

CHAPTER 15

Global Society in the New Millennium

The meeting at the United Nations in 2003 was the most momentous since October 25, 1962, when American Ambassador Adlai E. Stevenson confronted USSR Ambassador Valerian Zorin publicly over the evidence of newly-emplaced Soviet missiles in Cuba. Now, on February 5, 2003, U.S. Secretary of State Colin Powell was before the UN claiming evidence of newly-emplaced weapons in Iraq. “The gravity of this moment is matched by the gravity of the threat that Iraq’s weapons of mass destruction pose to the world,” Powell intoned. The threat ranged from nearly completed nuclear bombs to anthrax. Powell held up before the assembly and the worldwide television audience, a small vial of white powder, which he said corresponded to the amount of anthrax that had shut down the U.S. Senate during the terrorist attacks of September 2001. Yet, he added, the amount of anthrax Iraq was suspected to possess amounts to many thousand times the volume of the small vial displayed.

Powell’s presentation was intended to gain widespread international support for a U.S. invasion of Iraq to disarm the nation’s dictator, Saddam Hussein. The effect was not as intended. Soon after Powell’s presentation, and for months and years afterward, international journalists, security analysts, and academics disputed and eventually disproved all of Powell’s allegations. The United States invaded Iraq without UN support on March 20, 2003, but no weapons of mass destruction were ever found.

The invasion’s effects remains a profound turning point in global political dynamics. After the invasion of Iraq and reduction of its society to chaos, radical Islamic movements accelerated in some parts of the Middle East and Asia. Leftist candidates opposed by the United States such as Hugo Chavez in Venezuela and

Evo Morales in Bolivia enjoyed electoral success. Perhaps most significant for the second decade of the twenty-first century, the expense of wars in Iraq and Afghanistan, in combination with military actions in Pakistan and Libya, became part of a mounting U.S. deficit that produced a downward spiral of economic recession that came to affect Europe and Asia deeply. Global military spending would rise by nearly 50 percent between 2001 and 2011, with half of that spent by the United States alone. Global public debt, which had increased at a steady rate of roughly a trillion dollars a year in the late twentieth century, was sharply affected by the U.S. dive into major war expenditures in 2003, after which global debt began to accumulate at a rate of about 3 trillion dollars a year; in 2011 it reached about 43 trillion dollars, of which about a quarter belonged to the United States. By 2011, these dynamics had joined with debt crises in Europe and in Japan, as well as slowed markets for goods from exporting countries such as China and the Philippines, to create a global economic crisis. The effects were economic constriction in the developed countries, and lost opportunities for growth in developing countries.

Two Worlds on One Earth

In the industrialized areas of North America, Europe, Australia, and parts of Latin America and East Asia, the condition of human life changed dramatically during the twentieth century. At the beginning of the century, the industrialized world was connected by telegraph wires, rudimentary telephones, and steamboats and steam engines. By the end of the century, diesel engines, the automobile, electric trains and trolleys, jetliners, digital communications, and space shuttles had transformed this world. Public sanitation and water management was already well developed by 1900 and continued to be refined. Fertilizers, insecticides, and mechanized farming produced surpluses of varied, nutritious foods.

In the industrialized world, epidemic disease had been vanquished before a third of the twentieth century had passed. Great advances had been made in ameliorating common heart diseases and in curing or controlling some cancers. By the end of the century, the entire human genome had been mapped, opening the possibilities of technological intervention to end certain genetic defects or to use genetic material to cure disease. Industrialization had reached a point—particularly in North America and Europe—where workers enjoyed unprecedented productivity, safety, and convenience, with lower working hours, high wages, and retirement benefits. Housing was sufficient and safe. In this world, there had been an information revolution. Computers, high-speed phone lines, and wireless and satellite communications permitted all but the poorest inhabitants to have constant access to news, educational information, personal contacts, and entertainment. Most important, this world continued to generate capital for further investment and for research and development. Its plentiful educational institutions assured continuing dissemination of new knowledge and continued application of new technologies.

But a large portion of people sharing the earth did not live in this world. They lived in a world in which human and animal labor were still the basis of agriculture, and electricity and motor vehicles were unusual or unreliable. In their world water supplies were contaminated by bacteria, and sanitation systems were rare or poorly managed. The same infectious diseases that had been all but banished from the industrialized world still killed a majority of humans in this other world in the same way and at the same rate as they had done centuries before.

Agriculture in much of this world was inefficient or uncertain, particularly in times of drought. Telephones were available, but not on a universal, personal basis as in the industrialized world. Entertainment was limited to broadcast television or the occasional cinema. When wage work was available, the pay was very low and the hours were unregulated. A majority of children between the ages of five and fourteen were working for money needed for their or their family's survival. There were few—sometimes no—laws requiring safe working conditions or safe construction of houses. When earthquakes, floods, or fires occurred, casualties were ten or twenty times higher than they would have been if houses had been built to withstand catastrophe. And this was a world without capital. In times of famine there was relief from international agencies, and sporadically there was foreign aid for agriculture or education. But most often the gift that came from the industrialized world was a modern rifle or antiaircraft weapon, given in the interests of the giver.

Class Stratification in the Global Society

Historically, societies have handled questions of class inequality in different ways. Successful societies have mitigated the ability of elites to prey upon and eventually destroy weaker or poorer majorities. They have also maximized access to greater rewards for all in the society, so that the most talented and most creative will be able to make timely contributions to shared problems or opportunities. The least successful societies have permitted those who were born at the top to retain their privileges through contrived barriers to competition or ruthless exploitation of the majority. How the global society will behave in the twenty-first century is unclear. It might appear that the international organizations that are promoting global economic stability and limiting environmental deterioration would produce a generalized improvement of life in all regions, whether they are rich or poor, powerful or weak. But in the twentieth century, gross disparities in well-being between societies, nations, and regions grew sharper after the middle 1970s, and the gap continues to widen in the twenty-first century.

Mapping Disparities

In 1980 the Brandt Report, sponsored by the World Bank, underscored a strong global division between the North (North America, Europe, and industrializing Asia) and the South (Central and Latin America, equatorial and sub-Saharan



AP Photo/Lefteris Pitarakis

Riot police in Athens, Greece, confront protestors massed on the steps of Parliament in June 2011. Widespread, prolonged riots across Greece protested demands from the International Monetary Fund and the influential nations among the European Union—primarily Germany and France—that Greek social programs for health, education, and support of the unemployed be gutted. The debts of Greece are mostly foreign-owned, and some have been commoditized by international firms. The EU and the IMF continue to work to avoid a Greek default, partly by demanding further cuts in Greek social programs.

Africa, and Southeast Asia). The North was agriculturally productive, technologically advanced, and healthy, with good literacy rates. The South often struggled to eat, had few modern conveniences, suffered from epidemic disease, and had low literacy. Brandt quantified the difference in a way that is now famous: One-fourth of the world's population lives in the North, but they have four-fifths of the world's income.

In a general way, the North/South dichotomy still exists (if one excludes Afghanistan and Bangladesh from the North and Australia from the South). But it is probably more practical to realize that there are a small minority of the global population who not only control most of the world's income and investment but also have a standard of living that is centuries apart from that of some other people. Most important, this stratum of the global society does not necessarily follow the contours of nation-states. In most of the wealthiest nations there are pockets of poverty where the standards of living are not greatly different from those in the majority of the world's poor countries, just as in some generally

poor societies there are pockets of great wealth. The real issues are the factors that control quality of life, length of life, access to education, leisure, and support in old age. As a general rule (though there are exceptions), wealthier societies do better at providing higher levels and more widespread availability of these benefits. For this reason, the distribution of wealth in the world is important to understand as a background to understanding other disparities.

Defining Wealth and Poverty

The World Bank has established an international poverty line. This is based on Purchasing Power Parity (PPP), which means that instead of translating income into an absolute currency unit (such as U.S. dollars), the income is weighed against local prices and rates of inflation. An individual is poor, in the World Bank's view, when his or her annual income could buy less than what about \$500 could buy in the United States at present. Since prices tend to be low in the developing countries, this is calculated as being about \$456.25 a year, or \$1.25 a day. The percentage of the present global population that falls below that annual income line has been falling since 1990, primarily because of the economic development of China, Indonesia and the Philippines. But it is still about one-fifth, or about 1.4 billion of the world's 7 billion people. In case this standard should be considered too conservative, the World Bank also calculated a more generous poverty standard, in which PPP was about \$650. Redrawing the line, slightly under half of all living people fell below it. The corresponding average for all nations considered to be in the upper income ranks (thirty-three nations plus Hong Kong in the World Bank's study) is \$26,000. This means that the total income of the world's poorest one-fifth is equal to 0.33 percent of the total income of the top fifth. Overall, about one-seventh of the people on earth receive 80 percent of its income, with a middle group sharing the remaining 20 percent, and the poorest one-fifth having essentially no income at all.

