58 billion for Korea, \$42 for Indonesia, \$41 billion for Brazil, \$23 billion for Russia, and \$17 billion for Thailand from July 1997 through October 1998. In February 2002, the IMF extended a \$16 billion loan to Turkey to help it overcome the financial crisis, but refused to do so for Argentina (which defaulted on its \$140 billion foreign debt—the largest in history—in December 2001). In August 2002, the IMF extended a \$30 billion loan to Brazil to restore confidence and stem a massive capital outflow. By 2003, growth had resumed in Argentina and by 2005 Argentina had restructured its debt and repaid all IMF loans. In December 2005, Brazil also repaid all of its IMF loans. Despite the fact that by 2011 the foreign debt of most developing countries had improved, it still remained serious for some of them (see Case Study 11-5).

■ CASE STUDY 11-5 The Foreign Debt Burden of Developing Countries

Table 11.7 shows the total foreign debt, the foreign debt as a percentage of GNI, and the foreign debt service (interest and amortization payments on the debt) as a percentage of exports for all developing countries together and for developing countries in each geographical region in 1980 (i.e., before the official start of the Latin American debt crisis in 1982), in 1995 (before the start of the financial crisis in East Asia in 1997), and in 2010. From the table, we see that the total foreign debt of all developing countries was \$580 billion in 1980 (the largest component of which was the \$257 billion foreign debt of the Latin American and Caribbean countries). The total debt increased sharply to \$1,860 billion by 1995, and again to \$4,076 billion by 2010.

The table also shows that the total foreign debt as a percentage of GNI increased sharply from 1980 to 1995, but then it declined just as sharply by 2010, except for Europe and Central Asia (because of the disruptions arising from the collapse of communism). The foreign debt service as a percentage of exports also increased from 1980 to 1995 (except for East Asia and the Pacific and for Latin America and the Caribbean), but it then declined in all regions, except for Europe and Central Asia by 2009. Although less serious than in the 1980 and 1990s, many developing nations were still facing serious foreign debt problems in 2010, despite the fact that the rich countries had cancelled \$55 billion of the debt owed by the poorest developing countries at the end of 2005.

(continued)

■ CASE STUDY 11-5 Continued

■ TABLE 11.7. Developing Countries' Foreign Debt Indicators, 1980, 1995, 2010

	Total Debt (billion \$)			Debt as % of GNI			Debt Service as % of Exports		
	1980	1995	2010	1980	1995	2010	1980	1995	2009*
All developing countries	580	1,860	4,076	21	39	21	13	18	11
Sub-Saharan Africa	61	236	206	24	76	20	7	16	6
East Asia and Pacific	65	456	1,014	16	36	14	27	13	5
South Asia	38	152	401	16	32	19	12	30	7
Europe and Central Asia	76	246	1,273	8	33	43	7	11	27
Middle East and N. Africa	83	162	144	22	59	14	6	21	—
Latin America and Caribbean	257	609	1,039	36	36	22	36	27	18

* = 2010 data not available.

Source: World Bank, *World Development Indicators*, 2011, various issues.

11.6c Trade Problems of Developing Countries

During the 1980s, developed countries, beset by slow growth and large unemployment, increased the trade protection they provided to some of their large industries (such as textiles, steel, shipbuilding, consumer electronic products, television sets, shoes, and many other products) against imports from developing countries. These were the very industries in which developing countries had gained or were gaining a comparative advantage. A great deal of the new protectionism was directed especially against the manufactured exports of the High-Performance Asian economies (HPAEs), then called **newly industrialized economies (NIEs)**. These economies (Hong Kong, Korea, Singapore, and Taiwan) were characterized by rapid growth in gross domestic product (GDP), in industrial production, and in manufactured exports. By 1993, nearly a third of developing countries' exports to industrial countries were restricted by quotas and other nontariff trade barriers (NTBs).

Had the trend toward increased protectionism continued, it could have led to a revival (and justification) of **export pessimism** and a return to inward-looking policies in developing countries (see *Salvatore*, 2012). Fortunately, the successful completion of the Uruguay Round in December 1993 prevented this (see Section 9.7A). Although most of the liberalization that took place was in trade among developed countries, developing countries also benefited (refer to Case Study 9-7). The *Doha Round* (see Section 9.7B), launched in November 2001, was supposed to be a “development round” by dealing with the trade demands of developing countries. Sharp disagreements between developed and developing nations, and among developed nations themselves, however, have prevented its completion.

