

Chapter 19: Technological Advances and Economics in the Global Age: 19-3 Technological Advances: Debates About the Environment After 1900

Book Title: The Earth and Its Peoples: A Global History 7th Edition Update, AP® Edition

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19-3 Technological Advances: Debates About the Environment After 1900

Population growth and increased levels of migration and urbanization have intensified environmental threats, as farming acreage, factory production, and the extraction of natural resources all increased dramatically. In the early twenty-first century, the loss of rain forest, soil erosion, global warming, air and water pollution, and extinction of species threatened the quality of life and the survival of human societies. Environmental protection efforts, like the acquisition of new technology, progressed most in rich societies with the greatest economic resources. Pollution and other environmental challenges proliferated in the poorest nations with few resources.

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Chapter 19: Technological Advances and Economics in the Global Age: 19-3a Technology and the Environment

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19-3a Technology and the Environment

Two new technologies—the skyscraper and the automobile—transformed the urban environment even more radically than the railroad had done. At the end of the nineteenth century architects had begun to design ever-higher buildings using elevators and load-bearing steel frames. Major corporations in Chicago and New York competed to build the most daring buildings in the world, such as New York's fifty-five-story Woolworth Building (1912). A building boom in the late 1920s produced dozens of skyscrapers, culminating with the eighty-six-story Empire State Building in New York in 1932.

European cities restricted the height of buildings to protect their architectural heritage; Paris forbade buildings over 56 feet (17 meters) high. In the 1920s Swiss architect Charles Edouard Jeanneret (1887–1965), known as [Le Corbusier \(Professional name of architect Charles-Éduard Jeanneret, who led a modernist movement away from surface decoration and toward form following function. \(p. 570\)\)](#) (luh cor-booz-YEH), outlined a new approach to architecture that featured simplicity of form, absence of surface ornamentation, easy manufacture, and inexpensive materials such as concrete and glass. Other architects—including the Finn Eero Saarinen, the Germans Ludwig Mies van der Rohe (LOOD-vig MEES fon der ROW-uh) and Walter Gropius, and the American Frank Lloyd Wright—also contributed to what became known as the International Style.

Meanwhile, the edges of cities were spreading far into the countryside, thanks to the automobile. The assembly line pioneered by Henry Ford mass-produced vehicles in ever greater volume and at falling prices. By 1929 Americans owned five-sixths of the world's automobiles, or one car for every five people. Automobiles were praised as the solution to urban pollution; as they replaced carts and carriages, horses disappeared from city streets, as did tons of manure.

The most important environmental effect of automobiles was suburban sprawl. Middle-class families could now live in single-family homes too far apart to be served by public transportation. As middle- and working-class families bought cars, cities acquired rings of automobile suburbs. Los Angeles, the first true automobile city, consisted of suburbs spread over hundreds of square miles and linked together by broad avenues. Many Americans saw Los Angeles as the portent of a glorious future in which everyone would have a car. European cities that had inherited narrow streets from the premodern past adapted less easily to passenger automobiles. In the countryside, however, high-speed, limited-access expressways, called autostrada in Italy and autobahn in Germany, became sources of national pride for the regimes of Benito Mussolini and Adolf Hitler. Yet compared with the United States, private automobile ownership remained uncommon.

Technological advances also transformed rural economies. In 1915 Ford introduced a gasoline-powered tractor, and by the mid-1920s these versatile machines began replacing horses. Larger farms profited most from this innovation, while small farmers sold their land and moved to the cities. Tractors and other expensive equipment hastened the transformation of agriculture from family enterprises to larger businesses, or in the USSR to collective farms with state-owned tractor stations.

In India, Australia, and the western United States, engineers built dams and canals to irrigate dry lands. Dams offered the added advantage of producing electricity, for which there was a booming demand. The immediate benefits of water control—irrigated land, prevention of floods, and generation of electricity—far outweighed such negative consequences as salt deposits on irrigated fields and harm to wildlife that would eventually emerge.

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Chapter 19: Technological Advances and Economics in the Global Age: 19-3b The Emergence of Environmental Concerns
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19-3b The Emergence of Environmental Concerns

The Cold War and the massive investments made in postwar economic recovery focused public and governmental attention on technological innovations and enormous projects such as hydroelectric dams and nuclear power stations. Only a few experts warned that untested technologies and industrial expansion were degrading the environment. The superpowers were particularly negligent of the environmental impact of pesticide and herbicide use, automobile exhaust, industrial waste disposal, and radiation.

The wave of student unrest that swept across many parts of the world from 1968 into the 1970s created a new awareness of environmental issues and a new constituency for environmental action. As youth activism grew, governments in the West began to pass new environmental regulations. Among them was the Clean Air Act of 1970. Earth Day, a benchmark of the new awareness, was also first celebrated in 1970, the year in which the United States also established its Environmental Protection Agency.

When oil prices skyrocketed, the problem of finite natural resources became more broadly recognized. Making gasoline engines and home heating systems more fuel efficient and lowering highway speed limits to conserve fuel became matters of national debate in the United States, while poorer countries struggled to find the money to import oil. A widely read 1972 study called *The Limits of Growth* forecast a need to cut back on consumption of natural resources in the twenty-first century. Ecological and environmental problems now vied for public attention with superpower rivalry and Third World nation building.