Accumulated wealth is a different issue from income: Wealthy people are able to save and invest money, whereas poor people must spend all or most of their income to survive. In 2000 the United Nations collected its first comprehensive data on world wealth accumulation, and when the results were released in 2006 they produced shock. The top 10 percent of the world's adults controlled 85 percent of its wealth, and the top 1 percent alone controlled 40 percent of the wealth. In contrast, the poorest half of the world's adult population controlled only 1 percent of its wealth. The greatest collection of wealthy individuals was in the United States, where accumulated wealth averaged \$181,000. In India the average wealth accumulation per adult was \$1,100, and in most of Asia and Africa adults owned nothing at all.

There is a loose correlation between national wealth averages and the number of spectacularly wealthy individuals in any given society. There are about seven billion people on the earth, of whom a thousand are worth more than one billion dollars. Half live in the United States and Canada, while the rest are divided between Europe and Eastern Asia. Individuals worth more than \$50 million

number about 80,000 worldwide, and there are about 24 million people whose wealth amounts to between one million and 15 million dollars. About 330 million have a net worth of between \$100,000 and one million dollars. This means, globally, about 360 million people on the earth have wealth of more than \$100,000. At the other end, three billion people have accumulated wealth of less than \$10,000 each; of those, 1.1 billion have less than \$1000 of accumulated wealth. But these figures do not precisely describe levels of well-being within national societies. India, for instance, has 170,000 individuals with wealth between one million and fifty millions dollars, but it also has 307 million people who have accumulated wealth of less than \$1000. The United States, which has the highest number of billionaires, today is far outranked in average adult wealth by Switzerland, Norway, Australia and Singapore. The figures suggest that societies like India and the United States are marked by extreme disparities in the distribution of wealth.

Is the gap—globally and within societies—in income between the wealthiest and the poorest becoming worse or better? This is difficult for historians to reconstruct, but studies suggest that over the course of the last two hundred years, the trend has been in one direction only. In 1820 the global income ratio between the richest fifth and the poorest fifth was estimated at 3 to 1. In 1870 (that is, after the initial industrialization of Western Europe and the United States) it had risen to 7 to 1. In 1913, before the disintegration of the European empires, it was 11 to 1. In 1960, after the United States, Europe, and Japan had largely recovered from World War II, it was 30 to 1. In 1990, it was 60 to 1; in 2000 it was 75 to 1. These figures relating to imbalances in income can be considered in light of the following regarding the human condition of the majority: Of the 7 billion people on earth, 3 billion do not have modern sanitation facilities. About 2 billion do not have access to electricity in their homes. About 1 billion have unsafe drinking water and inadequate housing. Slightly under 900 million have no medical care, and slightly under 800 million are chronically malnourished.

Attempts at Global Coordination

From the 1990s, “globalization” as a way of describing unprecedented fluidity in the movement of people, money, and ideas around the globe has become a cliché. The origins of globalization lay in the institutions of finance and economic development put in place as the Second World War came to a close. The programs not only made capital and expertise available to nations emerging from the ravages of war or imperialism, but also established rules that allowed failing nations to be disciplined by an international consortium. Over time, these institutions led to the redistribution of capital and the lowering of barriers to trade. The late twentieth century experienced significant economic stimulation from these changes, but in the twenty-first century another side of the changes is being experienced: Economic crises in one society can be quickly transmitted around the world,

while competition for markets and profits tends to drive living standards in the direction of huge, poor majority.

The Militarized United Nations and Unpopular Dictators

Since its declaration in favor of universal human rights in 1948, the United Nations has maintained a policy of humanitarian intervention, which has consisted primarily of the movement of food and medicines into areas of crisis, and help in the care and resettlement of refugees. Apart from a small security force, however, the United Nations did not maintain troops in its early phase. Certain international military interventions, such as that in Korea during 1950 through 1953, could take place under the temporary aegis of the United Nations. Such an arrangement was invoked after the leader of Iraq, Saddam Hussein, decided to invade and occupy the neighboring kingdom of Kuwait in 1990 (see Chapter 14). The United Nations officially approved of a military coalition to drive the Iraqi army out of Kuwait. The United States took the lead role, and the U.S. Congress made its own declaration of war against Iraq. Nevertheless, the Persian Gulf War was technically a war of the United Nations allies against Iraq.

Soon after the conclusion of the war in September 1991, a similar coalition attempted to resolve the ongoing civil war in Somalia to prevent millions from starving. This operation was not a success, and U.S. President William Jefferson Clinton withdrew U.S. forces in 1993. But secretary-general of the United Nations Boutros Boutros-Ghali made the extension of humanitarian intervention to military action official United Nations policy in 1992. Soon after, a conflict of international proportions broke out in the territories of the former Yugoslavia. In 1991 the state had in practice disintegrated, and the leader of Serbia, Slobodan Milosevic, attempted to bring all regions of the former Yugoslavia under Serb domination. The UN forwarded a very limited military intervention which depended on cooperation with Serbian forces to restore the peace. For three years Bosnia and neighboring regions were ravaged by the fighting, until political leaders of the factions agreed to a peace settlement in 1995 that awarded generous portions of Bosnia to the Serbian forces. When the same general conflict spread to Kosovo a few years later, the UN tried air strikes to force Milosevic to withdraw his forces. When this did not succeed, the UN committed a substantial troop presence, but negotiations concluded in 1999 with most Muslims and Albanians driven from Kosovo, as Milosevic had intended.

UN military forces were mobilized again in 1999 to intervene in the worsening situation in East Timor. In 1975 East Timor had declared independence from Indonesia. The UN endorsed independence, but the United States repudiated it, wary that a communist government might be established. With U.S. endorsement, the Indonesian govern invaded East Timor and crushed the independence movement. Under subsequent Indonesian rule, state terror and corruption were common. In 1999 the armed UN oversaw a referendum among the East Timorese who voted for independence. Thereafter the UN governed East Timor as it made the transition to "special autonomy" within Indonesia.

Subsequently a vote among the East Timorese again confirmed the popular preference for independence, and in May 2002 East Timor became the world's newest—and instantly its poorest—nation. It was also the first nation in history to gain its independence from the United Nations rather than from an empire or former occupying nation-state.

The two experiments with armed intervention by the UN had conflicting results. Serbian aggression under Milosevic produced most of the results he desired—"ethnic cleansing," or the removal of non-Serb populations from central Yugoslavian lands—and a great deal of death and destruction before the combined military and political interventions of the UN stopped the fighting. On the other hand, Milosevic himself did not prosper. In 2000, he was voted out of the presidency and was extradited by the UN for trial at the international criminal court in The Hague, in the Netherlands. He died in custody in 2006 before his trial for war crimes and genocide could conclude. In East Timor, however, refugees who fled the fighting before UN intervention have returned and there is no fighting. The country remains dependent on Australia for its economic and industrial development, particularly management of its underwater oil reserves.

The end of meaningful UN militarization came in March 2003, when U.S. President George W. Bush led a campaign—not endorsed by the UN and steadfastly opposed by key members of the Security Council—to destroy the government of Saddam Hussein. Though the United States acted in conscious disregard of the United Nations, the administration of President Bush was careful to construct an ostensible coalition that included Britain and Australia and many more symbolic partners as fellow combatants, and to repeatedly declare that Iraq was being punished for its refusal to disarm as it had been instructed to do by the United Nations. Thus even a national action that seemed to represent an assertive unilateralism was necessarily represented as a coalition on behalf of the United Nations. The result was that the UN and its military forces became metaphorical rather than real.