In June 1974, the General Assembly of the United Nations called for the establishment of a **New International Economic Order (NIEO)** with the aim of (1) renegotiating the international debt of developing countries and reducing interest payments, (2) negotiating international commodity agreements, (3) establishing preferential access in developed

nations' markets to all the manufactured exports of developing nations, (4) removing trade barriers on agricultural products in developed nations, (5) increasing the transfer of technology to developing nations and regulating multinational corporations, (6) increasing the yearly flow of foreign aid to developing nations to 0.7 percent of rich nations' income, and (7) allowing developing nations a greater role in international decision making. Most of these same demands had been made previously at various [United Nations Conferences on Trade and Development \(UNCTAD\)](#) held every four years since 1966. However, the slowdown in the world economy during the 1980s and early 1990s led most industrial countries to turn inward to address their own internal problems of slow growth and unemployment, leading to the demise of the NIEO as a hotly debated issue.

Nevertheless, growth has increased and poverty has fallen in many developing countries during the past three decades of rapid globalization. There is also an increased awareness in the world today that the major cause of poverty in some of the poorest developing countries is internal and due to wars, corruption, political instability, disease, and natural calamities. In 2000, the World Bank sponsored the *Millennium Development Goals (MDG)*, which proposed a program for rich countries to help the poorest developing countries stimulate growth, reduce poverty, and promote sustainable development.

In 2010, developed countries as a group gave only 0.21 percent of their GDP in foreign aid and so did the United States—most of it bilateral. The reduction in trade restrictions and protectionism from the implementation of the Uruguay Round agreement, however, provided major trade benefits to developing countries (see Case Study 11-6).

■ CASE STUDY 11-6 Globalization and World Poverty

Although globalization is often accused of increasing world poverty, the fact is that world poverty would probably be even more widespread without globalization. What is true is that globalization did not benefit all nations. Some of the poorest nations in the world (especially those in sub-Saharan Africa) seem to have been left behind and marginalized by globalization, and they were poorer (i.e., their average real per capita income was lower) in the year 2000 than in 1980. The cause of their poverty, however, is not globalization but drought, famine, internal strife, war, and AIDS. What globalization can be blamed for is not spreading the benefits of increased efficiency and openness that come with globalization more evenly and equitably to all nations.

The World Bank has estimated that the number of very poor people (those living on less than \$1.25 per day) declined by about 650 million from 1981 to 2005 (see *Shaohua and Ravillion,*

2008). Without globalization, that number would have been higher, not lower. But there remain about 1 billion people living mostly in nonglobalizing nations facing stark poverty and thousands of children that die of starvation each day.

Trying to overcome this tragedy, 189 countries signed the Millennium Declaration in September 2000, adopting the *Millennium Development Goals (MDGs)*, a set of eight objectives incorporating specific targets for reducing income poverty, tackling other sources of human deprivation, and promoting sustainable development by 2015. The eight MDGs are (1) halve extreme poverty and hunger relative to 1990; (2) achieve universal education; (3) promote gender equality; (4) reduce child mortality; (5) improve maternal health; (6) combat HIV/AIDS, malaria, and other diseases; (7) ensure environmental sustainability; and (8) establish a global partnership for development.

(continued)

■ CASE STUDY 11-6 Continued

Jeffrey Sachs (2005) has indicated that most of these goals could be reached if rich nations provided 0.7 percent of their GDP (about \$281 billion, as compared with \$129 billion in 2009) in aid to developing countries as requested by the United Nations. Only a handful of countries provide 0.7 percent or more of their GDP in foreign aid. Most of the others have promised to increase their foreign aid to 0.5 percent of the GDP by 2010 and to 0.7 by 2015.

Sources: World Bank, *Globalization, Growth and Poverty* (Washington, D.C.: World Bank, 2002); D. Dollar and A. Aart, "Trade, Growth and Poverty," and "Growth Is Good for the Poor," *World Bank Working Papers*, 2002; J. Sachs, *The End of Poverty* (New York: Penguin Press HP, 2005); and D. Salvatore, "Globalization, Growth, Poverty and Governance," in G. Cipollone, ed., *Globalization, Growth and Ethics* (Rome: Gregorian University Press, 2010), pp. 169–185.