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Chapter 19: Technological Advances and Economics in the Global Age: 19-3c Conserving and Sharing Resources

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19-3c Conserving and Sharing Resources

In the 1960s environmental activists and political leaders began warning about the devastating environmental consequences of population growth, industrialization, natural resource exploitation, and the expansion of agriculture onto marginal lands and forests. Assaults on rain forests, the disappearance of species, and the poisoning of streams and rivers raised public consciousness, as did the depletion and pollution of the world's oceans. Environmental damage occurred both in the advanced industrial economies and in developing nations. The former Soviet Union, where industrial and nuclear wastes were routinely dumped with little concern for environmental consequences, had the worst environmental record.

In the developed world, industrial activity increased much more rapidly than the population grew, and the consumption of energy (coal, electricity, and petroleum) rose proportionally. This pattern is now clear in India, China, and other industrializing nations as well. Indeed, the consumer-driven economic expansion of the post–World War II years became an obstacle to addressing environmental problems, since modern economies depend on a profligate consumption of goods and resources (see [Map 19.1](#)). When consumption slows, industrial nations enter a recession, as recently demonstrated in 2008. How could the United States, Germany, Japan, or China change consumption patterns to protect the environment without endangering corporate profits, wages, and employment levels?

Map 19.1

Fresh Water Resources

This map links population density and the availability of water. Red areas are highly stressed environments where populations use at least 40 percent or more of available water. Less stressed environments are blue. The deeper the shade of red or blue, the greater the environmental stress. The ongoing effects of global warming on this crucial resource is unknown, but our ability to sustain intense modern agriculture in low-rainfall, high-average temperature environments will certainly be challenged.





Source: From "Global Water Stress," National Geographic, September 2002, pp. 14–16. Reprinted by permission of the National Geographic Society.

Which regions are both "highly stressed" and poor?

Since 1945 population growth has been most dramatic in the developing countries, where environmental pressures have also been extreme. In Brazil, India, and China, for example, the need to expand food production led to rapid deforestation and the extension of farming and grazing onto marginal lands. The results were predictable: erosion and water pollution. These and many other poor nations sought to stimulate industrialization because they believed that the transition from agriculture to manufacturing was the only way to provide for their rapidly growing populations. The argument was compelling: Why should Indians or Brazilians remain poor while Americans, Europeans, and Japanese grew rich?

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19-3d Responding to Environmental Threats

Despite the gravity of environmental threats, there were many successful efforts to preserve and protect the environment. The Clean Air Act, the Clean Water Act, and the Endangered Species Act were passed in the United States in the 1970s as part of an environmental effort that included the nations of the European Community and Japan. Grassroots political movements and the media encouraged environmental awareness, and most nations in the developed world enforced strict antipollution laws and sponsored massive recycling efforts. Many also encouraged resource conservation by rewarding energy-efficient factories and manufacturers of fuel-efficient cars and by promoting the use of alternative energy sources such as solar and wind power.

Environmental efforts produced significant results. In western Europe and the United States, air quality improved dramatically. Smog levels in the United States fell nearly a third from 1970 to 2000, even though the number of automobiles increased more than 80 percent. Emissions of lead and sulfur dioxide were down as well. The Great Lakes, Long Island Sound, and Chesapeake Bay were all much cleaner at the beginning of the new century than they had been in 1970.

AP® Exam Tip

Understand the environmental impacts of deforestation, desertification, and greenhouse gasses on the debate regarding the nature and causes of climate change.

Loss of Brazilian Rain Forest

The destruction of large portions of Brazil's virgin rain forest to grow soybeans or raise cattle and other livestock has come to symbolize the growing threat to the environment caused by population growth and economic development. In this photograph we see the scale of environmental destruction.





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New technologies made much of the improvement possible; for example, pollution controls on automobiles, planes, and factory smokestacks reduced harmful emissions. At the same time, the desire to preserve the natural environment was growing around the world. In developed nations continued political organization and enhanced awareness of environmental issues seemed likely to lead to step-by-step improvements in environmental policy. In the developing world and most of the former Soviet bloc, however, population pressures and weak governments were major obstacles to effective environmental policies. Since the 1990s the rapid expansion of China's industrial sector as well as industrial growth in other developing nations like India and Brazil has put additional pressure on the environment.

Environment & Technology

Global Warming

Until the 1980s environmental alarms focused mainly on localized episodes of air and water pollution, exposure to toxic substances, waste management, and the disappearance of wilderness. The development of increasingly powerful computers and complex models of ecological interactions in the 1990s, however, raised awareness of the global scope of certain environmental problems.

Many scientists and policymakers came to perceive global warming, a slow increase in the temperature of the earth's lower atmosphere, as an environmental threat requiring preventive action on an international scale. The warming is caused by a layer of atmospheric gases (carbon dioxide, methane, nitrous oxide, and ozone) that allow solar radiation to reach earth and warm it but that keep infrared energy (heat) from radiating from earth's surface back into space. Called the greenhouse effect, this process normally keeps the earth's temperature at a level suitable for life. However, increases in greenhouse-gas emissions—particularly from the burning of fossil fuels in industry and transportation—have added to this insulating atmospheric layer.

