

# CHAPTER 1

## Capitalism Shakes the World

For more than four decades following World War II, Germany was divided: East Germany was a dictatorship, while West Germany was a democracy. The economic systems of the two Germanys were as different as their systems of government. In the East, the economy, like just about everything else, was run by the Communist Party. Decisions about who should produce what, how, when, and for whom were made by the government and carried out under orders. Communism was not simply a form of government, it was also an economic system based on centralized direction of economic decisions. By contrast, West Germany had what is termed a capitalist economy. West Germans for the most part made economic decisions independently, guided in most cases by what they needed to do to turn a profit, to get and keep a decent job, or to have a particular kind of lifestyle given their means.

In October 1989 the general secretary of the East German Communist Party, Erich Honecker, grandly celebrated the founding of Communist East Germany 40 years earlier. He proclaimed that it had been both a “historical necessity” and a “turning point in the history of the German people.” Parades and demonstrations commemorated the anniversary. But 12 days after the celebration, Honecker suddenly stepped down as prodemocracy demonstrations broke out first in the East German city of Leipzig and then spread throughout the country. A million and a half Germans participated in these demonstrations in October, and twice that number attended them in November.

Less than a month after Honecker’s resignation, East and West Germans danced together on the Berlin Wall and then dismantled it. Less than a year after the grandiose celebration of its 40th anniversary, East Germany passed out of existence, its territory joined with that of West Germany, and the combined parts becoming once again simply Germany. As a result, the citizens of the former Communist nation passed from one economic system to another, from communism to capitalism. At about the same time, prodemocracy demonstrators

toppled their Communist rulers in the Soviet Union, Poland, Czechoslovakia, Hungary, and, indeed, in all of the remaining Communist-ruled countries except Cuba, Vietnam, Laos, North Korea, and China. The demonstrators rejected not only Communist dictatorships but also the centralized organization of their economies. All adopted some form of capitalist economic system.

Like communism, other economic systems had earlier fallen to the capitalist onslaught. An economic system based on slavery in the U.S. South ended with the victory of the Union troops in the Civil War and Lincoln's emancipation of the slaves. As a result the South ceased to be a slave economy and became capitalist. Similarly, the simple economics of hunting and gathering—what most humans did to make a living for most of our time on earth—has been abandoned in most parts of the world, to be replaced by other economic systems, and eventually, in most parts of the world, by capitalism. And the process continues. Capitalism is on a roll and has been since its birth.

Nevertheless, capitalism is new, having been a moving force in world history for only the past five centuries or so—less than 1 percent of the time that humans have inhabited the earth. During this relatively short period, however, the world has changed more quickly, more constantly, and more profoundly than during any earlier period of human history. And now the pace of change appears to be quickening, so even greater transformations will most likely occur in our lifetimes.

*Capitalism*, as we will see in detail later, is an economic system in which employers hire workers to produce goods and services that will be marketed with the intention of making a profit. Wherever capitalism has taken root, it has left no aspect of society unchanged. It has brought with it unprecedented advances in scientific and other kinds of knowledge, astonishing developments in technology, previously unimaginable ways of sharing information, and rising standards of consumption, health, and education in most of the world. It has also led to fundamental realignments of power and redistributions of wealth, the abolition of slavery and other archaic forms of bondage, and radical changes in family life, ideals, and beliefs.

Since we have lived with rapid change all of our lives, we tend to think of it as normal, even natural. Yet from a historical perspective, rapid and relentless transformation of the social and physical world is anything but normal. Far from being driven by change, earlier economic systems were bound by inertia. The *capitalist epoch* began in Europe around AD 1500. The capitalist organization of work—employers hiring people for wages to make a profit—first appeared in parts of England, the Netherlands, Belgium, and Italy. Initially the new way of organizing production affected few people, even in the countries where it first appeared,

but as it spread and became stronger, the transformative power of capitalism also grew. It would eventually revolutionize the world.

Capitalism's development and the social changes accompanying it occurred at different times in different places, and its impact was highly uneven. In some places capitalist development occurred quickly, in other places very slowly, and in some regions of the world, capitalism is only now replacing other economic systems.

**Capitalism** is an economic system in which employers, using privately owned capital goods, hire wage labor to produce commodities for the purpose of making a profit.

The **capitalist epoch** began in some parts of Europe around AD 1500, when capitalist organization of labor processes first appeared. It continues to the present in most of the world.



## EUROPE AT THE DAWN OF THE SECOND MILLENNIUM

*A mere handful of folk—unending emptiness stretching so far west, north, and east that it covers everything—fallow land, fens, and wandering rivers, heaths, woods and pastureland, every conceivable type of erstwhile forest leaving behind it brush fires and the woodburners' furtive sowing—clearings here and there, wrested from the forest but still only half-tamed; shallow pitiful furrows that wooden implements drawn by scrawny oxen have scratched in the unyielding soil . . . huts of stone, mud or branches, clustered in hamlets surrounded by thorn hedges and a belt of gardens; sparsely scattered towns, streets in ruins, fortifications haphazardly repaired, stone structures dating back to the Roman Empire that have been turned into churches or strongholds.*

*Such is the Western world in the year 1000. Compared with Byzantium, compared with Cordoba, it seems rustic, very poor and defenseless. A wild world ringed round by hunger, its meager population is in fact too large. The people struggle almost bare-handed, slaves to intractable nature and to a soil that is unproductive because it is poorly worked. No peasant who sows one grain of wheat expects to harvest much more than three—if it is not too bad a year that means bread to eat until Easter time.*

From Georges Duby, *The Age of the Cathedrals* (Chicago: University of Chicago Press, 1981), p. 3.

To see more clearly the changes that have come with capitalism, consider what life was like in Europe before the dawn of the capitalist age. In the year 1000, people there had short life spans; they had almost no experience with people or places farther away than the nearest town; and they depended on the food and other things they could produce by their own efforts, supplementing their consumption with only a few items available in local markets.

During most of human history, people lived in societies that had not changed much since the time of their parents, grandparents, or earlier ancestors. For generation after generation, sons made their livings in much the same ways as had their fathers before them, and daughters also followed in their mothers' footsteps. Tools and utensils, stories and beliefs were passed on from parents to children, just as they had been a century, or even a millennium, before. Good years and bad alternated with the weather, but continuous, rapid, and systematic change would not become an ordinary fact of life until the emergence of capitalism.

Around the world societies were organized in many different ways, but most people were only dimly aware of this diversity because their horizons did not extend beyond the small communities in which they lived. By the beginning of the 15th century, however, Europeans began to explore other continents and "discovered" what they called the "New World." Before long, traders and colonists, often financed by investors seeking fabulous

riches, were intruding on indigenous peoples in areas located in what is now Virginia, Peru, Barbados, South Africa, and India. The dynamism unleashed by the advent of capitalism in Europe soon began to impinge on the rest of the world.

## THE PERMANENT TECHNOLOGICAL REVOLUTION

It is hard to know which came first, capitalism or the great spurt of technical change that came along with it. Whatever the truth may be, the continuous, rapid, and far-reaching scientific discoveries and technological innovations that are now accepted as a permanent feature of modern life emerged more or less simultaneously with capitalism. And, of course, these discoveries and innovations made possible the remarkable economic advances of the last five centuries.

In 1500 goods were made almost entirely by hand, using simple tools. Power machinery consisted of such devices as the water wheel that turned a miller's grinding stone. People's understanding of the physical world was so rudimentary that births, deaths, and harvests, whether abundant or meager, were frequently interpreted with recourse to magic, superstition, or reference to God's will.

As late as 1800 traditional craft-based techniques, using skills that had been handed down from generation to generation, still prevailed in most production processes. But the new era brought new ideas, new discoveries, new methods, and new machines in every field of endeavor, making old ideas and old tools obsolete. And the new ways were in turn quickly made obsolete by even newer ones. As technical change revolutionized production, it reduced the amount of time required to produce most products.

The most important increases in labor productivity were those that occurred in the agricultural sector. As fewer people were required to produce the same or greater amounts of food, more labor could be devoted to the production of other things, particularly in the manufacturing sector. Thus, increases in agricultural productivity had to be achieved before the Industrial Revolution could take place. To illustrate the rapidity with which farm output has increased during the capitalist era, Figure 1.1 shows the growth of productivity in U.S. agriculture during the past two centuries.

There have also been dramatic improvements in methods of transportation during the past five centuries. In 1500 people either walked or used wagons to get themselves and their possessions or freight from one place to another on land. Wagons were pulled either by people or by animals, and the movement of people or freight overland was arduous, costly, slow, and sometimes dangerous. For all but a very few wealthy people, travel beyond a short distance from home was virtually impossible, and shipping freight was so expensive that it did not pay to send anything but very valuable and lightweight goods such as spices and silks.

