READING

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International Trade and Capital Flows

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LEARNING OUTCOMES

Mastery	*The candidate should be able to:*
☐	**a.** compare gross domestic product and gross national product;
☐	**b.** describe benefits and costs of international trade;
☐	**c.** distinguish between comparative advantage and absolute advantage;
☐	**d.** compare the Ricardian and Heckscher–Ohlin models of trade and the source(s) of comparative advantage in each model;
☐	**e.** compare types of trade and capital restrictions and their economic implications;
☐	**f.** explain motivations for and advantages of trading blocs, common markets, and economic unions;
☐	**g.** describe common objectives of capital restrictions imposed by governments;
☐	**h.** describe the balance of payments accounts including their components;
☐	**i.** explain how decisions by consumers, firms, and governments affect the balance of payments;
☐	**j.** describe functions and objectives of the international organizations that facilitate trade, including the World Bank, the International Monetary Fund, and the World Trade Organization.

INTRODUCTION

1

Global investors must address two fundamentally interrelated questions: where to invest and in what asset classes? Some countries may be attractive from an equity perspective because of their strong economic growth and the profitability of particular domestic sectors or industries. Other countries may be attractive from a fixed income

perspective because of their interest rate environment and price stability. To identify markets that are expected to provide attractive investment opportunities, investors must analyze cross-country differences in such factors as expected GDP growth rates, monetary and fiscal policies, trade policies, and competitiveness. From a longer term perspective investors also need to consider such factors as a country's stage of economic and financial market development, demographics, quality and quantity of physical and human capital (accumulated education and training of workers), and its area(s) of comparative advantage.[1]

This reading provides a framework for analyzing a country's trade and capital flows and their economic implications. International trade can facilitate economic growth by increasing the efficiency of resource allocation, providing access to larger capital and product markets, and facilitating specialization based on comparative advantage. The flow of financial capital (funds available for investment) between countries with excess savings and those where financial capital is scarce can increase liquidity, raise output, and lower the cost of capital. From an investment perspective, it is important to understand the complex and dynamic nature of international trade and capital flows because investment opportunities are increasingly exposed to the forces of global competition for markets, capital, and ideas.

This reading is organized as follows. Section 2 defines basic terminology used in the reading and describes patterns and trends in international trade and capital flows. It also discusses the benefits of international trade, distinguishes between absolute and comparative advantage, and explains two traditional models of comparative advantage. Section 3 describes trade restrictions and their implications and discusses the motivation for, and advantages of, trade agreements. Section 4 describes the balance of payments and Section 5 discusses the function and objectives of international organizations that facilitate trade. A summary of key points and practice problems conclude the reading.

2 INTERNATIONAL TRADE

The following sections describe the role, importance, and possible benefits and costs of international trade. Before beginning those discussions, we define some basic terminology used in this area.

2.1 Basic Terminology

The aggregate output of a nation over a specified time period is usually measured as its gross domestic product or its gross national product. Gross domestic product (GDP) measures the market value of all final goods and services produced by factors of production (such as labor and capital) located within a country/economy during a given period of time, generally a year or a quarter. Gross national product (GNP), however, measures the market value of all final goods and services produced by factors of production (such as labor and capital) supplied by citizens of a country, regardless of whether such production takes place within the country or outside of the country. The difference between a country's GDP and its GNP is that GDP includes, and GNP excludes, the production of goods and services by foreigners within that country, whereas GNP includes, and GDP excludes, the production of goods and

1 Comparative advantage refers to a country's ability to produce a good at a relatively lower cost than other goods it produces, as compared with another country. It will be more precisely defined and illustrated in Section 2.4.

services by its citizens outside of the country. Countries that have large differences between GDP and GNP generally have a large number of citizens who work abroad (for example, Pakistan and Portugal), and/or pay more for the use of foreign-owned capital in domestic production than they earn on the capital they own abroad (for example, Brazil and Canada). Therefore, GDP is more widely used as a measure of economic activity occurring *within* the country, which, in turn, affects employment, growth, and the investment environment.

Imports are goods and services that a domestic economy (i.e., households, firms, and government) purchases from other countries. For example, the US economy imports (purchases) cloth from India and wine from France. **Exports** are goods and services that a domestic economy sells to other countries. For example, South Africa exports (sells) diamonds to the Netherlands, and China exports clothing to the European Union. So how are services imported or exported? If a Greek shipping company transports the wine that the United States imports from France, the United States would classify the cost of shipping as an import of services from Greece and the wine would be classified as an import of goods from France. Similarly, when a British company provides insurance coverage to a South African diamond exporter, Britain would classify the cost of the insurance as an export of services to South Africa. Other examples of services exported/imported include engineering, consulting, and medical services.

The **terms of trade** are defined as the ratio of the price of exports to the price of imports, representing those prices by export and import price indexes, respectively. The terms of trade capture the relative cost of imports in terms of exports. If the prices of exports increase relative to the prices of imports, the terms of trade have improved because the country will be able to purchase more imports with the same amount of exports.[2] For example, when oil prices increased during 2007–2008, major oil exporting countries experienced an improvement in their terms of trade because they had to export less oil in order to purchase the same amount of imported goods. In contrast, if the price of exports decreases relative to the price of imports, the terms of trade have deteriorated because the country will be able to purchase fewer imports with the same amount of exports. Because each country exports and imports a large number of goods and services, the terms of trade of a country are usually measured as an index number (normalized to 100 in some base year) that represents a ratio of the average price of exported goods and services to the average price of imported goods and services. Exhibit 1 shows the terms of trade reported by the World bank, aggregated by their categories for region and income group. A value over (under) 100 indicates that the country, or group of countries, experienced better (worse) terms of trade relative to the base year of 2000.

Exhibit 1 Data on the Barter Terms of Trade for Industrial and Developing Countries (Unit Export Value/Unit Import Value)

	1990	1995	2000	2005	2010	2015
High Income	99.2	110.4	100.0	105.3	115.4	113.3
Low Income	125.9	118.2	100.0	98.0	117.2	113.8
Africa	113.3	108.1	100.0	108.9	132.4	121.9

(continued)

2 Although the prices of imports and exports are each stated in currency units, the currency units cancel out when we take the ratio, so the terms of trade reflect the relative price of imports and exports in real (i.e., quantity) terms: units of imports per unit of exports. To see this, note that if one unit of imports costs P_M currency units and one unit of exports is priced at P_X currency units, then the country can buy P_X/P_M (= Terms of trade) units of imports for each unit of exports.

Exhibit 1 (Continued)

	1990	1995	2000	2005	2010	2015
Asia	115.5	114.7	100.0	99.2	109.6	105.9
Europe	109.1	105.7	100.0	99.8	105.0	101.6
Western Hemisphere	98.7	104.7	100.0	104.9	115.9	107.5
Middle East	92.6	94.9	100.0	125.7	165.2	164.1

As an example, Exhibit 1 indicates that from 2000 to 2015 both low-income and high-income countries generally experienced an increase in their terms of trade; however, low-income countries experienced more volatility over the period. Looking at the disaggregated data indicates that Africa also experienced improvement in its terms of trade, albeit with volatility, during this period. Countries in Asia and the Western Hemisphere experienced some increase in their terms of trade while those in Europe saw little change. In contrast, countries in the Middle East (which benefited from rising prices of their petroleum exports) experienced a substantial increase in their terms of trade.

Net exports is the difference between the value of a country's exports and the value of its imports (i.e., value of exports minus imports). If the value of exports equals the value of imports, then trade is balanced. If the value of exports is greater (less) than the value of imports, then there is a **trade surplus (deficit)**. When a country has a trade surplus, it lends to foreigners or buys assets from foreigners reflecting the financing needed by foreigners running trade deficits with that country. Similarly, when a country has a trade deficit, it has to borrow from foreigners or sell some of its assets to foreigners. Section 4 on the balance of payments explains these relationships more fully.

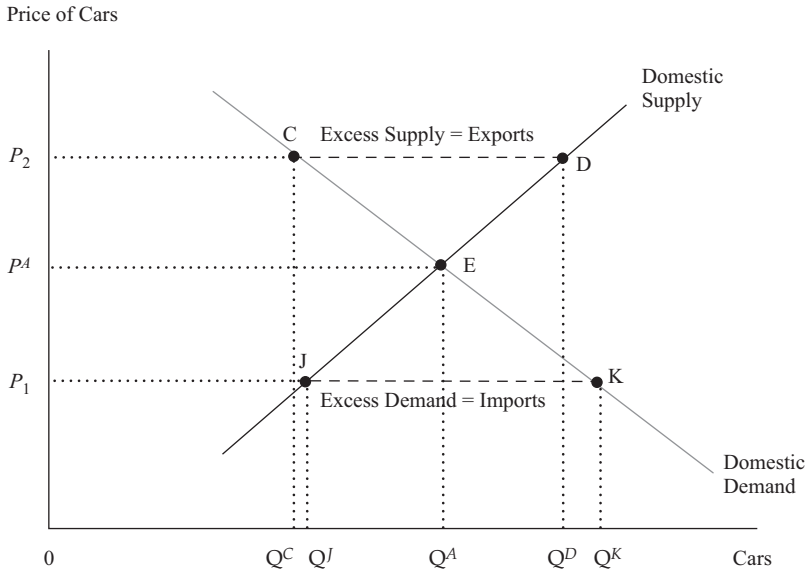
Autarky is a state in which a country does not trade with other countries. This means that all goods and services are produced and consumed domestically. The price of a good or service in such an economy is called its **autarkic price**. An autarkic economy is also known as a **closed economy** because it does not trade with other countries. An **open economy**, in contrast, is an economy that trades with other countries. If there are no restrictions on trade, then members of an open economy can buy and sell goods and services at the price prevailing in the world market, the **world price**. An open economy can provide domestic households with a larger variety of goods and services, give domestic companies access to global markets and customers, and offer goods and services that are more competitively priced. In addition, it can offer domestic investors access to foreign capital markets, foreign assets, and greater investment opportunities. For capital intensive industries, such as automobiles and aircraft, manufacturers can take advantage of economies of scale because they have access to a much larger market. **Free trade** occurs when there are no government restrictions on a country's ability to trade. Under free trade, global aggregate demand and supply determine the equilibrium quantity and price of imports and exports. Government policies that impose restrictions on trade, such as tariffs and quotas (discussed later in the reading), are known as **trade protection** and prevent market forces (demand and supply) from determining the equilibrium price and quantity for imports and exports. According to Deardorff, *globalization* refers to the "increasing worldwide integration of markets for goods, services, and capital that began to attract special attention in the late 1990s."[3] It also references "a variety of other changes that were perceived to occur

3 Deardorff, Alan. "Deardorff's Glossary of International Economics" (www-personal.umich.edu/~alandear/glossary).

at about the same time, such as an increased role for large corporations (multinational corporations) in the world economy and increased intervention into domestic policies and affairs by international institutions," such as the International Monetary Fund, the World Trade Organization, and the World Bank.

The levels of aggregate demand and supply and the quantities of imports and exports in an economy are related to the concepts of *excess demand* and *excess supply*. Exhibit 2 shows supply and demand curves for cars in the United Kingdom. E is the autarkic equilibrium at price P^A and quantity Q^A, with the quantity of cars demanded equaling the quantity supplied. Now, consider a situation in which the country opens up to trade and the world price is P_1. At this price, the quantity demanded domestically is Q^K while the quantity supplied is Q^J. Hence excess demand is Q^J Q^K. This quantity is satisfied by imports. For example, at a world price of $15,000, the quantity of cars demanded in the United Kingdom might be 2 million and UK production of cars only 1.5 million. As a result, the excess demand of 500,000 would be satisfied by imports. Returning to Exhibit 2, now consider a situation in which the world price is P_2. The quantity demanded is Q^C while the quantity supplied is Q^D. Hence, the domestic excess supply at world price P_2 is Q^C Q^D, which results in exports of Q^C Q^D.

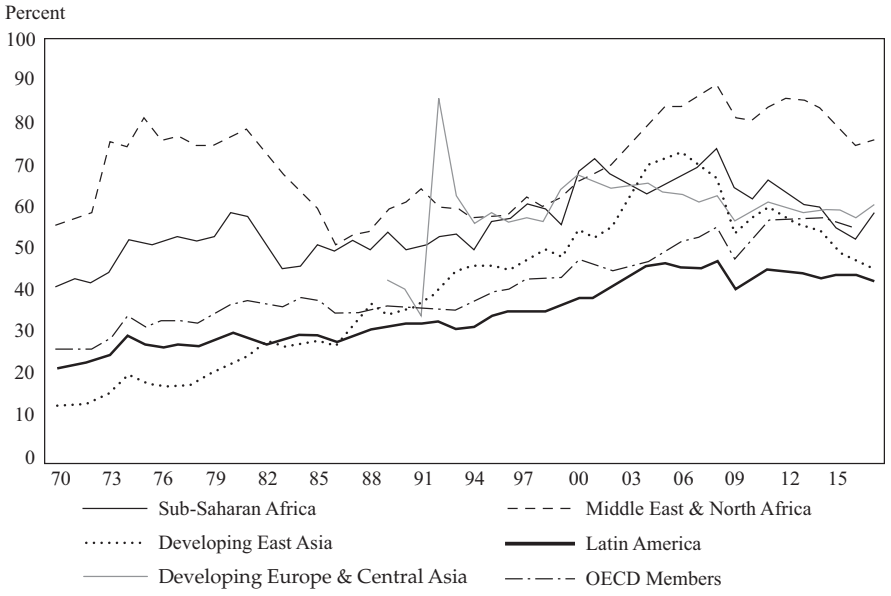
Exhibit 2 Excess Demand, Excess Supply, Imports and Exports



2.2 Patterns and Trends in International Trade and Capital Flows

The importance of trade in absolute and relative terms (trade-to-GDP ratio) is illustrated in Exhibits 3 through 5. Exhibit 3 shows that trade as a percentage of regional GDP increased in all regions of the world during 1970–2006. Developing countries in Asia had the fastest growth in trade, increasing from less than 20 percent of GDP in 1970 to more than 90 percent of GDP in 2006.

Exhibit 3 Trade in Goods and Services (Percent of Regional GDP)



Note: Developing East Asia and Developing Europe & Central Asia exclude all World Bank designated "High Income" countries in these regions.
Source: World Development Indicators.

Exhibit 4 indicates that trade as a percentage of GDP and the GDP growth rate increased in most regions of the world during 1990–2009. However, data for 2010-2016 indicates a decline that, although consistent with the worldwide economic downturn, varied across country groups. High-income countries that are members of the Organisation for Economic Co-Operation and Development (OECD) experienced a growth rate of 2.4 percent during 2000–2006, but had a growth rate of only 1.3 percent in between 2010-2016. The corresponding numbers for growth in non-OECD high-income countries are 5.0 percent and 2.0 percent, respectively; for lower-middle-income countries, they are 7.7 percent and 3.3 percent, respectively. The 2009 World Development Report affirmed the link between trade and growth and noted evidence that all rich and emerging economies are oriented to being open to trade. More specifically, the report indicated:

> …When exports are concentrated in labor-intensive manufacturing, trade increases the wages for unskilled workers, benefiting poor people. It also encourages macroeconomic stability, again benefiting the poor, who are more likely to be hurt by inflation. And through innovation and factor accumulation, it enhances productivity and thus growth. There may be some empirical uncertainty about the strength of trade's relationship with growth. But essentially all rich and emerging economies have a strong trade orientation. (World Bank 2009)

Of course, trade is not the only factor that influences economic growth. Research has also identified such factors as the quality of institutions, infrastructure, and education; economic systems; the degree of development; and global market conditions (World Trade Organization 2008).

Exhibit 4 Trade Openness and GDP Growth

Country Group	Trade as Percent of GDP (averaged over the period)				Average GDP growth (%)			
	1980–1989	1990–1999	2000–2009	2010–2016	1980–1989	1990–1999	2000–2009	2010–2016
World	75.4	77.9	91.6	94.1	3.1%	2.5%	3.2%	2.1%
High income:								
All	40.7	42.8	53.6	61.3	3.1%	2.5%	1.5%	1.1%
OECD	36.5	39.1	48.7	56.0	3.1%	2.4%	1.3%	1.1%
Non-OECD	126.3	116.5	134.9	138.8	3.9%	3.4%	3.4%	2.0%
Low and middle income:								
All	30.2	42.3	56.3	52.7	3.4%	2.6%	5.5%	3.0%
Middle	30.0	42.2	56.2	52.6	3.4%	2.6%	5.5%	3.0%
Upper middle	28.9	41.5	55.7	51.5	2.1%	2.4%	5.5%	2.9%
Lower middle	33.7	44.7	57.9	56.3	6.0%	3.0%	5.5%	3.3%
Low	52.9	54.1	63.5	66.9	2.6%	1.9%	4.4%	2.3%

Note: Averages indicate the average of the annual data for the period covered.
Source: World Bank.

Exhibit 5 presents trade and foreign direct investment as a percentage of GDP for select countries for 1990-2017. **Foreign direct investment** (FDI) refers to direct investment by a firm in one country (the *source country*) in productive assets in a foreign country (the *host country*). When a firm engages in FDI, it becomes a **multinational corporation** (MNC) operating in more than one country or having subsidiary firms in more than one country. It is important to distinguish FDI from **foreign portfolio investment** (FPI), which refers to shorter-term investment by individuals, firms, and institutional investors (e.g., pension funds) in such foreign financial instruments as foreign stocks and foreign government bonds. Exhibit 5 shows that trade as a percentage of GDP for the world as a whole increased from 39 percent in 1990 to 56 percent in 2010. In Argentina, trade as a percentage of GDP increased from 15 percent in 1990 to 35 percent in 2010, while in India during this same period it increased from 16 percent to almost 50 percent. Among the more advanced economies, trade expanded sharply in Germany (from 46 percent to 87 percent between 1990 and 2017), but in the United States trade expanded more modestly (from 20 percent to 27 percent).