Recent events have confirmed predictions of global temperature increases and melting glaciers and icecaps. Greenland glaciers and Arctic Ocean sea ice are melting at record rates, and huge sections of the Antarctic ice shelf are breaking off and floating away. Andean glaciers are shrinking so fast they could disappear in a decade, imperiling water supplies for drinking, irrigation, and hydroelectric production. Drought has affected much of the United States in recent years, and Australia has experienced the “Big Dry,” its worst drought in a century.

Despite this evidence, the industrialized countries that produce the most greenhouse gasses have been slow to adopt measures stringent enough to reduce emissions. They cite the negative effects they believe this could have on their economies. Because of these fears, many nations hesitated to sign the 1997 Kyoto Protocol, the first international agreement to impose penalties on countries that failed to cut greenhouse-gas emissions.

Shortly after succeeding George W. Bush as president in 2009, Barack Obama announced to an audience of scientists and citizens concerned with climate matters: “You can be sure that the United States will once again engage vigorously in these negotiations, and help lead the world toward a new era of global cooperation on climate change.” Yet when he ran for reelection in 2012, the issue of global warming, which his Republican opponents denied was a real phenomenon, played no role in his campaign. Ironically, a tropical superstorm named Sandy that dealt a devastating blow to New York and New Jersey just before the election seemed to vindicate the prediction that the increased energy in the atmosphere caused by global warming would produce severe weather anomalies around the world.

Flooding in Bangladesh

Typhoon-driven floods submerge the low-lying farmlands of Bangladesh with tragic regularity. Any significant rise in the sea level will make parts of the country nearly uninhabitable.



David Greedy/Getty Images



David Greedy/Getty Images

In 2015 Obama achieved his goal at a Paris conference where all of the world's industrialized nations reached agreement on a United Nations Framework Convention on Climate Change (UNFCCC). Article 2 of the convention sets forth its goals:

- (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
- (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;
- (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

Republican skepticism about global warming prompted President Trump in 2017 to officially withdraw the United States from the Paris climate agreement. On January 20, 2021, President Biden recommitted the United States to the agreement.

Questions for Analysis

1. Should it be the concern of people today to attack problems that are not expected to become severe for several decades?
2. Do industrialized and nonindustrialized economies share responsibility for climate change?
3. As an environmental problem, is global warming more of a concern than overpopulation, extinction of wild species, or preservation of fresh water supplies?

It now seems likely that industrialized nations will have to fund global improvements and that the cost will be high. Slow growth and fiscal crises in the mature industrial economies after the 2008 recession have politicized and slowed the progress of environmental reform. Nevertheless, growing evidence of environmental degradation and global warming have continued to propel popular reform efforts, as when the media drew attention to the precipitous shrinkage of Peru's Andean glaciers and to loss of rain forest in Brazil. Yet,

without broad agreement among the rich nations, the economic and political power necessary for environmental protections on a global scale will be very difficult to institute. When representatives from around the world negotiated a far-reaching treaty to reduce greenhouse gases in Kyoto, Japan, in 1997, President George W. Bush refused American participation even though the treaty was affirmed by nearly all other industrial nations. Canada subsequently withdrew from the agreement, and China and other rapidly industrializing nations were largely exempted from the treaty's limits. This agreement, as a result, has had a limited effect on greenhouse gas emissions. More recently, in 2015, world leaders successfully negotiated the Paris Agreement, a broad climate accord to limit the growth of carbon emissions and slow global warming. In 2017 President Donald J. Trump withdrew the United States from this international treaty, despite dire warnings from climate scientists.

Section Review

- American cities were transformed by skyscrapers, and the automobile led to the creation of suburbs.
- During the 1970s young people provided crucial leadership to a worldwide movement to conserve natural resources and protect the environment.
- The environmental movement achieved some successes in developed nations, reducing pollution and improving resource management, but global progress was hindered by a lack of cooperation between developed and developing nations.

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Chapter 19: Technological Advances and Economics in the Global Age: 19-4 Economics in the Global Age

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19-4 Economics in the Global Age

In a trend accelerated by the end of the Cold War, many governments encouraged free-market economic policies and promoted economic liberalization in the late twentieth century. At the same time, revolutions in information and communications technology led to the growth of knowledge economies in some regions, while industrial production and manufacturing were increasingly situated in Asia and Latin America. In addition, changing economic institutions, multinational corporations, and regional trade agreements reflected the spread of principles and practices associated with free-market economics throughout the world.

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Chapter 19: Technological Advances and Economics in the Global Age: 19-4a Free-Market Policies

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19-4a Free-Market Policies

Skyrocketing oil prices, debts from the Vietnam War (in the case of the United States), and declining competitiveness against new Japanese and European businesses created a period of economic stagnation in the United States and United Kingdom that consisted of rising price levels with pervasive unemployment at the same time. Under these circumstances, a new cadre of politicians and economists rejected the old economic policies of fiscal stimuli that dated back to the New Deal. Instead, they pursued deregulation, the privatization of public services, the weakening or dissolution of labor unions, and tax cuts favoring the rich on the assumption that these tax savings would turn into investments and job growth. President Ronald Reagan and the United Kingdom's Prime Minister Margaret Thatcher (1925–2013) pursued these free-market—or neoliberal—policies aggressively, crushing the resistance of the labor movement in declining industries such as steel and coal, contributing to the proliferation of the financial services sector, and driving economic inequality between the top 1 percent and bottom 20 percent still further.