The absence of UN military intervention and discrediting of unilateral U.S. action in the guise of an international coalition makes the twenty-first century markedly different from the twentieth century when it comes to unpopular dictators after Milosevic and Hussein. In the summer of 2011, popular protests against political corruption, heavy police control and economic stagnation across North Africa and the Middle East led to the downfall of the governments of Tunisia and Egypt. The Egyptian case was particularly dramatic. Hosni Mubarak, who had assumed the presidency of Egypt in 1981, was regarded internationally as a heir to Nasser's legacy of secular government. He maintained peace with Israel and was generally a supporter of the policies of the United States and the United Kingdom. But at home, he was regarded as a corrupt supporter of international corporations, indifferent to Egypt's high unemployment rates, and reliant on military repression. Less than a month after protests against Mubarak broke out in early 2011, leaders of the military forced him from office. He was later tried individually for economic crimes such as shutting down the Internet, and he and his sons were tried together for murder of protesters in Cairo.

The pattern of the Mubarak overthrow was distinctly different from the pattern of the late twentieth century. Neither the United Nations nor the United States intervened either to stop the public mayhem or to effect “regime change” in the style of Iraq. And though he had been a supporter of U.S. policy, Mubarak was not offered safe exile by the United States, as in the case of the Shah of Iran in 1979. Instead, the public contest between Mubarak and his public ran its own course, and Mubarak was left to suffer whatever fate the new military government decided to impose upon him. The change in dynamics was not unnoted by government leaders such as Muammar Gaddafi (who was killed by victorious rebels in October, 2011) in Libya or Bashar Assad in Syria, both of whom prosecuted prolonged civil war against their domestic opponents—some of whom are Muslim radicals—in the absence of UN or U.S. intervention.

The IMF, the World Bank, and the Costs of Discipline

In the latter twentieth century, the United States, Britain, France and Germany were acutely aware of the need for economic development in nations who could not float a domestic debt big enough to address their needs, and could not be considered good credit risks by other nations. This was the origin of the International Monetary Fund (IMF) and the World Bank, both chartered in 1944 (see Chapter 9). The primary purpose of the IMF is to certify nations as worthy borrowers. After loans are granted, the IMF provides oversight—or “surveillance” as it is officially called—of the ways in which borrowers manage the exchange rates of their currencies and their balance of payments. It attempts to keep currency values orderly, and to prevent lenders from suffering catastrophic losses if a borrowing nation should collapse. During the first decade of the twenty-first century, IMF loans—mostly to nations in Africa, Latin America, and Eastern Europe—dropped to a low of \$28 billion in 2006, but in 2011 the amount committed to loans is roughly \$280 billion, and the largest debtors are, for the first time in decades, Western European—Greece, Portugal, and Ireland.

In the 1960s and 1970s the World Bank became an important participant in financing plans for agricultural development in Asia and Africa. The funds made available, particularly by the United States, increased sharply, and in 1979 they rose above \$10 billion for the first time. This coincided with the energy crisis of the 1970s, in which many poorer countries that did not produce oil were squeezed by extraordinary energy costs. By the middle 1980s, the World Bank had become a major consideration in the politics and policies of many nations. The leading investors in the bank—the United States, Britain, France, West Germany, and Japan—were concerned that many debtor nations were not managing their economies wisely, and as a consequence would default on their loans. Through IMF surveillance and direct pressure from the World Bank, debtors were pressured to discipline their economies to raise their credit ratings. Measures for discipline were called Special Adjustment Programs (SAPs), and they usually featured devaluation of the currency to make the country’s products attractive abroad and increase the repayment time of domestic loans; raising interest rates

to decrease domestic indebtedness and encourage savings; trimming social programs for health, housing, and education or making them private enterprises; cutting back on environmental protections that tend to raise the cost of resources or restrict access; and financing industry as the first priority of the government.

All nations undergoing SAPs have suffered some discomfort, whether from damage to the environment, the effects of devaluation on savings for education or retirement, or sharply increasing private costs of education and health care. In some cases, these discomforts have been absorbed without widespread suffering and without destroying existing national governments. In other cases the effects of IMF and World Bank interference have been catastrophic and even deadly. Ecuador, for instance, was a promising economy in the late 1970s because of its oil. But officials of Ecuador's oil companies mismanaged and misappropriated the income from the oil industries. The IMF required that the Ecuadorian public assume responsibility for the international loans upon which the oil executives had defaulted. Ecuador was forced to lay off hundreds of thousands of workers and to nearly double oil prices. At the end of the twentieth century, Ecuador had regained neither economic prosperity nor political stability. In a similar case, loans provided to Tanzania in 1985 by a consortium of international lenders were conditional on an IMF program demanding open trade, lower wages, and extreme cuts in health care and public sanitation. By the end of the twentieth century, Tanzania's per capita income had dropped by a third, and the country had shot to the top of the list of countries facing massive deaths (in Tanzania's case, over 1.5 million) from AIDS.

In 2000 Argentina was required by the IMF to institute an SAP after it defaulted on debt payments. Like Ecuador, the Argentine government was required to pay off debts contracted by business executives. The Argentine government agreed to cut its budget deficit by 20 percent in a single year, and the same percentage cuts were made in government assistance programs to the unemployed (whose numbers were ballooning under the new austerity program). When the public lost confidence in the economy and tried to withdraw money from the banking system, the Argentinean government imposed strict rules on withdrawals that left large numbers of citizens with no cash and companies unable to meet payrolls. The country experienced its worst rioting since a political crisis of 1989. There were repeated turnovers in the government leadership through the spring of 2002, when Argentina defaulted again on its international debts. From 2003 on, the Argentine economy has been improved by domestic development programs and devaluation of its currency, and has experienced a high rate of growth. But the economy has little depth to weather international crises, and in 2009 its growth rate fell to 0.8 percent.

Recent history suggests that the discipline imposed by the international system can be helpful in getting some nations out of destructive patterns of corruption, unsecured debt, and lavish government spending. Examples such as Poland in the middle 1980s and South Korea in the early 1990s show that countries that become unable to secure foreign credit because of their internal policies can, under international pressure, redeem themselves with strong policies and again

become participants in the global system. But some nations cannot respond successfully to the pressures of that system. Many economists doubt the long-term wisdom of permanently destroying the economic viability of a large segment—perhaps ultimately a majority—of the world's population. More important, the specter of loan default has shifted from Asia, Africa and Latin America to Europe and North America, raising new pressure for changes in the international finance discipline that has prevailed since the Second World War.

Free Trade: Globalization Arrives

Like the IMF and the World Bank, the General Agreement on Tariffs and Trade (GATT) was created after the Second World War to ensure that no nation would attempt to protect its economy by erecting trade barriers. Instead, the majority of global trade was to be conducted in accordance with the principles of open markets and free competition. The aims of GATT were controversial in the 1960s and 1970s when nationalist sentiments were strong and many developing nations were attempting to protect their young industries from foreign competition by restricting or heavily taxing foreign imports. It was not until the 1990s that GATT experienced a sharp increase in its visibility and influence. This was partly due to the establishment of GATT-like free-trade zones in Europe (the European Economic Community, subsequently the European Union) and in North America (NAFTA). In those instances, the GATT principle of open markets was considered likely to enhance prosperity globally. Both the EU and the NAFTA signatories had used GATT rules to force Japan to open its markets to foreign products. At the same time, the collapse of the Soviet Union in 1991 and the decrease of centralized economic planning during the early 1990s in China created more venues for GATT policy and increased the number of aspiring GATT members.

In 1995, the World Trade Organization (WTO) was created to ratify and enforce the GATT regulations. In 2001, China was admitted as a member. In theory, this means that China's markets will now be open to foreign goods and that foreign investment will not be subject to special rules. According to the regulations, wages, housing prices, and the value of Chinese currency should be determined by global factors, not by government policy. In fact, China has artificially kept the value of its currency low, enhancing its exports.

The WTO has the power to enforce the rules and to punish nations that do not conform to specific instructions. It runs a system of closed courts—tribunals—in which member governments can sue other members for breaking the rules. Defendants who lose their cases must either change their laws as the WTO requires or reimburse the plaintiff for the amount determined by the court. Two-thirds of cases are settled by negotiation. Nations that refuse to comply can have trade restrictions imposed upon them by the WTO or can be expelled from the organization. The WTO courts are busy (they normally have more than 300 cases pending at any particular time), and they require a bureaucracy of administrators, lawyers, judges, economic monitors and advisors.

The combined effects of the IMF, the World Bank, and the WTO on the global economy are critical. At the end of the Second World War, the average tariff levied on imports into Europe or the United States was 40 percent. By 1990 it had fallen to 6.3 percent. During the 1990s it again fell dramatically, to less than 4 percent, which partly explains the burst of international trade and development in the last decade of the twentieth century. Overall, low-tariff policies promote worldwide access to goods that many societies otherwise either could not acquire or could not afford.