Water transport on rivers and along coasts was easier, but ships were small, slow, and unsafe. In 1500 there had been few advances in maritime technology beyond what was available to the Romans 1,000 years earlier. Within a century, however, sea transport was greatly improved. Ships began regularly crossing the Atlantic or rounding the Cape of Good Hope en route to the East Indies. By 1800 clipper ships raced from China to London

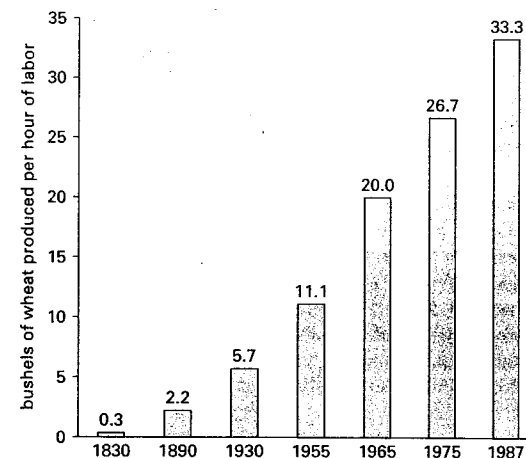


FIGURE 1.1 Productivity increases in U.S. agriculture, 1830–1987. Focusing specifically on the production of wheat, this figure shows how labor productivity in U.S. agriculture has risen during the past two centuries. In the 18th century American farmers used crude wooden plows drawn by horses or oxen. They sowed seeds by hand, cultivated them with hoes, cut the wheat with sickles, and harvested their grain from the wheat using manual threshing devices called flails. Iron plows were introduced early in the 19th century, but as late as 1830 it still took about 300 hours of labor to produce 100 bushels of wheat on a five-acre farm. In the middle of the 19th century farmers began to use chemical fertilizers, and they also came to rely more and more on factory-made agricultural machinery. Over the next century agricultural productivity rose dramatically. By 1987 on a large, highly mechanized American farm, 100 bushels of wheat could be produced with only 3 hours of labor on 3 acres of land, 100 times more output per hour than could be produced in 1830.

Source: U.S. Department of Agriculture, "A History of American Agriculture, 1776–1990," available at <http://www.usda.gov/history2/text4.htm>.

in 80 days and from New York to San Francisco in 22 days. At the same time, sailing across the Atlantic became almost routine.

By 1900 steam power replaced sails, and the construction of the Suez Canal (and soon thereafter the Panama Canal) greatly shortened world trade routes. Before the end of capitalism's fifth century, oil tankers, each carrying 2,500 times the cargo of Columbus's ships, clogged the shipping arteries of the world and became too large to enter all but the largest and deepest harbors. Until the Concorde was grounded for economic reasons in 2003, those who could pay the \$9,000 required for a reservation on this aircraft could travel from London to New York in three hours, moving at twice the speed of sound, overtaking the sun, and arriving "earlier" than when they had left.

Land transport was revolutionized as well. First, inland canals were dug—one of the most famous being the 365-mile (579 km) Erie Canal in New York State, constructed

between 1817 and 1825—and barge traffic through canals greatly reduced the cost of overland haulage. Soon railroads would increase the speed and cut the cost of moving goods and people even more. In the U.S., the transcontinental railroad was completed in 1867, and by the end of the 19th century tracks would crisscross all the world's industrial areas and penetrate the Canadian Rockies, the East African highlands, the Chinese hinterland, the vast Russian steppes, and the plain of northern India as well. Yet all this was but a prelude to the great 20th-century land transport revolution based on automobiles, trucks, and highways. When air travel and transport, major innovations of the last century, were added to the mix, the role of railroads in global shipping and travel, although remaining important and appealing to travelers in some areas, became relatively diminished.

The technological advances in transportation were matched by equally significant developments in medicine, agriculture, and communications. Improvements in health care and agricultural productivity made possible the population explosion and urbanization discussed later in this chapter. Moreover, the communications revolution has been central to the process of globalization, also to be discussed later in this chapter.

Less beneficial were certain advances in weaponry and the discovery and production of toxic chemicals and biological agents. Today, chemical, biological, and nuclear weapons, sometimes referred to as weapons of mass destruction, are powerful enough to destroy the entire population of the world. Whether in production techniques, in transportation, in medicine, in agriculture, in communications, or in nuclear, chemical, and biological warfare, technical change has occurred with a speed and pervasiveness that is unprecedented in human history.

## THE ENRICHMENT OF MATERIAL LIFE

The technological changes of the past five centuries have been accompanied by significant increases in people's consumption standards. Before the capitalist epoch, living conditions improved or deteriorated with changes in the weather, epidemics, and other natural phenomena, because most people made their livings by farming, herding, or hunting and gathering. But wherever and whenever capitalism took hold, people's incomes and consumption levels began to rise in a sustained way. Although the rises were sometimes followed by declines, over a long period there have been—and continue to be—substantial improvements in living standards. Figure 1.2 shows the sharp upturn in real wages experienced by one group of workers following the emergence of capitalism as the dominant economic system in Great Britain in the 19th century.

While Britain was the first capitalist country, the new economic system soon spread to other countries, producing comparable increases in average living standards wherever it went. In the U.S., for example, the buying power of the average income in 2002 was 32 times what it was in 1789 (the year the U.S. Constitution was adopted). This does not mean, of course, that Americans are now 32 times happier than they were in 1789, but it does indicate an unprecedented growth in the availability of material goods. With the increase in material abundance, changes occurred in such things as diets (meats are now eaten more frequently) and housing (bigger homes are built and kept at warmer temperatures in the winter).

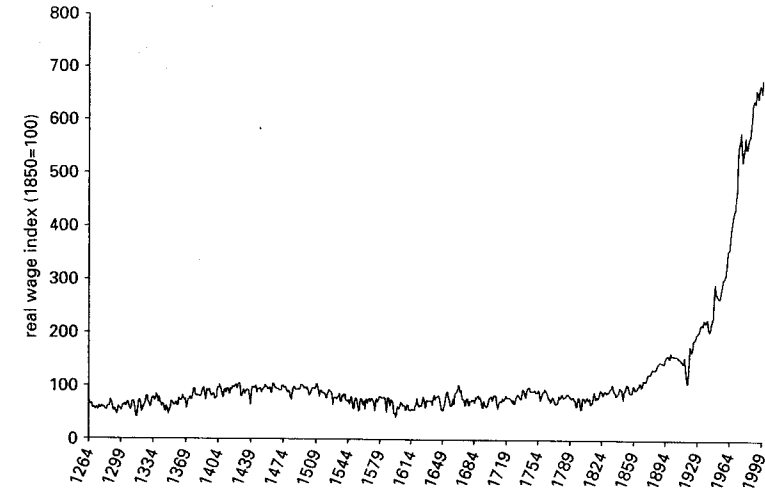


FIGURE 1.2 Real wages in London over seven centuries. This figure shows the average real wage of skilled construction workers in London between 1264 and 1999. The term "real" means that the monetary wage in each year has been corrected for any price inflation that occurred. Thus, the real wage is the real buying power of the monetary wage in any particular year. The data are presented here in the form of an *index*. They show what the average real wage was in each year *relative to* what it was in some other year. For this chart the year 1850 was chosen as the *base year* for which the index is set to equal 100. Thus, whatever the actual wage was in 1850, it is recorded here as being equal to 100. Then the real wage in any other year is recorded as a percentage of what it was in 1850. For example, if the real wage in some other year was twice what it was in 1850, it is recorded here as being 200; if it was half of what it was in 1850, it is 50 here. While the data are subject to error, they nevertheless tell an interesting story. Prior to the full development of capitalism, real wages did not rise consistently. Fluctuations in the real wage before 1800 were often the result of changes in the size of the population. For example, the relatively brief increase after 1370 occurred because of a shortage of labor associated with the general depopulation of Great Britain caused by a catastrophic bubonic plague that spread from Asia to Europe in the 14th century. Gains made between 1300 and 1500 were eroded after 1500 by the rapid increase in prices resulting from the sudden inflow of gold to Europe from the Americas. Since money wages then would buy fewer and fewer goods, real wages generally declined between 1500 and 1800. After 1800, however, and particularly since 1900, increased productivity of labor and greater bargaining power of some workers led to dramatic increases in real wages for people such as the skilled construction workers represented in this figure. Since 1800 the demand for such labor has tended to outpace its supply, and employers have found themselves competing with one another for scarce workers. Real wages rose because employers had to offer significantly higher wages to attract particular workers to their enterprises.

Source: Robert Allen, "Wages, Prices and Living Standards: The World Historical Perspective," available at <http://www.econ.ox.ac.uk/Members/robert.allen/WagesPrices.htm>.



## WHY DID THE ENGLISH ECONOMY TAKE OFF? COMPETITION, COAL, OR COLONIES?

No historical event has shaped the modern world more than the fact that in the 18th and 19th centuries it was parts of Europe (especially England) that took off economically, rather than parts of China. The outcome was a gap in incomes between Europe and everywhere else, and combined with Europe's population explosion, this gap led to a Euro-centered world (see Figures 1.3 and 1.4). Most of the rest of the world lagged behind economically and fell under the domination of Europeans and people of European descent in the U.S.

At first glance England, and Europe generally, had no special advantages that primed these economies to make the leap. Before the "European miracle" Chinese scientific knowledge surpassed that of Europe in many fields and rivaled it in most. Moreover, the areas of science in which Europe was ahead bore little relationship to the technological advances that were to propel the industrial revolution there. The more advanced economic areas of China such as the Chang River delta were not poorer than the advanced areas of Britain and Europe.

Economists sometimes suggest that British economic institutions made the difference. They have in mind an absence of governmental interventions such as price and wage setting, official monopolies, and confiscations of property. But recent historical research shows that an individual's pursuit of economic gain was probably freer from governmental fetters in the Chang delta in the 18th century than it was in England or other parts of Europe. Neither scientific preeminence, nor prior affluence, nor a *laissez-faire* environment explains why capitalism took hold in England rather than in some other small corner of the earth, propelling some other people to world dominance.

The chief disadvantage of the Chang delta was a paucity of natural resources. Unlike England, the Chang delta had no rich coal deposits and little water power. And it lacked access to a natural resource-rich hinterland that could feed the voracious appetite for raw materials generated by an expanding economy.