The United States pushed Latin American nations to reform their economies by removing limitations on foreign investment, eliminating many social welfare programs, and reducing public-sector employment (see [Chapter 18](#) for discussion of economic nationalism). Latin American governments responded by selling public-sector industries—like national airlines, manufacturing facilities, and public utilities—to foreign corporations. But popular support for these policies, what Latin Americans called [neoliberalism \(The term used in Latin America and other developing regions to describe free-market policies that include reducing tariff protection for local industries; the sale of public-sector industries, such as national airlines and public utilities, to private investors or foreign corporations; and the reduction of social welfare policies and public-sector employment. \(p. 575\)\)](#), eroded quickly due to political scandals over the terms of these sales of public properties and a slowing world economy. A catastrophic economic and political meltdown in Argentina between 2001 and 2002 contributed to the appearance of a reinvigorated nationalist left in Latin America that sought to roll back neoliberal reforms (see [Diversity & Dominance: The Struggle for Women's Rights in an Era of Global Political and Economic Change](#)). Among the most vocal critic of neoliberalism and American influence was Hugo Chávez (HUGH-go CHA-vez), elected president of Venezuela in 1998 and serving as the region's chief critic of U.S. policy until his death in 2013. Left-of-center presidents were later elected in Brazil (Luiz Inácio Lula da Silva, 2002), Argentina (Néstor Kirchner, 2003), Bolivia (Evo Morales, 2005), and Ecuador (Rafael Correa, 2007).

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19-4b Asian Transformation

Although Japan has few mineral resources and is dependent on oil imports, the Japanese economy weathered the oil price shocks of the 1970s much better than did the economies of Europe and the United States. In fact, Japan experienced a faster rate of economic growth in the 1970s and 1980s than did any other major developed economy, growing at about 10 percent a year and becoming the world's second largest economy. Average income in Japan also increased rapidly, briefly overtaking that of the United States in the 1980s.

There were major differences between the Japanese and U.S. industrial models. During the American occupation, Japanese industrial conglomerates known as zaibatsu were broken up. Although ownership of major industries became less concentrated,

AP® Exam Tip

Explain how governments had a strong role in economic life following World War II.

business leaders created new industrial alliances to control competition and facilitate the allocation of resources. During the period of dramatic growth there were six major keiretsu ([Alliances of corporations and banks that dominate the Japanese economy. \(p. 576\)](#) (kay-REHT-soo), each of which included a major bank as well as firms in industry, commerce, and construction tied together in an interlocking ownership structure. There were also minor keiretsu dominated by major industrial corporations, like Toyota.

Tariffs and import regulations inhibiting foreign competition were crucial to the early stages of development of Japan's major industries. These restrictions and Japanese success at exporting manufactured goods through the 1980s produced huge trade surpluses with other nations. Although the United States and the European Community engaged in tough negotiations to try to force open the Japanese market, these efforts had only limited success, and by 1990 Japan's trade surplus with the rest of the world was double that of 1985.

Many experts assumed that Japan's competitive advantages would propel it past the United States as the world's preeminent industrial economy, but during the 1990s Japan entered what would become a more than two-decade-long crisis that dramatically slowed the growth of both GDP and average income. In the thirty months between January 1990 and July 1992, Japanese stocks and real estate markets lost \$2.5 trillion in market value, while the national economy's growth rate fell from 3.1 percent a year to 0.2 percent.

Before the crisis, Japanese real estate and stock markets had become highly overvalued as

the nation's huge trade imbalances with the United States and other trading partners flooded the economy with cash and fueled dangerous financial speculation. As the crisis deepened and prices collapsed, the close relationships between industry, government, and banks proved to be a liability, as these powerful institutions acted to prop up inefficient companies and support unsustainable market values. By the end of the 1990s Japan's GDP had suffered a loss greater than that suffered by the United States in the Great Depression, leaving the nation with a crushing debt burden. Despite government efforts to promote recovery with deficit spending, public works projects, and low interest rates, Japan's economy has grown very slowly to the present. In 2010 it lost its position as the world's second largest economy to China.

AP® Exam Tip

Understand the growth of export-oriented economies in East Asia in this time period. Compare these economies with East Asian economies in earlier time periods.

Other Asian states imitated the Japanese model of development in the 1970s and 1980s. These nations protected new industries from foreign competition while encouraging close alliances among industries and banks. The largest and most successful of them, the Republic of Korea, commonly called South Korea, used a combination of inexpensive labor, strong technical education, and substantial domestic capital reserves to support a massive industrialization effort. Success in heavy industries such as steel and shipbuilding as well as in consumer industries such as automobiles and consumer electronics soon made it a global economic power.

The small nations of Taiwan and Singapore, along with Hong Kong, a British colony until 1997 when it returned to Chinese control, also became industrial and financial powerhouses. As a result of their rapid development, these three economies along with South Korea were called the [Asian Tigers \(Collective name for South Korea, Taiwan, Hong Kong, and Singapore—nations that became economic powers in the 1970s and 1980s. \(p. 576\)\)](#). While Taiwan suffered a number of political reverses, including the loss of its United Nations seat to the People's Republic of China in 1971 and the withdrawal of diplomatic recognition by the United States, it achieved remarkable economic progress, based in large part on investment in the economy of the People's Republic of China. Hong Kong and Singapore—long-time British colonies with extremely limited natural resources—also enjoyed rapid economic development. Both were historically important Asian ports and commercial centers that later developed successful manufacturing, banking, and commercial sectors.