SUMMARY

1. Although the level and the rate of economic development depend primarily on internal conditions in developing nations, international trade can contribute significantly to the development process. Some economists, however, notably Prebisch, Singer, and Myrdal, believed that international trade and the functioning of the present international economic system benefited developed nations at the expense of developing nations.
2. Even though the need for a truly dynamic theory of trade remains, the technique of comparative statics can extend traditional trade theory to incorporate changes in factor endowments, technology, and tastes. Because of less favorable demand and supply conditions, international trade today cannot be expected to be the engine of growth that it was for the regions of recent settlement in the nineteenth century. However, trade can still play a very important supportive role.
3. The commodity, or net barter, terms of trade (N) measure the movement over time in the nation's export prices relative to its import prices. The income terms of trade (I) measure the nation's export-based capacity to import. The single factoral terms of trade (S) measure the amount of imports the nation gets per unit of domestic factors embodied in its exports. I and S are more important than N for developing nations, but most of the discussion and controversy have been in terms of N (since it is the easiest to measure). I and S can rise even if N declines. Prebisch and Singer have argued that N has a tendency to decline for developing nations because most of their productivity increases are reflected in lower prices for their agricultural exports. Empirical studies indicate that for developing nations N has declined over the past century but I has increased substantially because of sharply rising volumes of exports.
4. Independently of deteriorating long-run or secular terms of trade, developing nations also face larger short-run fluctuations in their export prices and earnings than developed nations because of price-inelastic and unstable demand for supply of their exports. However, the absolute level of export instability is not very great, and, in most cases, it does not seem to have interfered with development. In the past, developing nations demanded international commodity agreements to stabilize and increase their export prices and earnings. These involve buffer stocks, export controls, or purchasing agreements. Only a very few of these are in operation today, and none seems particularly effective. The large expenditures that would be required to set up and run commodity agreements may not represent the best use of resources.
5. During the 1950s, 1960s, and 1970s, most developing nations made a deliberate attempt to industrialize through the policy of import substitution. The results were generally inefficient industries, excessive capital intensity and little labor absorption, neglect of agriculture, and even greater balance-of-payments problems. Since the late 1980s, many developing nations have shifted toward export-oriented policies and are paying more attention to their agriculture.

6. The most serious problems facing developing countries today are (1) the conditions of stark poverty prevailing in many countries, particularly those of sub-Saharan Africa, (2) the unsustainable foreign debt of many of the poorest developing countries, especially those of sub-Saharan Africa, and (3) the protectionism in developed countries against developing countries' exports. Developing countries sought to overcome these problems by demanding a New International Economic Order (NIEO) at the United

Nations and its special agency UNCTAD. Globalization is not the cause of world poverty, but globalization has not benefited all countries. In 2000, the World Bank sponsored the *Millennium Development Goals (MDG)*, which proposed a program for rich countries to help the poorest developing countries stimulate growth, reduce poverty, and promote sustainable development. As of 2012, most of those goals have not been achieved.

A LOOK AHEAD

So far, we have dealt almost exclusively with commodity trade and have assumed no international resource movement. However, capital, labor, and technology do move across national boundaries. In the next chapter (the last in Part Two), we analyze the costs and benefits of international resource movements for the nations involved. Since

multinational corporations are an important vehicle for the international flow of capital, labor, and technology, we also devote a great deal of attention to this relatively new and crucial type of economic enterprise.

KEY TERMS

Buffer stocks, p. 345	Export controls, p. 345	(HPAEs), p. 337	Marketing boards, p. 345	Single factoral terms of trade, p. 338
Commodity, or net barter, terms of trade, p. 338	Export instability, p. 344	Import-substitution industrialization (ISI), p. 347	New International Economic Order (NIEO), p. 354	United Nations Conferences on Trade and Development (UNCTAD), p. 355
Double factoral terms of trade, p. 339	Export-oriented industrialization, p. 347	Income terms of trade, p. 338	Newly industrialized economies (NIEs), p. 354	Vent for surplus, p. 335
Endogenous growth theory, p. 336	Export pessimism, p. 354	International commodity agreements, p. 345	Purchase contracts, p. 346	
Engine of growth, p. 334	Foreign debt, p. 353		Regions of recent settlement, p. 333	
	High-performance Asian economies			

QUESTIONS FOR REVIEW

1. Why did some economists regard traditional trade theory as irrelevant for developing nations and the development process? How can this charge be answered?
2. In what way was international trade an engine of growth for the regions of recent settlement during the nineteenth century?
3. Why can international trade not be expected to be an engine of growth for today's developing nations?
4. In what ways can international trade still play a very important supportive role for development today? What is meant by the commodity, or net barter, terms of trade? the Income terms of trade? the single factoral terms of trade? the double factoral terms of trade? Which are the most significant terms of trade for developing nations? Why?