Exhibit 5 Increasing Global Interdependence FDI and Trade as a percentage of GDP

Country	Type of Flow	1990	2000	2010	2017
World	Trade	38.9	51.3	56.9	56.2*
	FDI: Net Inflows	0.9	4.4	2.7	2.4
	FDI: Net Outflows	1.3	4.1	2.6	2.0
Argentina	Trade	15.0	22.6	35.0	25.0
	FDI: Net Inflows	1.3	3.7	2.7	1.9
	FDI: Net Outflows	0.0	0.3	0.2	0.2

(continued)

Exhibit 5 (Continued)

Country	Type of Flow	1990	2000	2010	2017
Germany	Trade	46.0	61.4	79.3	86.9
	FDI: Net Inflows	0.2	12.7	2.5	2.1
	FDI: Net Outflows	1.4	5.0	4.3	3.4
India	Trade	15.7	27.2	49.7	40.6
	FDI: Net Inflows	0.1	0.8	1.7	1.5
	FDI: Net Outflows	0.0	0.1	1.0	0.4
United States	Trade	19.8	25.0	28.2	26.6*
	FDI: Net Inflows	0.8	3.4	1.7	1.8
	FDI: Net Outflows	1.0	1.8	2.3	2.2

* Trade figures for 2016.
Source: World Development Indicators.

The increasing importance of multinational corporations is also apparent in Exhibit 5. Net FDI inflows and outflows increased as a percentage of GDP between 1990 and 2000 for each of the countries shown. Trade between multinational firms and their subsidiaries (i.e., intra-firm trade) has become an important part of world trade. For example, 46 percent of US imports occur between related parties (Bernard, Jensen, Redding, and Schott 2010). Globalization of production has increased the productive efficiency of manufacturing firms because they are able to decompose their value chain into individual components or parts, and then outsource their production to different locations where these components can be produced most efficiently.[4] For example, in 2016 Apple's iPhone 6s was manufactured with components sourced from several locations around the world: the camera, display and storage were manufactured in Japan; the RAM and A9 processor were manufactured in Korea; the modem, battery, Wi-Fi module, radio frequency transceiver and chassis were manufactured in China; and much of the hardware and software was designed in the United States while the phone itself was assembled in China.[5] Foreign direct investment and outsourcing have increased business investment in these economies and provided smaller and less developed economies the opportunity to participate in international trade. For example, in 2016 Intel had 10 fabrication plants and 101 assembly and testing sites in 8 countries/regions. These trends indicate the increasing global interdependence of economies, although the degree of interdependence varies. Greater interdependence also means that economies are now more exposed to global competition. As a result, they must be more flexible in their production structure in order to respond effectively to changes in global demand and supply.

The complexity of trading relationships has also increased with the development of sophisticated global supply chains that include not only final goods but also intermediate goods and services. Increased global interdependence has changed the risk and return profiles of many economies. Economies that have greater international links are more exposed to, and affected by, economic downturns and crises occurring in other

4 Hill and Hult (2019) explains the idea of the firm as a value chain: "The operations of the firms can be thought of as a value chain composed of a series of distinct value creation activities including production, marketing and sales, materials management, R&D, human resources, information systems, and firm infrastructure." Production itself can be broken down into distinct components and each component outsourced separately.

5 "Here's where all the components of your iPhone come from" Skye Gould and Antonio Villas-Boas Apr. 12, 2016 https://www.businessinsider.com/where-iphone-parts-come-from-2016-4

parts of the world. The contagion effect of the Asian financial crisis, which began in Thailand in July 1997, spread to many other markets, such as Indonesia, Malaysia, South Korea, Philippines, Hong Kong SAR, Singapore, and Taiwan Region. It even affected Brazil and Russia to some degree, although there is less clarity about the mechanisms by which the crisis spread beyond Asia. Among the outward symptoms of the crisis were exchange rate problems, such as currency speculation and large depreciation of currencies, capital flight, and financial and industrial sector bankruptcies. However, recovery was surprisingly swift and all these economies exhibited positive growth by the second quarter of 1999 (Gerber 2017).

2.3 Benefits and Costs of International Trade

The preceding sections have described the growth of world trade and the increasing interdependence of national economies. Has trade been beneficial? The benefits and costs of international trade have been widely debated. The most compelling arguments supporting international trade are: countries gain from exchange and specialization, industries experience greater economies of scale, households and firms have greater product variety, competition is increased, and resources are allocated more efficiently.

Gains from exchange occur when trade enables each country to receive a higher price for its exports (and greater profit) and/or pay a lower price for imported goods instead of producing these goods domestically at a higher cost (i.e., less efficiently). This exchange, in turn, leads to a more efficient allocation of resources by increasing production of the export good and reducing production of the import good in each country (trading partner). This efficiency allows consumption of a larger bundle of goods, thus increasing overall welfare. The fact that trade increases overall welfare does not, of course, mean that every individual consumer and producer is better off. What it does mean is that the winners could, in theory, compensate the losers and still be better off.

Trade also leads to greater efficiency by fostering specialization based on comparative advantage. Traditional trade models, such as the Ricardian model and the Heckscher–Ohlin model, focus on specialization and trade according to comparative advantage arising from differences in technology and factor endowments, respectively. These models will be discussed in the next section.

Newer models of trade focus on the gains from trade that result from economies of scale, greater product variety, and increased competition. In an open economy, increased competition from foreign firms reduces the monopoly power of domestic firms and forces them to become more efficient, as compared to a closed economy. Industries that exhibit increasing returns to scale (for example, the automobile and steel industries) benefit from increased market size as a country starts trading because the average cost of production declines as output increases in these industries. Monopolistically competitive models of trade have been used to explain why there is significant two-way trade (known as *intra-industry trade*) between countries within the same industry. Intra-industry trade occurs when a country exports and imports goods in the same product category or classification.

In a monopolistically competitive industry, there are many firms; each firm produces a unique or differentiated product, there are no exit or entry barriers, and long-run economic profits are zero. In such a model, even though countries may be similar, they gain from trade because each country focuses on the production and export of one or more varieties of the good and imports other varieties of the good. For example, the European Union exports and imports different types of cars. Consumers gain from having access to a greater variety of final goods. Firms benefit from greater economies of scale because firms both within and outside the EU are able to sell their goods in both markets. Hence, scale economies allow firms to benefit from the larger market size and experience lower average cost of production as a result of trade.

Research suggests that trade liberalization can lead to increased real (that is, inflation-adjusted) GDP although the strength of this relationship is still debated. The positive influence of trade on GDP can arise from more efficient allocation of resources, learning by doing, higher productivity, knowledge spillovers, and trade-induced changes in policies and institutions that affect the incentives for innovation.[6] In industries where there is "learning by doing," such as the semiconductor industry, the cost of production per unit declines as output increases because of expertise and experience acquired in the process of production. Trade can lead to increased exchange of ideas, freer flow of technical expertise, and greater awareness of changing consumer tastes and preferences in global markets. It can also contribute to the development of higher quality and more effective institutions and policies that encourage domestic innovation. For example, Coe and Helpman (1995) show that foreign research and development (R&D) has beneficial effects on domestic productivity. These effects become stronger the more open an economy is to foreign trade. They estimate that about a quarter of the benefits of R&D investment in a G–7 country accrues to their trading partners.[7] Hill (2007) discusses the case of Logitech, a Swiss company that manufactures computer mice. In order to win original equipment manufacturer (OEM) contracts from IBM and Apple, Logitech needed to develop innovative designs and provide high-volume production at a low cost. So in the late 1980s they moved to Taiwan Region, which had a highly qualified labor force, competent parts suppliers, a rapidly expanding local computer industry, and offered Logitech space in a science park at a very competitive rate. Soon thereafter, Logitech was able to secure the Apple contract.

Opponents of free trade point to the potential for greater income inequality and the loss of jobs in developed countries as a result of import competition. As a country moves toward free trade, there will be adjustments in domestic industries that are exporters as well as those that face import competition. Resources (investments) may need to be reallocated into or out of an industry depending on whether that industry is expanding (exporters) or contracting (i.e., facing import competition). As a result of this adjustment process, less-efficient firms may be forced to exit the industry, which may, in turn, lead to higher unemployment and the need for displaced workers to be retrained for jobs in expanding industries. The counter argument is that although there may be short-term and even some medium-term costs, these resources are likely to be more effectively (re-)employed in other industries in the long run. Nonetheless, the adjustment process is virtually certain to impose costs on some groups of stakeholders.

EXAMPLE 1

Benefits of Trade

Consider two countries that each produce two goods. Suppose the cost of producing cotton relative to lumber is lower in Cottonland than in Lumberland.

1. How would trade between the two countries affect the lumber industry in Lumberland?
2. How would trade between the two countries affect the lumber industry in Cottonland?
3. What would happen to the lumber industry workers in Cottonland in the long run?

6 "Knowledge spillovers" occur when investments in knowledge creation generate benefits that extend beyond the investing entity and facilitate learning and innovation by other firms or entities.

7 G–7 countries include Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

4 What is the meaning of the expression "gains from trade"?

5 What are some of the benefits from trade?

Solution to 1:

The lumber industry in Lumberland would benefit from trade. Because the cost of producing lumber relative to producing cotton is lower in Lumberland than in Cottonland (i.e., lumber is relatively cheap in Lumberland), Lumberland will export lumber and the industry will expand.

Solution to 2:

The lumber industry in Cottonland would not benefit from trade, at least in the short run. Because lumber is relatively expensive to produce in Cottonland, the domestic lumber industry will shrink as lumber is imported from Lumberland.

Solution to 3:

The overall welfare effect in both countries is positive. However, in the short run, many lumber producers in Cottonland (and cotton producers in Lumberland) are likely to find themselves without jobs as the lumber industry in Cottonland and the cotton industry in Lumberland contract. Those with skills that are also needed in the other industry may find jobs fairly quickly. Others are likely to do so after some re-training. In the long run, displaced workers should be able to find jobs in the expanding export industry. However, those who remain in the import-competing industry may be permanently worse off because their industry-specific skills are now less valuable. Thus, even in the long run, trade does not necessarily make every stakeholder better off. But the winners could compensate the losers and still be better off, so the overall welfare effect of opening trade is positive.

Solution to 4:

Gains from trade imply that the overall benefits of trade outweigh the losses from trade. It does not mean that all stakeholders (producers, consumers, government) benefit (or benefit equally) from trade.

Solution to 5:

Some of the benefits from trade include: gains from exchange and specialization based on relative cost advantage; gains from economies of scale as the companies add new markets for their products; greater variety of products available to households and firms; greater efficiency from increased competition; and more efficient allocation of resources.

2.4 Comparative Advantage and the Gains from Trade

Up to this point, we have not been precise about what it means for a country to have a comparative advantage in the production of specific goods and services. In this section, we define comparative advantage, distinguish it from the notion of absolute advantage, and demonstrate the gains from trading in accordance with comparative advantage. We then explain two traditional models of trade—the Ricardian and Heckscher–Ohlin models—and the source of comparative advantage in each model.

2.4.1 *Gains from Trade: Absolute and Comparative Advantage*

A country has an **absolute advantage** in producing a good (or service) if it is able to produce that good at a lower cost or use fewer resources in its production than its trading partner. For example, suppose a worker in Brazil can produce either 20 pens or 40 pencils in a day. A worker in Vietnam can produce either 10 pens or 60 pencils.

A Vietnamese worker produces 60 pencils a day while a Brazilian worker produces only 40 pencils a day. Hence, Vietnam produces pencils at a lower cost than Brazil, and has an absolute advantage in the production of pencils. Similarly, Brazil produces pens at a lower cost than Vietnam, and hence has an absolute advantage in the production of pens. A country has a **comparative advantage** in producing a good if its opportunity cost of producing that good is less than that of its trading partner. In our example, the opportunity cost of producing an extra pen in Vietnam is 6 pencils. It is the opportunity foregone; namely, the number of pencils Vietnam would have to give up to produce an extra pen. If Brazil does not trade and has to produce both pens and pencils, it will have to give up 2 pencils in order to produce a pen. Similarly, in Vietnam each pen will cost 6 pencils. Hence, the opportunity cost of a pen in Brazil is 2 pencils, whereas in Vietnam it is 6 pencils. Brazil has the lower opportunity cost and thus a comparative advantage in the production of pens. Vietnam has a lower opportunity cost (1 pencil costs ⅙th of a pen) than Brazil (1 pencil costs ½ a pen) in the production of pencils and thus has a comparative advantage in the production of pencils. Example 2 further illustrates these concepts.

EXAMPLE 2

Absolute and Comparative Advantages

Suppose there are only two countries, India and the United Kingdom. India exports cloth to the United Kingdom and imports machinery. The output per worker per day in each country is shown in Exhibit 6:

Exhibit 6 Output per Worker per Day

	Machinery	Cloth (yards)
United Kingdom	**4**	8
India	2	**16**

Based only on the information given, address the following:

1. Which country has an absolute advantage in the production of:
   - **A** machinery?
   - **B** cloth?
2. Do the countries identified in Question 1 as having an absolute advantage in the production of A) machinery and B) cloth, also have a comparative advantage in those areas?

Solution to 1A:

The United Kingdom has an absolute advantage in the production of machinery because it produces more machinery per worker per day than India.

Solution to 1B:

India has an absolute advantage in the production of cloth because it produces more cloth per worker per day than the United Kingdom.

Solution to 2A and 2B:

In both cases, the answer is "yes." In the case of machinery, the opportunity cost of a machine in the United Kingdom is 2 yards of cloth (8 ÷ 4 or 1 machine = 2 yards cloth). This amount is the autarkic price of machines in terms of cloth in the United Kingdom. In India, the opportunity cost of a machine is 8 yards of cloth (16 ÷ 2 or 1 machine = 8 yards cloth). Thus, the United Kingdom has a comparative advantage in producing machines. In contrast, the opportunity cost of a yard of cloth in the United Kingdom and in India is ½ and ⅛ of a machine, respectively. India has a lower opportunity cost (⅛ of a machine) and, therefore, a comparative advantage in the production of cloth.

It is important to note that even if a country does not have an absolute advantage in producing any of the goods, it can still gain from trade by exporting the goods in which it has a comparative advantage. In Example 2, if India could produce only 6 yards of cloth per day instead of 16 yards of cloth, the United Kingdom would have an *absolute* advantage in both machines and cloth. However, India would still have a *comparative* advantage in the production of cloth because the opportunity cost of a yard of cloth in India, ⅓ of a machine in this case, would still be less than the opportunity cost of a yard of cloth in the United Kingdom (½ of a machine as before).

Let us now illustrate the gains from trading according to comparative advantage. In Example 2, if the United Kingdom could sell a machine for more than 2 yards of cloth and if India could purchase a machine for less than 8 yards of cloth, both countries would gain from trade. Although it is not possible to determine the exact world price without additional details regarding demand and supply conditions, both countries would gain from trade as long as the world price for machinery in terms of cloth is between the autarkic prices of the trading partners. In our example, this price corresponds to a price of between 2 and 8 yards of cloth for a machine. *The further away the world price of a good or service is from its autarkic price in a given country, the more that country gains from trade.* For example, if the United Kingdom was able to sell a machine to India for 7 yards of cloth (i.e., closer to India's autarkic price), it would gain 5 yards of cloth per machine sold to India compared with its own autarkic price (with no trade) of 1 machine for 2 yards of cloth. However, if the United Kingdom was able to sell a machine to India for only 3 yards of cloth (closer to the UK autarkic price), it would gain only 1 yard of cloth per machine sold to India compared with its own autarkic price.

Exhibits 7 and 8 provide the production and consumption schedules of both countries at autarky and after trade has commenced. In autarky (Exhibit 7), the United Kingdom produces and consumes 200 machines and 400 yards of cloth (without trade, consumption of each product must equal domestic production). Similarly, India produces 100 machines and 800 yards of cloth in autarky. In a world economy consisting of only these two countries, total output for each commodity is the sum of production in both countries. Therefore, total world output is 300 machines and 1,200 yards of cloth.

Exhibit 7 Production and Consumption in Autarky

	Autarkic Production	Autarkic Consumption
United Kingdom		
Machinery (m)	200	200
Cloth (yards) (c)	400	400
India		

(continued)

Exhibit 7 (Continued)

	Autarkic Production	Autarkic Consumption
Machinery	100	100
Cloth (yards)	800	800
Total World:		
Machinery	300	300
Cloth (yards)	1200	1200

Now, assume that the United Kingdom and India start trading and that the world price of 1 machine is 4 yards of cloth (1m = 4c). This price is within the range of acceptable world trading prices discussed earlier because this price lies between the autarkic prices of the United Kingdom (1m = 2c) and India (1m = 8c). Exhibit 8 shows that in an open economy, the United Kingdom would specialize in machines and India would specialize in cloth. As a result, the United Kingdom produces 400 machines and no cloth, while India produces 1,600 yards of cloth and no machines. The United Kingdom exports 160 machines to India in exchange for 640 yards of cloth. After trade begins with India, the United Kingdom consumes 240 machines and 640 yards of cloth. Consumption in the United Kingdom increases by 40 machines and 240 yards of cloth. Similarly, India consumes 160 machines and 960 yards of cloth, an increase of 60 machines and 160 yards of cloth. World production and consumption is now 400 machines and 1,600 yards of cloth. Post-trade production and consumption exceeds the autarkic situation by 100 machines and 400 yards of cloth.