By contrast, British military prowess, honed in centuries of Continental warfare, gave England cheap access to the raw materials of the New World, especially following the defeat of France in the Seven Years War (1756–1763). Sugar flowed in from Barbados, Jamaica, and the other British Caribbean colonies to provide more than a tenth of the calories of the rapidly expanding British industrial workforce. The slave plantations of Virginia and Georgia fed raw cotton to the booming textile mills of Manchester. All the agricultural land of Great Britain would not have been enough to produce domestically the sugar consumed by British workers and the fibers used to make British cloth (wool from sheep farms). Without the colonies economic expansion would have driven up the price of cotton, sugar, and other raw materials. The high cost of raw

materials would have driven profits down and prematurely grounded the British takeoff.

On the eve of its economic takeoff, England's advantage was not that its institutions resembled the modern-day mainstream economist's ideal of secure individual property, effective competition, and limited government. A leading historian suggests a different view: England and the rest of Europe did indeed have institutional advantages, writes Kenneth Pomeranz, "but they seem applicable to very few endeavors in the pre-1800 world besides war, armed long-distance trade and colonization."

Source: Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton: Princeton University Press, 2000). The quote is from p. 166.

Figure 1.3 shows how the rise of productivity in Europe eventually helped to lift output per person in the world as a whole. The main part of the figure shows that the dramatic increase in output per person, averaged for the world as a whole, did not occur until after 1820, while the smaller (inserted) chart shows in detail the relative contributions of different regions to the world's total output during the past five centuries. To simplify this chart, the nations of the world have been divided into three groups. The first group, called "Western world," includes western Europe and the nations originally "settled" by western Europeans—the U.S., Canada, Australia, and New Zealand. The second group includes all of Asia, including China, India, and Japan. The third group consists of all the nations in Africa, Latin America, and eastern Europe, including Russia.

It can be seen that the "Western world" was responsible for most of the growth of world output between 1500 and the early 1900s, its share of world output increasing from less than 20 percent in 1500 to more than 55 percent in 1950. But, as the chart shows, its relative share has been falling since 1950.

While the West's share of world output was increasing, that of Asia was moving in the opposite direction—downward. This was due in part to the fact that the absolute amount of output being produced in the West was growing much faster than the amounts being produced in other regions, so the *percentage* of world output attributable to the other regions had to be falling. Because Asia produced most of the world's output in 1500, it was the region with the most to lose. Most of the decline in Asia's share was due to the spectacular economic success of Europe and North America. But there were other reasons for the precipitous decline in Asia's share of world output between 1820 and 1950. For one thing, the effect of British imperialism on the productivity of India, a major contributor to Asia's output, was devastating. Whereas India had had a strong and diversified economy in 1800, by the middle of the 19th century the British rulers of India had begun to cripple that nation's cotton textile industry in order to gain the entire Indian market for their own cotton textile products. At the same time India was forced to specialize in the production of (less valuable) raw cotton for export to English textile factories.

The upturn in Asia's share of world output since 1950—and the simultaneous decline in the West's share during this period—is the result, in large measure, of economic expansion in Japan and China. Measured by total output, Japan is the world's second-largest

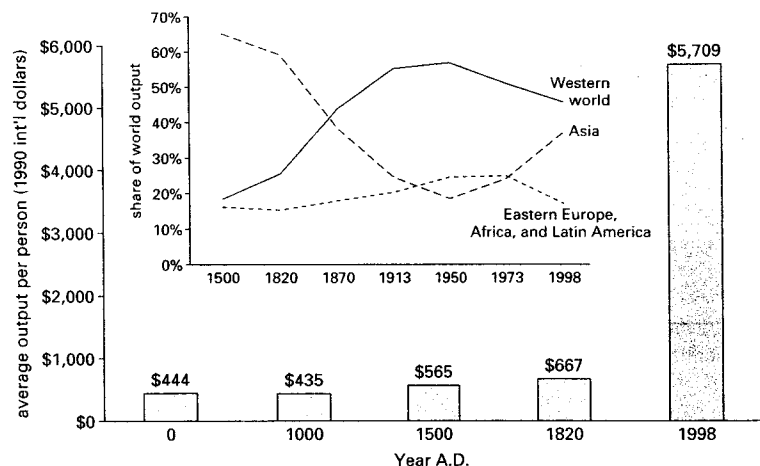


FIGURE 1.3 Two millennia of world GDP per capita. The larger chart in this figure presents inflation-adjusted estimates of output per person (GDP per capita) for the world as a whole during the last two millennia. These estimates are the result of more than half a century of empirical research conducted by Angus Maddison, one of the world's foremost scholars of global population size, technical change, and productivity growth. According to Maddison, the world's output per person remained at relatively low levels until 1820, with increases in output being largely absorbed by corresponding increases in the world's population. In the period since 1820, however, the technical changes associated with the rise of capitalism have allowed for a dramatic expansion of output per person. Although the data in the main chart show output per person averaged for the world as a whole, the insert shows how the productivity increases of the past few centuries have been generated disproportionately, and enjoyed unequally, by the various regions of the world. Since the vertical distances in the smaller chart represent percentages of total world output, and since all the regional shares thus represented must add up to 100 percent, the movements of any one region's output may seem exaggerated since any change in output in one part of the world must be offset by an opposite movement in at least one other part. In any case, the smaller chart reveals striking changes in shares of world output that are not shown in the larger chart.

Sources: Angus Maddison, *Monitoring the World Economy, 1820–1992* (Paris: OECD, 1995), p. 19, Table 1-1(a), and *The World Economy: A Millennial Perspective* (Paris: OECD, 2001), p. 28, Table 1-2.

economy (after the U.S.), and China (officially the People's Republic of China) has one-fifth of the world's population and has been racking up record-setting double-digit economic growth rates annually since the late 1970s. Also important is the contribution of the Asian "tigers"—South Korea, Taiwan, Thailand, and Singapore—all of which have been achieving exceptionally high rates of economic growth in recent decades.

India, the second-most-populous nation, has also experienced rapid increases in output since 1980.

One can also see from the insert in Figure 1.3 that the nations of Africa, Latin America, and eastern Europe started out with the smallest share of world output in 1500, increased their share slightly between 1820 and 1950, but ended up again (in 1998) with the smallest share. The recent decline here is mostly a result of the huge fall in output associated with the difficult transition from central planning to capitalism after the upheavals of 1989 to 1991 in eastern Europe and Russia. Another factor has been very slow economic growth or even declines in output in Latin America and (especially) Africa.

The data presented in Figures 1.2 and 1.3 showing vast increases in wages and output in much of the world over the past few centuries may actually *understate* the associated improvements in living standards. The reason is that the *quality* of goods has increased dramatically, and these increases in quality are not adequately accounted for when we measure prices and output.

Qualitative improvements can be seen most strikingly in the production of light, starting with the campfires of our distant ancestors and then moving on, with the passage of time, to oil lamps, candles, kerosene lamps, and, ultimately, to modern lighting technologies such as filament and fluorescent light bulbs. Among the changes that have come with these advances is an almost unbelievable increase in the efficiency of light production. Engineers define lighting efficiency with reference to how much light, measured in units called "lumens," can be produced using a certain amount of energy (measured in watts).

Figure 1.4 charts the advance of lighting technology from 1700 to the present, showing the lumens per watt of each new lighting source. Not shown in the chart is the fact that the lighting power of a campfire is between .002 and .003 lumens per watt. By 1800 a light source, the tallow candle, had been developed that was more than 32 times as efficient as a campfire: it emitted light at nearly .076 lumens per watt. With the coming of electric power in the late 19th century, lighting technology began to improve rapidly. By 1900 an "advanced" carbon filament lamp could light up a room (or a street) at 3.7 lumens per watt, and a century later a 100-watt tungsten filament lamp—the standard 100-watt commercial light bulb—could emit light at a rate of more than 14 lumens per watt. (See the source of this information cited in the caption for Figure 1.4.)

The biggest single advance in lighting technology so far has come with the development of the "compact" fluorescent light bulb. *Consumer Reports* tested this new light source in 1992 and found that it was capable of producing 68.3 lumens of light per watt, making it about 29,000 times more efficient than a campfire. The point is that our typical measures of improvements in standards of living—real wage increases and growth of real gross domestic product (GDP) per capita—do not account for the fact that we often get proportionally more of something, in this case illumination, than increases in our spending on it would indicate. These types of measurement issues have become increasingly important in the past century and a half as the rate of technical progress—stimulated by capitalism—has accelerated.

