Vocabulary

- ASEAN+3
- Asia Pacific Economic Cooperation (APEC)
- Association of Southeast Asian Nations (ASEAN)
- Chiang Mai Initiative (CMI)
- deliberation councils
- demographic transition
- Four Tigers
- high-performance Asian economies (HPAE)
- newly industrializing economies (NIE)
- swap agreements, or swaps
- total factor productivity (TFP)

Study Questions

1. Contrast the characteristics of economic growth in the HPAE with those characteristics of Latin America.
2. How can passage through a demographic transition lead to high savings and investment rates?
3. What are the characteristics of East Asian institutional environments that contributed to rapid economic growth?
4. Economists are divided over the effectiveness of East Asian industrial policies. Provide a balanced assessment of the issues relevant to understanding the role of industrial policies in fostering growth. Do you think one point of view is better than another? Why?
5. How might manufactured exports contribute to economic growth?
6. Is there a uniquely Asian model of economic growth? What are the issues, and how might we go about answering that question?

CHAPTER 17

China and India in the World Economy

Introduction: The Challenges of Openness

The emergence of China and India from their relative economic isolation is one of the most important contemporary trends in the international economy. Their increased openness and growing interdependence with the outside world have generated positive and negative effects, opportunities, and challenges. Openness and a change in their economic models enabled hundreds of millions of people to escape poverty, caused many manufactured goods and services to become less expensive, and helped hold world interest rates down, due in part to China's enormous pool of savings. The later tendency helped make real estate more affordable, spurred construction in developed countries, and is partly responsible for a boom in housing prices. Simultaneously, producers of manufactured goods in both developed and developing countries experienced intense competitive pressures that forced some of them to downsize, outsource, and change their business practices. For the first time in history, the service sector has begun to move jobs overseas and growing trade imbalances increase the chances of future crises and protectionist reactions.

China and India have a lot in common and a lot that is different. Both are nuclear powers, sites of ancient civilizations, and the two largest populations in the world. Both have transformed their economic systems by moving away from relative isolation and emphasizing markets over state control. Although China's reforms began earlier than India's, both countries succeeded in creating and sustaining high growth rates.

One of the most important differences is that India is the world's largest democracy while China is ruled by the Communist Party. In India decision making is sometimes contentious and must take into account opposing views, while Chinese decision making is highly centralized within a leadership that is never subjected to popular vote. Another difference is that India's manufacturing sector is much smaller than China's, even after adjusting for the overall size of the economy. As a consequence, trade plays a smaller role in India's economy than in China's, and India's impact on world trade is much less. India's command of information technology industries and services has drawn a great deal of attention, while China's ability to export manufactured goods, from apparel to automobiles to sophisticated electronics, has altered trade patterns and challenges the manufacturing sectors of countries around the world.

TABLE 17.1 Population and Income in China and India, 2007

	Population (Millions)	GDP (US$, Billions)	GDP per Capita (US$)	GDP per Capita (US$, PPP)
China	1,318	3,206	2,432	5,383
India	1,125	1,177	1,046	2,753

India and China are the two most populous countries in the world.

Source: World Bank, *World Development Indicators.*

India and China are potentially great powers and both are beginning to assume positions in the world economy that are consistent with their sizes and histories. When great powers emerge, history tells us that it usually creates a difficult period filled with transitions and tensions. This chapter surveys the major economic issues associated with the emergence in the world economy of China and India.

Demographic and Economic Characteristics

Table 17.1 shows the size of the Chinese and Indian economies. In 2007 their combined population was over three-eighths (38.5 percent) of world population, and over $4 trillion at market exchange rates. At current economic growth rates, China's economy will become the world's largest around the middle of the century. It currently has the world's third largest GDP, behind the United States and Japan, and is about three times larger than India. On a per capita basis, China will lag the world's leaders for many decades even at present growth rates.

The growth of GDP has been remarkable in both countries. Since 1980 real GDP growth has averaged 6.0 percent per year in India and an astonishing 10.0 percent per year in China. Around 1980, 84 percent of China's population and 65 percent of India's lived in extreme poverty. By the first decade of the new century, the figures had fallen to 15 percent for China and 42 percent for India. This represents nearly one billion individuals that were pulled out of extreme poverty by Chinese and Indian economic growth. Incomes that are only slightly better than extreme poverty are still desperately low, but no one can doubt that the economic success of these two countries has created significant benefits for a sizable share of humanity.

While poverty has fallen, a middle class has grown in size. The populations of both countries are so large that even a small middle class represents enormous purchasing power. The size of the middle class in both countries is unknown, but consider the following hypothetical situation. Suppose that 10 percent of both populations is middle class with purchasing power parity incomes of $12,000 or more. That would be a total of 240 million people, or nearly equivalent to the combined populations of France, Germany, Italy, and the United Kingdom. In both countries, but particularly in the case of China, it is this potential future market that has elicited so much international interest and foreign investment. The history of

Western pursuit of the Chinese market is long and mostly unhappy, but many Western firms believe that they cannot afford not to have a presence in China.

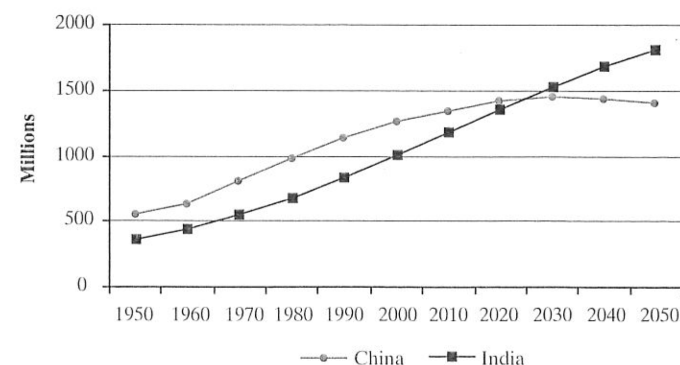
Population totals in India and China have more than doubled since 1950, as shown in Figure 17.1. China's limits on family size sharply curtailed its population growth rate, and between 2020 and 2030 India is predicted to pass it in absolute size. China's restrictive population policies mean fewer children and an older population, but a slowing population growth rate. If current trends hold, between 2030 and 2040 it will fall below replacement levels and its population will actually begin to decline. Given China's lack of health care, pension systems, and democracy, an aging population will not exert the same pressures on the government budget as it will in the European Union (see Chapter 14).