These [newly industrialized economies \(NIEs\) \(Rapidly growing, new industrial nations of the late twentieth century, including the Asian Tigers. \(p. 577\)\)](#) shared many characteristics that help explain their rapid industrialization. All had disciplined and hard-working labor forces, and all invested heavily in education. For example, as early as 1980 South Korea had as many engineering graduates as the advanced industrial nations of Germany, Britain,

and Sweden combined. All had very high rates of personal saving, about 35 percent of GDP, that was used to fund new technologies, and all emphasized outward-looking export strategies. And, like Japan, all benefited from government sponsorship and protection from foreign competition during development. Despite this momentum, the region was deeply shaken by a financial crisis that began in 1997. Like the recession that afflicted Japan in 1990, a combination of bad loans, weak banks, and the international effects of currency speculation led to a deep regional crisis that was stabilized only by the efforts of the United States, Japan, and international institutions like the International Monetary Fund.

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Chapter 19: Technological Advances and Economics in the Global Age: 19-4c China Rejoins the World Economy
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19-4c China Rejoins the World Economy

After Mao Zedong's death in 1976, the Chinese communist leadership began economic reforms that relaxed state control, allowing more initiative and permitting individuals to accumulate wealth. The results were remarkable. Under China's leader [Deng Xiaoping \(Communist Party leader who forced Chinese economic reforms after the death of Mao Zedong. \(p. 577\)\)](#) (dung shee-yao-ping) (1904–1997), China permitted foreign investment for the first time since the communists came to power in 1949. Between 1979 and 2014, foreign direct investment in China grew to more than \$1.5 trillion as McDonald's, General Motors, Coca-Cola, Airbus, Toyota, and many other foreign companies began doing business. In 2014 foreign direct investment was greater in China than in the United States for the first time, \$128 billion to \$86 billion. As a result of this pattern, foreign firms now account for roughly 50 percent of China's imports and exports.

By 2010 China had become a major industrial power and the world's most important exporting nation. Despite these changes, state-owned enterprises still employed more than 100 million workers, and most foreign-owned companies were limited to special economic zones. The result was a dual industrial sector—one modern, efficient, and connected to international markets, the other directed by political decisions. While the Chinese have not yet privatized land, by 1990 over 90 percent of China's agricultural land was in the hands of farmers permitted to sell what they produced, but new reforms were slowed by popular opposition to growing inequality among agriculturalists.

In 2010 China became the world's second largest economy, surpassing Japan. The scale of this achievement can be represented by the remarkable growth of China's GDP, the total value of all goods and services produced by the nation. In 1970 China, with a population of nearly 1 billion, had a GDP of \$56 billion, roughly half the GDP of Italy (\$111 billion), with a population of 55 million people. By 2010 China's GDP had increased eighty-one times, surpassing \$4.5 trillion, rising to \$11 trillion in 2015. Other

AP® Exam Tip

Explain why some governments, such as China under Deng Xiaoping, began to promote economic liberalization in the late twentieth century.

AP® Exam Tip

Explain how some groups, such as the Tiananmen Square protesters, opposed and promoted alternatives to the existing economic, political, and social orders.

developing countries grew substantially in this period as well. India's economy, for example, was larger than China's in 1970 (\$66 billion) and increased nineteen times by 2010, to \$1.2 trillion. In 2015 it was \$2.1 trillion, roughly one-fifth the size of China's.

Despite its enormous achievement, China, with a per capita GDP (GDP divided by national population) as of 2015 of \$8,027, has remained substantially poorer than mature industrial economies like the United States and Germany, which have per capita GDPs of \$56,115 and \$41,313, respectively. However, China is now richer than much of the developing world. Latin America has a per capita GDP of \$8,363, the Middle East and North Africa \$7,407, sub-Saharan Africa \$1,588, and South Asia \$1,542. While poverty levels in China have fallen swiftly during this period of rapid development, inequality, especially between rural and urban dwellers, has increased.

The combination of economic reforms, high levels of foreign investment, and technology transfers from developed industrial nations has helped make China one of the world's major industrial powers. As was true earlier with Japan and the Asian Tigers, China's expansion has depended heavily on exports, which accounted for over 40 percent of GDP in 2008, falling to roughly 30 percent by 2017. Success in foreign markets produced a large foreign trade surplus. As was the case with Japan three decades ago, these cash surpluses paid for the government's massive investments in infrastructure, but also promoted speculation in real estate and stocks and propped up a weak banking sector. While the Chinese economy continued to grow at a healthy rate during the worldwide recession that began in 2008, some economists wonder if the speculative excesses can be overcome without a deep contraction similar to that experienced by Japan in the 1990s. The near collapse of China's two major stock markets in 2015–2016, unsustainable real estate values, and rising corporate, government, and household debt levels are all suggestive of future problems.