Exhibit 8 Gains from Trade

	Post-trade Production	Post-trade Consumption	Change in Consumption (compared with autarky)
UK			
Machinery	400	240	+40
Cloth (yards)	0	640	+240
India			
Machinery	0	160	+60
Cloth (yards)	1600	960	+160
Total World:			
Machinery	400	400	+100
Cloth (yards)	1600	1600	+400

Exhibit 9 shows a more general case of gains from trade under increasing costs. In Panel A, the curve connecting the X and Y axes is the UK production possibilities frontier (PPF).[8] That is, it represents the combinations of cloth and machinery that the United Kingdom can produce given its technology and resources (capital and labor). The slope of the PPF at any point is the opportunity cost of one good in terms of the other. The shape of the PPF indicates increasing opportunity cost in terms of machines as more cloth is produced and vice versa. To maximize the value of output,

8 Modified from Salvatore (2011).

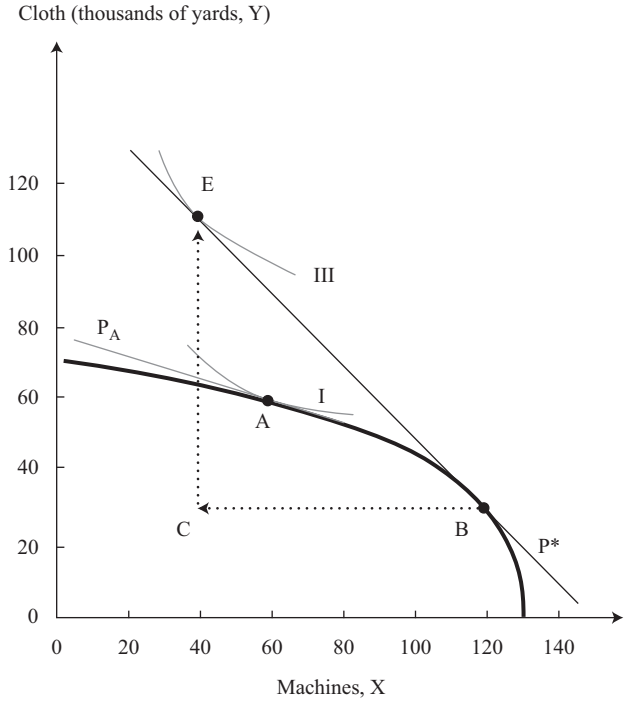
production occurs where the slope of the PPF equals the relative price of the goods. P_A represents the autarkic price line, which is tangent to the PPF at A, the autarkic equilibrium. The slope of the autarkic price line represents the opportunity cost before trade. In autarky, the United Kingdom produces and consumes 60 machines and 60 thousand yards cloth, and is on indifference curve I.[9] When the United Kingdom starts trading with India, it faces the world price line P^*. This new price line is tangent to the PPF at B. The change in relative prices of the goods encourages the United Kingdom to increase the production of the good in which it has comparative advantage (machines) and produce at B instead of A. We note that at B the United Kingdom has increased the production of machines to 120 units and reduced the production of cloth to 30 thousand yards. We also note that trade has expanded the UK consumption possibilities. The United Kingdom consumes at point E after trade, exports 80 machines to India and imports 80 thousand yards of cloth from India. Note that E is outside the PPF, but on the world price line that is tangent to the PPF at B. This line is also the trading possibilities line because trade occurs along this line. The slope of this line is the opportunity cost of a machine in terms of cloth in the world market. The United Kingdom has clearly increased its welfare through trade because it is able to consume at point E, which is on a higher indifference curve (III) and thus represents a higher level of welfare compared with the autarkic consumption point A on indifference curve I.

Panel B shows the corresponding situation for India. When trade opens with the United Kingdom, India shifts production from A' to B', producing more cloth, the good in which it has a comparative advantage, and fewer machines. It now exports 80 thousand yards of cloth to the United Kingdom and imports 80 machines from the United Kingdom. India now consumes at E' which is on the world price line and also on a higher indifference curve, III′, than the autarkic consumption point (A') on indifference curve I′. Thus, by specializing (incompletely, as is typically the case with increasing production costs) in the good in which it has a comparative advantage, each country increases its welfare. We should also note that P^* is the price at which trade is balanced. At this relative world price, the export of cloth from India equals the import of cloth into the United Kingdom (80 thousand yards) and the export of machines from the United Kingdom equals the imports of machines into India (80 machines).

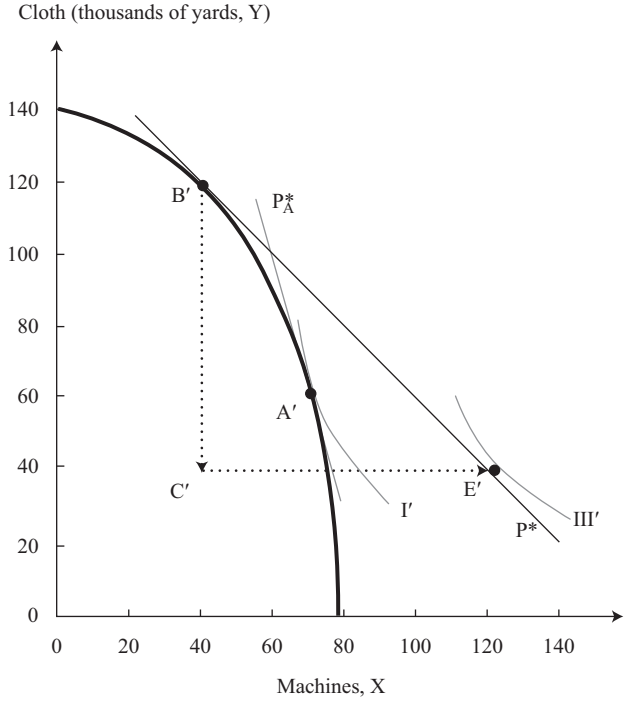
9 An indifference curve represents the various combinations of goods (machines and cloth) that provide the same level of utility or welfare. Higher indifference curves represent higher levels of utility or welfare.

Exhibit 9 Graphical Depiction of Gains from Trade with Increasing Costs

Panel A. United Kingdom



Panel B. India



A country's comparative advantage can change over time as a result of structural shifts in its domestic economy, shifts in the global economy, the accumulation of physical or human capital, new technology, the discovery of such natural resources

as oil, and so on. For example, an increase in skilled labor in China has led several multinational companies to establish R&D facilities in China to benefit from its highly educated workforce.

EXAMPLE 3

Changes in Comparative Advantage

Exhibit 10 shows how the South Korea's comparative advantage changed over time as a result of an export-oriented development strategy it adopted during the 1960s.[10] The challenges of foreign competition created a "virtuous circle" that was self-reinforcing. South Korea's changing comparative advantage was the result of government policy, an increasingly skilled and productive workforce, and proactive firms that learned and adapted new technology.

Exhibit 10 Changes in Structure of South Korea's Exports, 1980–2015 (Percentage Shares)

	1980	1985	1990	1995	2000	2005	2010	2015
Agricultural products	6.8%	4.0%	3.8%	3.2%	2.3%	1.8%	2.0%	2.0%
Fuels and mining products	1.0%	3.1%	1.6%	2.7%	6.1%	6.9%	8.9%	8.1%
Manufactures	69.3%	74.2%	76.9%	81.8%	82.2%	86.9%	86.5%	87.5%
Chemicals	3.3%		3.2%	6.4%	7.3%	9.3%	10.3%	10.9%
Pharmaceuticals			0.1%	0.2%	0.2%	0.2%	0.3%	0.4%
Machinery and transport equipment	15.7%		32.4%	46.9%	53.2%	58.4%	55.5%	57.7%
Office and telecom equipment	7.5%	9.9%	18.2%	23.8%	31.1%	27.9%	20.3%	20.5%
Integrated circuits & electronic components			6.8%	13.9%	13.1%	9.3%	9.1%	10.7%
Textiles	9.8%	6.8%	7.7%	8.8%	6.7%	3.5%	2.3%	2.0%
Clothing	13.1%	11.9%	10.0%	3.5%	2.7%	0.9%	0.3%	0.4%

Source: World Trade Organisation, WTO Statistics Database stat.wto.org/Home/WSDBHome.aspx.

1 How has South Korea's structure of exports changed over time?

2 How did increased foreign competition impact the economy?

3 What were the factors that helped to change South Korea's comparative advantage?

Solution to 1:

In 1980, agriculture and clothing accounted for 6.8 percent and 13 percent of South Korea's exports, respectively. By 2015, the corresponding figures were 2.0 percent and 0.4 percent. In contrast, by 2015 machinery and transport equipment were almost 60% of South Korea's merchandise exports from only about 16% in 1980. Manufactures as a whole were 87.5%, up from 69% in 1980.

10 Wikipedia: Trade Policy of South Korea. In 1962, South Korea first introduced an export promotion policy targeted at labor intensive industries like textiles and clothing. By the 1970s, this plan had shifted focus to heavy industries and chemicals as the main export targets. As South Korea developed in the 1980s and early 1990s, export policies shifted toward consumer products, electronics, and high tech in particular.

Solution to 2:

The challenges of foreign competition created a "virtuous circle" that was self-reinforcing. Success in export markets increased the confidence of South Korean firms and led to greater success in exports through increased productivity, higher-quality products, acquisition of new skills, and adoption of technologies.

Solution to 3:

The factors that helped change South Korea's comparative advantage included government policy, an increasingly skilled and productive workforce, and proactive firms that learned and adapted new technology.

From an investment perspective, it is critical for analysts to be able to examine a country's comparative and absolute advantages and to analyze changes in them. It is also important to understand changes in government policy and regulations, demographics, human capital, demand conditions, and other factors that may influence comparative advantage and production and trade patterns. This information can then be used to identify sectors, industries within those sectors, and companies within those industries that will benefit.

2.4.2 *Ricardian and Heckscher–Ohlin Models of Comparative Advantage*

A discussion of absolute and comparative advantage and the gains from specialization would be incomplete without a discussion of two important theories of trade, the Ricardian Model and the Heckscher–Ohlin Model. These models are based on cross-country differences in technology and in factor endowments, respectively. These theoretical models are based on several assumptions, some of which may not be fully satisfied in the real world; nonetheless they provide extremely useful insights into the determinants and patterns of trade.

Adam Smith argued that a country could gain from trade if it had an absolute advantage in the production of a good. David Ricardo extended Smith's idea of the gains from trade by arguing that even if a country did not have an absolute advantage in the production of any good, it could still gain from trade if it had a comparative advantage in the production of a good. In the Ricardian model, labor is the only (variable) factor of production. Differences in labor productivity, reflecting underlying differences in technology, are the source of comparative advantage and hence the key driver of trade in this model. A country with a lower opportunity cost in the production of a good has a comparative advantage in that good and will specialize in its production. In our two-country model, if countries vary in size, the smaller country may specialize completely, but may not be able to meet the total demand for the product. Hence, the larger country may be incompletely specialized, producing and exporting the good in which it has a comparative advantage but still producing (and consuming) some of the good in which it has a comparative disadvantage. It is important to recognize that although differences in technology may be a major source of comparative advantage at a given point in time, other countries can close the technology gap or even gain a technological advantage. The shift of information technology services from developed countries to India is an example of comparative advantage shifting over time.[11] This shift was facilitated by India's growing pool of highly skilled and relatively low-wage labor, the development and growth of its telecommunication infrastructure, and government policies that liberalized trade in the 1990s.

11 According to NASSCOM (India's prominent IT-BPO trade association), Indian firms offer a wide range of information technology services that include consulting, systems integration, IT outsourcing/managed services/hosting services, training, and support/maintenance. See www.nasscom.in.

In the Heckscher–Ohlin Model (also known as the factor-proportions theory), both capital and labor are variable factors of production. That is, each good can be produced with varying combinations of labor and capital. According to this model, differences in the relative endowment of these factors are the source of a country's comparative advantage. This model assumes that technology in each industry is the same among countries, but it varies between industries. According to the theory, a country has a comparative advantage in goods whose production is intensive in the factor with which it is relatively abundantly endowed, and would tend to specialize in and export that good. Capital is relatively more (less) abundant in a country if the ratio of its endowment of capital to labor is greater (less) than that of its trading partner.[12] This scenario means a country in which labor is relatively abundant would export relatively labor-intensive goods and import relatively capital-intensive goods. For example, because the manufacture of textiles and clothing is relatively labor intensive, they are exported by such countries as China and India where labor is relatively abundant.

Relative factor intensities in production can be illustrated with the following example. In 2002, capital per worker in the Canadian paper industry was C$118,777, whereas in the clothing manufacturing sector it was C$8,954.[13] These amounts indicate that manufacturing paper is more capital intensive than clothing production. Canada trades with Thailand and, being relatively capital abundant compared with Thailand, it exports relatively capital-intensive paper to Thailand and imports relatively labor-intensive clothing from Thailand.

Because the Heckscher–Ohlin model has two factors of production, labor and capital, (unlike the Ricardian model that has only labor), it allows for the possibility of income redistribution through trade. The demand for an input is referred to as a *derived demand* because it is derived from the demand for the product it is used to produce. As a country opens up to trade, it has a favorable impact on the abundant factor, and a negative impact on the scarce factor. This result is because trade causes output prices to change; more specifically, the price of the export good increases and the price of the import good declines. These price changes affect the demand for factors used to produce the import and export goods, and hence affect the incomes received by each factor of production.

To illustrate this point, consider again the opening of trade between the United Kingdom and India in Exhibit 9. When trade opened, the United Kingdom expanded production of machines—which are assumed to be the capital-intensive industry—and reduced production of clothing. India did the opposite. Machines became more expensive relative to clothing in the United Kingdom (line P^* is steeper than line P^A). The relative price change, along with the shift in output it induces, leads to a redistribution of income from labor to capital in the United Kingdom. The opposite occurs in India—machines become cheaper relative to clothing (line P^* is flatter than $P^{A'}$), production shifts toward clothing, and income is redistributed from capital to labor.

Note that in each country, the relatively cheap good and the relatively cheap factor of production both get more expensive when trade is opened. That raises an interesting question: If free trade equalizes the prices of goods among countries, does it also equalize the prices of the factors of production? In the simple Heckscher–Ohlin world of homogeneous products, homogeneous inputs, and identical technologies among countries, the answer is yes: The absolute and relative factor prices are equalized in both countries if there is free trade. In the real world, we see that factor prices do not converge completely even if there is free trade because several assumptions of the

12 Alternatively, factor abundance can be defined in terms of the relative factor prices that prevail in autarky. Under this definition, labor is more (less) abundant in a country if the cost of labor relative to the cost of capital is lower (higher) in that country.

13 Appleyard, Field, and Cobb (2010).

models are not fully satisfied in the real world. Nonetheless, it is important to note that *with international trade factor prices display a tendency to move closer together in the long run.*

Changes in factor endowments can cause changes in the patterns of trade and can create profitable investment opportunities. For example, in 1967 Japan had a comparative advantage in unskilled-labor-intensive goods, such as textiles, apparel, and leather. Meier (1998) notes that by 1980, Japan had greatly increased its skilled labor and consequently had a comparative advantage in skill-intensive products, especially non-electrical machinery.

It is important to note that technological differences, as emphasized in the Ricardian trade model, and differences in factor abundance, as emphasized in the Heckscher–Ohlin model, are both important drivers of trade. They are complementary, not mutually exclusive. Tastes and preferences can also vary among countries and can change over time, leading to changes in trade patterns and trade flows.

3 TRADE AND CAPITAL FLOWS: RESTRICTIONS AND AGREEMENTS

Trade restrictions (or trade protection) are government policies that limit the ability of domestic households and firms to trade freely with other countries. Examples of trade restrictions include tariffs, import quotas, voluntary export restraints (VER), subsidies, embargoes, and domestic content requirements. **Tariffs** are taxes that a government levies on imported goods. **Quotas** restrict the quantity of a good that can be imported into a country, generally for a specified period of time. A voluntary export restraint is similar to a quota but is imposed by the exporting country. An **export subsidy** is paid by the government to the firm when it exports a unit of a good that is being subsidized. The goal here is to promote exports, but it reduces welfare by encouraging production and trade that is inconsistent with comparative advantage. **Domestic content provisions** stipulate that some percentage of the value added or components used in production should be of domestic origin. Trade restrictions are imposed by countries for several reasons including protecting established domestic industries from foreign competition, protecting new industries from foreign competition until they mature (infant industry argument), protecting and increasing domestic employment, protecting strategic industries for national security reasons, generating revenues from tariffs (especially for developing countries), and retaliation against trade restrictions imposed by other countries.

Capital restrictions are defined as controls placed on foreigners' ability to own domestic assets and/or domestic residents' ability to own foreign assets. Thus, in contrast with trade restrictions, which limit the openness of goods markets, capital restrictions limit the openness of financial markets. Sections 3.1 through 3.4 discuss trade restrictions. Section 3.5 briefly addresses capital restrictions.

3.1 Tariffs

Tariffs are taxes that a government levies on imported goods.[14] The primary objective of tariffs is to protect domestic industries that produce the same or similar goods. They may also aim to reduce a trade deficit. Tariffs reduce the demand for imported goods by increasing their price above the free trade price. The economic impact of a

14 Governments may also impose taxes on exports, although they are less common.

tariff on imports in a small country is illustrated in Exhibit 11. In this context, a small country is not necessarily small in size, population, or GDP. Instead, a **small country** is one that is a price taker in the world market for a product and cannot influence the world market price. For example, by many measures Brazil is a large country, but it is a price taker in the world market for cars. A large country, however, is a large importer of the product and can exercise some influence on price in the world market. When a large country imposes a tariff, the exporter reduces the price of the good to retain some of the market share it could lose if it did not lower its price. This reduction in price alters the terms of trade and represents a redistribution of income from the exporting country to the importing country. So, in theory it is possible for a large country to increase its welfare by imposing a tariff if 1) its trading partner does not retaliate and 2) the deadweight loss as a result of the tariff (see below) is smaller than the benefit of improving its terms of trade. However, there would still be a net reduction in global welfare—the large country cannot gain by imposing a tariff unless it imposes an even larger loss on its trading partner.

In Exhibit 11, the world price (free trade price) is P^*. Under free trade, domestic supply is Q^1, domestic consumption is Q^4, and imports are Q^1Q^4. After the imposition of a per-unit tariff t, the domestic price increases to P_t, which is the sum of the world price and the per-unit tariff t. At the new domestic price, domestic production increases to Q^2 and domestic consumption declines to Q^3, resulting in a reduction in imports to Q^2Q^3.

The welfare effects can be summarized as follows:

- Consumers suffer a loss of consumer surplus because of the increase in price.[15] This effect is represented by areas A + B + C + D in Exhibit 11.
- Local producers gain producer surplus from a higher price for their output. This effect is represented by area A.
- The government gains tariff revenue on imports Q^2Q^3. This effect is represented by area C.

The net welfare effect is the sum of these three effects. The loss in consumer surplus is greater than the sum of the gain in producer surplus and government revenue and results in a deadweight loss to the country's welfare of B + D.