Economic Reforms in China and India

Economic reform of China's communist system began in 1978. Under communism, every aspect of China's economy was controlled by the state. Private enterprise did not exist, and the basic decisions that every economy makes about what to produce, how to produce it, and who should receive it were made from the top down by government planners and Communist Party politicians. China had limited contact with outsiders, and the emphasis of its economic policy was self-sufficiency in all goods and services.

India's reforms began in the 1980s, and then gathered momentum in 1991 when the government was forced to respond to a balance of payments crisis. India's economic system was best characterized as socialist, with a mix of state ownership and control, together with private enterprise. Most large industrial enterprises were state-owned, however, and the Indian system of regulation

FIGURE 17.1 Population and Projections, 1950–2050



Source: U.S. Census Bureau.

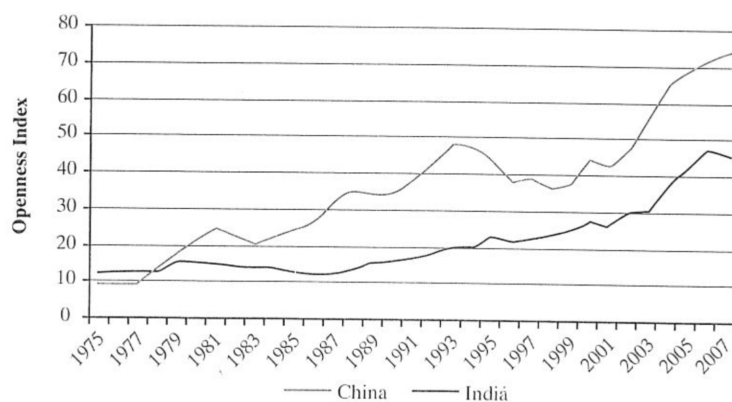
meant that all firms had to obtain permits for even minor changes. If a firm wanted to expand, if it wanted to change its product lines, or even if it wanted to change its board of directors, first it had to obtain a permit from the government.

After their transitions, both countries are much more market oriented and far more outward looking. The remarkable degree of opening is apparent in their openness indexes, 1975–2007, shown in Figure 17.2. The index for both countries increased over the long run. China's jumped immediately with the changes in policy that began in 1978 while India's was relatively unchanged until the early 1990s. The usual negative relationship between country size and openness is weak, as Chinese reforms in particular have emphasized international economic integration through both trade and investment, and have led to an unusually large openness index given its population. China's index is an indication of its dependence on world trade (and by implication, investment) for its continued success.

The Reform Process in China

A country's decision to undertake large scale economic reform can come from many directions. As we saw in Chapter 15, reforms in a number of Latin American countries were a result of the debt crisis of the 1980s together with the failure of traditional policies to resolve the crisis. Other countries, New Zealand for example, began large scale economic reforms without the urgency created by an economic crisis. In China's case there was no immediate crisis, but rather a long period of instability and disappointment with the results achieved under communism. The leader of Chinese

FIGURE 17.2 Openness Index, 1975–2007



Chinese trade began to grow in the late 1970s; India's in the early 1990s.

Source: World Bank, *World Development Indicators.*

economic reforms, **Deng Xiaoping**, put it in terms of a choice between distributing poverty under the old system, and distributing wealth under a new system.

There was no master plan for Chinese reforms, but rather a gradual, steady dismantling of the controls exercised by the state and the Communist Party. Deng Xiaoping is famously reported to have described the reforms as analogous to "feeling the stones to cross the river." You advance one foot, see if it holds, then advance another. The slow and steady pace of reform was dictated in part by a lack of experience and information about how to proceed but also by the fear of a reaction from the hard-line, conservative, anti-reformers.

The first changes were confined to agriculture and involved loosening the constraints on peasant producers by allowing them more control and ownership of individual plots of land. Peasants were allowed to sell their product in markets and were soon increasing the quantity of foodstuff available. Foreign trade under the old system was controlled by twelve **foreign trading corporations (FTC)**, which were attached to the various branches of government. All exports and imports went through the FTC and were strictly regulated with no consideration given to comparative advantage. The reforms gradually opened trade, first through the creation of additional FTC and then through a series of steps that removed price controls and ended export subsidies. In order to limit the initial impact of reforms on the domestic economy and to prevent a political backlash, China created a number of **Special Economic Zones (SEZ)** which were modeled on the concept of export processing zones. SEZ went further by giving provincial and local authorities wide latitude to experiment with radically different economic and trade policies. Incentives were given to form joint ventures with foreign producers who came to the SEZ to set up production facilities. Between 1979 and 1988, China created five SEZ, all of which successfully attracted foreign investment (particularly from Taiwan, Hong Kong, and the overseas Chinese business communities), generated a large flow of exports, and helped raised the rate of economic growth. The SEZ created a demonstration effect for the rest of China and other regions began to push for similar policies.

China also applied to join the General Agreement on Tariffs and Trade (GATT) in 1986. Membership requires a country to describe all trade and economic policies that may affect GATT agreements, and to open bilateral negotiations with individual members over any issues of concern. Negotiations were difficult and lasted until China joined the WTO in 2001. The protracted period of negotiations probably kept the reform process moving forward, and ultimately resulted in a strong Chinese commitment to an open economy, both for trade and investment.