Deng Xiaoping's strategy of balancing change and continuity avoided some of the social and political costs experienced by Russia and other socialist countries that abruptly embraced capitalism and democracy after the collapse of the Soviet Union, but he faced a major challenge in 1989. Responding to inflation and to worldwide mass movements in favor of democracy, Chinese students and intellectuals led a series of protests demanding more democracy and an end to corruption. This movement culminated in [Tiananmen \(Tee-yehn-ahn-men\) Square \(Site in Beijing where Chinese students and workers gathered to demand greater political openness in 1989. The demonstration was crushed by Chinese military with great loss of life. \(p. 578\)\)](#), in the heart of Beijing, where hundreds of thousands of protesters gathered and refused to leave. After weeks of standoff, tanks pushed into the square, killing hundreds and arresting thousands. The Communist Party has not faced another direct challenge to its power since then, but growing levels of labor unrest, protests in favor of political rights, corruption scandals, and ethnic confrontations continue to challenge this one-party dictatorship.

Chapter 19: Technological Advances and Economics in the Global Age: 19-4d Regional Trade Organizations
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19-4d Regional Trade Organizations

Regional trade organizations had come into being to promote growth, reduce the economic vulnerability of member states, and, less explicitly, balance American economic dominance. The twenty-seven-member European Union was the most successful (see Map

AP® Exam Tip

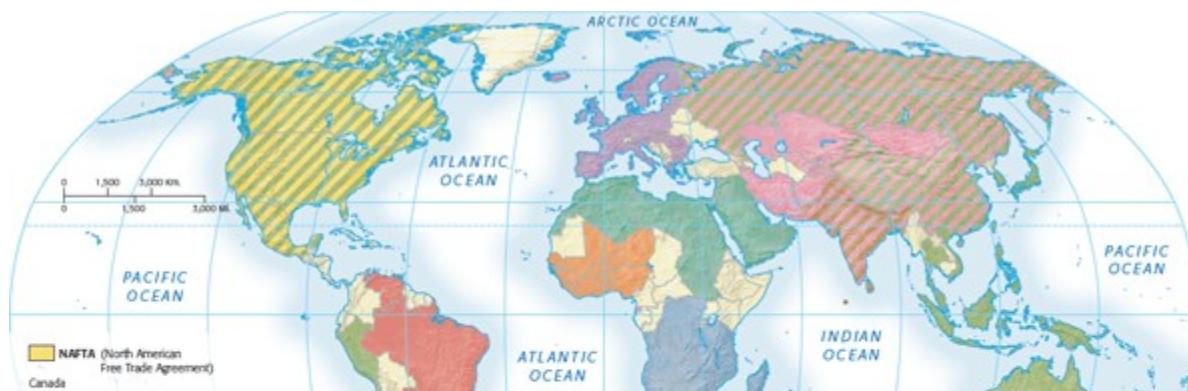
Identify and explain the impact of several regional trade agreements.

19.2). The euro, a common currency inaugurated in 2002 and used in twelve member states, competed with the U.S. dollar for investment and banking. However, unequal levels of development among members became a source of crisis in 2009 when the world economic downturn devastated stock markets and increased rates of unemployment. Countries like Greece that had taken on more debt than the revenues produced by their shrinking economies could cover sought assistance from the rest of the EU, but the wealthier countries, led by Germany, proved reluctant to rescue them. Instead, they urged an austerity program of radical cutbacks in public expenditures. These measures increased unemployment, popular discontent, and resentment of immigrants who competed for jobs with native-born citizens. The idea of the euro, a common currency that symbolized Europe's progress toward unity, came into question since countries belonging to the euro zone were not at liberty to devalue their currency and thereby reduce their debt burdens. In 2016 a popular referendum in Britain, which had not adopted the euro, unexpectedly committed the government to withdrawing from the EU. While the terms of this Brexit (British exit) remained to be negotiated, concern arose as to whether other EU countries might follow Britain's lead.

Map 19.2

Regional Trade Associations, 2004

International trade and development are major concerns of governments in developed and developing countries. NAFTA, Mercosur, and the EU are free-trade areas. The other associations promote trade and development.





Do regional trade agreements signal increasing globalization or simply formalize linguistic and cultural connections with roots in earlier centuries?

Despite the EU's expansion, the North American Free Trade Agreement (NAFTA), which eliminated tariffs among the United States, Canada, and Mexico in 1994, governed the world's largest free-trade zone. Yet heated debate in the United States over illegal immigration across the Mexican border, as well as anti-Hispanic prejudice, limited popular enthusiasm for the agreement. Populist opposition to NAFTA and to immigration from Latin America was a contributing factor in Donald J. Trump's come-from-behind presidential victory in 2016. One of his initial acts as president was to authorize building a wall between the United States and Mexico. Immigration remained a prominent and contentious political issue during the Trump presidency.

AP® Exam Tip

Discuss the role of global organizations and multinational corporations in the economic system of the modern world.

The third largest free-trade zone, Mercosur, created by Argentina, Brazil, Paraguay (now suspended), and Uruguay in 1991 and subsequently expanded to include five associate members, visualized a parliament consisting of eighteen representatives from each member state. Other free-trade associations operated in West Africa, southern Africa, Southeast Asia, Central America, the Pacific Basin, and the Caribbean.