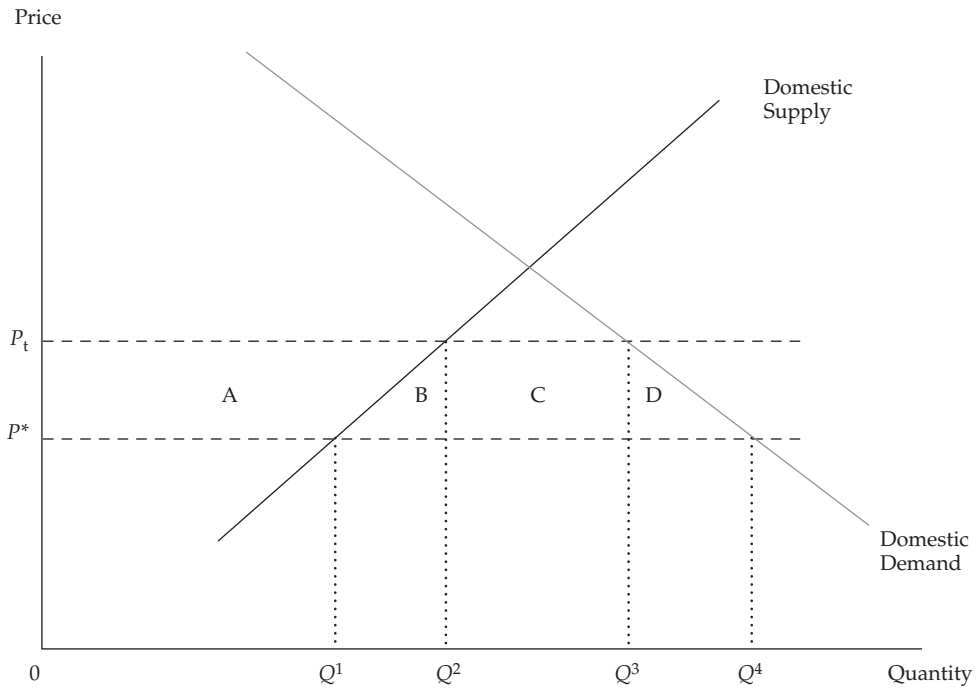
Welfare Effects of an Import Tariff or Quota

	Importing Country
Consumer surplus	– (A + B + C + D)
Producer surplus	+A
Tariff revenue or Quota rents	+C
National welfare	$-B-D$

Tariffs create deadweight loss because they give rise to inefficiencies on both the consumption and production side. B represents inefficiencies in production. Instead of being able to import goods at the world price P^*, tariffs encourage inefficient producers whose cost of production is greater than P^* to enter (or remain in) the market, leading to an inefficient allocation of resources. On the consumption side, tariffs prevent mutually beneficial exchanges from occurring because consumers who were willing to pay more than P^* but less than P_t are now unable to consume the good.

15 Consumer surplus, producer surplus, and deadweight loss are defined and discussed in the prerequisite reading "Demand and Supply Analysis: Introduction" available online in your Candidate Resources.

Exhibit 11 Welfare Effects of Tariff and Import Quota



EXAMPLE 4

Analysis of a Tariff

South Africa manufactures 110,000 tons of paper. However, domestic demand for paper is 200,000 tons. The world price for paper is $5 per ton. South Africa will import 90,000 tons of paper from the world market at free trade prices. If the South African government (a small country) decides to impose a tariff of 20 percent on paper imports, the price of imported paper will increase to $6. Domestic production after the imposition of the tariff increases to 130,000 tons, while the quantity demanded declines to 170,000 tons.

1. Calculate the loss in consumer surplus arising from the imposition of the tariff.
2. Calculate the gain in producer surplus arising from the imposition of the tariff.
3. Calculate the gain in government revenue arising from the imposition of the tariff.
4. Calculate the deadweight loss arising from the imposition of the tariff.

Solution to 1:

The loss in consumer surplus = $1 × 170,000 + 1/2 × $1 × 30,000 = $185,000. This calculation is represented by areas A + B + C + D in Exhibit 11.

Solution to 2:

Gain in producer surplus = $1 × 110,000 + 1/2 × ($1 × 20,000) = $120,000; Area A in Exhibit 11.

Solution to 3:

Change in government revenue = \$1 × 40,000 = \$40,000; Area C in Exhibit 11.

Solution to 4:

Deadweight loss because of the tariff = 1/2 × \$1 × 20,000 + 1/2 × \$1 × 30,000 = \$25,000; Areas B + D in Exhibit 11.

3.2 Quotas

A **quota** restricts the quantity of a good that can be imported into a country, generally for a specified period of time. An **import license** specifies the quantity that can be imported. For example, the European Union operates a system of annual import quotas for steel producers who are not members of the World Trade Organization. The 2010 quota was 0.2 million tons a year for Kazakhstan. In the case of Russia, the 2010 quota of 3.2 million tons per year was a part of an EU–Russia agreement.[16] A key difference between tariffs and quotas is that the government is able to collect the revenue generated from a tariff. This effect is uncertain under a quota. With quotas, foreign producers can often raise the price of their goods and earn greater profits than they would without the quota. These profits are called **quota rents**. In Exhibit 11, if the quota is Q^2Q^3, the equivalent tariff that will restrict imports to Q^2Q^3 is t and the domestic price after the quota is P_t. This is the same as the domestic price after the tariff t was imposed. Area C, however, is now the quota rent or profits that are likely to be captured by the foreign producer rather than tariff revenue that is captured by the domestic government. If the foreign producer or foreign government captures the quota rent, C, then the welfare loss to the importing country, represented by areas B + D + C in Exhibit 11, under a quota is greater than under the equivalent tariff. If the government of the country that imposes the quota can capture the quota rents by auctioning the import licenses for a fee, then the welfare loss under the quota is similar to that of a tariff, represented by areas B + D.

A **voluntary export restraint** (VER) is a trade barrier under which the exporting country agrees to limit its exports of the good to its trading partners to a specific number of units. The main difference between an import quota and a VER is that the former is imposed by the importer, whereas the latter is imposed by the exporter. The VER allows the quota rent resulting from the decrease in trade to be captured by the exporter (or exporting country), whereas in the case of an import quota there is ambiguity regarding who captures the quota rents. Hence, a VER results in welfare loss in the importing country. For example, in 1981 the Japanese government imposed VERs on automobile exports to the United States.

3.3 Export Subsidies

An export subsidy is a payment by the government to a firm for each unit of a good that is exported. Its goal is to stimulate exports. But it interferes with the functioning of the free market and may distort trade away from comparative advantage. Hence, it reduces welfare. *Countervailing duties* are duties that are levied by the importing country against subsidized exports entering the country. As an example, agricultural subsidies in developed countries, notably the EU, have been a contentious issue in trade negotiations with less-developed countries and developed countries that are agricultural exporters, such as New Zealand and Australia.

16 For more information, see http://ec.europa.eu/trade/creating-opportunities/economic-sectors/industrial-goods/steel/.

In the case of an export subsidy, the exporter has the incentive to shift sales from the domestic to the export market because it receives the international price plus the per-unit subsidy for each unit of the good exported. This scenario raises the price in the domestic market by the amount of the subsidy in the small country case (price before subsidy plus subsidy). In the large country case, the world price declines as the large country increases exports. The net welfare effect is negative in both the large and small country cases, with a larger decline in the large country case. This result is because in the large country case, the decline in world prices implies that a part of the subsidy is transferred to the foreign country, unlike in the small country case.

Exhibit 12 summarizes some of these effects.

Exhibit 12

Panel A. Effects of Alternative Trade Policies

	Tariff	Import Quota	Export Subsidy	VER
Impact on	Importing country	Importing country	Exporting country	Importing country
Producer surplus	Increases	Increases	Increases	Increases
Consumer surplus	Decreases	Decreases	Decreases	Decreases
Government revenue	Increases	Mixed (depends on whether the quota rents are captured by the importing country through sale of licenses or by the exporters)	Falls (government spending rises)	No change (rent to foreigners)
National welfare	Decreases in small country Could increase in large country	Decreases in small country Could increase in large country	Decreases	Decreases

Panel B. Effects of Alternative Trade Policies on Price, Production, Consumption, and Trade

	Tariff	Import Quota	Export Subsidy	VER
Impact on	Importing country	Importing country	Exporting country	Importing country
Price	Increases	Increases	Increases	Increases
Domestic consumption	Decreases	Decreases	Decreases	Decreases
Domestic production	Increases	Increases	Increases	Increases
Trade	Imports decrease	Imports decrease	Exports increase	Imports decrease

EXAMPLE 5

Tariffs, Quotas, and VERs

Thailand, a small country, has to decide whether to impose a tariff or a quota on the import of computers. You are considering investing in a local firm that is a major importer of computers.

1. What will be the impact of a tariff on prices, quantity produced, and quantity imported in Thailand (the importing country)?
2. If Thailand imposes a tariff, what will the impact be on prices in the exporting country?

3 How would a tariff affect consumer surplus, producer surplus, and government revenue in Thailand?

4 Explain whether the net welfare effect of a tariff is the same as that of a quota.

5 Which policy, a tariff or a quota, would be most beneficial to the local importer in which you may invest and why?

6 If Thailand were to negotiate a VER with the countries from which it imports computers, would this be better or worse than an import quota for the local importing firm in which you may invest? Why?

Solution to 1:

A tariff imposed by a small country, such as Thailand, raises the price of computers in the importing country, reduces the quantity imported, and increases domestic production.

Solution to 2:

A tariff imposed by a small country would not change the price of computers in the exporting country.

Solution to 3:

When a small country imposes a tariff, it reduces consumer surplus, increases producer surplus, and increases government revenue in that country.

Solution to 4:

The quota can lead to a greater welfare loss than a tariff if the quota rents are captured by the foreign government or foreign firms.

Solution to 5:

A tariff will hurt importers because it will reduce their share of the computer market in Thailand. The impact of a quota depends on whether the importers can capture a share of the quota rents. Assuming importers can capture at least part of the rents, they will be better off with a quota.

Solution to 6:

The VER would not be better for the local importer than the import quota and would most likely be worse. Under the VER, all of the quota rents will be captured by the exporting countries whereas with an import quota at least part of the quota rents may be captured by local importers.

It is important to understand existing trade policies and the potential for policy changes that may impact return on investment. Changes in the government's trade policy can affect the pattern and value of trade and may result in changes in industry structure. These changes may have important implications for firm profitability and growth because they can affect the goods a firm can import/export, change demand for its products, impact its pricing policies, and create delays through increased paperwork, procurement of licenses, approvals, and so on. For example, changes in import policies that affect the ability of a firm to import vital inputs for production may increase the cost of production and reduce firm profitability.

3.4 Trading Blocs, Common Markets, and Economic Unions

There has been a proliferation of trading blocs or regional trading agreements (RTA) in recent years. Important examples of regional integration include the North American Free Trade Agreement (NAFTA) and the European Union (EU). A regional trading bloc is a group of countries that have signed an agreement to reduce and progressively eliminate barriers to trade and movement of factors of production among the members of the bloc. It may or may not have common trade barriers against countries that are not members of the bloc.

There are many different types of regional trading blocs, depending on the level of integration that takes place. **Free trade areas** (FTA) are one of the most prevalent forms of regional integration in which all barriers to the flow of goods and services among members have been eliminated. However, each country maintains its own polices against non-members. The North American Free Trade Agreement (NAFTA) among the United States, Canada, and Mexico is an example of a FTA. A **customs union** extends the FTA by not only allowing free movement of goods and services among members but also creating a common trade policy against non-members. In 1947, Belgium, the Netherlands, and Luxemburg ("Benelux") formed a customs union that became a part of the European Community in 1958. The **common market** is the next level of economic integration that incorporates all aspects of the customs union and extends it by allowing free movement of factors of production among members. The Southern Cone Common Market (MERCOSUR) of Argentina, Brazil, Paraguay, and Uruguay is an example of a common market.[17] An **economic union** requires an even greater degree of integration. It incorporates all aspects of a common market and in addition requires common economic institutions and coordination of economic policies among members. The European Community became the European Union in 1993. If the members of the economic union decide to adopt a common currency, then it is also a **monetary union**. For example, with the adoption of the euro, 19 EU member countries also formed a monetary union.[18]

EXAMPLE 6

Trading Blocs

1 Chile and Australia have a free trade with each other but have separate trade barriers on imports from other countries. Chile and Australia are a part of a(n)

A FTA.

B Economic union.

C Customs union.

D Common market.

17 For more information, visit the OECD website, http://stats.oecd.org/glossary/.

18 On 1 January 1999, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain adopted the euro. This adoption meant that these countries had to surrender control over their domestic monetary policy to the European Central Bank. Greece joined in 2001. Euro coins and notes went into circulation on 1 January 2002, and these countries gave up the last vestiges of their national currencies. Other members now include Slovenia (2007), Cyprus (2008), Malta (2008), Slovakia (2009), Estonia (2011), Latvia (2014), and Lithuania (2015). The eurozone (i.e., the monetary union) is only a subset of the EU membership because some EU members, notably the United Kingdom, have not adopted the euro.

2 An RTA that removes all tariffs on imports from member countries, has common external tariffs against all non-members, but does not advance further in deepening economic integration is called a(n)

A FTA.

B Economic union.

C Customs union.

D Common market.

Solution to 1:

A is correct. Chile and Australia do not a have customs union because they do not have a common trade policy with respect to other trade partners (C is incorrect). A common market or a economic union entail even more integration (B and D are incorrect).

Solution to 2:

C is correct. A basic FTA does not entail common external tariffs (A is incorrect), whereas a common market and an economic union entail integration beyond common external tariffs (B and D are incorrect).

Regional integration is popular because eliminating trade and investment barriers among a small group of countries is easier, politically less contentious, and quicker than multilateral trade negotiations under the World Trade Organization (WTO). The WTO is a negotiating forum that deals with the rules of global trade between nations and where member countries can go to sort out trade disputes. The latest rounds of trade negotiations launched by the WTO in 2001 at Doha, Qatar, included several contentious issues of specific concern to developing countries, such as the cost of implementing trade policy reform in developing countries, market access in developed countries for developing countries' agricultural products, and access to affordable pharmaceuticals in developing countries. After nearly a decade of negotiations, very limited progress has been made on the major issues. Hence, it is not surprising to see a renewed interest in bilateral and multilateral trade liberalization on a smaller scale. Policy coordination and harmonization are also easier among a smaller group of countries. Regional integration can be viewed as a movement toward freer trade.

Regional integration results in preferential treatment for members compared with non-members and can lead to changes in the patterns of trade. Member countries move toward freer trade by eliminating or reducing trade barriers against each other, leading to a more efficient allocation of resources. But regional integration may also result in trade and production being shifted from a lower-cost non-member who still faces trade barriers to a higher-cost member who faces no trade barriers. This shift leads to a less-efficient allocation of resources and could reduce welfare. Hence, there are two static effects that are direct results of the formation of the customs union: trade creation and trade diversion.

Trade creation occurs when regional integration results in the replacement of higher-cost domestic production by lower-cost imports from other members. For example, consider two hypothetical countries, Qualor and Vulcan. Qualor produces 10 million shirts annually and imports 2 million shirts from Vulcan, which has a lower cost of production. Qualor has 10 percent tariffs on imports from Vulcan. Qualor and Vulcan then agree to form a customs union. Qualor reduces its production of shirts to 7 million and now imports 11 million shirts from Vulcan. The decline in Qualor's domestic production (from 10 million to 7 million shirts) is replaced by importing 3 million additional shirts from the low-cost producer, Vulcan. This scenario represents

trade creation. The rest of the additional imports (6 million shirts) represent increased consumption by Qualor's consumers because the price of shirts declines after formation of the custom union.

Trade diversion occurs when lower-cost imports from nonmember countries are replaced with higher-cost imports from members. In the example in the preceding paragraph, suppose Qualor initially imposes a 10 percent tariff on imports from both Vulcan and Aurelia. Aurelia is the lowest-cost producer of shirts, so Qualor initially imports 2 million shirts from Aurelia instead of from Vulcan. Qualor and Vulcan then form a customs union, which eliminates tariffs on imports from Vulcan but maintains a 10 percent tariff on imports from Aurelia. Now trade diversion could occur if the free trade price on imports from Vulcan is lower than the price on imports from Aurelia. Even though Aurelia is the lowest-cost producer, it may be a higher-priced source of imports because of the tariff. If this is the case, then Qualor will stop importing from Aurelia, a non-member, and divert its imports to Vulcan, a member of the RTA. Both trade creation and trade diversion are possible in an RTA. If trade creation is larger than trade diversion, then the net welfare effect is positive. However, there are concerns that this may not always be the case.

The benefits ascribed to free trade—greater specialization according to comparative advantage, reduction in monopoly power because of foreign competition, economies of scale from larger market size, learning by doing, technology transfer, knowledge spillovers, greater foreign investment, and better quality intermediate inputs at world prices—also apply to regional trading blocs. In addition, fostering greater interdependence among members of the regional trading bloc reduces the potential for conflict. Members of the bloc also have greater bargaining power and political clout in the global economy by acting together instead of as individual countries.

The 2009 World Development Report points to spillover of growth across borders as one of the main benefits of regional integration (Collier and O'Connell 2007). There is evidence of considerable spillovers among OECD countries, which are highly integrated both as a group and within their own geographic regions. The long-run growth of integrated countries is interconnected because members have greater access to each other's markets. Strong growth in any RTA country could have a positive impact on growth in other RTA member countries. RTAs also enhance the benefits of good policy and lead to convergence in living standards. For example, growth spillovers are likely to be much smaller among Sub-Saharan African countries because of a lack of integration arising from deficiencies in RTAs and inadequate levels of transportation and telecommunications infrastructure. Roberts and Deichmann (2008) estimated what the cumulative loss in real GDP between 1970 and 2000 would have been if Switzerland, which is landlocked and fully integrated with both its immediate neighbors and the world economy, had been subject to the same level of spillovers as the Central African Republic. Under such a scenario, Switzerland's GDP per capita in 2000 would have been 9.3 percent lower. The cumulative GDP loss would have been $334 billion (constant US dollars, 2000), which was the equivalent of 162 percent of Switzerland's real GDP in 2000.