Indian Economic Reforms

Indian reforms began gradually in the 1980s and speeded up considerably after the 1991 crisis. Three forces played significant roles in preparing Indian policymakers for the necessary changes. First, India's primary trade partner, the USSR, suffered a number of setbacks through the 1980s and finally dissolved itself in 1991. India had partially modeled its economic policies on the USSR, and its demise laid bare the failure of its economy to produce prosperity. Second, the success of several East Asian countries was important. In 1960, South Korean and Indian income per

capita were about the same, but by 1990, Korea was entering the ranks of the developed world, while India remained stuck at low levels of income. When **Manmohan Singh**, the finance minister who carried out many of the reforms, visited Korea in 1987, he was shocked to see how far behind India had fallen. Third in the list of forces was a financial crisis that developed as a result of heavy borrowing by the government. When the Gulf War drove up oil prices and cut off the flow of remittances back home from Indian workers in the Gulf States, the country was left with inadequate foreign reserves and an inability to finance its debt.

The changes in economic policy that followed touched on a number of areas, including the permitting process. India's regulation of its economy was based on a system of permits that stifled innovation and creativity with their extensive, complicated, and inefficient rules. Permits were intended to be a means for preventing the creation of powerful interests that might undermine democracy and promote inequality. Yet their unintended consequence was that they fostered inefficiency and by protecting Indian businesses from competition, both domestic and foreign, they thereby allowed them to operate without regard for product quality or firm efficiency. Many of the larger firms were state-owned under the belief that the state planners could better select product lines and operating procedures than could markets, and as in the Chinese and Russian cases, the state-owned sector of the economy operated without the imperative of profitability. Firms could lose money for years and still continue in business since they had no hard budget constraints. Losses were covered by the government budget, even as it meant an enormous drain on government revenue and fewer resources for important public projects such as safe drinking water, highways and ports, rural education, and other needs. Denationalization was the second set of reforms begun after the crisis of 1991.

A final critical area that began to receive attention from the reformers was international trade and investment. Indian trade policy was based on the idea of import substitution industrialization (see Chapter 15), as in Latin America and other developing countries after World War II. Domestic firms received high levels of protection, exports were implicitly discouraged, and self sufficiency was the goal. India's famous Ambassador car is an example. Protected from foreign imports, it remained essentially the same for nearly forty years. Why go through the expense of changing the product line if there is a captive market? In addition to dismantling many of the restrictions on trade, India also began to dismantle the restrictions on inward foreign investment.

Remaining Issues

In both the Chinese and Indian cases, profound changes have taken place. The depth and breadth of the reforms represent a break in each country's historical path, and a shift from low-growth, isolationist policies toward high growth and integration with the world economy. The domestic reforms are not over, however, and a number of changes are still in the works.

An indicator of the reform progress in both China and India is the World Bank's Doing Business index discussed in Chapter 13 (http://www.doingbusiness.org). Recall that the index ranks 181 countries on ten dimensions of business regulations. These range from the ease of starting or closing a business, to employing workers, dealing with licenses, paying taxes, and enforcing contracts, among others. The rankings are based on the number of steps, the amount of time, and the cost to comply with business regulations in each of the ten areas. In 2009 China ranked 83 out of 181, while India was 122. In other words, neither country is a world leader in the ease of doing business.

Given that both China and India are far from being world leaders in the ease of doing business, it is somewhat puzzling how they could have achieved such high rates of growth. Economists do not share a consensus on this issue and it seems that this will be an active area of debate for some time. In the case of China, there are at least two explanations for its growth in spite of its obstacles to doing business. On the one hand, many economists believe that the local enterprises that are found in townships and villages are often owned by local governments and that they provide a counterbalance to the inefficient rules and regulations imposed by the central government. According to the proponents of this explanation, the system is inefficient in its design since it limits market freedoms, but it functions relatively efficiently because the **township and village enterprises (TVE)** are able to respond more quickly to local conditions and because their interests are more aligned with local communities. Not everyone accepts this view. An alternative is that the TVE act in an entrepreneurial way when the central government is not too heavy handed, but a great deal of the growth in China has been fueled by foreign investment, which is subject to a different set of rules and regulations than domestic investment. One of the key points of contention is whether the TVE are publicly or privately owned. Surprisingly, it is difficult to determine the ownership structure, but the proponents of the view that foreign investment has been the key driver of Chinese growth also argue that they are private and that they have been centers of entrepreneurial success in places and at times when the central government has not interfered too much.

CASE STUDY

Why Did the USSR Collapse and China Succeed?

Before the collapse of the Soviet Union, college bookstores and academic presses carried a significant number of works describing the transition from capitalism to socialism, as if it was an inevitable future for some portion of humankind. Almost nothing was published about the reverse process, the transition from socialism to capitalism. Such a book would have seemed strange; no one was writing anything along those lines, and probably few publishers would have given it a second look. When China began its gradual transition in 1978, its meaning was unclear to most observers and it took years to understand that it was abandoning communism. In 1989 when the Berlin Wall fell and central Europeans began to migrate west, no one knew if the USSR or the socialist governments would permit people to leave. And when the USSR announced that it was dissolving into fifteen separate nations, nearly everyone was taken

by surprise. It is no wonder then, that the academic and policymaking worlds were unprepared for the transition from socialism to capitalism.

The economies that abandoned socialism or communism in favor of market-based systems came to be known as the **transition economies**. One of the first controversies was over the speed of the transition. "You cannot cross a chasm in two leaps" (go fast) was one view. The other view was that of Deng Xiaoping, the Chinese leader who likened reform to "feeling the stones to cross the river." The International Monetary Fund (IMF) and the U.S. government favored quick transitions, while a number of academics sounded a more cautious note. In many respects, the fortunes of Russia (fast) and China (slow) came to symbolize the two approaches.

