# Chapter 10

## Applying What You've Learned: Three Issues

PLEASE NOTE: This book is currently in draft form; material is not final.

Ultimately, politics is how we deal with the issues that confront us as human beings on the planet Earth. It's popular to say we live in an increasingly globalized world; to some extent that's true. More people travel; more trade occurs between nations; and the decisions of any one nation usually affect people's lives in other nations. The list of issues we might consider, use things they see and hear on the news now make sense.

# 10.1 Trade

PLEASE NOTE: This book is currently in draft form; material is not final.

**LEARNING OBJECTIVES**

In this section you will learn:

1. How international trade works, and what it means to people.
2. How international trade affects politics.

Trade is a controversial issue because it can make some people richer and some people poorer. Trade has great benefits as well as costs; it is neither all good nor all bad. Trade can mean lower prices, higher quality and more selection for consumers. It can force domestic producers to be more efficient. It can also cost people jobs, drive down wages in some industries, and contribute to environmental damage. The thing we might understand most fundamentally about trade is that it tends to help a lot of people a little, and to hurt a few people a lot. Keep that in mind as we explore the topic of international trade.

**Free trade**[1]—trade with limited or no barriers between nations—has been a widespread policy goal since World War II. Trade barriers erected at the outset of the Great Depression helped make the depression worldwide and perhaps contributed to the rise of Nazism, fascism and World War II. So beginning first with an international agreement known as the **General Agreement on Trade and Tariffs (GATT)**[2] in 1947, the nations of the world have worked to lower trade barriers. Make money, not war has been the battle cry of the current era.

In political science terms, this approach to international relations has been called liberal commercialism. If the nations of the world are interconnected through commerce, the reasoning goes, they will be less likely to make war. Is this true? In 1909, before World War I, Sir Norman Angell wrote a well-regarded book arguing that war was not really profitable for anyone. His argument has sometimes been misunderstood as saying commercial ties will make war less likely. That didn't prove to be true; World War I, however, wrecked the economies of Europe for

1. Trade between nations unencumbered by tariffs or other barriers that may limit the supply of or raise the cost of goods.
2. A series of global trade negotiations, beginning in 1947, that attempted to liberalize the terms of world trade so as to encourage economic growth and forestall armed conflict.

decades. But economic ties at least raise the cost of war, and that was Angell's point.Sir Norman Angell, *The Great Illusion*. New York: Cosimo Classics, 2010. The fact that 100 years later, the book remains in print, ought to suggest something about the power of Angell's arguments.

That GATT was replaced in 1995 with the *World Trade Organization*, or the WTO, which attempts to set the terms of international trade. It has the unenviable job of trying to balance the desire for open markets against nations' desires to preserve jobs and the environment. It has provoked riots and protests around the world, but trade continues unabated. Like all international organizations, it lacks a serious enforcement capability, but nations have generally abided by its terms, if only because they want other nations to do the same.

A good example of how free trade can work is the **North American Free Trade Agreement (NAFTA),**[3] which was adopted between the U.S., Canada and Mexico in 1992. NAFTA was spurred by Mexico, as that nation's leadership came to realize that 80 percent of their economy was tied up in buying from and selling to the United States. Any disruption to that relationship would spell economic catastrophe for Mexico, so they sought an agreement with the U.S. to cement that trade relationship. NAFTA provides for no tariffs, and a way of resolving trade disputes through negotiation. Although the presidential candidate H. Ross Perot—who had a potential free-trade zone at an old airport that was likely to be worth a lot less if NAFTA was approved—once described the impending flight of jobs to lower-wage Mexico as destined to produce "a giant sucking sound," the tariff or tax on imports from Mexico before NAFTA was only 3 percent. A 3 percent tariff was not preventing anybody from moving a factory south of the border. Mexico has weaker environmental laws than the U.S., but diversifying development away from Mexico City was likely to help that issue. In any event, higher wages in Mexico are likely to mean, in the long run, less illegal immigration to the U.S. and more wealth with which to deal with problems such as environmental damage. That being said, 20 years of NAFTA has not radically altered the political or economic landscape of North America. The agreement has failed to produce either all the benefits or all the costs that were both promised and warned about when it was adopted. And that's the story in general with the results of free trade: Not as good as promised, not as bad as predicted.