Although regional integration has many advantages, it may impose costs on some groups. For example, there was significant concern in the United States that NAFTA and especially low-skilled-labor intensive imports from Mexico could hurt low-skilled workers. Adjustment costs arose as import competition caused inefficient firms to exit the market, and the workers in those firms were at least temporarily unemployed as they sought new jobs. However, the surviving firms experienced an increase in productivity, and US consumers benefited from the increase in product varieties imported from Mexico. Feenstra and Taylor (2008) estimated that the product varieties exported from Mexico to the United States had grown by an average of 2.2 percent a year across all industries. They estimated that NAFTA imposed private costs of nearly $5.4 billion a year in the United States during 1994–2002, but that these costs

were offset by an average welfare gain of $5.5 billion a year accruing from increased varieties imported from Mexico. Consumer gains from more varieties of products continued over time as long as the imports continued, while adjustment costs arising from job losses declined over time. In 2003, the gain from increased product varieties from Mexico was $11 billion, far exceeding the adjustment costs of $5.4 billion.[19] Their analysis concluded:

> …Thus the consumer gains from increased product variety, when summed over the years, considerably exceed the private loss from displacement. This outcome is guaranteed to occur because the gains from expanded import varieties occur every year that the imports are available, whereas labor displacement is a temporary phenomenon. (Feenstra and Taylor 2008, p. 208)

It is important to recognize, however, that workers displaced by regional integration may have to bear long-term losses if they are unable to find jobs with wages comparable with the jobs they lost or they remain unemployed for a long period. For example, although import competition was certainly not the only factor that led to a dramatic contraction of the US automobile industry, the impact on employment in that industry is likely to be permanent and many former autoworkers, especially older workers, may never find comparable jobs.

Concerns regarding national sovereignty, especially where big and small nations may be part of the same bloc, have also been an impediment to the formation of FTAs. The proposal for a South Asian regional bloc has faced challenges regarding India's role because it is one of the biggest economies in the region.

Regional integration is important from an investment perspective because it offers new opportunities for trade and investment. The cost of doing business in a large, single, regional market is lower and firms can benefit from economies of scale. However, it is important to note that differences in tastes, culture, and competitive conditions still exist among members of a trading bloc. These differences may limit the potential benefits from investments within the bloc. In addition, depending on the level of integration and the safeguards in place, problems faced by individual member countries in an RTA may quickly spread to other countries in the bloc.

There are at least two challenges in the formation of an RTA and in its potential progression from a free trade area to deeper integration in the form of a customs union, common market, or economic union. First, cultural differences and historical considerations—for example, wars and conflicts—may complicate the social/political process of integration. Second, maintaining a high degree of economic integration limits the extent to which member countries can pursue independent economic and social policies. Free trade and mobility of labor and capital tend to thwart policies aimed at controlling relative prices and/or quantities within a country, while balance of payments and fiscal credibility considerations limit the viability of divergent macroeconomic policies. This situation is especially true in the case of a monetary union because monetary policy is not under the control of individual countries and currency devaluation/revaluation is not available as a tool to correct persistent imbalances.[20] When persistent imbalances do arise, they may lead to a crisis that spills over to other countries facing similar problems. A recent example is the fear of contagion caused by the Greek fiscal crisis in 2010. In May 2010, Standard & Poor's reduced the credit ratings on Greece's government from investment grade to junk status. It also downgraded the government debt of Spain and Portugal. These countries were suffering

19 Feenstra and Taylor (2008) discuss in their book the data limitations and various assumptions they made in their analysis.

20 These limitations are inherent in any system with fixed exchange rates and a high degree of capital mobility. They are not unique to a monetary union (i.e., a common currency). For a discussion of currency regimes, see the Level I curriculum reading on Currency Exchange Rates.

from a combination of high government deficits and slow GDP growth. The credit downgrades increased fears that Greece, in particular, would default on its debt and cause economic turmoil not only among the healthier countries in the EU but also in the United States and Asia. The EU and the International Monetary Fund (IMF) agreed on a USD145 billion (EUR110 billion) bailout for Greece in May 2010, and provided Ireland with a financing package of about USD113 billion (EUR85 billion) in November 2010. As of late 2010, there were continuing concerns about the financial health of Greece, Ireland, Portugal, and Spain. The EU, which created the European Financial Stability Facility (EFSF) in 2010 to help EU countries in need, has been debating the need for an expansion in the scope and financing capacity of the EFSF.

EXAMPLE 7

Trade Agreements

Bagopia, Cropland, and Technopia decide to enter into an RTA. In the first stage, they decide to sign a free trade agreement (FTA). After several successful years, they decide that it is time to form a common market.

1 Does an FTA make exporting firms in member countries more attractive as investment options?

2 How does the common market affect firms doing business in these countries compared with an FTA?

Solution to 1:

The first stage, where there is free movement of goods and services among RTA members, is called a free trade area. It makes exporting firms a more attractive investment proposition because they are able to serve markets in member countries without the additional costs imposed by trade barriers.

Solution to 2:

Unlike an FTA, a common market allows for free movement of factors of production, such as labor and capital, among the member economies. Like an FTA, it provides access to a much larger market and free movement of goods and services. But the common market can create more profitable opportunities for firms than an FTA by allowing them to locate production in and purchase components from anywhere in the common market according to comparative advantage.

3.5 Capital Restrictions

There are many reasons for governments to restrict inward and outward flow of capital. For example, the government may want to meet some objective regarding employment or regional development, or it may have a strategic or defense-related objective. Many countries require approval for foreigners to invest in their country and for citizens to invest abroad. Control over inward investment by foreigners results in restrictions on how much can be invested, and on the type of industries in which capital can be invested. For example, such strategic industries as defense and telecommunications are often subject to ownership restrictions. Outflow restrictions can include restrictions on repatriation of capital, interest, profits, royalty payments, and license fees. Citizens are often limited in their ability to invest abroad, especially in foreign exchange–scarce economies, and there can be deadlines for repatriation of income earned from any investments abroad.

Economists consider free movement of financial capital to be beneficial because it allows capital to be invested where it will earn the highest return. Inflows of capital also allow countries to invest in productive capacity at a rate that is higher than could be achieved with domestic savings alone, and it can enable countries to achieve a higher rate of growth. Longer-term investments by foreign firms that establish a presence in the local economy can bring in not only much needed capital but also new technology, skills, and advanced production and management practices as well as create spillover benefits for local firms. Investment by foreign firms can also create a network of local suppliers if they source some of their components locally. Such suppliers may receive advanced training and spillover benefits from a close working relationship with the foreign firms. On the one hand, increased competition from foreign firms in the market may force domestic firms to become more efficient. On the other hand, it is possible that the domestic industry may be hurt because domestic firms that are unable to compete are forced to exit the market.

In times of macroeconomic crisis, capital mobility can result in capital flight out of the country, especially if most of the inflow reflects short-term portfolio flows into stocks, bonds, and other liquid assets rather than foreign direct investment (FDI) in productive assets. In such circumstances, capital restrictions are often used in conjunction with other policy instruments, such as fixed exchange rate targets. Capital restrictions and fixed exchange rate targets are complementary instruments because in a regime of perfect capital mobility, governments cannot achieve domestic and external policy objectives simultaneously using only standard monetary and fiscal policy tools.[21] By limiting the free flow of capital, capital controls provide a way to exercise control over a country's external balance whereas more traditional macropolicy tools are used to address other objectives.

Modern capital controls were developed by the belligerents in World War I as a method to finance the war effort. At the start of the war, all major powers restricted capital outflows (i.e., the purchase of foreign assets or loans abroad). These restrictions raised revenues by keeping capital in the domestic economy, facilitating the taxation of wealth, and producing interest income. Moreover, capital controls helped to maintain a low level of interest rates, reducing the government's borrowing costs on its liabilities. Since WWI, controls on capital outflows have been used similarly in other countries, mostly developing nations, to generate revenue for governments or to permit them to allocate credit in the domestic economy without risking capital flight. In broad terms, a capital restriction is any policy designed to limit or redirect capital flows. Such restrictions may take the form of taxes, price or quantity controls, or outright prohibitions on international trade in assets. Price controls may take the form of special taxes on returns to international investment, taxes on certain types of transactions, or mandatory reserve requirements—that is, a requirement forcing foreign parties wishing to deposit money in a domestic bank account to deposit some percentage of the inflow with the central bank for a minimum period at zero interest. Quantity restrictions on capital flows may include rules imposing ceilings or requiring special authorization for new or existing borrowing from foreign creditors. Or there may be administrative controls on cross-border capital movements in which a government agency must approve transactions for certain types of assets.

Effective implementation of capital restrictions may entail non-trivial administration costs, particularly if the measures have to be broadened to close potential loopholes. There is also the risk that protecting the domestic financial markets by capital restrictions may postpone necessary policy adjustments or impede private-sector

21 Section 4.1 of the Level I curriculum reading on Currency Exchange Rates provides a concise discussion of the policy implications of capital mobility with fixed versus floating exchange rates.

adaptation to changing international circumstances. Most importantly, controls may give rise to negative market perceptions, which may, in turn, make it more costly and difficult for the country to access foreign funds.

In a study on the effectiveness of capital controls, the International Monetary Fund considered restrictions on capital outflows and inflows separately.[22] The authors concluded that for restrictions on capital inflows to be effective (i.e., not circumvented), the coverage needs to be comprehensive and the controls need to be implemented forcefully. Considerable administrative costs are incurred in continuously extending, amending, and monitoring compliance with the regulations. Although controls on inflows appeared to be effective in some countries, it was difficult to distinguish the impact of the controls from the impact of other policies, such as strengthening of prudential regulations, increased exchange rate flexibility, and adjustment of monetary policy. In the case of capital outflows, the imposition of controls during episodes of financial crisis seems to have produced mixed results, providing only temporary relief of varying duration to some countries, while successfully shielding others (e.g., Malaysia) and providing them with sufficient time to restructure their economies.

EXAMPLE 8

Historical Example—Capital Restrictions: Malaysia's Capital Controls in 1998–2001

After the devaluation of the Thai baht in July 1997, Southeast Asia suffered from significant capital outflows that led to falling local equity and real estate prices and declining exchange rates. To counter the outflows of capital, the IMF urged many of the countries in the region to increase interest rates, thus making their assets more attractive to foreign investors. Higher interest rates, however, weighed heavily on the domestic economies. In response to this dilemma, Malaysia imposed capital controls on 1 September 1998. These controls prohibited transfers between domestic and foreign accounts, eliminated credit facilities to offshore parties, prevented repatriation of investment until 1 September 1999, and fixed the exchange rate of the Malaysian ringgit at 3.8 per US dollar. In February 1999, a system of taxes on capital flows replaced the prohibition on repatriation of capital. Although the details were complex, the net effect was to discourage short-term capital flows while permitting long-term transactions. By imposing capital controls, Malaysia hoped to regain monetary independence, and to be able to cut interest rates without provoking a fall in the value of its currency as investors avoided Malaysian assets. The imposition of outflow controls indeed curtailed speculative capital outflows and allowed interest rates to be reduced substantially. At the same time, under the umbrella of the capital controls, the authorities pursued bank and corporate restructuring and achieved a strong economic recovery in 1999 and 2000. With the restoration of economic and financial stability, administrative controls on portfolio outflows were replaced by a two-tier, price-based exit system in February 1999, which was finally eliminated in May 2001. Although Malaysia's capital controls did contribute to a stabilization of its economy, they came with long-term costs associated with the country's removal from the MSCI developed equity market index, an important benchmark in the institutional asset management industry, and its relegation to the emerging market universe. The Malaysian market was no longer seen as on par with developed equity markets whose institutional

22 Ariyoshi, et al. (2000).

and regulatory frameworks provide a higher standard of safety for investors. As a consequence, it became more difficult for Malaysia to attract net long-term capital inflows (Kawai and Takagi 2003).

1 Under what economic circumstances were Malaysia's capital restrictions imposed?
2 What was the ultimate objective of Malaysia's capital restrictions?
3 How successful were the country's capital restrictions?

Solution to 1:

As a result of the Southeast Asian crisis, Malaysia suffered substantial net capital outflows pushing up the domestic interest rate level.

Solution to 2:

The restrictions were designed to limit and redirect capital flows to allow the government to reduce interest rates and pursue bank and corporate restructurings.

Solution to 3:

Although the capital controls helped stabilize Malaysia's economy, they contributed to a change in investors' perception of Malaysian financial markets and removal of the Malaysian equity market from the MSCI benchmark universe of developed equity markets. This situation undermined international demand for Malaysian equities and made it more difficult to attract net long-term capital inflows.

THE BALANCE OF PAYMENTS

4

The **balance of payments** (BOP) is a double-entry bookkeeping system that summarizes a country's economic transactions with the rest of the world for a particular period of time, typically a calendar quarter or year. In this context, a transaction is defined as "an economic flow that reflects the creation, transformation, exchange, or extinction of economic value and involves changes in ownership of goods and/or financial assets, the provision of services, or the provision of labour and capital."[23] In other words, the BOP reflects payments for exports and imports as well as financial transactions and financial transfers. Analyzing the BOP is an important element in assessing a country's macroeconomic environment, its monetary and fiscal policies, and its long-term growth potential. Investors use data on trade and capital flows to evaluate a country's overall level of capital investment, profitability, and risk. The following section describes the balance of payments, the factors that influence it, and its impact on exchange rates, interest rates, and capital market transactions.

4.1 Balance of Payments Accounts

The BOP is a double-entry system in which every transaction involves both a debit and credit. In principle, the sum of all debit entries should equal the sum of all credit entries, and the net balance of all entries on the BOP statement should equal zero. In practice, however, this is rarely the case because the data used to record balance of payments transactions are often derived from different sources.

23 IMF Balance of Payments Handbook, chapter II, page 6.

Debit entries reflect purchases of imported goods and services, purchases of foreign financial assets, payments received for exports, and payments (interest and principal) received from debtors. Credit entries reflect payments for imported goods and services, payments for purchased foreign financial assets, and payments to creditors (see Exhibit 13, Panel A). Put differently, a debit represents an increase in a country's assets (the purchase of foreign assets or the receipt of cash from foreigners) or a decrease in its liabilities (the amount owed to foreigners); a credit represents a decrease in assets (the sale of goods and services to foreigners or the payment of cash to foreigners) or an increase in liabilities (an amount owed to foreigners).

For example, as shown in Panel B of Exhibit 13, on 1 September Country A purchases $1 million of goods from Country B and agrees to pay for these goods on 1 December. On 1 September, Country A would record in its BOP a $1 million debit to reflect the value of the goods purchased (i.e., increase in assets) and $1 million credit to reflect the amount owed to Country B. On 1 December, Country A would record in its BOP a $1 million debit to reflect a decrease in the amount owed (liability) to Country B and $1 million a credit to reflect the actual payment to Country B (decrease in assets).

From Country B's perspective, on 1 September it would record in its BOP a $1 million debit to reflect the amount owed by Country A and a $1 million credit to reflect the sale of goods (exports). On 1 December, Country B would record a $1 million debit to reflect the cash received from Country A, and $1 million credit to reflect the fact that it is no longer owed $1 million by Country A.

Exhibit 13 Basic Entries in a BOP Context

Panel A

DEBITS Increase in Assets, Decrease in Liabilities	CREDITS Decrease in Assets, Increase in Liabilities
■ Value of imported goods and services	■ Payments for imports of goods and services
■ Purchases of foreign financial assets	■ Payments for foreign financial assets
■ Receipt of payments from foreigners	■ Value of exported goods and services
■ Increase in debt owed by foreigners	■ Payment of debt by foreigners
■ Payment of debt owed to foreigners	■ Increase in debt owed to foreigners

Panel B

Country A	Debits	Credits
1 September	$1 million Goods purchased from Country B *(increase in real assets)*	$1 million Short-term liability for goods purchased from Country B *(increase in financial liabilities)*
1 December	$1 million Elimination of short-term liability for goods purchased from Country B *(decrease in financial liabilities)*	$1 million Payment for goods purchased from Country B *(decrease in financial assets)*

Exhibit 13 (Continued)

Country B	Debits	Credits
1 September	$1 million Short-term claim for goods delivered to Country A *(increase in financial assets)*	$1 million Goods delivered to Country A *(decrease in real assets)*
1 December	$1 million Receipt of payment for goods delivered to Country A *(increase in financial assets)*	$1 million Elimination of claim for goods delivered to Country A *(decrease in financial assets)*

4.2 Balance of Payment Components

The BOP is composed of the **current account** that measures the flow of goods and services, the **capital account** that measures transfers of capital, and the **financial account** that records investment flows. These accounts are further disaggregated into sub-accounts:

Current Account

The current account can be decomposed into four sub-accounts:

1. **Merchandise trade** consists of all commodities and manufactured goods bought, sold, or given away.
2. **Services** include tourism, transportation, engineering, and business services, such as legal services, management consulting, and accounting. Fees from patents and copyrights on new technology, software, books, and movies are also recorded in the services category.
3. **Income receipts** include income derived from ownership of assets, such as dividends and interest payments; income on foreign investments is included in the current account because that income is compensation for services provided by foreign investments. When a German company builds a plant in China, for instance, the services the plant generates are viewed as a service export from Germany to China equal in value to the profits the plant yields for its German owner.
4. **Unilateral transfers** represent one-way transfers of assets, such as worker remittances from abroad to their home country and foreign direct aid or gifts.

Capital Account

The capital account consists of two sub-accounts:

1 **Capital transfers** include debt forgiveness and migrants' transfers (goods and financial assets belonging to migrants as they leave or enter the country).[24] Capital transfers also include the transfer of title to fixed assets and the transfer of funds linked to the sale or acquisition of fixed assets, gift and inheritance taxes, death duties, uninsured damage to fixed assets, and legacies.

2 **Sales and purchases of non-produced, non-financial assets**, such as the rights to natural resources, and the sale and purchase of intangible assets, such as patents, copyrights, trademarks, franchises, and leases.

Financial Account

The financial account can be broken down in two sub-accounts: financial assets abroad and foreign-owned financial assets within the reporting country.

1 A country's assets abroad are further divided into official reserve assets, government assets, and private assets. These assets include gold, foreign currencies, foreign securities, the government's reserve position in the International Monetary Fund,[25] direct foreign investment, and claims reported by resident banks.

2 Foreign-owned assets in the reporting country are further divided into official assets and other foreign assets. These assets include securities issued by the reporting country's government and private sectors (e.g., bonds, equities, mortgage-backed securities), direct investment, and foreign liabilities reported by the reporting country's banking sector.

EXAMPLE 9

US Current Account Balance

Exhibit 14 shows a simplified version of the US balance of payments for 1970–2009.