The Shanghai Cooperation Organization (SCO) formed in 2001 with China, Russia, and four former Soviet Central Asian republics as members. It originally pursued common security interests, such as combating separatist movements and terrorism, but the accession of India and Pakistan in 2016 and the observer status of Iran, a major oil exporter, and Afghanistan and Mongolia, countries with untapped mineral sources, lent plausibility to the SCO's twenty-year plan for reducing barriers to trade and population movement. Iran, which formally applied for full membership, posed a special problem insofar as both Russia and

China were involved in an American-led international campaign to curb its nuclear program. An agreement in 2016 to lift many economic sanctions in return for a 15-year cap on Iranian nuclear expansion eased that problem.

Diversity & Dominance

The Struggle for Women's Rights in an Era of Global Political and Economic Change

The struggle for women's rights has been one of the most important social movements of the twentieth and twenty-first centuries. Although we can identify fundamental similarities in objectives across cultural and political boundaries, women in less developed nations are forced to recognize that their objectives and strategies must take into account international inequalities in power and wealth.

In this section Gladys Acosta, a militant Peruvian feminist, discusses her recommended agenda for this struggle in the era after the fall of the Soviet Union and the rise of neoliberalism, the term used in Latin America to identify the free-market economic policies advocated by the United States. Among its chief characteristics are an end to the governmental protections for local industries, a reduction in government social welfare policies (efforts to hold down prices on staples and establish wage minimums, among other policies), a reduction in public-sector employment, a commitment to paying debts to international creditors, and the removal of impediments to foreign investment. Many Latin Americans believe that neoliberalism is a new form of imperialism. While written in the 1990s, this political manifesto deals directly with issues of great relevance today: international indebtedness, the social costs of austerity, and gender inequality.

Neoliberalism in Action

When I talk of neo-liberalism, I mean austerity measures, foreign debts, and increased liberties for all those who have the power of money at their disposal and the power of repression over those who make demands. We have now reached a new form of capitalist accumulation. The world's economic system is in a state of change and capital has become more concentrated and centralised. I would not go as far as to say countries don't exist anymore but national identities do certainly play a different role now. . . . If we look at the bare face of neo-liberalism from a woman's point of view, we cannot fail to notice its murderous consequences. . . . At the moment we're experiencing capitalism's greatest ideological offensive. It's all business: everything is bought and sold and everything has its price.

The Consequences of Neoliberal Politics

[W]omen play an important role in this ever-more internationalized economy because we represent, as ever, a particularly exploitable workforce. A number of

studies have revealed the existence of subcontractor chains who work for transnational companies "informally" and mainly employ women. Basically we are dealing with a kind of integration into the world market which often uses our own homes as its outlet. Obviously, this work is badly paid and completely unprotected and has to be done without any of those social rights which were formerly achieved by trade union struggles. . . . As it advances worldwide, this capitalism also encourages the expansion of certain kinds of tourism. A visible increase in prostitution is part of this, whereby women from poor countries are smuggled into large, internationally operated rings which exploit them. The reports of Filipina women traded on the West German market send shivers down our spines....

How the Adoption of Austerity Measures Affects Women's Lives

It is obvious that foreign debt is one of the most inhuman forms of exploitation in our countries when one considers the ratio between work necessary for workers' needs and work producing profit for employers. The experts have already explained how the prevailing exchange and investment structures have created international finance systems which keep whole populations in inhuman conditions.... Women in every household are suffering every day as a result of impoverished economies and those who are most exposed to the effects of foreign debt are women.

When it comes to shopping, caring for sick children or the impossibility of meeting their schooling costs, the illusion of "leaving poverty behind" evaporates. Yet the problem is not only of an economic nature because under such circumstances the constant tension leads to grave, often lasting exhaustion. The psychosocial damage is alarming. The adoption of austerity [under neoliberalism] measures means a curtailment of the state's commitment to social services with a direct effect on women. Daily life becomes hell for them. The lack of even minimal state welfare presents women (and obviously children too) with crushing working days.

AP® Historical Thinking Skills

Making Connections What has led to the rise of neoliberalism on the lives of female workers?

Making Connections In what ways do Acosta's views of women and family and the views of Kollontai ([Chapter 16](#)) compare?

Source: From Gladys Acosta, "The View of a Peruvian Militant," in *Compañeras: Voices from the Latin American Women's Movement*, ed. Gaby Küppers (London, UK: Latin American Bureau, 1994).

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19-4e World Trade Organization

In 1995 the world's major traders established the [World Trade Organization \(WTO\) \(An international body established in 1995 to foster and bring order to international trade. \(p. 580\)\)](#), dedicated to reducing barriers and enforcing international agreements. With the accession of Russia as its 157th member in 2012, the largest economy not to be included was Iran. The WTO had many critics and regularly encountered street protests during its ministerial meetings. Some protesters rallied against neoliberalism and claimed that the organization's idea of free trade enabled low-cost foreign manufacturers to attract business and shrink job opportunities in richer states; others demanded continuing tariff protection for local farmers.

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19-4f Transnational Technologies and Corporations

Computers have dramatically altered manufacturing. Small dedicated computers now control and monitor machinery in most modern industries. In the developed world, as well as in China and other fast-growing developing economies, factories forced by global competition to improve efficiency and product quality increasingly depend on robots. Japan's early lead in robotics in the 1990s has been reduced as Europe, the United States, and, in recent years, China have all raced to introduce robotics across their economies. While nationalist critics of economic integration and globalization tend to blame unrestricted trade as a threat to local industries and domestic employment, the effect of robotics on factory employment has progressed with little regulation. Take, for example, the American steel industry. Between 1962 and 2005 the industry lost 400,000 workers, but shipments of steel did not decline at all due to enhanced productivity through automation. These technologies are now being employed in white-collar sectors with similar results.