Capitalism is not unique in its capacity to promote rapid increases in material well-being. The Soviet Union, with a Communist government and a centrally planned non-market economy, achieved very high rates of economic growth between the late 1920s

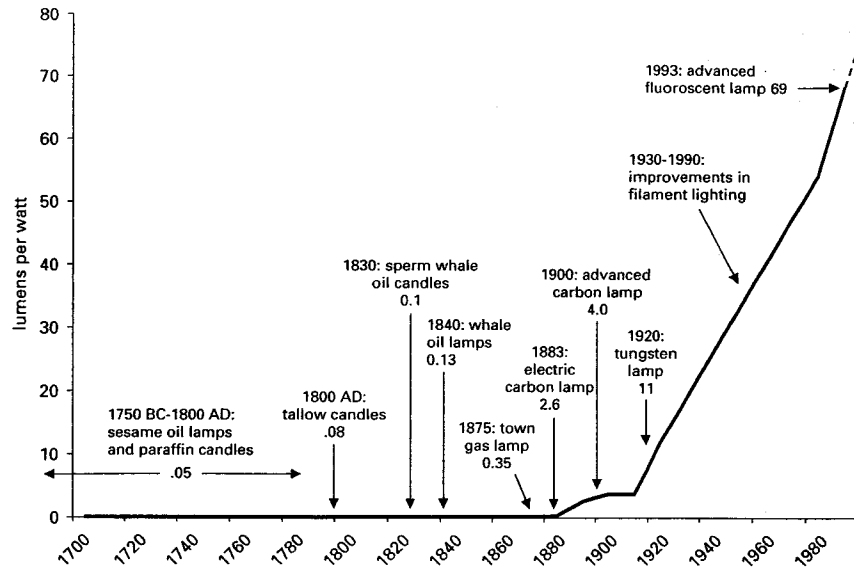


FIGURE 1.4 Improvements in lighting technology, 1700 to the present. This figure shows how the efficiency of lighting technology (measured in lumens per watt on the vertical axis) has increased over the past three centuries. A "lumen" is a unit indicating a certain intensity of light, and a "watt" is a unit measuring the power of a source of energy. Source: William D. Nordhaus, "Do Real-Output and Real-Wage Measures Capture Reality? The History of Lighting Suggests Not," in Timothy F. Bresnahan and Robert J. Gordon, eds., *The Economics of New Goods*, National Bureau of Economic Research Studies in Income and Wealth, vol. 58 (Chicago: University of Chicago Press, 1996), pp. 29-66.

and the mid-1980s. And, as we have just seen, over the past three decades China, also under Communist rule, has maintained rates of increase in total output unparalleled by any of the world's capitalist economies, supporting extraordinary improvements in living standards. But these cases of rapid economic growth under systems other than capitalism are atypical.

## GROWING INEQUALITY

The material abundance that has come with capitalism is not evenly distributed. As capitalism has enhanced the generation of wealth in some parts of the world, it has also led to glaring global inequalities. Before the rise of capitalism, most of the world's population lived quite simply, without the material goods that the majority of people in rich countries now take for granted. But as capitalism developed, the gap between rich and poor became

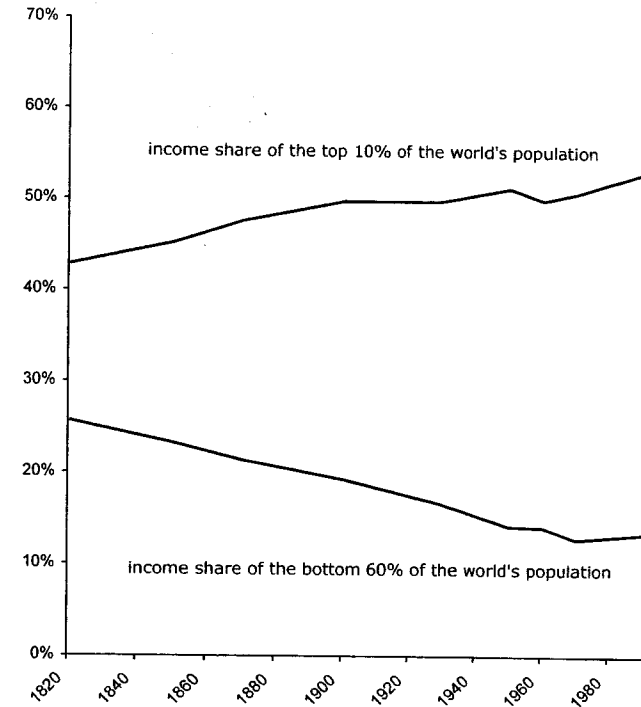


FIGURE 1.5 Growing world inequality, 1820-1992. This figure charts the growing income gap between the top 10 percent and the bottom 60 percent of the world's population. Since the emergence of capitalism in Europe and its gradual spread throughout the world, the fortunes of the rich and the rest have diverged. This occurred because there was a rapid expansion of output in Europe and North America, where capitalism first flourished, but no such rapid expansion occurred in the rest of the world. Although inequality has been reduced considerably *within* many countries, increases in inequality *between* nations has resulted in a more unequal world. Since 1960 the increase in global inequality has slowed and by some measures even has been reversed because of the rapid economic growth of the two largest poor countries in the world—India and China.

Source: François Bourguignon and Christian Morrisson, "Inequality Among World Citizens: 1820-1992," *American Economic Review*, vol. 92, no. 4, September 2002, pp. 727-744.

a chasm (see Figure 1.5). Today many people in the world still do not have clean drinking water, while the wealthiest individuals possess their own jet planes. According to recent research the poorest 10 percent of Americans are richer on average than two-thirds of the people in the world, and four-fifths of the world's population lives below what is defined as the poverty line in North America and Europe.

## THE POPULATION EXPLOSION AND THE GROWTH OF CITIES

Along with capitalism's technical progress and rising standards of living, there has been a global population explosion. As Figure 1.6 shows, the population of the world grew very slowly from 10,000 BC to the 18th century AD. But since then, as the sharp upturn in the curve indicates, the rate of growth of the world's population has increased dramatically. From AD 1 to 1750 the population grew at a slow rate (0.56 per thousand annual growth); at that rate it took 1,200 years for the population to double. Between 1750 and 1950 it grew at a faster rate (about 5.7 per thousand), one that doubled the population every 120 years.

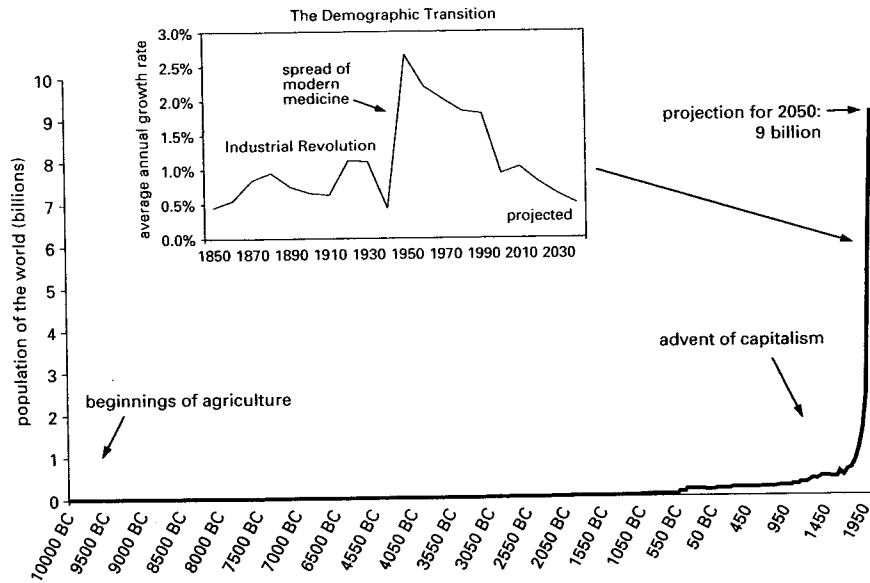


FIGURE 1.6 Capitalism and the population explosion. This figure charts the population of the world from 10,000 BC to the end of the 20th century. For most of the last 12,000 years, the total population of the world grew slowly, if at all, with periods of increase in good years followed by intervals of decline in response to climatic adversity and other calamities. There are about 20 cities in the world today whose populations exceed the entire population of the world—which was probably less than 10 million—11,000 years ago, when agriculture began displacing hunting and gathering. Population started growing rapidly in a few countries two centuries ago, but the world's population really exploded in the 20th century with the development of modern medicine and its spread throughout the world. While the number of people in the world continues to grow, the pace of growth is slowing (see insert). Demographers predict that the population of the world will stabilize at about 11 billion around the middle of the 22nd century.

Sources: United Nations Development Programme, *World Population From Year 0 to Stabilization* (United Nations, 1996); U.S. Bureau of the Census, *Historical Estimates of World Population* (1995) available at <http://www.census.gov/hpc/www/worldpop.html>; U.S. Bureau of the Census, *Total Midyear Population for the World: 1950–2050* (1995, updated 2/28/98), available at <http://www.census.gov/hpc/www/worldpop.html>.

Since 1950 the world's population has been growing so quickly (about 17.1 per thousand) that it will double every 40 years.

The rapid population growth of the past 250 years is a radical departure from the previous trend. This population explosion is a new social phenomenon seen only in the capitalist epoch. However, population growth has slowed in the United States, Europe, Japan, China, and some other parts of the world. Hence, it seems, as the insert in Figure 1.6 suggests, that the population explosion may soon be over.

While the recent spurt in the world's total population has been dramatic, there have also been important movements of people from one part of the world to another. In places such as North and South America and Australia, for example, entirely new populations came in, overwhelming and virtually eliminating the indigenous peoples. At the same time a large number of people found themselves being involuntarily transported from their places of birth in Africa to unfamiliar lands.