Exhibit 14 US International Transactions Accounts Data

(Credits+, Debits–)	1970	1980	1990	2000	2009	2017
Current Account						
Exports of goods and services and income receipts	68,387	344,440	706,975	1,421,515	2,159,000	3,279,190
Exports of goods and services	56,640	271,834	535,233	1,070,597	1,570,797	2,351,072
Income receipts	11,748	72,606	171,742	350,918	588,203	928,118
Imports of goods and services and income payments	–59,901	–333,774	–759,290	–1,779,241	–2,412,489	–3,609,734
Imports of goods and services	–54,386	–291,241	–616,097	–1,449,377	–1,945,705	–2,903,349
Income payments	–5,515	–42,532	–143,192	–329,864	–466,783	–706,385
Unilateral current transfers, net	–6,156	–8,349	–26,654	–58,645	–124,943	–118,597

24 Immigrants bring with them goods and financial assets already in their possession. Hence, these goods are imported on grounds other than commercial transactions.

25 These are in effect official currency reserves held with the International Monetary Fund.

Exhibit 14 (Continued)

(Credits+, Debits–)	1970	1980	1990	2000	2009	2017
Capital Account						
Capital account transactions, net	....	....	–7,220	–1	–140	–24,746
Financial Account						
US-owned assets abroad, ex derivatives (increase/financial outflow (–))	–9,337	–86,967	–81,234	–560,523	–140,465	–1,182,749
Foreign-owned assets in the United States, ex derivatives (increase/financial inflow (+))	7,226	62,037	139,357	1,038,224	305,736	1,537,682
Financial derivatives, net	NA	NA	NA	NA	50,804	23,074
Statistical discrepancy (sum of above items with sign reversed)	–219	22,613	28,066	–61,329	162,497	–95,880

Based only on the information given, address the following:

1 Calculate the current account balance for each year.
2 Calculate the financial account balance for each year.
3 Describe the long-term change in the current account balance.
4 Describe the long-term change in the financial account balance.

Solutions to 1 and 2:

(Credits+, Debits–)	1970	1980	1990	2000	2009	2017
Current Account	2,330	2,317	–78,969	–416,371	–378,432	–449,141
Financial Account	–2,111	–24,930	58,123	477,701	216,075	378,007

Solution to 3:

The United States had a current account surplus until 1980. After 1990, the US current account had an increasing deficit as a result of strong import growth.

Solution to 4:

Mirroring the growing US current account deficit, the US financial account, after 1990, registered increasing net capital inflows in similar proportions to the deficit in the current account.

4.3 Paired Transactions in the BOP Bookkeeping System

The following examples illustrate how some typical cross-border transactions are recorded in the BOP framework outlined previously. They include commercial exports and imports, the receipt of income from foreign investments, loans made to borrowers abroad, and purchases of home-country currency by foreign central banks. Exhibit 15 illustrates the various individual bookkeeping entries from the perspective of an individual country, in this case Germany.

Commercial Exports: Transactions (ia) and (ib)

A company in Germany sells technology equipment to a South Korean auto manufacturer for a total price of EUR50 million, including freight charges of EUR1 million to be paid within 90 days. The merchandise will be shipped via a German cargo ship. In this case, Germany is exporting two assets: equipment and transportation services. The cargo shipped is viewed as being created in Germany and used by South Korean customers. In return for relinquishing these two assets, Germany acquires a financial asset—the promise by the South Korean manufacturer to pay for the equipment in 90 days.

Germany would record a EUR50 million debit to an account called "private short-term claims" to show an increase in this asset. It would also record a credit of EUR49 million to "goods" and another credit of EUR1 million to "services." Both credit entries are listed in the export category and show the decrease in assets available to German residents. These figures are entered as credits on lines 2 and 3 and as a debit on 19 in Exhibit 15 and are marked with (ia) to identify a typical commercial export transaction. To pay for the technology equipment purchased from Germany, the South Korean auto manufacturer may purchase euros from its local bank (i.e., a EUR demand deposit held by the Korean bank in a German bank) and then transfer them to the German exporter. As a result, German liabilities to South Korean residents (i.e., South Korean private short-term claims) would be debited. The respective entries, marked with (ib) are on lines 19 and 23 in Exhibit 15.

Commercial Imports: Transaction (ii)

A German utility company imports gas from Russia valued at EUR 45 million (ii), and agrees to pay the Russian company within three months. The imported gas generates a debit on line 6. The obligation pay is recorded as a credit to foreign private short-term claims on line 23.

Loans to Borrowers Abroad: Transaction (iii)

A German commercial bank purchases EUR 100 million in intermediate-term bonds issued by a Ukrainian steel company. The bonds are denominated in euros, so payment is made in euros (i.e., by transferring EUR demand deposits). A debit entry on line 18 records the increase in German holdings of Ukrainian bonds, and a credit entry on line 23 records the increase in demand deposits held by Ukrainians in German banks.

Exhibit 15 Hypothetical Transactions between German Residents and Foreigners

Item no	Account	Debit	Credit	Balance
		–	+	+/–
1	**Exports of goods and services, income received**			**55**
2	Goods		49 (ia)	49
3	Services		1 (ia)	1
4	Income on residents' investments abroad		5 (v)	5
5	**Imports of goods and services, income paid**			**–45**
6	Goods	45 (ii)		–45
7	Services			
8	Income on foreign investments in home country			
9	**Unilateral transfers**			
10	**Changes in residents' claims on foreigners**			**–105**

Exhibit 15 (Continued)

Item no	Account	Debit	Credit	Balance
		–	+	+/–
11	Official reserve assets			
12	Gold			
13	Foreign currency balances			
14	Other			
15	Government claims			
16	Private claims			
17	Direct investments			
18	Other private long-term claims	100 (iii)		–100
19	Private short-term claims	50 (ia), 5 (v)	50 (ib)	–5
20	**Changes in foreign claims on residents**			**195**
21	Foreign official claims		20 (iv)	20
22	Foreign private long-term claims			
23	Foreign private short-term claims	20 (iv), 50 (ib)	45 (ii), 100 (iii), 100 (vi)	175
24	**Other**	100 (vi)		**–100**
	Total	~~270~~ 370	~~270~~ 370	**0**
	Current Account: (1) + (5) + (9)			**10**
	Capital Account: (24)			**–100**
	Financial Account: (10) + (20)			**90**

Purchases of Home-Country Currency by Foreign Central Banks: Transaction (iv)

Private foreigners may not wish to retain euro balances acquired in earlier transactions. Those who are holding foreign currency, in our example euro claims, typically do so for purposes of financing purchases from Germany (or other euro area member countries). Assume for instance, that Swiss residents attempt to sell EUR20 million in exchange for their native currency, the Swiss franc (CHF), but there is a lack of demand for EUR funds in Switzerland. In such circumstances, the CHF would appreciate against the EUR. To prevent an undesired CHF appreciation, the Swiss National Bank (SNB) might sell CHF in exchange for EUR balances.

Suppose that the Swiss National Bank purchased EUR20 million, typically in the form of a EUR demand deposit held with a German bank, from local commercial banks in Switzerland. The German BOP would register an increase of EUR20 million in German liabilities held by foreign monetary authorities, the Swiss National Bank (line 21), and an equivalent decline in short-term liabilities held by private foreigners (i.e., Swiss private investors, line 23). It may be noteworthy that when the SNB purchases EUR funds from Swiss commercial banks, it also credits them the CHF equivalent of EUR20 million. The SNB's liabilities to Swiss commercial banks arising from this transaction are in fact reserve deposits that Swiss banks can use when they expand their lending business and create new deposits. Currency interventions by central banks, therefore, can contribute to an increase in a country's overall money supply, all else remaining unchanged.

Receipts of Income from Foreign Investments: Transaction (v)

Each year, residents of Germany receive billions of EUR in interest and dividends from capital invested in foreign securities and other financial claims. German residents receive these payments in return for allowing foreigners to use German capital that otherwise could be put to work in Germany. Foreign residents, in turn, receive similar returns for their investments in Germany. Assume that a German firm has a long-term capital investment in a profitable subsidiary abroad, and that the subsidiary transfers to its German parent EUR5 million in dividends in the form of funds held in a foreign bank. The German firm then has a new (or increased) demand deposit in a foreign bank as compensation for allowing its capital to be used by its subsidiary. A debit entry on line 19 shows German private short-term claims on foreigners have increased by EUR5 million, and a credit entry on line 4 reflects the fact that German residents have given up an asset (the services of capital covered over the period) valued at EUR5 million.

Purchase of Non-financial Assets: Transaction (vi)

In a move to safeguard its long-term supply of uranium, a German utility company purchases the rights to exploit a uranium mine from the government of Kazakhstan. It agrees to pay within three months. The respective entries are on lines 23 and 24. Because a non-financial, non-produced asset is involved in this transaction, it is recorded in Germany's capital account.

Note that the sum of all BOP entries in Exhibit 15 is 0. Transactions (i)–(iv) produce a current account surplus of EUR10 million, a capital account deficit of EUR100 million, and a financial account surplus of EUR90 million.

Although it is important to understand the detailed structure of official balance of payments accounts as described in the preceding paragraphs, this example is not necessarily how investment professionals think about the balance of payments day-to-day. Practitioners often think of the current account as roughly synonymous with the trade balance (merchandise trade + services) and lump all the financing flows (financial account + capital account) into one category that is usually referred to simply as the "capital account." They then think of the capital account as consisting of two types of flows—portfolio investment flows and foreign direct investment (FDI). The former are shorter-term investments in foreign assets (stocks, bonds, etc.), whereas the latter are long-term investments in production capacity abroad. Although not completely accurate, this way of thinking about the balance of payments focuses attention on the components—trade, portfolio flows, and FDI—that are most sensitive to, and most likely to affect, market conditions, prices of goods and services, asset prices, and exchange rates. In addition, this perspective fits well with the role that the balance of payments plays in the macroeconomy.

4.4 National Economic Accounts and the Balance of Payments

In a closed economy, all output Y is consumed or invested by the private sector—domestic households and businesses—or purchased by the government. Letting Y denote GDP, C private consumption, I investment, and G government purchases of goods and services, the national income identity for a closed economy is given by:

$$Y = C + I + G \quad (1)$$

Once foreign trade is introduced, however, some output is purchased by foreigners (exports) whereas some domestic spending is used for purchases of foreign goods and services (imports). The national income identity for an open economy is thus

$$Y = C + I + G + X - M \quad (2)$$

where X denotes exports and M denotes imports.

For most countries, exports rarely equal imports. Net exports or the difference between exports and imports ($X - M$) is the equivalent of the current account balance from a BOP perspective.[26] When a country's imports exceed its exports, the current account is in deficit. When a country's exports exceed its imports, the current account is in surplus. As the right side of Equation 2 shows, a current account surplus or deficit can affect GDP (and also employment). The balance of the current account is also important because it measures the size and direction of international borrowing.

In order for the balance of payments to balance, a deficit or surplus in the current account must be offset by an opposite balance in the sum of the capital and financial accounts. This requirement means that a country with a current account deficit has to increase its net foreign debts by the amount of the current account deficit. For example, the United States has run current account deficits for many years while accumulating net foreign liabilities: The current account deficit was financed by net capital imports (i.e., direct investments by foreigners), loans by foreign banks, and the sale of US equities and fixed-income securities to foreign investors. By the same token, an economy with a current account surplus is earning more for its exports than it spends for its imports. Japan, Germany, and China are traditional current account surplus countries accumulating substantial net foreign claims, especially against the United States. An economy with a current account surplus finances the current account deficit of its trading partners by lending to them—that is, granting bank loans and investing in financial and real assets. As a result, the foreign wealth of a surplus country rises because foreigners pay for imports by issuing liabilities that they will eventually have to redeem.

By rearranging Equation 2, we can define the current account balance from the perspective of the national income accounts as:

$$CA = X - M = Y - (C + I + G) \quad \textbf{(3)}$$

Only by borrowing money from foreigners can a country have a current account deficit and consume more output than it produces. If it consumes less output than it produces, it has a current account surplus and can (indeed must) lend the surplus to foreigners. International capital flows essentially reflect an *inter-temporal trade.* An economy with a current account deficit is effectively importing present consumption and exporting future consumption.

Let us now turn to the relationship between output Y and disposable income Y^d. We have to recognize that part of income is spent on taxes T, and that the private sector receives net transfers R in addition to (national) income. Disposable income Y^d is thus equal to income plus transfers minus taxes:

$$Y^d = Y + R - T \quad \textbf{(4)}$$

Disposable income, in turn, is allocated to consumption and saving so that we can write

$$Y^d = C + S_p \quad \textbf{(5)}$$

where S_p denotes private sector saving. Combining Equations 4 and 5 allows us to write consumption as income plus transfers minus taxes and saving.

$$C = Y^d - S_p = Y + R - T - S_p \quad \textbf{(6)}$$

26 Strictly speaking, net exports as defined here is the trade balance rather than the current account balance because it excludes income receipts and unilateral transfers. This distinction arises because we have defined income Y as GDP rather than GNP (see section 2.1). Because the trade balance is usually the dominant component of the current account, the terms "trade balance" and "current account" are often used interchangeably. We will do so here unless the distinction is important to the discussion.

We can now use the right side of Equation 6 to substitute for C in Equation 3. With some rearrangement we obtain

$$CA = S_p - I + (T - G - R) \quad \textbf{(7)}$$

Because $(T - G - R)$ is taxes minus government spending and transfers, it is the government surplus, or put differently, government savings S_g. Equation 7 can therefore be restated as

$$S_p + S_g = I + CA \quad \textbf{(8)}$$

Equation 8 highlights an essential difference between open and closed economies: An open economy can use its saving for domestic investment or for foreign investment (i.e., by exporting its savings and acquiring foreign assets), while in a closed economy savings can only be used for domestic investment. Put another way, an open economy with promising investment opportunities is not constrained by its domestic savings rate in order to exploit these opportunities. As Equation 8 shows, it can raise investment by increasing foreign borrowing (a reduction in CA) without increasing domestic savings. For example, if India decides to build a network of high-speed trains, it can import all the required materials it needs from France and then borrow the funds, perhaps also from France, to pay for the materials. This transaction increases India's domestic investment because the imported materials contribute to the expansion in the country's capital stock. All else being equal, this transaction will also produce a current account deficit for India by an amount equal to the increase in investment. India's savings does not have to increase, even though investment increases. This example can be interpreted as an inter-temporal trade, in which India imports present consumption (when it borrows to fund current expenditure) and exports future consumption (when it repays the loan).

Rearranging Equation 8, we can write

$$S_p = I + CA - S_g \quad \textbf{(9)}$$

Equation 9 states that an economy's private savings can be used in three ways: (1) investment in domestic capital (I), (2) purchases of assets from foreigners (CA), and (3) net purchases (or redemptions) of government debt ($-S_g$).

Finally, we can rearrange Equation 8 again to illustrate the macroeconomic sources of a current account imbalance:

$$CA = S_p + S_g - I \quad \textbf{(10)}$$

A current account deficit tends to result from low private savings, high private investment, a government deficit ($S_g < 0$), or a combination of the three. Alternatively, a current account surplus reflects high private savings, low private investment, or a government surplus.

As outlined above, trade deficits can result from a lack of private or government savings or booming investments. If trade deficits primarily reflect high private or government consumption (i.e., scarce savings = $S_p + S_g$), the deficit country's capacity to repay its liabilities from future production remains unchanged. If a trade deficit primarily reflects strong investments (I), however, the deficit country can increase its productive resources and its ability to repay its liabilities.

We can also see from Equation 3 that a current account deficit tends to reflect a strong domestic economy (elevated consumer, government, and investment spending), which is usually accompanied by elevated domestic credit demand and high interest rates. In such an environment, widening interest rate differentials vis-à-vis other countries can lead to growing net capital imports and produce an appreciating currency. In the long run, however, a persistent current account deficit leads to a permanent increase in the claims held by other countries against the deficit country. As a result, foreign investors may require rising risk premiums for such claims, a process that appears to lead to a depreciating currency.

EXAMPLE 10

Historical Example: The United Kingdom Budget

A financial newspaper had the following item:

> The UK's budget deficit is the highest in the G–20; in Europe, only Ireland borrows more. These are the stark facts facing Chancellor of the Exchequer George Osborne as he plans his first Budget tomorrow. He intends to tackle the problem even if that involves severe spending cuts and large tax increases.
>
> *Source*: *Financial Times*, 21 June 2010.

1. What are the likely consequences for the UK current account balance from the planned fiscal policy moves mentioned in the above article?
2. Describe the impact spending cuts and tax increases are likely to have on UK imports.

Solution to 1:

The combination of spending cuts and tax increases will, all else the same, lead to an improvement in the UK current account position.

Solution to 2:

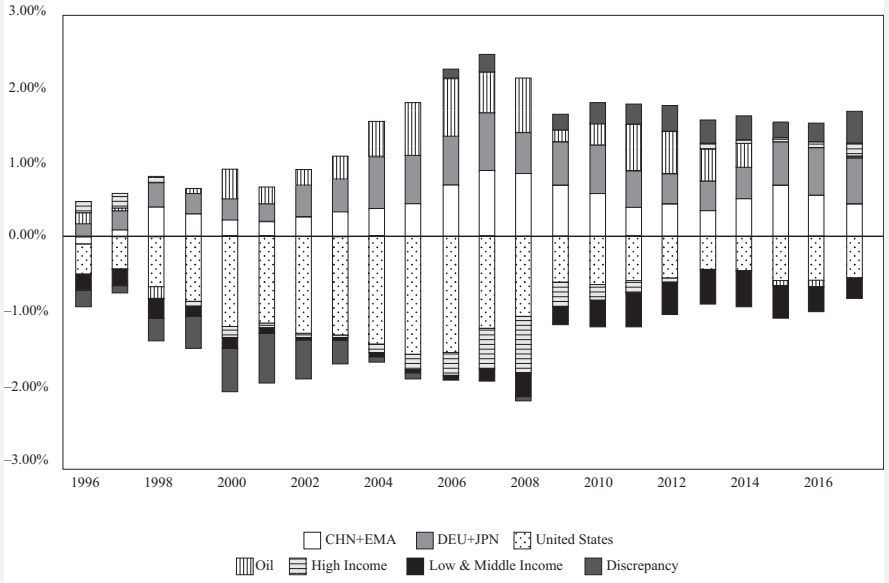
UK imports are likely to be reduced by tax increases and spending cuts because government demand for foreign goods will fall and growth in private household income, which finances private imports, will be restricted as more household income goes to taxes.