Effects of Globalized Trade and Finance

In the twenty-first century many nations, including the United States and China, are again using import tariffs on selected goods to protect home industries as a method of dealing with unprecedented long-term economic crisis. This is only one aspect of the global management system that is being altered in response to new conditions, in which the world's leading economic powers experience problems that in the late twentieth century were limited to developing nations.

The Specter of Competition: Wages, Specialization, and Advertising

In areas where wages are comparatively high, as in the United States, Canada, Europe, Australia, and Japan, the cost of goods can be high. In such circumstances, foreign products that compete with domestic products may be much cheaper because the workers producing them have lower wages. Before the 1980s, governments tended to offset this advantage of foreign goods by imposing a high tariff on imports. This kept domestic products competitive and wages high, but protectionism was strictly outlawed after creation of the WTO in 1995.

Now, domestic and foreign goods must compete in the same markets. If domestic companies produce goods efficiently enough to compete with foreign goods made by low-wage workers, then the domestic wages must fall or the goods must be manufactured in another country where wages are lower. For the developed nations during the 1990s, this meant a tendency to specialize. Goods that could be made or grown cheaply elsewhere—many electronic products, clothing, certain fruits and vegetables—either were not produced domestically or were produced only in small quantities. Instead, the economies of Europe, North America, and Japan focused on the development of high-cost essential goods, which still permitted paying high wages to the workers who made them. Automobiles and aircraft, military weapons, computers and surveillance systems, pharmaceuticals, and high-end medical equipment were produced almost exclusively in the most developed countries. As the twenty-first century began, however, China was transforming this system, as it grew from a supplier of low-wage labor for basic goods to a producer of high-end weaponry, computers, and

ultimately automobiles, bringing a new dimension of competition to the most developed nations and undermining the last haven of high wages in the developed countries.

Many of the industries of the developed nations reserved huge portions of their operating budgets—often more than 50 percent—for advertising to the population at large, lobbying for government contracts, and making special appeals to target audiences rather than relying on low prices to make their products competitive. This was particularly true of firms providing medicines, weapons and security. In other cases, companies—particularly selling computer software—learned to control the terms of development and marketing so completely that prices could be virtually dictated by the seller. Instead of using the market attraction of quality goods at low prices, these companies used the cultural attraction of modern media and the economic ploys of limited competition to maintain their profits. This helped them survive in the ecology of international trade where tariff barriers to the exchange of goods were no longer permitted. But it also meant that in order to spread the appeal of their products, they had to spread the culture that supports them, so that cultural or religious conflict often became inseparable from other aspects of global competition. As the twenty-first century develops, the efficacy of these strategies is waning, and the question of products whose quality and reliability can transcend cultural assumptions must be confronted.

Globalized Debt

Debt is a normal part of global financial life and of national economic management. Wars, expanded agricultural or commercial sectors, and systematic modernization of industry or education have normally been the cause of governments going into debt. Historically, governments in need of money turned to the banking system, where private investors had accumulated capital that could be loaned to the government at profitable rates. But in the twentieth century, some of these patterns changed. The Great Depression of the 1930s, particularly, changed the historical relationship between government and banks. In that period, it was the banks that were in need of help, as the stock market and credit market crashes left them with sudden obligations and little cash. Beginning in that era, the governments of the United States, the United Kingdom, and France became the guarantors of the banks, and to avoid future troubles banks were carefully regulated regarding the proportion of their assets they could extend in loans, the conditions under which loans were made, and the speed with which interest rates could rise or fall.

Governments could function as rescuers of the banks, if necessary, because they could float their own debt—“sovereign” or government debt—to their own publics, in the form of bonds. Proceeds from the maturation of the bonds would go back to the public, stimulating the economy. If the government should have difficulty making its payments on time, it had the power to print money to cover the shortfall. This would lower the value of the nation’s currency, lower the prices

on its goods, and increase its exports. The result would be inflation. But, if not prolonged, inflation might do no permanent harm. To attract investment, the government might raise interest rates on its bonds, which would in turn raise interest rates on other loans. In the short run this, too, would have no serious effect. But if prolonged it would strangle credit, though lessening the burden on debtors (including the government). Inflation and rising interest rates would ultimately transfer equity from the creditors who bought bonds to the government itself, restoring the balance and allowing the government to continue to guarantee the stability of the banking systems.

These patterns pertained through most of the twentieth century, and became valuable tools in the 1970s, when the industrialized economies were staggered by a sudden rise in oil prices (see Chapter 13) and an inflationary spiral that impeded growth in Japan, Europe and the United States. After resolution of this extended stagnation, many banks and governments began, in the 1980s, to reassess the relationship between governments and banks. In this era of early globalization the notion of sovereign debt management struck many as obsolete. The former pattern of governments regulating banks while guaranteeing their solvency was based upon a premise that a loan was a closed system. The money was loaned to one party by another, and the debtor was expected to pay it back to the lender. But, it was argued by some economists, it should be possible to redistribute the dangers of lending by allowing the original lender to sell his asset to one or more parties. If the credit was thus made into units and distributed, it would spread the risk among many parties and permit many parties to participate in interest profits.

In response to these arguments, the 1980s and the 1990s were an era of "deregulation" across the developed world. President Reagan in the United States, Prime Minister Thatcher in the United Kingdom, and other heads of state argued that extensive government oversight of finance and manufacturing was inefficient, costly to the public, and encouraging to a mentality of public dependence upon the state. There began a process, lasting nearly a quarter of a century, of removing regulations that had previously controlled prices, investment policies, some safety regulations, and rules for protection of the environment. The result in some industries, such as the airlines, was the emergence of new companies that competed with the older ones, driving down prices and extending the availability of the product. In other industries, particularly manufacturing, loosened rules of investment and labor management permitted the transfer of jobs to countries with lower wages, lowering the cost of goods and raising profits dramatically. Together with the lowered tariffs of the era, these produced a flood of international trade, bringing investment to developing nations such as China, India, Indonesia, Vietnam, Mexico, and Poland, while creating new opportunities for export for nearly all manufacturing nations.

In the United States, Europe, Japan and South Korea, innovations in finding new ways of floating loans and redistributing debt brought rapid profits to banks and to international investment firms. Globally debt rose, but in most countries remained in a healthy relationship to national gross product, in the range of 5 to 20 percent. At the same time, global wealth was increasing, and people in many

widely separated places enjoyed an increase in their income levels. Rises in investment, and in disposable income were made possible primarily by the ready availability of credit. This ability to keep cash flowing—to keep liquidity up—was regarded as the key to having resolved the great economic crises of the 1930s and the 1970s. Credit itself, in the forms of credit cards, mortgages, and home equity loans, was one of the most rapidly expanding businesses in the world. Some nations even had their public debt managed by the international firms who specialized in commoditization of private debt. Under such conditions, the standards for making loans—the primary form of profit—gradually fell. Expectations of income, reliability, and equity investment were lowered to such a degree that many loans became unlikely to be repaid. However, agencies that were expected to assure the quality of the loan commodities were ineffective, and many unsound loans were sold at high prices to unsuspecting purchasers around the world.

Global Credit and Liquidity Crises

This worldwide debt bubble burst in 2008 when U.S. real estate—the foundation of the global debt industry—fell in value. When Barack Obama was elected president of the United States in November, he was set to inherit a unique convergence of unsecured war debt, a financial world wasted by lack of regulation, and spreading international economic troubles. In the United States, major firms that were regarded as hugely wealthy were suddenly revealed to few no meaningful assets. The loans they held directly or indirectly could not be repaid. Very large failing firms turned to their insurers for help, and many insurers who were contractually bound to aid their clients also began to fail. The impending collapse of gigantic firms of global reach threatened a worldwide loss of liquidity and cessation of investment. To avoid these consequences, the governments of the United States, Canada, the United Kingdom, France, Germany, China and Japan all extended financial aid to their banks and investment firms. An immediate global financial collapse was prevented, but most countries were left with little margin for raising capital to further stimulate their economies or rescue huge numbers of workers whose savings, including retirement funds, had evaporated in the crisis.