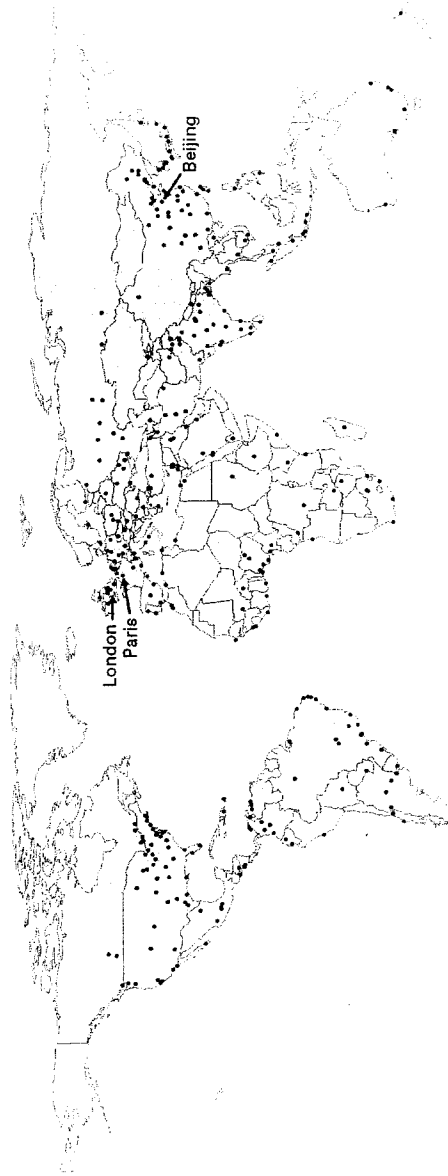
Many of the indigenous Indian populations of North and South America were decimated, with their remnants relocated to remote territories. Millions of Africans—conservative estimates suggest at least 10 million, others say perhaps 100 million—were transported in chains across the Atlantic Ocean, having been forcibly taken from their communities to become slaves in the Americas. However, perhaps as many as half of the captives did not survive the crossing and went to watery graves instead of being sold to plantation owners. Numerous Chinese and (Asian) Indians, recruited to work under conditions little different from slavery, were shipped to faraway places—the Chinese to build railroads in North America, the Indians to build them in East and Southern Africa.

Other populations migrated long distances when their traditional livelihoods were destroyed by changes in their homelands. Germans, for example, had to leave their country when they were subjected to political repression. Italians left when declining grain prices made farming no longer a viable way of life. Others emigrated when they found their traditional crafts made obsolete by new capitalist factories. A large number of Irish people found it necessary to emigrate when the potato crop, their main source of nutrition, was wiped out by blight in the middle of the 19th century. For similar reasons Poles, Greeks, Jews, Hungarians, and Russians all found that they needed to move. It matters little whether we say that they moved because of the "pull" of opportunities in new places or whether we attribute their migration to the "push" of circumstances at home that became intolerable. What is important is that they experienced fundamental changes in their lives, saw old routines disrupted, and pursued alternative opportunities in new lands.

Along with the migrations of people from one area of the world to another came significant changes in occupations. For example, in 1800 the overwhelming majority of Americans were food producers of one sort or another: independent farmers, food-producing slaves, or fishermen. Today only 2 percent of the U.S. population lives and works on farms, while another 3 percent works in the food processing and food service industries. This small fraction of the population (5 percent) is able to grow, process, and serve enough food to meet the needs of the whole country while at the same time producing a surplus that is exported.

As people left farming, another change became apparent, namely, *urbanization* and the growth of cities. Before the emergence of capitalism, most people lived in the countryside, not in urban areas. In the last few centuries, however, people have been drawn, or in some cases pushed, into cities. In 1800 only 6 percent of Americans lived in towns or cities with more than 2,500 people. Today three-quarters of the U.S. population lives in such urban areas.





**FIGURE 1.7** Cities of the world with more than a million inhabitants in 2002. Each of the dots in this figure represents a city of more than 1 million people (but not all cities of more than a million people are represented in the figure). Increasing concentration of people in cities—urbanization—has all along been an important consequence of the spread of capitalism. By 1850, three cities had grown to a size of more than 1 million people. London, Paris, and Beijing (the three arrows in this map pinpoint their locations). By 2002, as a result of rapid population growth and the expansion of capitalism throughout the world, there were 405 such cities (only some of which are shown in this figure).

Source: Tertius Chandler, *Four Thousand Years of Urban Growth: An Historical Census* (Lampeter, Wales, U.K.: St. David's University Press, 1987). Map generated by Deepita Sateesh.

London's population, only 70,000 in 1500, grew to 600,000 by 1700 and approached three-quarters of a million in 1800, making it then the largest English-speaking city in the world. Today, London has a population of 11 million, the New York metropolitan area, 17 million, and Mexico City, 18 million. Tokyo, the world's biggest urban area, is home to 28 million people.

The process of urbanization is not limited to the United States, England, Mexico, or Japan. Urbanization happens wherever industrialization takes place. As the economic historian Eric Hobsbawm argued in *The Age of Capital: 1848–1875*, capitalist economic development propels an exodus from rural areas to cities, pushes people to migrate from one region to another, and drives them to move from one town to another. In 1900, 9 of the 10 largest cities in the world were in Europe or North America, with Tokyo as the exception. Today, with the global spread of capitalism, 8 of the 10 are now in Asia, Africa, or Latin America, with New York and Los Angeles as the exceptions. In 1850 there were only 3 cities with populations exceeding 1 million people—London, Paris, and Beijing—but as Figure 1.7 shows, by 2002 there were cities of this size in all parts of the world.

Urbanization happened without anyone *planning* for it to happen: it occurred because individuals chose, for one reason or another, to leave their homes in the countryside and move to cities. Thus, the urbanization of the past few centuries is a prime example of how free markets can foster fundamental changes in society based on individual decisions.

In the waning years of the 20th century, Bill Gates, the founder of Microsoft and the richest man in the world (see Chapter 6), embarked on a program of offering free computers to all libraries in poor neighborhoods in the U.S., most of which were in rural areas. He imagined—and intended—that his program would halt the process of urbanization, since people in rural areas would now have access through the computers in their local libraries to most of what is available to denizens of urban areas. A story in the *New York Times* reported on this as follows: “Bill Gates predicted in 1995 that the Internet would help rural people stay put, in part because they would have the same advantages as city slickers in the virtual world.” Having offered this prophecy in his 1995 book, *The Road Ahead*, Gates recently revisited “the land of no stoplights” and had to concede that “the road ahead was full of blind curves.” The fact was that the introduction of computers had done nothing to halt, or even to slow down, the exodus of people from rural America. Indeed, many rural Americans used the new computers to help them find jobs in urban areas. Gates concluded: “I thought digital technology would eventually reverse urbanization, and so far that hasn't happened.”

## THE CHANGING NATURE OF WORK

The way people earn their livelihoods has changed as well. At the dawn of the capitalist era, most families consumed only what they themselves produced or what they could obtain by selling their own products. Except for slaves, most families owned the tools they needed to make a living. With the rise of capitalism, people have become increasingly dependent on employment, that is, on getting a job working for someone else. At the same time, they have become subject to the dangers and hardships of unemployment. When there is not a sufficient amount of employment available (not enough jobs to go around), unemployment leaves families and even whole regions destitute and desperate. It becomes a capitalist form

of plague, potentially affecting everyone except the independently wealthy and thus threatening almost everyone with insecurity.

Rapid change in the workplace makes even the most skilled workers vulnerable to unemployment as technological change renders their skills obsolete. Before capitalism, the son of a blacksmith could be confident that the skills learned in his father's shop would be a secure source of his livelihood. Under capitalism, a worker may spend arduous years learning specific skills, but new production processes can make them useless almost overnight. Ironworkers in the 19th century, for instance, completed long apprenticeships, learning exactly how much to heat the iron and how to process it. But when steelmaking rather than iron manufacture, abruptly replaced iron manufacture, the skilled ironworkers became obsolete, their distress written off as part of the social costs to be paid for technological progress.

The changes also transformed working conditions. As time went on workers found employment in huge factories and mills, in circumstances where dangerous machinery, poor lighting, intense heat, long hours, and the pressure to produce quickly combined to make such jobs hazardous and exhausting. Before the passage of protective legislation in the past century and a half, the number of people wounded in industrial accidents multiplied like casualties on a battlefield.

Nothing has been left untouched by the expansion of the capitalist economic system. Even people's experience of time itself has changed. Precapitalist lives tended to follow natural time, marked by the passing of the seasons and the movement of the sun and moon across the sky. Individual work tasks were performed irregularly, with periods of high work effort alternating with periods of rest. The work pattern could follow the natural rhythms of the worker, or it might be dictated by the natural rhythms of the weather. But in capitalist employment labor is paid for by the hour, and work tasks are defined with reference to how much time they take to perform. Starting and stopping time, lunch, coffee breaks, and even bathroom breaks are often measured in minutes. Clock time has supplanted natural time. Clocks can now be seen on public buildings, in schoolrooms, at factory gates, and on people's wrists. "Time is money," Benjamin Franklin said more than 200 years ago, previewing what was to come.

In recent years the trend toward working outside the home has reversed for some as modern communications technology has made it possible for people who do certain kinds of jobs—mostly well-paid writers, lawyers, professionals in finance, and others working for themselves—to work at home, "meeting" with clients and collaborators and selling their services over the internet.

## THE TRANSFORMATION OF THE FAMILY

Social and family life has also been transformed in the capitalist era. Although families remain important to our emotional lives and procreation, the household has been entirely reshaped and, as a productive unit, nearly eliminated. Before the advent of capitalism, a family of three generations and several married couples often lived within a stone's throw of one another or even under the same roof, sharing tasks and meals. By the mid-20th century in Western societies, the typical household had been reduced to a nuclear family (a family unit consisting of a mother and father and their children), with grandparents living in a nursing or retirement home and aunts and uncles scattered throughout the country. By the end of the

20th century, divorce, improved birth control, abortion, greater longevity, and increasing numbers of couples choosing not to get married had taken us even further from the traditional household. Households are much smaller now, consisting on average of fewer than three people; by 2000 unmarried couples constituted nearly 1 out of 10 of the 60 million U.S. households that were headed by couples.

At the same time, many of the customary functions of the family have been removed from the family's domain. Activities such as making clothes and preparing and preserving food that were once carried on at home are now performed mostly in factories or other market-oriented enterprises. The people engaged in such work outside the home today are often the very women (or their grandchildren) who once worked in their own kitchens or at the home loom. Much of the work of rearing children, providing education and medical care to family members, and accomplishing other tasks in the home has also been entrusted to outside professionals.