EXAMPLE 11

Global Current Account Imbalances since 1996

As a result of growing financial integration and trade liberalization, the world economy has entered a period of rapid growth in cross-border trade since the late 1980s. In synch with surging international trade, current account imbalances widened substantially in the 1990s and the first decade of the new millennium. Exhibit 16 shows current account balances for 1996–2017 for five specific groups—the United States, the top 20 Oil exporting countries as of 2016, Germany and Japan (DEU + JPN), China and emerging Asia (CHN + EMA)—and two broad categories: all other High Income countries and all remaining Low and Middle Income countries. The United States ran a current account deficit in every year, and in every year its deficit represented most of the aggregate value of such deficits worldwide. Only after the 2007–2009 recession has the US deficit declined both in absolute terms and relative to the global aggregate of current account deficits. In the first half of the 1990s, Germany and Japan were the traditional current account surplus countries, providing net exports of goods and services to and accumulating net claims against the United States. Since the late 1990s, among the largest current account surpluses are those of China and emerging Asia. Oil exporting countries, who have traditionally had significant current account surpluses, saw a change to current account deficits in 2015.

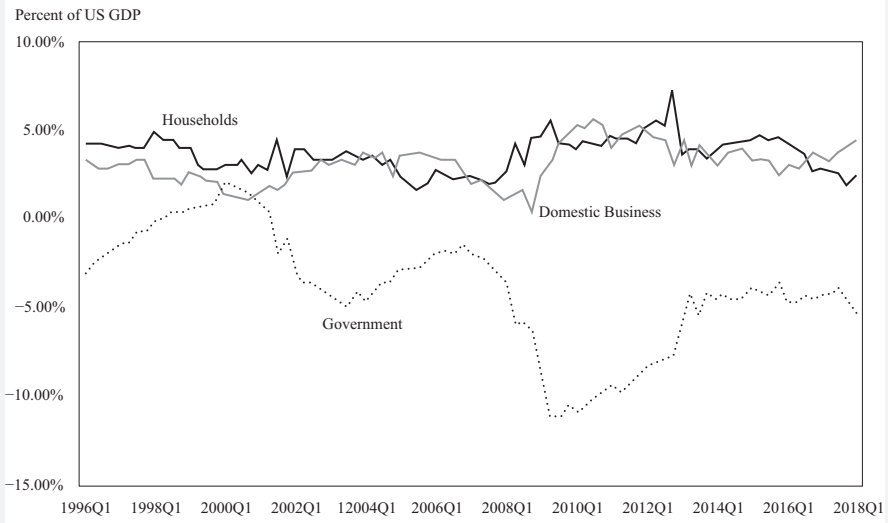
Exhibit 16 Global Imbalances (Current Account Balance in Percent of World GDP)



Note: 1. CHN+EMA includes the following economies: Chinese mainland, Hong Kong SAR, Indonesia, Korea, Malaysia, Philippines, Singapore, Thailand.
2. The Oil group consists of the 20 largest oil exporting countries in 2016—excluding the United States—as listed in the Economist Intelligence Unit World Factbook 2017.
3. The High Income as well as the Low and Middle Income groups' definitions include all countries that do not fall into any of the other categories.
Source: IMF *Balance of Payments Statistics Yearbook, 2018*.

As illustrated in Equation 10, current account deficits or surpluses reflect imbalances between national savings (including government savings) and investments. Current account deficits are often related to expansionary fiscal policy and government deficits. In the 1980s, for instance, the growing deficit in the US current account was widely seen as the consequence of tax cuts and rising defense spending adopted by the Reagan administration. Since the mid-1990s, however, the current account imbalances depicted in Exhibit 16 appear to reflect other, more complex factors. Exhibit 17 illustrates US net savings (S–I) for private domestic businesses, households and non-profits, and the government (i.e., federal, state, and local) from the first quarter of 1996 to the first quarter of 2018. The exhibit indicates that business sector net savings and government net savings as a percentage of GDP were near mirror-images between 1996 to 2008. During the technology bubble businesses invested heavily and ran progressively larger savings deficits while the government moved to a surplus. After the bubble burst the pattern reversed with businesses moving to net positive savings and the government fiscal balance deteriorating sharply. Meanwhile, the household sector gradually reduced its savings rate. After the global financial crisis in late 2008, households and businesses cut spending and increased savings sharply while the government deficit exploded to more than 12 percent of GDP. As the economy recovered from the financial crisis from 2012 onwards, government borrowing fell to five percent of GDP. Both households and business maintained a higher rate of saving during this period than before the financial crisis.

Exhibit 17 United States: Sectorial Saving–Investment Balance since 1996 (Net Savings in Percent of GDP)



Source: Federal Reserve Board, flow-of-funds data.

TRADE ORGANIZATIONS

5

During the Great Depression in the 1930s, countries attempted to support their failing economies by sharply raising barriers to foreign trade, devaluing their currencies to compete against each other for export markets, and restricting their citizens' freedom to hold foreign exchange. These attempts proved to be self-defeating. World trade declined dramatically and employment and living standards fell sharply in many countries. By the 1940s, it had become a wide-spread conviction that the world economy was in need of organizations that would help promote international economic cooperation. In July 1944, during the United Nations Monetary and Financial Conference in Bretton Woods, New Hampshire, representatives of 45 governments agreed on a framework for international economic cooperation. Two crucial, multinational organizations emanated from this conference—the World Bank, which was founded during the conference, and the International Monetary Fund (IMF), which came into formal existence in December 1945. Although the IMF was founded with the goal to stabilize exchange rates and assist the reconstruction of the world's international payment system, the World Bank was created to facilitate post-war reconstruction and development.

A third institution, the International Trade Organization (ITO), was to be created to handle the trade side of international economic cooperation, joining the other two "Bretton Woods" institutions. The draft ITO charter was ambitious, extending beyond world trade regulations to include rules on employment, commodity agreements, restrictive business practices, international investment, and services. The objective was to create the ITO at a United Nations Conference on Trade and Employment in Havana, Cuba in 1947. Meanwhile, 15 countries had begun negotiations in December 1945 to reduce and regulate customs tariffs. With World War II only barely ended, they wanted to give an early boost to trade liberalization and begin to correct the legacy of protectionist measures that had remained in place since the early 1930s. The group

had expanded to 23 nations by the time the deal was signed on 30 October 1947 and the General Agreement on Tariffs and Trade (GATT) was born. The Havana conference began on 21 November 1947, less than a month after GATT was signed. The ITO charter was finally approved in Havana in March 1948, but ratification in some national legislatures proved impossible. The most serious opposition was in the US Congress, even though the US government had been one of the driving forces. In 1950, the United States government announced that it would not seek congressional ratification of the Havana Charter, and the ITO was effectively dead. As a consequence, the GATT became the only multilateral instrument governing international trade from 1948 until the World Trade Organization (WTO) was officially established in 1995.

5.1 International Monetary Fund

As we saw earlier, current account deficits reflect a shortage of net savings in an economy and can be addressed by policies designed to rein in domestic demand. This approach could, however, have adverse consequences for domestic employment. The IMF stands ready to lend foreign currencies to member countries to assist them during periods of significant external deficits. A pool of gold and currencies contributed by members provides the IMF with the resources required for these lending operations. The funds are only lent under strict conditions and borrowing countries' macroeconomic policies are continually monitored. The IMF's main mandate is to ensure the stability of the international monetary system, the system of exchange rates and international payments that enables countries to buy goods and services from each other. More specifically, the IMF:

- provides a forum for cooperation on international monetary problems;
- facilitates the growth of international trade and promotes employment, economic growth, and poverty reduction;
- supports exchange rate stability and an open system of international payments; and
- lends foreign exchange to members when needed, on a temporary basis and under adequate safeguards, to help them address balance of payments problems.

The global financial crisis of 2007–2009 demonstrated that domestic and international financial stability cannot be taken for granted, even in the world's most developed countries. In light of these events, the IMF has redefined and deepened its operations by:[27]

- *enhancing its lending facilities*: The IMF has upgraded its lending facilities to better serve its members. As part of a wide-ranging reform of its lending practices, it has also redefined the way it engages with countries on issues related to structural reform of their economies. In this context, it has doubled member countries' access to fund resources and streamlined its lending approach to reduce the stigma of borrowing for countries in need of financial help.
- *improving the monitoring of global, regional, and country economies*: The IMF has taken several steps to improve economic and financial surveillance, which is its framework for providing advice to member countries on macroeconomic policies and warning member countries of risks and vulnerabilities in their economies.

27 Visit www.imf.org/ for more information.

- *helping resolve global economic imbalances*: The IMF's analysis of global economic developments provides finance ministers and central bank governors with a common framework for discussing the global economy.
- *analyzing capital market developments*: The IMF is devoting more resources to the analysis of global financial markets and their links with macroeconomic policy. It also offers training to country officials on how to manage their financial systems, monetary and exchange regimes, and capital markets.
- *assessing financial sector vulnerabilities*: Resilient, well-regulated financial systems are essential for macroeconomic stability in a world of ever-growing capital flows. The IMF and the World Bank jointly run an assessment program aimed at alerting countries to vulnerabilities and risks in their financial sectors.

From an investment perspective, the IMF helps to keep country-specific market risk and global systemic risk under control. The Greek sovereign debt crisis, which threatened to destabilize the entire European banking system, is a recent example. In early 2010, the Greek sovereign debt rating was downgraded to non-investment grade by leading rating agencies as a result of serious concerns about the sustainability of Greece's public sector debt load. Yields on Greek government bonds rose substantially following the downgrading and the country's ability to refinance its national debt was seriously questioned in international capital markets. Bonds issued by some other European governments fell and equity markets worldwide declined in response to spreading concerns of a Greek debt default. The downgrading of Greek sovereign debt was the ultimate consequence of persistent and growing budget deficits the Greek government had run before and after the country had joined the European Monetary Union (EMU) in 2001. Most of the budget shortfalls reflected elevated outlays for public-sector jobs, pensions, and other social benefits as well as persistent tax evasion. Reports that the Greek government had consistently and deliberately misreported the country's official economic and budget statistics contributed to further erosion of confidence in Greek government bonds in international financial markets. Facing default, the Greek government requested that a joint European Union/IMF bailout package be activated, and a loan agreement was reached between Greece, the other EMU member countries, and the IMF. The deal consisted of an immediate EUR45 billion in loans to be provided in 2010, with more funds available later. A total of EUR110 billion was agreed depending on strict economic policy conditions that included cuts in wages and benefits, an increase in the retirement age for public-sector employees, limits on public pensions, increases in direct and indirect taxes, and a substantial reduction in state-owned companies. By providing conditional emergency lending facilities to the Greek government and designing a joint program with the European Union on how to achieve fiscal consolidation, the IMF prevented a contagious wave of sovereign debt crises in global capital markets.

Another example of IMF activities is the East Asian Financial Crisis in the late 1990s. It began in July 1997, when Thailand was forced to abandon its currency's peg with the US dollar. Currency devaluation subsequently hit other East Asian countries that had similar balance of payment problems, such as South Korea, Malaysia, the Philippines, and Indonesia. They had run persistent and increasing current account deficits, financed mainly with short-term capital imports, in particular, domestic banks borrowing in international financial markets. External financing was popular because of the combination of lower foreign, especially US, interest rates and fixed exchange rates. Easy money obtained from abroad led to imprudent investment, which contributed to overcapacities in several industries and inflated prices on real estate and stock markets. The IMF came to the rescue of the affected countries with considerable loans, accompanied by policies designed to control domestic demand, which included fiscal austerity and tightened monetary reins.

5.2 World Bank Group

The World Bank's main objective is to help developing countries fight poverty and enhance environmentally sound economic growth. For developing countries to grow and attract business, they have to

- strengthen their governments and educate their government officials;
- implement legal and judicial systems that encourage business;
- protect individual and property rights and honour contracts;
- develop financial systems robust enough to support endeavours ranging from micro credit to financing larger corporate ventures; and
- combat corruption.

Given these targets, the World Bank provides funds for a wide range of projects in developing countries worldwide and financial and technical expertise aimed at helping those countries reduce poverty.

The World Bank's two closely affiliated entities—the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA)—provide low or no-interest loans and grants to countries that have unfavourable or no access to international credit markets. Unlike private financial institutions, neither the IBRD nor the IDA operates for profit. The IBRD is market-based, and uses its high credit rating to pass the low interest it pays for funds on to its borrowers—developing countries. It pays for its own operating costs because it does not look to outside sources to furnish funds for overhead.

IBRD lending to developing countries is primarily financed by selling AAA-rated bonds in the world's financial markets. Although the IBRD earns a small margin on this lending, the greater proportion of its income comes from lending out its own capital. This capital consists of reserves built up over the years and money paid in from the Bank's 185 member country shareholders. IBRD's income also pays for World Bank operating expenses and has contributed to IDA and debt relief. IDA is the world's largest source of interest-free loans and grant assistance to the poorest countries. IDA's funds are replenished every three years by 40 donor countries. Additional funds are regenerated through repayments of loan principal on 35-to-40-year, no-interest loans, which are then available for re-lending. At the end of September 2010, the IBRD had net loans outstanding of USD125.5 billion, while its borrowings amounted to USD132 billion.

Besides acting as a financier, the World Bank also provides analysis, advice, and information to its member countries to enable them to achieve the lasting economic and social improvements their people need. Another of the Bank's core functions is to increase the capabilities of its partners, people in developing countries, and its own staff. Links to a wide range of knowledge-sharing networks have been set up by the Bank to address the vast need for information and dialogue about development.

From an investment perspective, the World Bank helps to create the basic economic infrastructure that is essential for the creation of domestic financial markets and a well-functioning financial industry in developing countries. Moreover, the IBRD is one of the most important supranational borrowers in the international capital markets. Because of its strong capital position and its very conservative financial, liquidity, and lending policies, it enjoys the top investment-grade rating from the leading agencies and investors have confidence in its ability to withstand adverse events. As a result, IBRD bonds denominated in various major currencies are widely held by institutional and private investors.

5.3 World Trade Organization

The WTO provides the legal and institutional foundation of the multinational trading system. It is the only international organization that regulates cross-border trade relationships among nations on a global scale. It was founded on 1 January 1995, replacing the General Agreement on Tariffs and Trade (GATT) that had come into existence in 1947. The GATT was the only multilateral body governing international trade from 1947 to 1995. It operated for almost half a century as a quasi-institutionalized, provisional system of multilateral treaties. Several rounds of negotiations took place under the GATT, of which the Tokyo round and the Uruguay round may have been the most far reaching. The Tokyo round was the first major effort to address a wide range of non-tariff trade barriers, whereas the Uruguay round focused on the extension of the world trading system into several new areas, particularly trade in services and intellectual property, but also to reform trade in agricultural products and textiles. The GATT still exists in an updated 1994 version and is the WTO's principal treaty for trade in goods. The GATT and the General Agreement on Trade in Services (GATS) are the major agreements within the WTO's body of treaties that encompasses a total of about 60 agreements, annexes, decisions, and understandings.

In November 2001, the most recent and still ongoing round of negotiations was launched by the WTO in Doha, Qatar. The Doha round was an ambitious effort to enhance globalization by slashing barriers and subsidies in agriculture and addressing a wide range of cross-border services. So far, under GATS, which came into force in January 1995, banks, insurance companies, telecommunication firms, tour operators, hotel chains, and transport companies that want to do business abroad can enjoy the same principles of free and fair trade that had previously applied only to international trade in goods. No final agreement has been reached in the Doha round as of mid-2018, however, it marked one of the most crucial events in global trade over the past several decades: China's accession to the WTO in December 2001. The inability to reach agreement in the Doha round has led to an increasing number of bilateral and multi-lateral trade agreements, such as the Trans-Pacific Partnership with Japan, Vietnam and nine other countries.

The WTO's most important functions are the implementation, administration, and operation of individual agreements; acting as a platform for negotiations; and settling disputes. Moreover, the WTO has the mandate to review and propagate its members' trade policies and ensure the coherence and transparency of trade policies through surveillance in a global policy setting. The WTO also provides technical cooperation and training to developing, least-developed, and low-income countries to assist with their adjustment to WTO rules. In addition, the WTO is a major source of economic research and analysis, producing ongoing assessments of global trade in its publications and research reports on special topics. Finally, the WTO is in close cooperation with the other two Bretton Woods institutions, the IMF and the World Bank.

From an investment perspective, the WTO's framework of global trade rules provides the major institutional and regulatory base without which today's global multinational corporations would be hard to conceive. Modern financial markets would look different without the large, multinational companies whose stocks and bonds have become key elements in investment portfolios. In the equity universe, for instance, investment considerations focusing on global sectors rather than national markets would make little sense without a critical mass of multinational firms competing with each other in a globally defined business environment.

EXAMPLE 12

Historical Example: Function and Objective of International Organizations

On 10 May 2010, the Greek government officially applied for emergency lending facilities extended by the International Monetary Fund. It sent the following letter to the IMF's Managing Director:

Request for Stand-By Arrangement
This paper was prepared based on the information available at the time it was completed on Monday, May 10, 2010. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Greece or the Executive Board of the IMF. The policy of publication of staff reports and other documents by the IMF allows for the deletion of market-sensitive information.