Russian reformers quickly moved to create a private economy where none had existed before. This involved an enormous amount of work, not just in the economic realm, but in politics and institution building as well. To begin, the economy had to be stabilized to avoid unsustainable budget deficits and hyperinflation. This was not entirely successful for a variety of reasons, not the least of which was the turmoil caused by the transition and the breakup of the USSR. Throughout the new economy, administrative controls were replaced with market-based mechanisms so that prices could be freed from bureaucratic control. The barriers to firms that prevent them from entering and leaving markets were dismantled, and important new markets were created. New labor markets required unemployment insurance, pension systems, and safety nets, while financial markets needed the regulatory apparatus of banking oversight, security laws, and tax rules. The transfer of property rights was begun, and government officials began the creation of the legal infrastructure for settling disputes and enforcing contracts. One of the most complicated and difficult tasks was the privatization of firms and factories that had been state owned. In Russia, that was nearly the entire productive apparatus of the economy. The end result was an enormous concentration of wealth and a general understanding that the process of privatization favored a small group of insiders. In sum, a wide variety of new institutional structures had to be created.

The outcome was tragic for a large segment of the population. By 1996, Russia's economy was about 64 percent of its size in 1990. Infant mortality increased dramatically, birth rates fell below replacement levels, and wealth became highly concentrated. Russia was not unique in this way, as all but one of the fifteen countries that the USSR split into saw income declines of 25 percent or more. Six countries watched as their incomes fell by more than 50 percent and civil wars broke out in a couple of cases.

By contrast, the Chinese economy did not decline at all during its transition from communism to capitalism. Although its reforms were begun in 1978, until the mid-1980s they mainly affected the agricultural sector. Since China had such a large share of its population in rural areas, the positive effects on food output and rural incomes were significant. Primarily, the agricultural reforms let families and villages take individual responsibility for meeting their production quotas, and allowed them to consume or sell whatever amount they produced above the quota. Villages

and communes were allowed to disband the collectivist system of production and individual incentives began to rule the efforts and decision making of producers.

In the mid-1980s, China extended its market-based reforms to a number of Special Economic Zones (SEZ), Economic and Technology Development Zones (ETDZ), High Technology Development Zones (HTDZ), and other special developmental areas, mostly located along the coast. The rules of each type of zone varied, but in general they allowed far more independent, profit oriented, market-based, decision making. The SEZ in particular, were encouraged to experiment with new forms of economic organization, and to develop joint ventures by attracting foreign investment. These areas began to account for the bulk of Chinese growth, exports, and foreign investment.

China's transition strategy is considered a gradualist strategy because it did not attempt to reform the entire economic structure all at once. Rather, it used a **dual track strategy**, which localized reforms to certain areas or sectors (e.g., agriculture) while maintaining traditional, central planning structures in the remainder of the economy. Slowly, subsidized prices were raised to the market level and the mandatory production targets were reduced to a small share of the total output or zero. By the early to mid-1990s, more than 90 percent of retail prices and 80 to 90 percent of agricultural and intermediate goods prices were decontrolled. China has been much slower to privatize its state owned sector.

Many observers argue that the gradual implementation of reforms in a slow but steady sequence removed the pressure to instantaneously develop new institutions and economic relations. By adopting a dual track approach, China allowed the market economy to develop alongside the centrally planned economy, and to gradually take over more and more of its functions. Perhaps even more importantly than avoiding an economic downturn, it gave the Chinese people time to adjust their expectations to fit a market-based system and reduced the shock of change.

The proponents of rapid reform see China as a special case. First, central planning was less extensive in China, with the result that its economy was less distorted and less over-concentrated on heavy industry. Second, and most importantly, China's economy is much more agricultural. In 1978, when China began its reforms, 71 percent of the labor force was in agriculture. The figure for Russia in 1990 at the beginning of its transition was 13 percent. China's heavier concentration in agriculture gives it a large rural labor force with very low productivity. If these workers leave the countryside, the resulting loss of output is small, while the offsetting productivity gains from employment in urban and village industrial enterprises are significant. Hence, China can move labor from agriculture into the new enterprises but Russia had to take labor out of heavy industry to staff the new enterprises.

Janos Kornai, the eminent Hungarian economist and perceptive observer of the transition summarized the debate in the following terms:

> *Some developments are rapid, others slow. Some call for a one-stroke intervention while many others come about through incremental changes.... The emphasis has to be on consolidation, stability, and sustainability, not on breaking speed records (Finance and Development, September 2000).*

China and India in the World Economy

China's accession to the World Trade Organization (WTO) was notable. Accession ended fifteen years of negotiations and established beyond all doubt that China would not turn away from its march toward capitalism. WTO accession also meant that foreign concerns about property rights and market access would be resolved and that investment in China would not be subject to arbitrary rules by the Chinese government or by foreign governments that might try to discriminate against manufacture imports from China.

India was a member of the WTO from the beginning, but its reforms of the 1990s caused exports and imports to take off. With a much smaller manufacturing sector than China, the absolute value of its trade is far less. Nevertheless, its growth rate is high and recent concerns about the outsourcing of services and India's high technology sector are important reasons for a closer look at its trade patterns.