The majority of nations in Europe were in a special situation. The European Union had, beginning in the 1980s, begun to introduce a new currency, the euro. The original plan was that all members of the European Union—most European countries except Switzerland, Norway, Croatia, Serbia, and Iceland—would eventually give up their own currencies and use the euro. Some nations were quick to do so, while others, notably the United Kingdom, delayed, or introduced the euro as a second currency beside their sovereign currency. Because Germany is the dominant exporter in Europe (and is the third exporter in the world after China and the United States), it had the greatest influence over the euro value.

A nation's relationship to the euro turned out to be a critical factor in their options for responding to the crisis of 2008. Those nations still using a sovereign

currency had the immediate option of devaluation, lessening the value of existing debts and likely increasing exports. Those nations relying on the euro had no such option, and were dependent upon the leading EU nations—Germany, the United Kingdom and France—to either devalue the currency or provide loans to allow the governments to meet their domestic obligations. In either event, the ability of any euro nation to protect its own products from German competition was severely compromised. The worst-hit nations as of 2011 were Greece, Portugal and Ireland. In the case of Greece, austerity measures imposed by the IMF and the European Union had contracted the economy by more than five percent, and debt had risen to 140 percent of annual gross domestic product (GDP). In such circumstances it is impossible for a country to keep up payments on its loans. Its creditors suffer a loss, and its citizens become subject to more deprivation as a result of foreign demands.

Under the patterns of globalization, crises cannot be contained. As the situation in Europe endangers the credit-worthiness of an increasing number of countries, the United States is caught in the combined effects of the burst real-estate bubble of 2008, government aid to failing banks and investment firms, its ongoing obligations to social support programs, and its huge spending on a series of foreign military engagements since 2001. As a result the United States cannot come to the aid of Europe, or any other failing economic zone, as it had done in the last half of the twentieth century. As of 2009, the United States for the first time entered the category of nations whose public debt is 60 percent or higher of its annual Gross Domestic Product (GDP)—although the total debt is only one quarter the total wealth of the country, and 60 percent of the debt is domestically owned. Unlike Greece, the United States has a sovereign currency which if necessary can be printed to pay any debt obligation, and thus is not in danger of default. Nevertheless, there is fear that self-imposed austerity measures in the United States could impoverish a majority of Americans and dampen global trade. China, Germany and Japan are particularly vulnerable, since their economies are export-driven, and the U.S. market is crucial to them.

The relative debt position of the United States can be illuminated somewhat by comparison. In most cases, war expenditures are a factor in worsening a national debt. But Japan, a country with minimal military expenditures, leads the world for indebtedness. The oil crisis of 1974–1977 hit Japan very hard, and for the first time since the Second World War the country assumed a significant debt to sustain social services and attempt to stimulate employment. Though Japan remained a leading exporter, its political system in the 1980s and 1990s proved unable to resolve the economic problems, due in significant part to political corruption and legislative gridlock. As debt rises, paying the ongoing interest on the debt becomes a larger and larger part of the national budget; countries which borrow to pay this interest experience a very steep rise in their indebtedness. This has happened to Japan, especially since 1995. In March of 2011 Japan also suffered the catastrophes of a tsunami and subsequently nuclear meltdown at the Fukushima nuclear facilities. This destroyed much of the productive capacity of northeast Honshu Island and incurred mountainous expenses for medical care,

rehoming, and reconstruction. As of 2011–2012, the national debt was believed to have reached 170 to 225 percent of GDP, the highest ratio by far in the world. Japan leads the list of countries whose debt is more than 100 percent of GDP—the others being the Federation of Saint Kitts and Nevis, Lebanon, Zimbabwe, Greece, Iceland, Jamaica, Italy and Singapore.

Despite the global proportions of the crisis that began in 2008, most of Asia and Africa are in good shape with respect to their debt as a percentage of GDP. Russia has a reported national debt of less than 10 percent, China under 20 percent, India is under 60 percent. Yet it is easy to over-estimate the importance of debt in a country's overall economic health. Japan's huge debt has not significantly raised its interest rates on government bonds, because the debt is domestically owned. So long as the national debt is primarily domestically owned, indebtedness is not necessarily a determinant of any country's national fortunes. The Greek debt, mostly foreign-owned, has driven bond prices above 15%, and brought huge international pressure for austerity. Historically, U.S. debt was domestically owned, but in the first decade of the twentieth century a slide began toward predominant foreign ownership. Nor does debt on its own determine collective national income. Despite high indebtedness Singapore ranks in the top five of the world's countries in terms of annual income per person—the United States is number 7, Italy is 23rd, Japan is 24th. On the other hand, Libya and Uzbekistan have perhaps the lowest rates of national indebtedness, but rank 43rd and 134th respectively in terms of income per person.

Management of Energy and the Environment

Investment and debt are now distributed worldwide, but environmental features such as air and water have always been global issues. Yet global systems for the management of trade and finance are now half a century old and are fully supported by the leading industrial nations, while the emerging organizations for management of the environment are young, weak, and not fully supported by all the industrial nations. Pollution of the atmosphere, damage to the ozone layer, and global warming are the most frequently invoked new dangers. But there are related and equally alarming problems with pollution of the oceans, over-fishing, deforestation generally and destruction of the rain forests in particular, soil erosion, and depletion of aquifers. Even space pollution is recognized as a problem; eight thousand separate items of space debris were identified as orbiting aimlessly around the planet, occasionally colliding with satellites and the International Space Station.

Pollution and Global Warming

The industrialized and industrializing nations produce far more than their share of greenhouse gases that contribute to global warming, as well as damage to the

ozone layer that protects the earth's surface from ultraviolet radiation. The United States alone, with 4 percent of the world's population, produces nearly a quarter of the world's greenhouse gases. With effort this percentage can be lessened, and the United States had some success with this in the late 1970s following the oil crisis. Cars became smaller and more fuel-efficient, and Americans turned their thermostats down in the winter and up in the summer. But these measures were abandoned when the price of oil fell, and the U.S. contribution as a percentage of world pollution has increased steadily since that time.

Although the United States remains the greatest producer of greenhouse gases on a per-person basis, China is the single greatest producer among nations. China is still heated largely by coal, the dirtiest of all fuels. Its automobile use is increasing. Its industries do little or nothing to decrease the amount of pollutants they release into the air or water. Health problems in China caused by mismanagement of human and industrial wastes are common. Yet the position of the Chinese government has been that antipollution measures are expensive and would be a brake on China's pace of economic development. Indeed, the Chinese government in 2006 denounced demands that China decrease its pollutants as "environmental imperialism."

In 1992 the United Nations sponsored a meeting on climate change at Rio de Janeiro, Brazil. A convention signed by 155 nations established the goal of keeping the emission of greenhouse gases at 1990 levels for ten years. Compliance was voluntary, and few nations have complied. Instead of staying at 1990 levels, emissions rose 14 percent between 1990 and 2000. The result of subsequent climate change meetings was a complex agreement designed to accommodate the specific circumstances of individual countries, to allow wealthy nations to buy the right to pollute, but to lower the global emission rate by more than 5 percent by 2012. The treaty also called for the creation of an international authority to monitor emission levels and sanction nations that were not abiding by the agreement.

The controversies of subsequent global warming summit meetings demonstrate the contradictions in current development patterns. The European Union and Japan have consistently been the foremost advocates for drastic cuts in pollution rates. Gasoline is heavily taxed by both, and nuclear power is the preferred method of generation of electricity. The European Union and Japan were joined by the Alliance of Small Island States, which includes Jamaica, Singapore, and many nations of the Indian Ocean and the Pacific and Atlantic. One effect of global warming is rising sea levels, and some of these island nations may actually disappear if global warming does not abate. Indeed, the country of Tuvalu in the Pacific was completely evacuated in late 2001 because of rising sea levels, making it the first national casualty of global warming. Since then, Tuvalu has attempted to hang on, despite the fact that rising sea levels will eventually destroy it completely.

Opposing this group were the OPEC nations (see Chapter 13), all of whom are dependent on oil export for their incomes. They were joined by the industrializing nations of China, Indonesia, Russia, and Ukraine, who argued that the cost of pollution control would cripple their economic progress. Making a similar

argument, some developed nations—particularly the United States, Canada, and Australia—claimed that although they could afford the cost of pollution controls, these costs would cut disposable income in their societies by as much as 10 percent, unfairly burdening the poor, slashing their consumption of foreign goods, and dampening economic progress around the globe. In the end, the U.S. proposal that pollution rights be bought and sold (so called “cap and trade”) was accepted, along with exemptions for industrializing nations.