May 3, 2010
Managing Director
International Monetary Fund
Washington DC

The attached Memorandum of Economic and Financial Policies (MEFP)[28] outlines the economic and financial policies that the Greek government and the Bank of Greece, respectively, will implement during the remainder of 2010 and in the period 2011–2013 to strengthen market confidence and Greece's fiscal and financial position during a difficult transition period toward a more open and competitive economy. The government is fully committed to the policies stipulated in this document and its attachments, to frame tight budgets in the coming years with the aim to reduce the fiscal deficit to below 3 percent in 2014 and achieve a downward trajectory in the public debt-GDP ratio beginning in 2013, to safeguard the stability of the Greek financial system, and to implement structural reforms to boost competitiveness and the economy's capacity to produce, save, and export. (…) The government is strongly determined to lower the fiscal deficit, (…) by achieving higher and more equitable tax collections, and constraining spending in the government wage bill and entitlement outlays, among other items. In view of these efforts and to signal the commitment to effective macroeconomic policies, the Greek government requests that the Fund supports this multi-year program under a Stand-By Arrangement (SBA) for a period of 36 months in an amount equivalent to SDR26.4 billion.[29] (…) A parallel request for financial assistance to euro area countries for a total amount of €80 billion has been sent. The implementation of the program will be monitored through quantitative performance criteria and structural benchmarks as described in the attached MEFP and Technical Memorandum of Understanding (TMU). There will be twelve quarterly reviews of the program supported under the SBA by the Fund, (….) to begin with the first review that is expected to be completed in the course of the third calendar quarter of 2010, and then every quarter thereafter until the last quarterly review envisaged to be completed during the second

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28 The detailed memorandum is available from www.imf.org/external/pubs/ft/scr/2010/cr10111.pdf.
29 A SDR (special drawing right) is a basket of four leading currencies: Japanese yen (JPY), US dollar (USD), British pound (GBP), and euro (EUR). It consists of 18.4 yen, 0.6320 USD, 0.0903 GBP, and 0.41 EUR. One SDR was worth 1.4975 USD or 1.1547 EUR on 10 May 2010.

calendar quarter of 2013, to assess progress in implementing the program and reach understandings on any additional measures that may be needed to achieve its objectives. (….) The Greek authorities believe that the policies set forth in the attached memorandum are adequate to achieve the objectives of the economic program, and stand ready to take any further measures that may become appropriate for this purpose. The authorities will consult with the Fund in accordance with its policies on such consultations, (….) and in advance of revisions to the policies contained in the MEFP. All information requested by the Fund (….) to assess implementation of the program will be provided.
(….)
Sincerely,

George Papaconstantinou	George Provopoulos
Minister of Finance	Governor of the Bank of Greece

1 What is the objective of the IMF's emergency lending facilities?
2 What are the macroeconomic policy conditions under which the IMF provides emergency lending to Greece?
3 What is the amount Greece requests from the IMF as emergency funds?

Solution to 1:

The program seeks to safeguard the stability of the Greek financial system and to implement structural reforms to boost competitiveness and the economy's capacity to produce, save and export.

Solution to 2:

The Greek government has to reduce the country's fiscal deficit by achieving higher and more equitable tax collections as well as constrain spending in the government wage bill and entitlement outlays.

Solution to 3:

Greece applied for a standby arrangement in an amount equivalent to SDR26.4 billion (approximately USD39.5 billion, based on the 10 May 2010 exchange rate).

SUMMARY

This reading provides a framework for analyzing a country's trade and capital flows and their economic implications. It examines basic models that explain trade based on comparative advantage and provides a basis for understanding how international trade can affect the rate and composition of economic growth as well as the attractiveness of investment in various sectors.

- The benefits of trade include
  - gains from exchange and specialization;
  - gains from economies of scale as companies add new markets for their products;
  - greater variety of products available to households and firms; and

- increased competition and more efficient allocation of resources.

- A country has an absolute advantage in producing a good (or service) if it is able to produce that good at a lower absolute cost or use fewer resources in its production than its trading partner. A country has a comparative advantage in producing a good if its *opportunity cost* of producing that good is less than that of its trading partner.
- Even if a country does not have an absolute advantage in the production of any good, it can gain from trade by producing and exporting the good(s) in which it has a comparative advantage and importing good(s) in which it has a comparative disadvantage.
- In the Ricardian model of trade, comparative advantage and the pattern of trade are determined by differences in technology between countries. In the Heckscher–Ohlin model of trade, comparative advantage and the pattern of trade are determined by differences in factor endowments between countries. In reality, technology and factor endowments are complementary, not mutually exclusive, determinants of trade patterns.
- Trade barriers prevent the free flow of goods and services among countries. Governments impose trade barriers for various reasons including: to promote specific developmental objectives, to counteract certain imperfections in the functioning of markets, or to respond to problems facing their economies.
- For purposes of international trade policy and analysis, a small country is defined as one that cannot affect the world price of traded goods. A large country's production and/or consumption decisions do alter the relative prices of trade goods.
- In a small country, trade barriers generate a net welfare loss arising from distortion of production and consumption decisions and the associated inefficient allocation of resources.
- Trade barriers can generate a net welfare gain in a large country if the gain from improving its terms of trade (higher export prices and lower import prices) more than offsets the loss from the distortion of resource allocations. However, the large country can only gain if it imposes an even larger welfare loss on its trading partner(s).
- An import tariff and an import quota have the same effect on price, production, and trade. With a quota, however, some or all of the revenue that would be raised by the equivalent tariff is instead captured by foreign producers (or the foreign government) as quota rents. Thus, the welfare loss suffered by the importing country is generally greater with a quota.
- A voluntary export restraint is imposed by the exporting country. It has the same impact on the importing country as an import quota from which foreigners capture all of the quota rents.
- An export subsidy encourages firms to export their product rather than sell it in the domestic market. The distortion of production, consumption, and trade decisions generates a welfare loss. The welfare loss is greater for a large country because increased production and export of the subsidized product reduces its global price—that is, worsens the country's terms of trade.
- Capital restrictions are defined as controls placed on foreigners' ability to own domestic assets and/or domestic residents' ability to own foreign assets. In contrast to trade restrictions, which limit the openness of goods markets, capital restrictions limit the openness of financial markets.

- A regional trading bloc is a group of countries who have signed an agreement to reduce and progressively eliminate barriers to trade and movement of factors of production among the members of the bloc.
  - They may or may not have common trade barriers against those countries that are not members of the bloc. In a free trade area all barriers to the flow of goods and services among members are eliminated, but each country maintains its own polices against non-members.
  - A customs union extends the FTA by not only allowing free movement of goods and services among members but also creating a common trade policy against non-members.
  - A common market incorporates all aspects of a customs union and extends it by allowing free movement of factors of production among members.
  - An economic union incorporates all aspects of a common market and requires common economic institutions and coordination of economic policies among members.
  - Members of a monetary union adopt a common currency.
- From an investment perspective, it is important to understand the complex and dynamic nature of trading relationships because they can help identify potential profitable investment opportunities as well as provide some advance warning signals regarding when to disinvest in a market or industry.
- The major components of the balance of payments are the
  - current account balance, which largely reflects trade in goods and services.
  - capital account balance, which mainly consists of capital transfers and net sales of non-produced, non-financial assets.
  - financial account, which measures net capital flows based on sales and purchases of domestic and foreign financial assets.
- Decisions by consumers, firms, and governments influence the balance of payments.
  - Low private savings and/or high investment tend to produce a current account deficit that must be financed by net capital imports; high private savings and/or low investment, however, produce a current account surplus, balanced by net capital exports.
  - All else the same, a government deficit produces a current account deficit and a government surplus leads to a current account surplus.
  - All else the same, a sustained current account deficit contributes to a rise in the risk premium for financial assets of the deficit country. Current account surplus countries tend to enjoy lower risk premiums than current account deficit countries.
- Created after WWII, the International Monetary Fund, the World Bank, and the World Trade Organization are the three major international organizations that provide necessary stability to the international monetary system and facilitate international trade and development.
  - The IMF's mission is to ensure the stability of the international monetary system, the system of exchange rates and international payments that enables countries to buy goods and services from each other. The IMF helps to keep country-specific market risk and global systemic risk under control.

- The World Bank helps to create the basic economic infrastructure essential for creation and maintenance of domestic financial markets and a well-functioning financial industry in developing countries.
- The World Trade Organization's mission is to foster free trade by providing a major institutional and regulatory framework of global trade rules without which today's global multinational corporations would be hard to conceive.

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PRACTICE PROBLEMS

1 Which of the following statements *best* describes the benefits of international trade?

A Countries gain from exchange and specialization.

B Countries receive lower prices for their exports and pay higher prices for imports.

C Absolute advantage is required for a country to benefit from trade in the long term.

2 Which of the following statements *best* describes the costs of international trade?

A Countries without an absolute advantage in producing a good cannot benefit significantly from international trade.

B Resources may need to be allocated into or out of an industry and less-efficient companies may be forced to exit an industry, which in turn may lead to higher unemployment.

C Loss of manufacturing jobs in developed countries as a result of import competition means that developed countries benefit far less than developing countries from trade.

3 Suppose the cost of producing tea relative to copper is lower in Tealand than in Copperland. With trade, the copper industry in Copperland would *most likely*:

A expand.

B contract.

C remain stable.

4 A country has a comparative advantage in producing a good if:

A it is able to produce the good at a lower cost than its trading partner.

B its opportunity cost of producing the good is less than that of its trading partner.

C its opportunity cost of producing the good is more than that of its trading partner.

5 Suppose Mexico exports vegetables to Brazil and imports flashlights used for mining from Brazil. The output per worker per day in each country is as follows:

	Flashlights	Vegetables
Mexico	20	60
Brazil	40	80

Which country has a comparative advantage in the production of vegetables and what is the *most* relevant opportunity cost?

A Brazil: 2 vegetables per flashlight.

B Mexico: 1.5 vegetables per flashlight.

C Mexico: ⅓ flashlight per vegetable.

6 Suppose three countries produce bananas and pencils with output per worker per day in each country as follows:

	Bananas	Pencils
Mexico	20	40
Brazil	30	90
Canada	40	160

Which country has the greatest comparative advantage in the production of bananas?

A Canada.

B Brazil.

C Mexico.

7 In the Ricardian trade model, a country captures more of the gains from trade if:

A it produces all products while its trade partner specializes in one good.

B the terms of trade are closer to its autarkic prices than to its partner's autarkic prices.

C the terms of trade are closer to its partner's autarkic prices than to its autarkic prices.

8 Germany has much more capital per worker than Portugal. In autarky each country produces and consumes both machine tools and wine. Production of machine tools is relatively capital intensive whereas winemaking is labor intensive. According to the Heckscher–Ohlin model, when trade opens:

A Germany should export machine tools and Portugal should export wine.

B Germany should export wine and Portugal should export machine tools.

C Germany should produce only machine tools and Portugal should produce only wine.

9 According to the Heckscher–Ohlin model, when trade opens:

A the scarce factor gains relative to the abundant factor in each country.

B the abundant factor gains relative to the scarce factor in each country.

C income is redistributed between countries but not within each country.

10 Which type of trade restriction would *most likely* increase domestic government revenue?

A Tariff.

B Import quota.

C Export subsidy.

11 Which of the following trade restrictions is likely to result in the greatest welfare loss for the importing country?

A A tariff.

B An import quota.

C A voluntary export restraint.

12 A large country can:

A benefit by imposing a tariff.

B benefit with an export subsidy.

C not benefit from any trade restriction.

13 If Brazil and South Africa have free trade with each other, a common trade policy against all other countries, but no free movement of factors of production between them, then Brazil and South Africa are part of a:

A customs union.

B common market.

C free trade area (FTA).

14 Which of the following factors *best* explains why regional trading agreements are more popular than larger multilateral trade agreements?

A Minimal displacement costs.

B Trade diversions benefit members.

C Quicker and easier policy coordination.

15 The sale of mineral rights would be captured in which of the following balance of payments components?

A Capital account.

B Current account.

C Financial account.

16 Patent fees and legal services are recorded in which of the following balance of payments components?

A Capital account.

B Current account.

C Financial account.

17 During the most recent quarter, a steel company in South Korea had the following transactions

- Bought iron ore from Australia for AUD50 million.
- Sold finished steel to the United States for USD65 million.
- Borrowed AUD50 million from a bank in Sydney, Australia.
- Received a USD10 million dividend from US subsidiary.
- Paid KRW550 million to a Korean shipping company.

Which of the following would be reflected in South Korea's current account balance for the quarter?

A The loan.

B The shipping.

C The dividend.

18 Which of the following *most likely* contributes to a current account deficit?

A High taxes.

B Low private savings.

C Low private investment.

19 Which of the following chronic deficit conditions is *least* alarming to the deficit country's creditors?

A High consumption.

B High private investment.

C High government spending.

20 Which of the following international trade organizations regulates cross-border exchange among nations on a global scale?

A World Bank Group (World Bank).

B World Trade Organization (WTO).

C International Monetary Fund (IMF).

21 Which of the following international trade organizations has a mission to help developing countries fight poverty and enhance environmentally sound economic growth?

A World Bank Group (World Bank).

B World Trade Organization (WTO).

C International Monetary Fund (IMF).

22 Which of the following organizations helps to keep global systemic risk under control by preventing contagion in scenarios such as the 2010 Greek sovereign debt crisis?

A World Bank Group (World Bank).

B World Trade Organization (WTO).

C International Monetary Fund (IMF).

23 Which of the following international trade bodies was the only multilateral body governing international trade from 1948 to 1995?

A World Trade Organization (WTO).

B International Trade Organization (ITO).

C General Agreement on Tariffs and Trade (GATT).

SOLUTIONS

1 A is correct. Countries gain from exchange when trade enables each country to receive a higher price for exported goods and/or pay a lower price for imported goods. This leads to more efficient resource allocation and allows consumption of a larger variety of goods.

2 B is correct. Resources may need to be reallocated into or out of an industry, depending on whether that industry is an exporting sector or an import-competing sector of that economy. As a result of this adjustment process, less-efficient companies may be forced to exit the industry, which in turn may lead to higher unemployment and the need for retraining in order for displaced workers to find jobs in expanding industries.

3 A is correct. The copper industry in Copperland would benefit from trade. Because the cost of producing copper relative to producing tea is lower in Copperland than in Tealand, Copperland will export copper and the industry will expand.

4 B is correct. Comparative advantage is present when the opportunity cost of producing a good is less than that of a trading partner.

5 C is correct. While Brazil has an absolute advantage in the production of both flashlights and vegetables, Mexico has a comparative advantage in the production of vegetables. The opportunity cost of vegetables in Mexico is ⅓ per flashlight, while the opportunity cost of vegetables in Brazil is ½ per flashlight.

6 C is correct. Mexico has the lowest opportunity cost to produce an extra banana. The opportunity cost is 2 pencils per banana in Mexico, 3 pencils per banana in Brazil, and 4 pencils per banana in Canada.

7 C is correct. A country gains if trade increases the price of its exports relative to its imports as compared to its autarkic prices, i.e. the final terms of trade are more favorable than its autarkic prices. If the relative price of exports and imports remains the same after trade opens, then the country will consume the same basket of goods before and after trade opens, and it gains nothing from the ability to trade. In that case, its trade partner will capture all of the gains. Of course, the opposite is true if the roles are reversed. More generally, a country captures more of the gains from trade the more the final terms of trade differ from its autarkic prices.

8 A is correct. In the Heckscher–Ohlin model a country has a comparative advantage in goods whose production is intensive in the factor with which it is relatively abundantly endowed. In this case, capital is relatively abundant in Germany so Germany has a comparative advantage in producing the capital-intensive product: machine tools. Portugal is relatively labor abundant, hence should produce and export the labor-intensive product: wine.

9 B is correct. As a country opens up to trade, it has a favorable impact on the abundant factor, and a negative impact on the scarce factor. This is because trade causes the output mix to change and therefore changes the relative demand for the factors of production. Increased output of the export product increases demand for the factor that is used intensively in its production, while reduced output of the import product decreases demand for the factor used intensively in its production. Because the export (import) product uses the abundant (scarce) factor intensively, the abundant factor gains relative to the scarce factor in each country.

10 A is correct. The imposition of a tariff will most likely increase domestic government revenue. A tariff is a tax on imports collected by the importing country's government.

11 C is correct. With a voluntary export restraint, the price increase induced by restricting the quantity of imports (= quota rent for equivalent quota = tariff revenue for equivalent tariff) accrues to foreign exporters and/or the foreign government.

12 A is correct. By definition, a large country is big enough to affect the world price of its imports and exports. A large country can benefit by imposing a tariff if its terms of trade improve by enough to outweigh the welfare loss arising from inefficient allocation of resources.

13 A is correct. A customs union extends a free trade area (FTA) by not only allowing free movement of goods and services among members, but also creating common trade policy against non-members. Unlike a more integrated common market, a customs union does not allow free movement of factors of production among members.

14 C is correct. Regional trading agreements are politically less contentious and quicker to establish than multilateral trade negotiations (for example, under the World Trade Organization). Policy coordination and harmonization is easier among a smaller group of countries.

15 A is correct. The capital account measures capital transfers and sale and purchase of non-produced, non-financial assets such as mineral rights and intangible assets.

16 B is correct. The current account measures the flows of goods and services (including income from foreign investments). Patent fees and legal services are both captured in the services sub-account of the current account.

17 C is correct. The current account includes income received on foreign investments. The Korean company effectively "exported" the use of its capital during the quarter to its US subsidiary, and the dividend represents payment for those services.

18 B is correct. A current account deficit tends to result from low private saving, high private investment, a government deficit, or a combination of the three. Of the choices, only low private savings contributes toward a current account deficit.

19 B is correct. A current account deficit tends to result from low private saving, high private investment, low government savings, or a combination of the three. Of these choices, only high investments can increase productive resources and improve future ability to repay creditors.

20 B is correct. The WTO provides the legal and institutional foundation of the multinational trading system and is the only international organization that regulates cross-border trade relations among nations on a global scale. The WTO's mission is to foster free trade by providing a major institutional and regulatory framework of global trade rules. Without such global trading rules, today's global transnational corporations would be hard to conceive.

21 A is correct. The World Bank's mission is to help developing countries fight poverty and enhance environmentally sound economic growth. The World Bank helps to create the basic economic infrastructure essential for creation and maintenance of domestic financial markets and a well-functioning financial industry in developing countries.

22 C is correct. From an investment perspective, the IMF helps to keep country-specific market risk and global systemic risk under control. The Greek sovereign debt crisis on 2010, which threatened to destabilize the entire European banking system, is a recent example. The IMF's mission is to ensure the stability of the international monetary system, the system of exchange rates and international payments which enables countries to buy goods and services from each other.

23 C is correct. The GATT was the only multilateral body governing international trade from 1948 to 1995. It operated for almost half a century as a quasi-institutionalized, provisional system of multilateral treaties and included several rounds of negotiations.