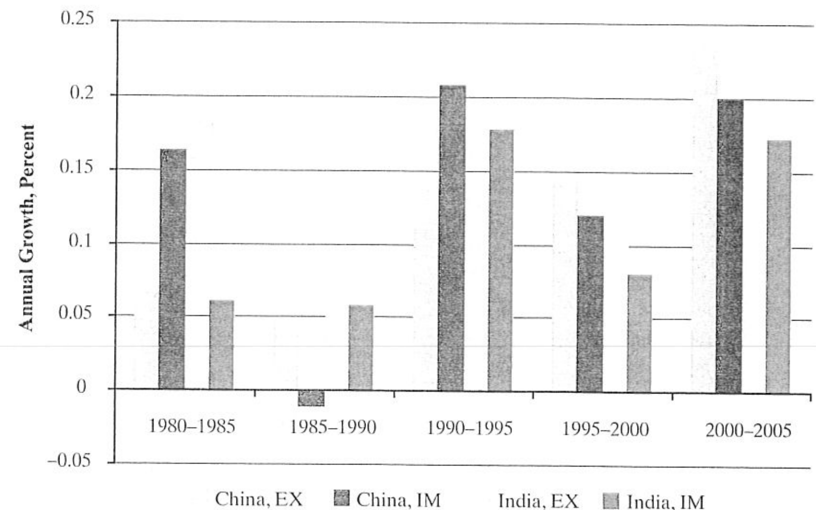
Chinese and Indian Trade Patterns

Figure 17.3 shows the average annual growth of trade, both exports and imports, in constant dollar terms and five-year increments, from 1980 to 2005. In China's case, every five-year period except one (1985–1990) experienced growth in both exports and their rate of growth. India's exports and export growth rate also increased in every period but one (1995–2000), when the growth rate fell slightly but still was above 10 percent. Imports also show strong growth with no periods of absolute decline except 1985–1990 in China.

Figure 17.3 illustrates an important point regarding trade: Exports and imports are tied together. In the case of China this is particularly important to note given the large volume of its exports and the disruption they are causing in trade networks. Chinese exports depend on imported inputs and technology since a large share of its trade consists of commoditized goods that China assembles into a final form and exports. For example, Chapter 4, Table 4.3, lists the top ten Chinese exports to the United States. These are either low technology goods such as footwear, bedding accessories, and briefcases, or high technology goods such as automatic data processing machines. The high technology products, however, are often only assembled in China from parts produced elsewhere. An example is the laptop computer. Taiwan was the leading producer of laptops, but shifted all of its production to China. The processing chips come from Intel, software is supplied by Microsoft, the display panel and memory chips are produced in Korea and Taiwan, and the hard drives are supplied by Japan. China assembles the parts and exports laptop computers (automatic data processing machines).

If China is not presently a high technology producer, it is certainly moving in that direction, in part through its rapid expansion of its science, engineering, research, and development capacity. The number of patents granted by its national patent office was nearly 50,000 in 2005 (versus 164,000 in the United States), and it is spending large amounts on infrastructure that will make the entire society more productive. Nevertheless, at this point it still has limited collaboration with universities and its absorption and diffusion of imported technology is weak. In the present, much of its domestic technology sector depends on its ability to copy (often illegally) foreign products, and it continues to depend on foreign direct investment for technology, management, and access to international networks. This is likely to change in the future, however.

FIGURE 17.3 Average Annual Growth of Imports and Exports, 1980–2005



Since 1990, exports and imports have grown much faster than GDP.

Source: World Bank, *World Development Indicators*.

Table 17.2 compares Indian and Chinese trade in goods and services. Note first that Chinese exports are about six times larger than India's, and its imports are about four times greater. Even in the area of services, where Indian exports are on the rise and have been much noted, China's total is still about a third larger. Table 17.2 illustrates clearly how much more of an impact China's growth is having on the world economy. Its goods exports account for 8.7 percent of the world's total, and it ranks number two in the world in goods exports and number three in goods imports.

In recent years, Indian trade has captured the world's attention though its ability to participate in the growing area of services trade. Several factors account for this, not the least of which is the fact that English is spoken by educated Indians. In addition, India's leadership has consistently emphasized higher education and technology, and although it has a severe shortage of places in its universities, its leading institutions such as the India Institute of Technology

TABLE 17.2 Chinese and Indian Export and Import Totals, 2007

	US$, Billions	Share in World Trade	Rank among Countries
India: Exports			
Goods	147	1.0	26
Services	92	2.7	10
India: Imports			
Goods	217	1.5	18
Services	78	2.5	13
China: Exports			
Goods	1,219	8.7	2
Services	122	3.6	7
China: Imports			
Goods	956	6.7	3
Services	129	4.1	6

China's trade sector is much larger than India's, even in services.

Source: World Trade Organization, *Trade Profiles.*

(IIT) are among the world's best. There is possibly no greater example of a sector or a country that has benefited from the advent of the telecommunications revolution than India's high-tech sector.

A closer examination of Chinese and Indian service exports highlights this fact and points to an important difference in the two economies. As shown in Table 17.2, China's service exports are larger than India's, although not by as much as its goods exports. More important is the composition of each country's service exports, which is not shown in Table 17.2. China has a $7 billion deficit in services, which primarily comprise transportation and travel services (shipping costs and business and personal travel). India has a $14 billion surplus in services, which primarily comprise information services and other business services, two high growth areas of services.

Computer and information services and other business services include the call centers that Thomas Friedman (*The World Is Flat*) and others have written about, along with the outsourcing of medical consultations, data entry, legal briefs, and the myriad other activities that are now sometimes performed at a distance and then sent over the Internet to the final user of the information. As described in Chapter 4, the outsourcing of services depends on the telecommunications revolution, with the Internet, video conferencing, satellite communications, and the software to use them. In the past, most services were consumed at the point of production, but as technology allows a separation of production from consumption or use, services have begun to be outsourced in the same way that manufacturing has been for decades.

The Challenges of India and China in the World Economy

There are numerous challenges to existing trade patterns and trade relations posed by the entrance of the world's two most populous countries in the world trading system. We will look at three such challenges: Indian services, Chinese manufacturing, and the demand for resources.

Services

Services such as shipping have been traded for decades as shipping companies hire crews around the world and register their vessels in the most convenient location, selling their services to firms wherever they are in need. Business services and information services, however, are a relatively new to international trade since they can only be traded if technology and infrastructure can pass large amounts of information across long distances at low costs. Since the mid-1990s, this has been possible and trade in information and computer services has taken off. The outsourcing of services from high-income industrial economies to India is a new arena for the application of comparative advantage.