Finally, today's family finds itself in a greatly changed social network. Once, families tended to live in the same community from generation to generation, with skills and occupations being passed from parents to children and each family having an acknowledged and often hierarchically ordered place in that community. Today, few families remain in one spot from generation to generation. Many have to move in search of work. Indeed, it is common now for families to move several times in one generation, making it difficult to sustain their ties to any particular community. As a result, families cannot rely as much as they used to on a local network for support or assistance. This further contributes to people's use of purchased services and government assistance. The day care center and the babysitter have taken over for the grandmother or the older children. For many people today the idea of a neighborhood as a community of families lives on only as a source of nostalgia.

## THREATS TO THE ECOSYSTEM

In 1984 the name of a city in India, Bhopal, came to symbolize environmental destruction because an accidental discharge of poisonous vapor from a Union Carbide chemical plant there killed at least 2,000 people and permanently injured many more. In the years since the Bhopal disaster, many more environmental crises have occurred, and people have become increasingly aware of the threats facing the earth's ecosystem.

As population and production have soared, so too have the use and degradation of our natural environment. With the development of capitalism, elements of the ecological system such as air, water, soil, and weather have been altered more radically than they have ever been before in human history. CO<sub>2</sub> now being released into the atmosphere is creating a "greenhouse effect," and we are now experiencing global warming as a result. The consequences are far-reaching: possible melting of the polar ice caps, rising sea levels that may put large coastal areas under water, and potential changes in climates and rain patterns that may destroy some of the world's prime food-growing areas.

Figure 1.8 presents evidence showing that human activities such as those that involve the use of fossil fuels—coal, oil, and gasoline—have profoundly affected our natural environment. Increasing emissions of carbon dioxide into the air during the past century have not only resulted in measurably larger amounts of CO<sub>2</sub> in the earth's atmosphere but have also brought about perceptible increases in Northern Hemisphere average temperatures.

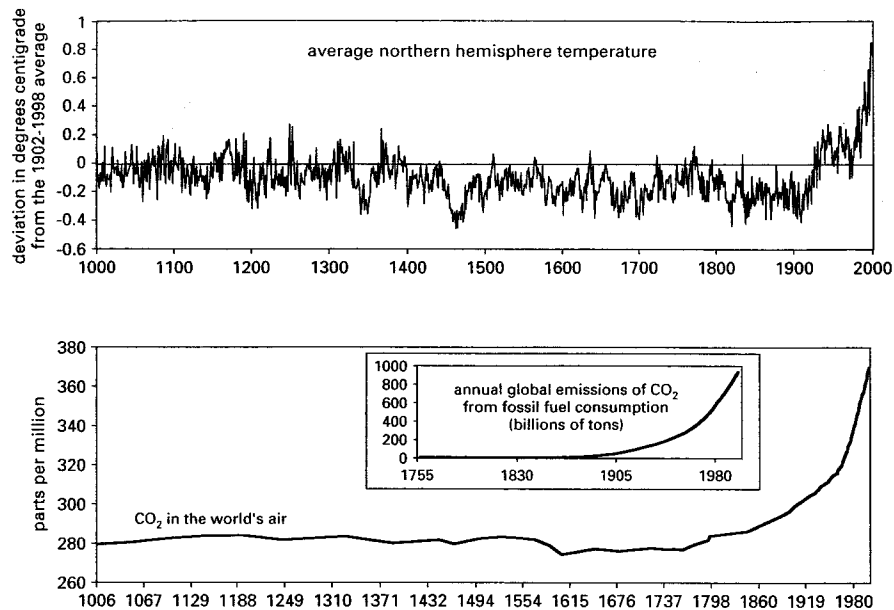


FIGURE 1.8 Fossil fuels, CO<sub>2</sub> emissions, CO<sub>2</sub> in the air, and global warming. For most of the past 1,000 years Northern Hemisphere temperatures and amounts of CO<sub>2</sub> in the world's air remained more or less constant. However, the growing use of fossil fuels such as coal and petroleum products in the 20th century is associated with amplified CO<sub>2</sub> emissions and more intense concentrations of CO<sub>2</sub> in the world's air. Indeed, the smallest of the three charts shows that CO<sub>2</sub> emissions from fossil fuel consumption have risen exponentially over the past two and a half centuries. These changes have in turn generated more "greenhouse gases"—gases that trap heat and prevent it from escaping—thereby causing global temperatures to rise. The end result is what is referred to as "global warming." The data on which the charts are based come from estimates of past temperatures based on studies of tree fossils, centuries-old ice, and other phenomena.

Sources: Michael Mann, Raymond Bradley, and Malcolm Hughes, "Global-Scale Temperature Patterns and Climate Forcing over the Past Six Centuries," *Nature*, no. 391, April 1998, pp. 779–87, data available at <http://www.people.virginia.edu/~mem6w/mbh99.html>; G. Marland, T. A. Boden, and R. J. Andres, "Global, Regional, and National CO<sub>2</sub> Emissions," in *Trends: A Compendium of Data on Global Change* (Oak Ridge, Tennessee, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, 2002), available at [http://cdiac.esd.ornl.gov/trends/emis/em\\_cont.htm](http://cdiac.esd.ornl.gov/trends/emis/em_cont.htm); World Resources Institute, *World Resources Institute Annual Report, 2001* (World Resources Institute, 2002). Joe Von Fischer of Princeton University and the Santa Fe Institute assisted in the creation of this diagram.

Average temperatures of the earth fluctuate from decade to decade under the influence of many factors, including reduced sunlight due to various factors including variations in solar radiation and volcanic events such as the massive Tambora eruption in 1815 and the Krakatau explosion in 1883. The Tambora volcano spewed forth so much ash in 1815 that 1816 became known as the "year without a summer." In that year frost covered the southern United States on the Fourth of July. The 1883 Krakatau eruption produced an ash cloud

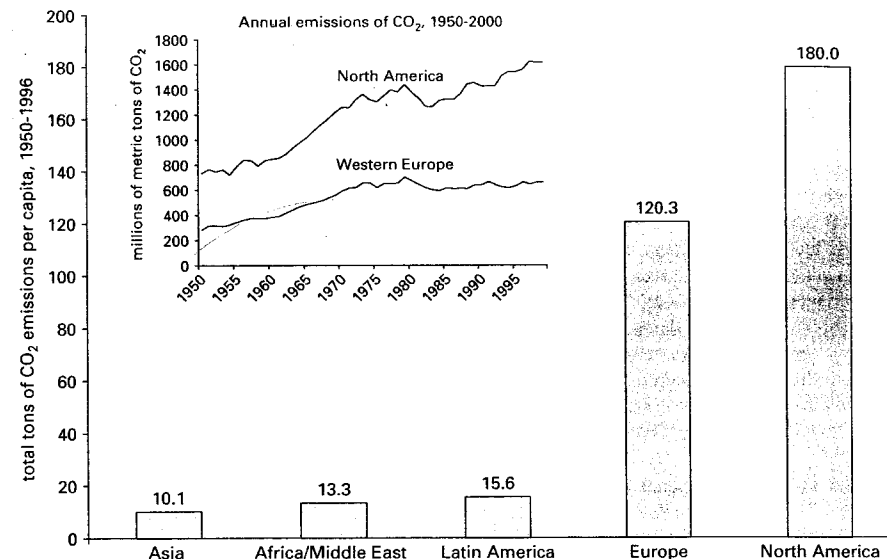


FIGURE 1.9 Cumulative CO<sub>2</sub> emissions per capita, 1950 to 1996. This figure shows that the rich countries in North America and Europe were responsible for most of the CO<sub>2</sub> emissions that polluted the earth's atmosphere between 1950 and 1996. Cumulatively over the last half century, North America (mostly the U.S.) was responsible for about half and Europe for about a third of the world's emissions of CO<sub>2</sub>. The bars show that, on a per capita basis, North America and Europe put nearly 10 times more CO<sub>2</sub> into the atmosphere than did the poorer nations in Asia, Africa, the Middle East, and Latin America combined. The smaller chart indicates that annual emissions from North America have continued to rise in the last 20 years, while those from Europe have leveled off.

Sources: G. Marland, T. A. Boden, and R. J. Andres, "Global, Regional, and National CO<sub>2</sub> emissions," in *Trends: A Compendium of Data on Global Change* (Oak Ridge, Tennessee, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, 2002), available at [http://cdiac.esd.ornl.gov/trends/emis/em\\_cont.htm](http://cdiac.esd.ornl.gov/trends/emis/em_cont.htm); World Resources Institute, *World Resources Institute Annual Report, 2001* (World Resources Institute, 2002).

that circled the world for more than two years and, as a consequence, reduced the earth's temperature. During the last century, however, average temperatures have risen in response to increasingly high levels of greenhouse gas concentrations. These have resulted from the CO<sub>2</sub> emissions associated with the burning of fossil fuels. As shown in Figure 1.8, the decade of the 1990s was by far the hottest in the past 1,000 years.

Figure 1.9 shows the environmental effects of different lifestyles and government policies. It demonstrates that responsibility for CO<sub>2</sub> emissions lies more heavily with the rich industrial nations in Europe and North America than with less developed countries in Asia, Africa, the Middle East, and Latin America. The smaller chart within Figure 1.9 shows that because of more energy-using lifestyles and a paucity of conservation-oriented government policies, North America (primarily the U.S.) emits CO<sub>2</sub> at a considerably faster—and faster growing—rate than does western Europe. In per-capita terms the U.S. is,

in fact, the biggest polluter in the world: in 2001 Americans accounted for more than 20 tons of CO<sub>2</sub> emissions per person, while Norway and Switzerland, countries with about the same levels of income per capita as the U.S., accounted for 7 and 5 tons per person, respectively. Looking at the data another way, the U.S. by itself emitted two and a half times as much CO<sub>2</sub> during the second half of the 20th century as did China and India combined, two nations that have a combined population of about eight times that of the U.S.