Energy and The Atmosphere

Political problems connected to improvement of the atmosphere are aggravated by the critical importance of oil production and consumption. The United States consumes more than 25 percent of the world’s petroleum but produces less than 3 percent of the world supply. China, once an exporter of oil, is now the country with the most rapidly rising demand, and will soon rival the United States and the European Union as a consumer. The economic and political hierarchies of oil production and refining are determined not only by production rates but also by the quantity of oil still left to be processed. In general, environmental scientists estimate that by about 2004 approximately half of all the oil that was originally stored in fossil reservoirs beneath the earth’s surface had been used.

In such a situation, the distinction between actively producing oil for the world market and reserving it for later use is important. In 2006, Russia surpassed Saudi Arabia in oil production, more than doubling its output in the previous five years. As a result, Russia has fallen in rank as a possessor of oil reserves. By contrast, Saudi Arabia has been producing oil for nearly a hundred years but still has a claimed reserve of nearly 280 billion barrels. Experts project that Saudi Arabia could continue its present rate of production for at least a hundred years without exhausting its supply. Thus Saudi Arabia is the leading power within OPEC, and it will continue to be a critically important player in many areas of world politics despite the fact that it is not a world leader in any important index of quality of life or international military significance. But Venezuela, a relatively new producer, has a proven reserve of nearly 300 billion barrels, making it the most oil-rich country in the world. How long Venezuela will be able to keep its reserve without dissipating it through consumption or exports is unknown.

Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela can expect to continue production for many decades. But the most populous members of OPEC—Nigeria, Algeria, and Indonesia—have limited reserves. As a group they will continue to produce for decades at most, and Indonesia has nearly exhausted its known reserves. For these nations, maximizing production and maximizing returns (regardless of environmental consequences) are indispensable to their continued economic development. They must also seek some alternative source of income once their oil is gone.

Of the newly emerging oil producers, Mexico—which will be the last oil source in North America—has enough known resources to produce for a significant period of time. Most important will be the area where known reserves have

hardly been exploited but will be eagerly sought in the twenty-first century: the Caspian–Caucasus–Central Asian lands of Azerbaijan, Uzbekistan, Turkmenistan, and Kazakhstan. But there will be an important difference for new producers. Saudi Arabian oil, like most oil in the Persian Gulf, is relatively near the surface and has been cheap to access. Central Asian oil is relatively difficult to access and will require major international investment. As a consequence, it is not likely that the Central Asian producers will become influential as individual nations the way Saudi Arabia has. As for alternate fossil fuels, Russia is already using its huge reserve of natural gas to great profit in supplying Europe and parts of Asia. Iran and Qatar will also be powerful in any natural gas market. The United States, India, China, Australia, and South Africa, by contrast, have the world's major reserves of coal, whose use with present technology would be devastating to the world's natural environment.

Water and Disease

The health of a majority of the world's population is directly tied to access to adequate clean water. In the twentieth century, great advances were made in the control of some epidemic diseases, such as smallpox and polio. But epidemic disease remains the primary cause of death in humans because a majority of the global population still live in conditions in which universal vaccination and improvement of public hygiene are not practical due to polluted or inadequate water supplies. Controlling epidemic disease is not extraordinarily expensive or complicated, but it is nevertheless beyond the capacity of many national governments. In the developed countries, deaths from diseases such as malaria, cholera, dengue fever, yellow fever, or tuberculosis are rare—less than 1 percent of all deaths. But as many as 16.3 million people in the developing nations died of epidemic disease in 1993, and about 15 million in 2010—over 40 percent of all deaths. In the late twentieth century, three million babies born each year in the developing nations did not survive one week.

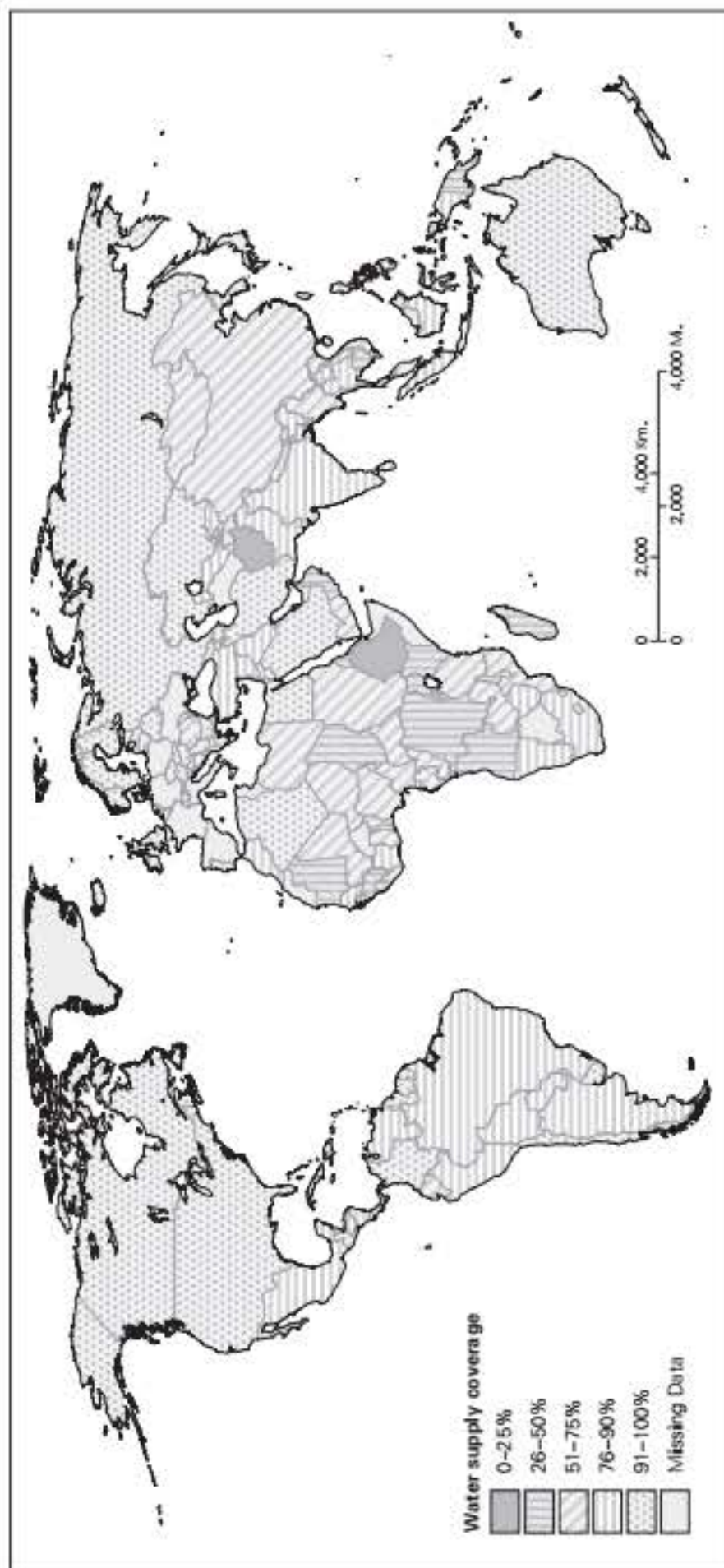
The spread of HIV/AIDS is an important element because AIDS weakens the immune system and causes a ballooning in the number of deaths from infectious diseases. As of 2006, global health authorities estimated that forty million people are infected with HIV, about 65 percent of them in sub-Saharan Africa. Unlike earlier epidemics, AIDS is not inexpensive to treat or easy to defeat. In the United States, new drugs have been developed that mitigate the damage AIDS can do to an individual's body, and scientists claim they are close to a medical cure. While this represents an advance, it has come at a tremendous cost. During the 1990s the United States spent more research money on AIDS than on any disease except cancer. Many more people in the United States are afflicted by heart disease, for instance, but the long-term threat of AIDS proliferation has given this research a high priority. A concerted effort by international drug companies and governments could allow medicines necessary to maintain the health of HIV-positive patients to fall from a cost of \$1,500 a month to as little as \$300 a year. The World Health Organization of the UN subsidizes the world's poorest

countries in purchasing some HIV/AIDS drugs, but countries that are developing but still relatively poor do not qualify. Mexico, for instance, has an average per capita annual income of \$6,790 a year and is too wealthy to receive aid, but it would cost a Mexican HIV/AIDS patient \$8,000 to purchase the drugs, even under the UN subsidy rules.