As with all economic changes, some people benefit and some are hurt. It is clear, however, that there are net benefits overall for national economies. Consider the case of the United States. As the hardware for computer and information technology (IT) has become less expensive, IT services and software are taking the majority share of total IT spending by U.S. businesses. Outsourcing reduces the price of IT services and software, makes business-specific applications cheaper to purchase, and allows businesses to achieve higher levels of productivity at a lower cost. Higher productivity, in turn, raises living standards overall, although not necessarily for every individual. It is another case of comparative-advantage-based trade, the same as described in Chapters 3 and 4. In this case, India's comparative advantage allows it to trade with the United States and to contribute to the increase in U.S. productivity while at the same time creating good paying jobs and advancing its own economy.

Those who oppose this form of trade fear that all computer and IT work will end up in developing countries. This seems highly unlikely. For example, the U.S. Bureau of Labor Statistics projects job growth in the United States in IT related occupations to be three times faster than in the rest of the economy until at least 2010. These new workers and many already in the IT services sector will not continue to do the same thing, however, as the comparative advantage of the United States is shifting within the IT field. The danger is not that jobs will disappear, but that the United States will fail to produce enough qualified people, or that the mix of skills and qualifications will not match the demand by businesses, or that new limits on trade in services will put businesses at a competitive disadvantage.

Manufacturing

China's emergence as an export platform and as a high-volume manufacturer of consumer goods challenges existing trade patterns and manufacturing trends. The challenge to emerging markets such as Mexico, Brazil, Malaysia, and Thailand is that they cannot depend on low wages as the primary source of their comparative advantage. The challenge appears in the form of intense competitive pressures from low-cost goods produced in China. Chinese manufacturing wages are estimated to be about one-fourth of the amount paid in Brazil and Mexico, and given China's other advantages, competition on the basis of labor cost alone is increasingly less likely to succeed. For example, Mexico's export processing zone (the *maquiladora* industry, see Chapter 13) lost a large share of its apparel sector when China entered the WTO. Mexico's geographic advantage next to the U.S. market was nullified for products that do not need a rapid turn around between order and delivery. The effect on some of the manufacturing in high-income countries is similar, such as apparel in the United States and Italy. Furthermore, as China begins to expand its exports of more sophisticated products such as cars, the competitive pressure is likely to spread into other sectors of manufacturing.

China has several sources of comparative advantage in manufacturing. Its abundance of low wage, low skilled labor has already been mentioned, and its large domestic market has been alluded to. One way to look at China is as a large free-trade area where firms can take advantage of scale economies when producing for the domestic market. Coupled with overall growth and expansion of its middle class, the demand for manufactured goods is increasing rapidly and will continue to absorb a larger share of Chinese output. A third advantage is China's coastal areas, which have potentially convenient logistics for trading internationally. China continues to invest heavily in its port facilities and coastal infrastructure in an effort to develop its geographic advantages.

There are also a few institutional disadvantages that reduce its competitiveness. One is the overall business climate. While China ranks well ahead of India in the World Bank's Doing Business Index, its position at 83 out of 181 hardly qualifies as world leading. Taxes, the availability of credit, licensing, steps to start a business, or to employ workers and investor protections are all in the bottom half of the world rankings.

A related disadvantage of the business climate is China's inability to enforce intellectual property rights. This was the main point of contention between the United States and China in its accession to the WTO, and continues to be a major issue in China's relations with its trading partners. Some firms routinely resist making investments in China for fear that their products will be copied, and firms that do invest often limit themselves to product lines that do not contain trade secrets. China meets WTO standards but its enforcement is ineffective. Chinese firms frequently reverse engineer products, produce a knock-off at a fraction of the price of the imported good since no royalties are paid, and expand across the domestic market. This has generated a reaction in Europe and the United States, but the problems associated with enforcement of property rights are significant. Many observers believe that China's enforcement will not become effective until China itself has significant intellectual property to protect.

Resources

China's rapid growth has increased its appetite for natural resources. For resource producers in Latin America and Africa, this has been a boon since China is below the world per capita average in all major natural resources except coal. Copper, oil, iron ore, and other minerals have experienced spikes in their world prices, which are in part related to Chinese demand. Simultaneously, a number of developing countries have been able to sign long-term agreements that will provide them with investment for exploration and supply contracts for the delivery of their resources. China's substantial export earnings are available for purchasing the resources it will need as it continues its development.

The fact that China buys its resources from other developing countries does not guarantee that the countries selling the resources will spend the money well. Furthermore, in some cases these purchases pose a direct challenge to the geo-political strategies of the United States, as China has signed agreements with a number of countries the United States has tried to isolate (e.g., Iran, Sudan, and Venezuela, all of which have signed oil delivery contracts). At this point, Chinese oil purchases have not grown faster than the expansion of known reserves, so it is unlikely that Chinese demand is responsible for much of the increase in world prices.

Unresolved Issues

China's large manufacturing sector and the remarkable growth of its exports has generated a number of concerns. Some concerns are based on misconceptions, others are a projection onto China of problems that originate elsewhere, and some are valid. This part of the chapter looks at three such issues: trade balances, the environment, and the call for political reform in the midst of China's increasing level of unrest.