The list of fundamental environmental changes taking place in our times seems endless. The atmosphere's ozone layer, which protects us from the cancer-causing ultraviolet rays of the sun, is being depleted. Acid rain is destroying forests and killing life in lakes. Nuclear wastes, which must be stored "safely" for hundreds of thousands of years, are routinely produced. Tropical forests, which help to maintain the balance between oxygen and CO<sub>2</sub> in the earth's atmosphere, are being cut down. Many of the world's rivers are being polluted. With oil spills, the dumping of toxic and radioactive chemicals, and routine discharges from tankers and industrial plants, even the oceans are being spoiled. Toxic chemicals are leaking into the earth's groundwater, the last major source of pure drinking water. The destruction of natural habitats is causing the extinction of increasing numbers of animal and plant species. Insecticides and herbicides are poisoning prime farming soils, and vast areas of farmland are being destroyed by urban development. These changes in our physical world, especially when taken all together, threaten destruction on a scale that we cannot now even begin to calculate.

Just as people responded to economic insecurity in the 19th and early 20th century by demanding that governments assist them in times of need, pressures have been mounting in the last few decades for protective environmental policies. Some of these have been very effective, resulting in cleaner air and water in many parts of the U.S. and a greatly reduced use of energy in much of Europe. The main lesson is that environmental problems often cannot be addressed without cooperation among nations. The successful international effort to reverse the depletion of the ozone layer is an example of the kind of cooperation that is needed.

Other international efforts to reduce pollution have been less successful, however. In 1997 many nations came together in Kyoto, Japan, to work out a plan to reduce emissions of CO<sub>2</sub> on a worldwide basis. The meeting, organized by the United Nations, was called the United Nations Framework Convention on Climate Change, and the plan that came out of it is referred to as the Kyoto Protocol. By 2003, 111 nations, including all the member states of the European Union, had ratified the Kyoto Protocol, agreeing to reduce their CO<sub>2</sub> emissions by specified amounts each year. But the governments of a number of countries that are major CO<sub>2</sub> polluters—including China and the United States—have refused to sign on to it. As a result, the Kyoto Protocol regulates only 44 percent of the world's emissions of CO<sub>2</sub>.

## NEW ROLES FOR GOVERNMENT

Government and people's relations to government have also been altered since the rise of capitalism. In 1500 much of what was to become the capitalist world was ruled by some type of despot, with kings and emperors basing their claims to authority on God's will, hereditary right, or simply brute force. There were few ways in which ordinary people could protect themselves from the arbitrary powers of such rulers. But governments played a minor role in most people's daily lives; tax collection was typically nonexistent or

ineffective, while compulsory schooling, permanent police forces, and standing armies did not become common until the 19th century.

Hereditary rulers were challenged by the British revolutions of the 17th century and by the American and French Revolutions of the 18th century. These revolutions established the important principle of governing with the consent of the governed, although only property-owning freeborn (nonslave) males gained the right to vote. But in Europe and the U.S. these revolutions placed important limitations on absolute rulers, and eventually they were followed by written constitutions, the abolition of slavery, widespread male suffrage, elimination of property qualifications for voting, and the extension of the franchise to women and minorities. In the 19th and 20th centuries, largely as a result of intense and lengthy struggles by workers, antislavery groups, suffragists, and others, all the major capitalist countries participated in the growth of democratic government. As governments became more democratic, they came to play a major role in providing such services as public education for the young and income support and health care for the elderly.

In the late 19th century in Europe and later in North America and other parts of the world, governments increasingly also took responsibility for providing assistance to the unemployed and those unable to work. Today, in western Europe and to a lesser degree in the United States, many people expect governments to provide something like a social safety net, especially during periods of economic decline. Moreover, governments have become major employers as well.

But while government in most countries has become more democratically accountable, everywhere it has also become more intrusive. In the past century governments have attained increased powers to invade the privacy and influence the sentiments of the citizenry. Television and other modern communications media give heads of state enormous influence in shaping people's opinions, while modern information technology allows government easy access to our location, private messages, and economic activity.

## GLOBALIZATION

The finale of Warner Brothers' blockbuster Matrix film trilogy, *The Matrix Revolutions*, opened simultaneously on November 5, 2003, on 10,013 screens in more than 50 countries and in 43 languages. On that day at precisely the same moment—6 a.m. in Los Angeles, 9 a.m. in New York, 5 p.m. in Moscow, 11 p.m. in Tokyo, and so on—moviegoers watched the title shots appear on the screen as this first ever global debut of a film began.

The president of Warner Brothers Entertainment, Alan Horn, called it "showmanship." "It's theatrical, it's fun, it's exciting," Horn said about the megaopening. He also explained that by making the film available in theaters around the world he hoped to limit the profits of film pirates, who copy a film and distribute it globally (as they often do if a film opens in one country but cannot be seen in theaters in other countries until much later). Like many others, Horn understands that globalization means that many aspects of our life, from our entertainment to the enforcement of property rights, are no longer local or even national matters; they are global.

Capitalism has accomplished what not even the most powerful rulers in the past were able to do: it has brought the entire world into a single all-encompassing system. Alexander

the Great conquered much of the world in the fourth century BC, expanding the reach of Greek civilization as far as India, but he soon retreated, leaving only traces of Greek culture behind. The Roman Empire at its height extended from the British Isles to the Middle East, at most a few thousand miles. In the two centuries following Muhammad's death in AD 632, his influence expanded well beyond Arabia, and Islam became the dominant force in a swath of loosely affiliated states stretching from Spain to what is now Indonesia—a third of the way around the world. But none of these empires touched more than parts of the globe. Only the capitalist economy, with a built-in tendency to expand and with the help of the 20th-century revolution in communications technology, has reached entirely around the world, obliterating distances, spawning common languages and appetites, and bringing most of the world's peoples into a single interdependent system.

Look at the cover of this book. The two women pictured in the upper photograph are from Bangalore, India, and they are responding to customer service inquiries placed via 800 numbers to companies such as General Electric, Dell Computer, America Online, and British Airways. But they are not living in the U.S. or England. Rather, they are in their hometown working at a "call center." They and others like them are doing back-office work for global corporations that, in order to cut costs, are "outsourcing" tasks such as customer service to India, where English is spoken and people are willing to work for a fraction of what American workers are paid. To facilitate the growth of this type of employment, the Indian government has recently installed reliable high-capacity telephone lines that make it possible for a person working in an Indian call center to communicate with customers overseas without sounding any different from a person working in the same country as the corporation being called.

To remove any suspicions that the person responding to a service call from the U.S. might be a foreigner, the young Indian women in the cover photograph were trained to sound just like Americans. To accomplish this they watched old episodes of *Friends* and *Ali McBeal* on videotape and learned that "Bimmer" refers to a BMW. In addition, the women have adopted American-sounding names. According to the story in the *New York Times* for which the photograph of the two women served as an illustration, they have assumed the names "Naomi Morrison" and "Susan Sanders" and, with accents one might hear at Wrigley Field, they have also begun pretending that they are residents of Chicago.

There are 60,000 call centers in the U.S. employing at least 3.5 and perhaps as many as 6 million people, three out of four of whom are women, most accepting relatively low wages. The number of people employed in U.S. call centers is roughly the same as the number of people working as truck drivers, assembly-line workers, or public school teachers. But the number of people employed in U.S. call centers is not likely to grow because competition impels companies to try to cut costs, and one good way of cutting costs these days is to outsource customer service tasks to a country such as India, where the average annual income per person is \$500 and many people are happy to work for the \$200 per month they can earn working in a call center.

The picture on the bottom half of the cover is a shot of the port of Hamburg, Germany, showing cargo containers that are about to be, or have just been, loaded onto or unloaded from the container ships that are also visible in the photograph. "Containerized shipping," as it is called, accounts for 90 percent of the world's trade (by value), and there are about 8,000 container ships currently in service around the world. Container traffic is measured on the basis of "twenty equivalent units," or TEUs, with each 20-foot-long container being

counted as one TEU and each 40-foot long container (the only other size) as two TEUs. In 2001 Hamburg was the ninth-busiest container shipping port, accounting for 4.6 million of the 360 million TEUs that passed through the world's ports in that year. The particular containers shown in the cover photograph are filled with goods coming into or being exported from Germany and other European nations.

The fact that there is now a single world market for goods and services of all kinds means that producers depend on buyers worldwide for their livelihood. When the U.S. economy is booming and American wages are on the rise, automobile workers in South Korea prosper. The globalization of the economy also means that Indian software developers are constantly looking for ways to edge out competitors in Silicon Valley (and vice versa), and highly trained Indian radiologists (many of them having earned their MDs in American medical schools) are now providing interpretations of electronic images (X-rays and the like) at a fraction of the price usually charged by comparably trained American doctors (see box, "Radiology Sweatshops?" on next page.).

Similarly, the clothing worker stitching shirts in the U.S. is looking for ways to stay ahead of the competition in Sri Lanka, where the stitchers are paid less than one-tenth of what a comparable U.S. worker makes. Most large companies now consider the entire world not only as the market for their products but also as offering potential locations for production units. And, as readers of this book may already know, American students seeking admission to colleges or graduate schools now face competition from students from all over the world. The same is true for many jobs in the rapidly expanding information-based sectors of the U.S. economy.