5. What reasons did Prebisch, Singer, and Myrdal give for their belief that the commodity terms of trade of developing nations have a tendency to deteriorate over time?
6. What criticisms have been levied against the United Nations study that Prebisch and Singer quoted in their work to confirm their belief?
7. What conclusions can be reached on the basis of the many empirical studies conducted as to the movement of the commodity and income terms of trade of developing nations over the past century and especially since World War II?
8. What is export instability? What are the alleged causes and effects of export instability on economic development? What are the results of empirical studies on export instability and its effects on economic development?
9. What are international commodity agreements? Why do developing nations want them? What is meant by buffer stocks, export controls, and purchasing agreements? Can you give an example of each?
10. Why do developing nations want to industrialize? What is meant by import substitution? by export-oriented policies? What are the advantages and disadvantages of each as a method of industrialization for developing nations?
11. What has been the experience with import substitution during the past decades? What has this experience led to?
12. What are the major problems facing developing countries today? What are their causes?
13. Which region of the world has the largest concentration of poorest countries? Why are these countries so poor?
14. How do developing countries propose to resolve the major problems that they face today? What are the prospects of resolving them in the near future?
15. Has globalization increased or reduced world poverty? What is the World Bank agenda for reducing world poverty?

PROBLEMS

1. Indicate all the ways in which international trade could retard development.
2. Counter each of the criticisms in your answer to Problem 1 that international trade could retard economic development.
3. Draw a hypothetical production frontier for a developing nation exhibiting increasing costs. Have the horizontal axis measure primary commodities and the vertical axis measure manufactured goods. Show on your figure the effect on the nation's production frontier of an improvement in the technology of primary production.
4. What effect is an improvement in the technology of primary production likely to have on the terms of trade of a developing country? Why? (*Hint*: See Chapter 7.)
5. Draw a figure showing how trade could be a vent for surplus.
- *6. Taking the index of export prices, import prices, volume of exports, and productivity in the export sector in a developing nation to be all equal to 100 in 1980, in 2010 what would be:
 - (a) The commodity terms of trade of this nation if the index of its export prices rises by 10 percent but the index of its import prices rises by 20 percent?
 - (b) This nation's income terms of trade if the index of export volume grows to 130 by 2010?
 - (c) This nation's single factoral terms of trade if its productivity index in the export sector rises to 140 by 2010?
- *7. Is the nation in Problem 6 better or worse off in 2010 as compared with 1980? Why?
- *8. Explain with the use of a graph how deteriorating terms of trade resulting from growth can make a developing nation worse off after growth than before.
9. Draw a figure showing that when the supply of a commodity increases, its equilibrium price will fall

* = Answer provided at www.wiley.com/college/salvatore.

by a greater amount the more price-inelastic is the demand curve for the commodity.

10. Draw two figures showing that with a negatively inclined demand curve and a positively inclined supply curve, producers' earnings fluctuate more with a shift in demand than with a shift in supply.
11. With the use of a diagram, show how a buffer stock could lead either to an unmanageable stock or to the buffer authority running out of the commodity.
12. Why has the New International Economic Order demanded by developing countries not been established? Why is this no longer a hotly debated topic?
13. In what way did the implementation of the Uruguay Round help developing nations? In what way did it not?
14. Explain why immiserizing growth does not seem to have occurred in most developing countries over the past three decades.
15. Explain the reason rich nations should and should not forgive all of the foreign debt of the poorest developing countries.

APPENDIX

A11.1 Income Inequalities by Traditional and Purchasing-Power Parity (PPP) Measures

Table 11.8 shows the per capita income of various countries when measured the traditional way (i.e., by simply using the official exchange rate to express the per capita incomes of various countries in terms of the U.S. dollar) and after adjustment to take into account the difference in the purchasing power of money in different countries. Note that according to the traditional measure, the per capita income in the United States is 11.1 times larger than China's, but this falls to 6.2 times when adjusted for the difference in the purchasing power of the national currency in each country. Note also that according to the traditional measure, the U.K.'s per capita income (\$38,540) was the sixth highest for the countries listed in the table, but it rises to fourth place (after the United States, Germany, and Canada) in terms

■ **TABLE 11.8.** Traditional and Purchasing Power Parity (PPP) per Capita Incomes of Selected Countries in 2010

Traditional Method		PPP Method	
United States	\$47,140	United States	\$47,020
Germany	43,330	Germany	38,170
France	42,390	Canada	37,280
Japan	42,150	United Kingdom	36,580
Canada	41,950	Japan	34,790
United Kingdom	38,540	France	34,440
Italy	35,090	Spain	31,550
Spain	31,650	Italy	31,090
Brazil	9,390	Mexico	15,010
Mexico	9,330	Brazil	10,920
China	4,260	China	7,570
India	1,340	India	3,560
Burundi	160	Burundi	390

Source: World Bank, *World Development Report*, 2012.

of PPP because of the generally higher cost of living in Germany and Canada than in the United Kingdom. By either measure, the United States still enjoys the highest standard of living. Finally, note that the traditional method makes the U.S. per capita income 295 times higher than that of Burundi (the poorest country in the world), but with PPP it falls to 121 times—still an abyss.

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except International Financial Statistics, can be accessed through the Internet by clicking the name of the report after accessing the organization web site at:

<http://www.worldbank.org>

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