AIDS is clearly most severe in countries with compromised public hygiene, and the primary causes of epidemic diseases other than AIDS are a lack of safe drinking water and inadequate facilities for human waste. As antibiotics and other drugs are introduced into those countries to combat the epidemics, resistant strains of the bacteria and viruses responsible for them evolve, presenting a danger of boomerang infections in the industrialized nations where these diseases are under control. But the major problems are water sources and water processing. Although global warming raises water levels, it does nothing to increase the amount of water available for agriculture, drinking, or bathing. Indeed, flooding has always represented a major health hazard, spreading bacteria associated with dead bodies and waste products into areas where they can immediately affect human health. When this is taken in combination with the desertification of North China and Central Africa, which is certainly due to global warming, climate change is dramatically lowering humanity's supply of water.

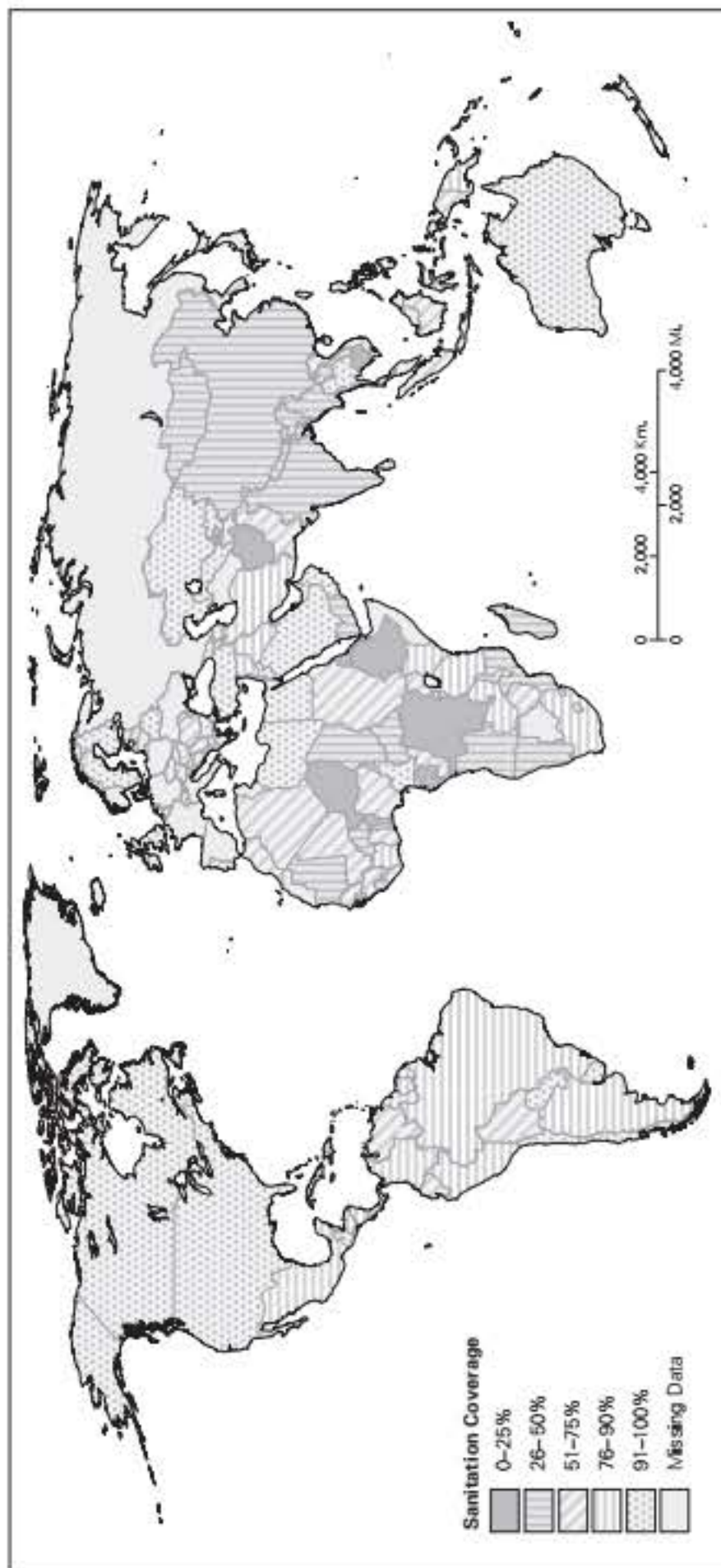
Supplies of fresh water can be increased or redistributed through the use of dams, canals, desalination, and above-ground reservoirs. A nation's need for water is calculated by considering its population and its reliance on agriculture. Some countries have adequate supplies of water, but fewer have adequate means of making it safe for use in irrigation, drinking, and cooking (see Maps 15.1 and 15.2). Of the regions recently surveyed by a United Nations group, only North America, Europe, Russia, Iran, Saudi Arabia, Australia, and portions of North Africa and Central Asia had both adequate supplies of water and fully adequate means of processing it for safe use. Several very populous countries, including India, China, and Mexico, had nearly adequate supplies of water but cannot make much more than half the water safe. Africa above the Sahara Desert is overwhelmed by both scarce supply and virtually no means of processing what is available for healthful use.

Global warming is a less immediate problem for industrializing countries than for countries still heavily dependent on traditional agriculture. The desertification of Eastern Africa and northern China is advancing rapidly each year, causing the movement of populations into already crowded areas where agricultural production is still possible. The current rate of global warming is estimated at 1 degree centigrade per decade. Many nations in the temperate zones of the Northern Hemisphere are experiencing a pleasant lengthening of their growing seasons, but there is also an increasing threat from diseases such as malaria that thrive in warm damp environments. Tree species that need a minimum period of dormancy in very cold winters are weakening under the warmer conditions, and roads, railway beds, and large buildings that depend on firm ground in Scandinavia and Russia are sinking as the permafrost melts. If the rate of warming continues, rising sea levels will produce major migrations and refugee problems



MAP 15.1 Water supply coverage.

It is to be expected that regions nearer the poles will have more plentiful water sources and those nearer the equator would have less. But recent data indicates China, Mongolia, parts of Central Asia and southern Africa, and other temperate zones are experiencing worsening water shortages due to climate change.



MAP 15.2 Sanitation coverage.

Environmental experts estimate that the current global population has about 80 percent of the water it needs and about 60 percent of the necessary sanitary water supplies. These maps show the differences, by national boundaries, between raw water supplies and sanitary water supplies.



GLOBAL Technologies

Genetic Engineering

Since the beginning of genetic science in the middle nineteenth century, many have dreamed of being able to control the genes that seem to control so much of human destiny. At the end of the twentieth century, scientists were taking their first steps toward successful and practical manipulation of genes. This sometimes involves the insertion of genes (which are strings of protein in the nucleus of the cell) of one species into another, sometimes the deletion of genes, and sometimes advising humans to be aware that they carry genes that could be harmful to their offspring.

So far, humans have benefited in various ways from these projects.

The earliest and perhaps widest applications involved the manipulation of some crops to introduce genes to make the plants resistant to disease. In the United States, the use of genetically altered strains of corn, soybean, and cotton has been enthusiastically adopted. The United States accounts for far more than half of the world's production of genetically manipulated, or GM, crops. Argentina is a distant second. Even though the benefits of healthy plants without the use of pesticides is attractive, many fear that such procedures can introduce unknown variables that may threaten the health of neighboring crops or humans who eat them. At the very least, the prospect of scientifically altered plants suggests that in future large corporations may attempt to patent and monopolize basic crops.

Similar techniques have been used to produce healthier meat.

in Asia, as it already has in Africa. The waters of the Ganges and the Mekong, for instance, could rise by as much as a meter by 2020, driving away millions of inhabitants. On the other hand, some experts estimate that China's Yellow River could run dry in the middle twenty-first century without dramatic intervention by the Chinese government.