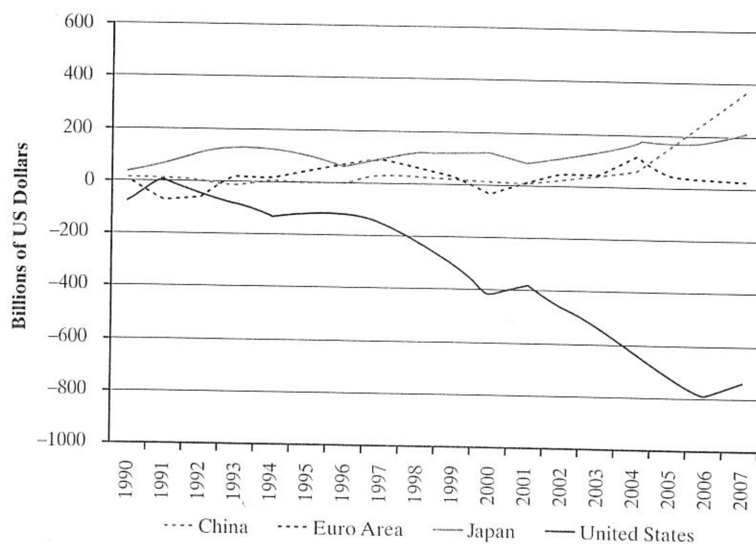
Unbalanced Trade Competition created by the rapid growth of China's exports has generated pressures for protectionism in a number of countries. In the United States, for example, a $268 billion merchandise trade deficit with China in 2007 fuels protectionist sentiments and calls for Chinese currency reform. Since the mid-1990s, China has run a significant surplus in both its current account and its trade in goods and services. While large by world standards, neither comes close to being as large as the United States' current account deficit. Figure 17.4 shows the trends in current account balances for China, the euro area, Japan, and the United States. To the extent that world trade is vulnerable from its imbalances, it appears that U.S. deficits and not Chinese surpluses are the source of vulnerability.

A few observers argue that a significant portion of China's manufacturing competitiveness is due to its fixed exchange rate system. Before July 21, 2005, China pegged its currency, the renminbi, to the U.S. dollar. Consequently, when the dollar weakened beginning in 2002, the renminbi weakened with it. In many

quarters this was seen as an unfair trade advantage for China. In 2005, China announced that it was adopting a narrow exchange rate band and that it would use a trade weighted index instead of a dollar peg. In other words, the People's Bank of China (PBOC) adopted an exchange rate that is permitted to fluctuate in a narrow band and that is pegged to a weighted average of its major trading partners. Moving the peg off the dollar and setting it on a basket of currencies resulted in an appreciation of China renminbi against the U.S. dollar as the latter lost value in world markets. Since 2005, the dollar has fallen against the renminbi by 20 percent, from 8.19 per dollar to 6.83 (as of mid-August 2009).

A related issue is the effect of China's savings on U.S. government finances. China's trade surplus is related to its relatively high savings rate, as discussed in Chapter 9. The export surplus and the large inflow of FDI have caused it to accumulate the largest foreign reserves holdings of any country in the world, valued at over $2 trillion in mid-2009. The inflow of dollars through trade and FDI leads to an expansion of the Chinese money supply as firms convert their export earnings into renminbi and the PBOC supplies whatever level of domestic currency is needed to mop up the dollars. If it did not do this, the price of the renminbi would

FIGURE 17.4 Current Account Balances, 1990–2007



The U.S. current account deficit is much larger and older than China's surplus.

Source: World Bank, *World Development Indicators*.

rise, or in other words, China's currency would appreciate. China then takes a large portion of the newly created renminbi off the market by selling bonds. This is known as **sterilization** because it counteracts the effect on the local currency of the dollar inflow. The local bonds pay low interest rates, and China turns around and buys higher interest foreign assets such as U.S. government bonds with its dollar holdings. In effect, Chinese savings finance U.S. government deficits.

This relationship naturally leads to the fear that if China stopped buying U.S. bonds, it might touch off a crisis in the United States. To the extent this is true, the solution is for the United States to reduce its budget deficits and its trade deficits, which require a large inflow of foreign capital for their financing. According to the U.S. Federal Reserve Bank, China accounts for about 15 percent of the net purchases of U.S. government bonds. This is not a large enough share to have a dramatic direct effect on U.S. interest rates, but it still raises concerns since it would signal a shift in China's willingness to buy U.S. debt and potentially cause other purchasers to change their expectations. Consequently, a change in Chinese purchases of U.S. bonds could tip worldwide investor expectations against the dollar and make it much harder for the United States to finance its deficits. Ironically, this would also hurt China, which currently holds a large supply of U.S. bonds. In a sense, China is stuck with financing U.S. debt, while the United States becomes increasingly vulnerable as its dependence on outside finance grows.

Environmental Pressures Growth has come at a high environmental cost. Currently China has sixteen of the twenty most polluted cities in the world and 90 percent of its urban groundwater is contaminated. In the last decade, 200 million people have moved from the country to the city, and most live without connection to sewage treatment plants. China's per capita energy consumption is well below the level of the United States, but it is moving up rapidly. Given its large coal deposits (its one abundant natural resource), over the next twenty years it will probably become one of the top contributors to the production of carbon dioxide, a major cause of global warming. If the costs of China's environmental destruction are subtracted from its GDP, its growth rate falls from 9 to 10 percent per year to around 2 percent per year.

China's future economic success is likely to depend significantly on its ability to respond to the negative effects of the environmental destruction created by its growth. Unfortunately, the centralization of control and decision making in the Communist Party works against the creation of flexible and rapid responses to environmental problems. Local areas that are the first to perceive changes in environmental conditions lack a voice in China's highly centralized system and by the time information filters up to the authorities, conditions have deteriorated to the point where far more expensive and disruptive remediation becomes necessary.

Political Reform and Protest In general, China's leaders recognize their country's environmental problems, but their grip on power and their fear of the consequences if they were to loosen it somewhat prevent them from decentralizing authority and control. Nevertheless, environmental pressures are only one of several forces pressing for greater decentralization of the authority and power of the

ruling Communist Party. Some economists have long argued that free markets inevitably lead to political freedoms, but as yet, this has not been the case in China.

In 1993 official Chinese sources reported 8,700 incidents of unrest and/or protest. In 2005 the number was ten times greater, around 87,000. The momentous and rapid changes running through Chinese society are generating increasing levels of unease, discomfort, and anger. China has over 140 million internal migrants who are on the move in search of work and opportunities. Villagers frequently complain about local officials who forcibly take land for the construction of factories, and workers laid off from state-owned factories protest the loss of health care and pension benefits when their unproductive enterprises close without compensation for the workforce. And local citizens complain about provincial authorities that refuse to respond to environmental problems such as toxic spills in local waterways or noxious fumes from manufacturing plants.