Trading over long distances has been integral to the functioning of capitalism since its inception. The huge market fairs in Europe from the 15th to the 17th centuries attracted merchants from hundreds of miles away and even from beyond Europe. They often brought with them lightweight luxuries such as spices and precious metals. However, long-distance trade in other goods was relatively insignificant. As noted earlier, transportation costs for heavier products were very high, and other difficulties blocking the transport of goods over long distances included brigandage, piracy, and the many local transit taxes levied by the rulers of the small kingdoms and principalities that then made up Europe. In the last half-century, however, there has been a dramatic increase in long-distance trade. In 1950 only 8 percent of the world's output was exported to other nations; now the comparable figure is almost 30 percent.

It now makes sense to think of the entire world system of investing, buying, and selling as a single global economy. National boundaries still matter, of course, but much less so than in the past: goods, money, information, and, to a lesser extent, people pass with only minor impediments from country to country. The process of globalization has challenged national governments, for it makes them more interdependent. Decisions made by the U.S. government or by the European Central Bank have ripple effects that extend throughout the world. The inability of Mexican or Russian borrowers to service their foreign debt can send shock waves through Wall Street and from there to the U.S. Treasury Department.

Globalization, as we have said, concerns the international movement of money, goods, and even people in search of a better livelihood. But globalization is not simply economic: it concerns languages, political rights and movements, what people value and admire, how people worship, what they eat and dance to, and the arts. The Indian women at the call center in Bangalore are able to imitate Chicago accents and discuss recent Chicago Bulls games because they see the Bulls on TV and hear Chicagoans on the radio.

## "RADIOLOGY SWEATSHOPS"?

**W**ho's afraid of globalization? Call-center employees. Auto and garment industry workers. Computer programmers. Data-entry personnel. People who compete with poorly paid workers in the rest of the world. How about doctors?

When a doctor at Massachusetts General Hospital began using radiologists in India to read X-rays and MRI scans in the fall of 2002, high-priced doctors started talking like auto workers. It's a "nail in the coffin of the job market" wrote one (anonymously) on the radiologists' website, AuntMinnie.com. Another asked: "Who needs to pay us \$350,000 a year if they can get a cheap Indian radiologist for \$25,000?" Still others talked about the "radiology sweatshops."

There is an acute shortage of radiologists in the U.S. Advertised vacancies rose from less than 100 per month in the mid 1990s to well over 500 a month in 2001, and the chairman of the board of chancellors at the American College of Radiology said of the shortage: "It's almost of crisis proportions." But there are many well-trained English-speaking radiologists in India. Add to this the fact that it is difficult to get U.S. radiologists to work nights, and nighttime in the U.S. is daytime in India.

X-ray, MRI, and other images can be beamed to medical centers in India instantaneously. The Indian radiologists are not licensed to do diagnosis, but they can perform nondiagnostic tasks such as converting two-dimensional images from scans into the three-dimensional images that surgeons find more informative. Arjun Kalyanpur is a doctor who had been on the faculty at Yale and moved back to India. He and a partner read about 100 scans a day, including some from the Centre Community Hospital in State College, Pennsylvania. The staff radiologist at the community hospital is entirely happy with Dr. Kalyanpur's work, but he did not know where it was done. "Is he actually in India?" the doctor asked when told that Kalyanpur worked in Bangalore.

Other areas of medical practice will also be globalized. Specialized firms in Ireland, India, and other countries have long handled billing and the processing of insurance claims for U.S. hospitals. But now images of tissue can be transmitted electronically, to be analyzed by specialists at remote sites. Robotic microscopes allow a doctor or technician to be oceans away from the slide under the microscope. Even the monitoring of patients in intensive care units can now be performed at remote sites. While this off-site monitoring is currently done within the U.S., there is no technical reason why it could not be done anywhere in the world where there is the necessary expertise.

U.S. medical institutions not only buy radiology and other services from the rest of the world, they sell, too. "I think the opportunities for U.S. health care internationally probably are very large," said Dr. Ronald Weinstein, head of pathology at the University of Arizona College of Medicine, where plans are underway to market diagnostic and other services around the world.

Sources: Andrew Pollack, "Who's Reading Your X-ray? Jobs in Medical Care, Too, Can Be Outsourced Overseas," *New York Times*, Sunday, November 16, 2003, Section 3, p. 1; www.AuntMinnie.com.

Globalization, like technical change, is a source of affluence for many, but it can quickly make a once cutting-edge industry or job skill obsolete, causing unemployment and financial hardship for the people involved. The citizens of most democratic nations have pressed their governments for protection against the vagaries of the global marketplace, in some cases seeking to limit the extent of global exchange. In some democracies, especially those in western Europe, governments have implemented extensive unemployment insurance and offered subsidies for retraining and relocation to workers in declining industries. These programs are expensive, of course, and many governments are reluctant to raise the taxes necessary to fund them for fear that higher taxes will induce some businesses to relocate to other (lower-tax) nations, which would only increase economic insecurity. Many fear that globalization increases economic insecurity while at the same time diminishing the power of governments to implement programs that might make people more secure.

Underlying such fears is a simple fact: the economy is now global while government is still local. The global economy is thus interconnected, while the power to coordinate it is dispersed among more than 200 national governments, a handful of international bodies, and a few thousand large corporations. Power in the global economy is not distributed among individual citizens and consumers. Rather, it is held by a small number of powerful institutions. For example, the World Trade Organization, which regulates the terms on which nations exchange goods and services, is deliberately structured to limit input from ordinary citizens.

The heads of the world's 1,000 largest corporations, producing 80 percent of the globe's industrial output, could all fit into a medium-sized concert hall, for example, Alice Tully Hall at Lincoln Center in New York City. About 2,000 corporate leaders, along with a few government officials, actually do come together annually at a ski resort in the small town of Davos, Switzerland. Calling themselves the "World Economic Forum," this exclusive group has been assembling there for more than 30 years, but these days extraordinary security measures are adopted to protect the participants from antiglobalization protesters, among others: the airspace over Davos is closed during the week-long conference, hundreds of police officers surround the hotels where the attendees meet, and 6,000 Swiss soldiers are on patrol nearby.

Some observers have hoped that global leaders such as those who meet in Davos would work together to regulate the world economy in ways that would protect both people and the environment from the social costs generated by multinational capitalist enterprises. However, the fact is that corporations have at least as much interest in competing as in cooperating, while their interest in protecting society and the environment from the consequences of global profit seeking is tempered by their opposition to restrictions on their own profit making. And in the absence of anything resembling a world government, all international cooperation must come about through negotiations among independent governments, but, of course, any government can refuse to participate in such negotiations.

## CONCLUSION

To lay the foundations for an understanding of capitalism, this chapter has focused on the technological revolution, increasing material well-being, the population explosion, the growth of cities, the transformation of work and the family, threats to the ecosystem, new

roles for government, and globalization. The list of changes that have come with capitalism could be expanded, but the set of transformations discussed here establishes the basic point of the chapter: capitalism generates perpetual change.

It could be argued that the rise of capitalism was not so much the cause as it was the effect of the changes outlined in this chapter. Might not advances in science and technology have led to the development of capitalism? Or could the population explosion have been the cause and capitalism the consequence?

Science and population growth are undoubtedly important, but before capitalism they did not have cumulative effects. Scientific knowledge and technology were more advanced in the Islamic world and China, for example, than they were in Europe before 1500. But neither Islamic science and mathematics nor the Chinese inventions of gunpowder, magnetic compasses, cast iron, moveable type, canal locks, and machines for keeping time led to sustained technological progress or industrial development. It is also true that periods of rapid population growth have accompanied short periods of economic expansion throughout the 100,000 or so years of human existence, but as Figure 1.6 shows, it was not until the advent of capitalism that rapid population growth became the rule rather than the exception.

In the last 500 years virtually all traditional patterns of life and livelihood have been disrupted and reconstructed. The world and the world's peoples have been shaken up and remade. In the chapters to follow we discuss the reasons why capitalism is such a powerful source of change and why it affects not only the economy but also politics, beliefs, and many other dimensions of social life.

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# CHAPTER 2

## People, Preferences, and Society

Parents everywhere are sometimes late in picking up their children at day care centers, thereby inconveniencing the staff. An experiment, carried out in Haifa, Israel, was designed to find a solution to the problem of tardy parents. At six randomly chosen centers a fine was imposed for lateness, and a few other centers were selected to serve as a “control group” (nothing was changed at these centers). Staff at the centers with the newly instituted fines expected that punctuality would improve. Contrary to these expectations, however, there was an *increase* in tardiness when the fines were imposed: the number of parents picking up their kids late more than doubled. Even more striking was the fact that when the fines were revoked, the parents’ higher rate of tardiness persisted. Meanwhile, the amount of parental lateness at the centers in the control group did not change.

The economists who designed the Haifa experiment were quite surprised by the results. Most economists assume that people seek monetary gain and try to avoid losses. From this perspective, the day care centers’ fines should have given the parents an incentive to be more punctual. But the plan backfired. After analyzing the results, the designers of the experiment concluded that the imposition of the fines must have unintentionally suggested to the parents a new way of thinking about their behavior. Whereas before the experiment lateness had been seen as a violation of a *moral obligation* (to pick up the kids on time), after the imposition of the fines being late could be viewed as a *choice* between picking up the kids on time and paying a price (the fine) for being late. And under the new system many parents were apparently willing to pay the price. The designers of the experiment titled their report “A Fine Is a Price.” Their main finding was that imposing the fines had signaled to the parents that they were now in a marketlike relationship to the day care staff—one in which they could *buy* lateness. Once the fines had been