It is tempting to assume that prolonged, devastating famine may be a result of global warming and poor water resources. History shows that famines are not natural disasters, but are caused by a failure of governments to respond to changing environmental conditions. Before the twentieth century, governments attempted to prevent floods by keeping dams, dikes and irrigation systems in good working order. They responded to droughts with supplies of stored grain, construction of temporary housing, and other ways of supporting or relocating affected populations and getting agricultural land back into production. These are still the primary tools of modern governments responding to famine or threats of famine. But in the twentieth century there emerged clear instances

Pigs have been altered to produce high levels of healthy fatty acids normally found in fish. But many modifications are unrelated to healthy eating and only make animal products easier to process, such as cows that produce milk more resistant to heat and chickens that can remain healthy while eating cheap or contaminated feed. In related developments, animals from dwarf hamsters to pigs and horses have been bred to produce hormones and proteins needed for human medicine but otherwise impossible to obtain.

Although genetic engineering has unlimited potential applications, a primary goal of research has been the prevention or cure of cancer. In August of 2011, evidence seemed to confirm that a patient's blood could be genetically re-engineered by the targeted insertion of a patient's DNA into his own T-cells—programming them to not only seek and kill

existing cancer cells, but to continue to monitor and eradicate new cells. Such research needs much further advancement before being a practical medical tool, but it is exemplary of the possibilities of genetic engineering.

Researchers warn that the function of all genes depends on the complex biochemical environment in which genes are naturally surrounded, and that learning to identify and manipulate genes does not produce complete control over their action. The possibility of unintended products that could enter and replicate within the gene pools of humans, animals, and plants is ever present. There have indeed been rare deaths of human subjects in gene therapy experiments, due to inadequately-understood variables. Knowledge must advance fast enough to keep abreast of the cultural and economic demands for improvement of our environment and our health.

of governments deliberately depriving their rural citizens of food in order to supply the military or urban populations. This happened in China during the Great Leap Forward (see Chapter 10) and is a regular occurrence in North Korea; perhaps 600,000 people starved in North Korea in the late 1990s, and famine still recurs there in the twenty-first century.

In some other regions governments have failed entirely. They are unable to prevent soldiers from appropriating food from starving populations, or to prevent the destruction of farmland through warfare. When refugees congregate, there may be nobody to provide them with water, food, or medical care. Dramatic incidents of this sort have occurred after 2000 in Afghanistan, Ethiopia, Niger, Guatemala, and Myanmar. The most tragic examples of such suffering in the early twenty-first century have arisen at Darfur, Sudan (where more than a hundred thousand people may have died between 2003 and 2010) and the ongoing conflict in Somalia. In the case of Somalia, a civil war raging since 1991 has destroyed roads, farmland, forest, and grazing areas. When drought hit the area in 2010, troops deliberately



A starving child is bathed in a refugee camp in Mogadishu, Somalia. Since 1991, civil war has destroyed agriculture and transportation, putting some 11 million people at risk of death. International agencies provide inadequate help as the difficulties of food distribution increase in the country, and economic crises in Europe and North America discourage increased foreign aid.

prevented the migration of starving people. Refugees attempting to reach Kenya, Uganda, Yemen and other neighboring areas (which are also suffering from the drought) often die of the hardships of travel. The United Nations, no longer able to mobilize troops to help populations caught in these situations, attempts to coordinate international aid. Several European nations have reneged on promised funds, and aid that actually arrives is often stolen by soldiers or pilfered by corrupt officials. Somalia is a classic case of intense human suffering arisen from the inability of governments to respond to environmental challenges.

Economists estimate that providing basic medical care (including vaccinations), elementary education, safe water, sanitation, and basic nutrition to those who lack them would cost less than 4 percent of the combined wealth of the 225 richest single individuals in the world. The cost to the world's wealthiest nations would be negligible. Why is it not done? Many middle-or lower-income nations in the world attract foreign investment, but they are not the poorest countries. They are countries that have sufficient education, political stability, and infrastructure to support industries, many of them foreign-owned. Their low wage levels attract the

investment, which creates more jobs and more incentives to improve education. Money does flow from the industrialized countries to these nations (such as Mexico, the Philippines, India, South Africa, and Vietnam). It generates new wealth both locally and in the investing countries. But the unindustrialized world has inefficiencies of its own, particularly an undeveloped or missing infrastructure for education, transportation, and communication, but also political instability and corruption. No single corporation or nation can profit from paying for basic health improvements in a country that is wracked by civil war (as in the cases of Sudan and Somalia) or chronic food shortages, or where educational levels are so low that most people have no understanding of disease, hygiene, or technology. If there is hope for improvement in the poorest countries, it probably lies in two trends. The first is wage creep in the developing nations. As countries such as China, Mexico, and the Philippines draw closer to the industrialized nations in living standards, the profitability of their labor will decrease. The search for cheap labor will inevitably raise the question of expanding investment in the very poorest nations.

CONCLUSION

History shows that gross disparities in well-being (usually resulting from gross differences in income) between classes are destabilizing. The issue is not inequality itself, but inequalities so extreme that people in the same society are living in different worlds—long-lived and short-lived, educated and uneducated, homed and homeless, invested in the society or alienated from it. It is a disturbing trend that the industrialized world is moving toward sharper skewing of the income distribution. Economists and political scientists usually quantify the destabilizing potential of inequalities through the Gini coefficient (named for Italian economist Corrado Gini), also called the Sustainable Government Index. A map of Gini coefficients shows that countries with a low ratio (greater equality of income distribution) are politically stable, with few incidents of public disorder, efficient and credible legal systems, and good continuity of representative government.

Twenty years ago, such countries included Japan, all of Europe and North America, northwestern Africa, India, Australia, Vietnam, Central Asia, and parts of eastern Africa. But developments of the last twenty years have brought instability to previously stable societies such as Greece and the United Kingdom, both of which were afflicted with widespread riots and looting in 2011. Subsequently, Europe, the United States, Canada and parts of Asia saw the spread of peaceful, broadly-based movements opposing government subsidization of huge corporations and shifting of debt burdens to the middle class and the poor. The United States and the United Kingdom both rank at 2.5 out of 5 on the Gini scale, but trend toward 3.5, where are found Georgia, Niger, Pakistan, the Philippines, the Russian Federation, and Turkey. Myanmar, the country with the highest Gini coefficient, is a mere twelve slots above the United States. There is no precise correlation between Gini ratios and political destiny. It is, however, an important indicator for trends and developmental issues relating to industrial innovation,

market vitality, social integration and political stability. In an age of global protests decrying political corruption, high unemployment, and failure to relieve public misery, political analysts and historians will be examining the general problem of the Sustainable Government Index for some time.

For Further Reading

Studies relating to the content of this chapter in both print and digital media are flourishing, and we encourage you to pursue areas of interest. The suggestions here are well-established or unusually comprehensive sources.

Marq de Villiers, *Water: The Fate of Our Most Precious Resource* (New York: Mariner Books, 2001). On the basis of science gathered by major international agencies, this study presents the problems and suggests some policy options.

Teresa Hayter, *The Creation of World Poverty: An Alternative View to the Brandt Report* (London: Pluto Press, 1981). A reply to the arguments in the report.

Akira Iriye, *Global Community: The Role of International Organizations in the Making of the Contemporary World* (Berkeley: University of California Press, 2002). A leading historian of U.S. relations with the world considers the impact of nongovernmental organizations on the present and near future.

J. R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth-Century World* (New York: W. W. Norton, 2000). The most comprehensive and accessible discussion of environment issues by a historian.

Report of the Independent Commission on International Development Issues, North-South: A Program for Survival (Cambridge, Mass.: M.I.T. Press, 1980). The “Brandt report,” a discussion of the causes of and remedies for global inequities.

Peter Unger, *Living High and Letting Die: Our Illusion of Innocence* (Oxford and New York: Oxford University Press, 1996). The most famous comprehensive view and ethical interpretation of these problems.

Gavin Williams, “Brandt Report: A Critical Introduction,” *Review of African Political Economy*, vol. 7, no. 19 (Winter 1980), pp. 77–86. A reply to the arguments in the report.

Carmen M. Reinhart & Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, (Princeton University Press, 2009). A well-researched introduction to the history of bubbles and credit crises.

Related Websites

Virtual Library on International Development

<http://w3.acdi-cida.gc.ca/virtual.nsf>

Sustainable Africa: Water Energy, Health, Agriculture, Biodiversity

<http://sustainable.allafrica.com/>

Global Environment Outlook 2000 (United Nations Environment Programme)

<http://www.grida.no/geo2000/index.htm>

Goddard Institute for Space Studies: Education: The Global Warming Debate

<http://www.giss.nasa.gov/edu/gwdebate/>

HungerWeb (Brown University)

http://www.brown.edu/Departments/World_Hunger_Program/