The transnational corporation is the primary agent for these technological changes as well as for the globalization of industrial production. By the twentieth century the growing economic power of corporations in industrialized nations allowed them to invest directly in the mines, plantations, and public utilities of less developed regions. In the post–World War II years many of these companies became truly transnational, having multinational ownership and management. International trade agreements and open markets furthered the process. Ford, Nissan, BMW, Toyota, and other car companies not only produced and sold cars internationally, but their shareholders, workers, and managers also came from numerous nations.

The location of manufacturing plants overseas and the acquisition of corporate operations by foreign buyers rendered such global firms as transnational as the products they sold. In the 1970s and 1980s American brand names like Levi's, Coca-Cola, Marlboro,

Gillette, McDonald's, and Kentucky Fried Chicken were global phenomena. But in time Asian corporate names—Honda, Hitachi, Sony, Sanyo, and Mitsubishi—were blazoned in neon and on giant video screens on the sides of skyscrapers, along with European brands

AP® Exam Tip

Understand the role of transnational corporations in spreading free market principles throughout the world.

AP® Exam Tip

Consider the effects of a globalized consumer society.

such as Nestlé, Mercedes, Pirelli, and Benetton. Since 1979, China's emergence as a global industrial power has accelerated this process of integration and diffusion. In recent decades major Japanese, American, and European manufacturing giants have located factories that produce automobiles, pharmaceuticals, smartphones, aircraft, and common consumer goods in China to gain access to the Chinese domestic market as well as to lower the price of finished products sold in home markets by utilizing cheaper Chinese labor. One study found that globalization, especially deepening trade with China, had led to the loss of at least 2 million jobs in the United States between 2000 and today.

As transnational manufacturers, agricultural conglomerates, and financial giants became wealthier and more powerful, they increasingly escaped the controls imposed by national governments. If labor costs were too high in Japan, antipollution measures too intrusive in the United States, or taxes too high in Great Britain, transnational companies relocated—or threatened to do so. In 1945, for example, the U.S. textile industry was largely located in low-wage southern right-to-work states (states that inhibit unionization) and dominated the American market while at the same time exporting successfully to foreign markets. As wages in the American South rose and global competition increased, these producers began relocating plants to Puerto Rico in the 1980s and to Mexico after NAFTA went into effect in 1994. Now China is the primary manufacturer of textiles sold in the United States and other developed economies.

Section Review

- After three decades of rapid economic growth, Japan entered a deep recession in the 1990s.
- The four Asian Tigers experienced rapid economic growth.
- After Deng Xiaoping reformed and modernized China's economy in 1979, China has experienced three decades of rapid growth.
- Improvements in existing technology and new technologies such as the computer have improved manufacturing efficiency and transformed leisure.
- Globalization created a more integrated world economy, connecting producers and consumers from different regions and nations and reducing the ability of a single nation to escape the effects of distant events.

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19-5 Conclusion

The industrialized world experienced a flood of new inventions—automobiles, electric lights, radios, movies, airplanes—that stimulated not only a broader respect for science, but also an expectation that science would continue indefinitely to improve human lives. This was the cult of the modern. Technology even affected the arts, providing new materials for architecture and furniture design, new electronic means of amplifying and distributing music, and an ever-expanding array of tools for making and reproducing images, both still and moving. Yet the devastating human tragedies of war and depression also encouraged currents of nihilism, despair, and questioning of faith.

While participating in many of these changes, the nonindustrialized nations also had their own technological breakthroughs, such as the rickshaw, and did not use some inventions, such as electricity, in the same way as the West. New media such as cinema and radio were used in different ways as well and sometimes perpetuated themes and images from local cultural sources. At the same time, traditional patterns of village life began to erode as cities grew and urban life, at least for the privileged classes, took on the demeanor and attitudes of Europe. But becoming like Europe did not mean coming to like Europe.

The world was altered by economic growth and globalization, by population growth and movement, and by technological and environmental change. Led by the postwar recovery of the industrial powers and the remarkable economic expansion of Japan, the Asian Tigers, and more recently China, the world economy grew dramatically until the global recession of 2008. The development and application of new technology contributed significantly to this process. International markets were more open and integrated than at any other time. However, not all the nations of the world benefited from the new wealth and exciting technologies of the postwar era. The capitalist West and a handful of Asian nations grew richer and more powerful, while most of the world's nations remained poor.

This period also witnessed the beginning of the international environmental movement. Public attention increasingly focused on resource management, pollution, and the preservation of endangered species. In response, the United States and governments in western Europe put in place the first generation of environmental laws. The Clean Air Act in the United States and other measures had an immediate impact, but both policymakers and the public grew aware of ever more serious challenges. The gas crisis of the 1970s gave these efforts a sense of urgency.

At the same time, new technologies and the wealth produced by economic expansion have allowed the world's richest nations to implement ambitious programs of environmental protection. As a result, pollution produced by automobiles and factories has actually

declined in the richest nations. The question that remains is whether rapidly developing nations, such as Brazil, China, and India, will move more quickly than the mature industrial nations did to introduce these new technologies and curtail threats to the environment like global warming.

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