China has well over 100 million Internet users, nearly 300,000 nongovernmental organizations (NGOs) and 120,000 newly minted lawyers. The economic changes that it is undergoing are profoundly reshaping society beyond its economy, and while the political system is slow to respond, it is uncertain if the Communist Party will be able to maintain its control.

The Choices Ahead

As China and India succeed, the pressures will mount to limit their participation in world markets. Negotiations for China's accession to the WTO led to a series of bilateral agreements between China and its trading partners that allow voluntary export restraints and other measures to block Chinese exports if they threaten firms in importing countries. The U.S. Congress introduced, and then retracted under political pressure, a measure that would label China's exchange rate management system as an unfair trade advantage. If passed, it would legitimize blocking some Chinese exports from entering the United States. Similar measures have not been proposed for India, although the outsourcing by firms of their IT work has led to calls for the re-examination of policies that may be encouraging firms to go abroad. In the end, however, measures against China and India become difficult to enforce because for every firm hurt by Chinese or Indian imports, others are helped by the low prices and availability of their goods and services. Hence, trade measures to stem trade flows will hurt businesses and consumers that depend on the imports.

If Chinese success in particular is frightening to some politicians, businesses, and workers, Chinese failure should be seen as an even greater threat. For example, the country is unlikely to begin to make serious headway in addressing its environmental problems unless it has political stability and some degree of economic prosperity. It has enormous reserves of coal, which is one of the greatest contributors to global warming when it is burned to generate energy. A switch to cleaner fuels is highly unlikely if the country is struggling against economic failure or political instability. The same holds for its ability to address the problems of water and air pollution, missing urban infrastructure, and other remediation needed in order to counter the effects of rapid economic growth.

A financial crisis in either China or India could radiate in ways that are impossible to predict. As the world's two most populous nations, there are literally hundreds of millions of people who might be affected domestically and the consequences outside of either country could be dramatic. Crises work against stability and peace, and the growth of social protest in China in recent years reduces the likelihood that an economic crisis would be resolved without significant social conflict.

Furthermore, China and India have large parts of their populations that are living in poverty or not far above. While conditions have significantly improved for many, not everyone has benefited from growth and many who have are falling farther and farther behind the new economic elites in both countries. In China this has led to growing dissatisfaction and rising protest. India's democratic system creates more legitimate means for changing leaders who do not deliver, whereas China's growing inequality is seen by many as a potential threat to the current system. A failure of its economic project would undoubtedly worsen economic inequality and lead to greater social unrest.

When governments are undemocratic, social unrest can be a good thing. When they also have nuclear weapons and the world's largest army, too much social unrest can be a threat to the rest of the world. The consequences of a breakdown in order, an economic collapse, or even economic stagnation, are impossible to predict, but any of them would probably pose a serious challenge to prosperity and stability outside China.

Summary

- China and India are the two most populous countries in the world. Taken together, they account for about three-eighths (38.5 percent) of the world's population in 2007.
- Both countries have undertaken extensive economic reforms and both have achieved high rates of economic growth since 1980. China's economy is about three times larger than India's and its growth rate is about 50 percent faster.
- Economic reforms began in 1978 in China and in the 1980s in India. Indian reforms became much more serious and intense after a financial crisis in 1991. China is one of the few formerly communist countries that did not suffer a loss of output during its transition to the market economy. In part this is probably due to the more cautious nature and slower speed of its reforms, but also because of its large agricultural sector. When it began its reforms, about 70 percent of its labor force was in agriculture, much of it very low productivity. A loss of workers to that sector did not result in a decline in output.
- Both China and India score low on the Doing Business Index of the World Bank, indicating that there are a number of institutional changes yet to be made.
- Both countries have seen a very rapid growth of imports and exports. China's manufacturing sector is extremely competitive but relies heavily on technology imports. Its exports are mostly either low technology goods or high technology goods that are assembled in China from imported parts. Exports of Indian business services and computer and information services

have taken off since the middle of the 1990s. This type of trade in services represents a new area of trade but is another application of the theory of comparative advantage.

- Trade and growth in China and India pose several challenges for other countries. China's manufacturing sector has a strong comparative advantage in the production of goods that need abundant supplies of low wage labor, while India's production of business services and computer and information services is supported by abundant supplies of English speaking engineers and technicians.
- Large U.S. budget and current account deficits do not depend on China for their financing, but raise the probability of a reaction against China's success in world markets.
- China's inability to enforce intellectual property rights is a constant source of tension between it and its trading partners.
- China's growth has posed an enormous toll on both society and the environment. Its water and air resources are degrading rapidly, and its ability to contain the outbreak and spread of new diseases is under question. The escalation of social protests this has generated has become a major issue for the ruling Communist Party, which seeks to contain the protest.

Vocabulary

Deng Xiaoping
dual track strategy
foreign trading corporation (FTC)
Manmohan Singh
Special Economic Zone (SEZ)
sterilization
township and village enterprises (TVE)
transition economies

Study Questions

1. How are the economies of China and India alike? How are they different?
2. Describe the process of Chinese reforms from their beginning in 1978 up until China's accession to the WTO.
3. What were the factors that led to economic reform in India, and what were the main elements of the reforms?
4. Why did economic reform in Russia and most other transition economies lead to large declines in their GDP but not in China?
5. What are the sources of China's comparative advantage and how does that show up in the goods it trades?

6. What are the factors that make India competitive in business services and computer and information services? Do these factors give it a comparative advantage or do they reflect some other source of competitiveness?
7. What challenges to the world economy do India and China pose?
8. Chinese policies have created a great deal of controversy and discussion. For each of the following topics, describe the issues raised by China's trading partners and evaluate their concerns.
   a. China's trade surplus
   b. China's exchange rate system
   c. Intellectual property