*Figure 10.1* *[To Come] Trade between Canada, U.S. and Mexico*

3. A 1994 treaty between the United States, Canada and Mexico that provided for free trade between the three states, along with mechanisms for resolving trade disputes.

## The Logic of Trade

Why trade to begin with? Why not produce what you need at home and preserve jobs in the process? There is an economic logic to trade, and that's one of the reasons why it's not all bad.

The idea that underpins international trade is the theory of **comparative advantage**[4]. All of the arguments for global trade are based on this one theory. Like a lot of theories, there is evidence for it and evidence against it.

The most basic way to understand comparative advantage might be to put it this way: Make what you're good at, and buy what you're not good at. On a purely personal level, this should be easy to understand. We're not all equally good at everything. Let's say you major in accounting at college, and become proficient. You pass your CPA exam, and get a good job with a firm or even go out and start your own firm. One of things that will happen is that you will spend a lot of time at work as well as making a living wage. Your time is about to become more valuable. So, when you were a starving college student, perhaps you changed the oil in your car yourself because you could do it and save the money you would have spent at Minute Monkey or some other local oil change business. But, comparatively speaking, as a successful CPA, in some ways it makes more sense to pay a nearby mechanic to change your oil, because he's better and faster at it than you are and your time is really better spent on a client's tax return, or better spent just not working.

That's comparative advantage: Do what you're good at, and pay somebody else to do the other stuff. This translates to national economies as well. In the classic hypothetical situation, we have a two-person economy consisting of Bob and Carly.

*Figure 10.2* *[To Come] Comparative Advantage with Broccoli and Cabbage*

This economy consists of two commodities: broccoli and cabbage. Now Bob can produce two broccoli and three cabbages in a given time period, whereas the ever-resourceful Carly can produce three broccoli and five cabbages. So, at first glance, things don't look good for Bob. But under the theory of comparative advantage, Carly should make cabbages and Bob should produce broccoli. Why? Whereas Carly has an absolute advantage in both products, she stands to gain the most by making cabbages. She gives up more by producing broccoli. Bob thus should make broccoli, because he gives up less to do so. He thereby has a comparative advantage in broccoli.

4. The theory that if people and states produce what they're good at, and buy what they're not, we'll all be better off. It is the chief justification for free trade.

There are clear examples where this is true. It would be possible to grow citrus fruit in Canada, perhaps in heavily climate-controlled greenhouses. But it would be very expensive fruit. Better for Canada to grow trees and produce lumber, and leave oranges to Florida, Mexico and Brazil. Nobody argues with this kind of comparative advantage, rooted as it is in geography and climate.

But in fact most trade is in similar kinds of goods, such as automobiles and parts, aircraft and parts, heavy equipment and raw materials. Rich nations trade with other more often than anybody trades with poor nations. Canada remains the United States' biggest trading partner, and among the biggest category of what we trade with each other is automobiles and parts, which are produced in abundance on both sides of the border.

And even then, trade gets tricky. Softwood trees such as spruce, pine and hemlock grow well on both sides of the border, and despite their generally rosy relationship, the U.S. and Canada are frequently in dispute about softwood lumber exports. U.S. lumber producers argue that Canada's low taxes on timber harvests constitute an unfair advantage. Canadian timber producers will argue that they need that tax break in order to compete with more productive forests south of the border. Both sides want to preserve jobs in the timber and wood products industries; both sides face lobbying pressure both from workers and business owners.

These kinds of trade disputes get even more complicated with more complicated products. Take commercial jetliners, for example. During World War II, the U.S. produced most of the Allies' heavy bombers, which meant that U.S. firms left the war poised to seize a comparative advantage in producing large commercial aircraft. Some European firms attempted to build commercial jet transports, but they weren't as good as the planes built by U.S. manufacturers such as Boeing, McDonnell Douglas and Lockheed. The DeHavilland Comet, the first commercial jet transport, tended to come apart in mid-air, which was not very popular with passengers or pilots.

Building commercial aircraft, however, was a point of national pride for the Europeans, as well as a potential source of jobs and a way to maintain technological and engineering skill. So firms from Great Britain, France, Germany and Spain joined to form what became known as Airbus. Airbus was heavily subsidized by the governments of the member firms—literally billions of dollars in "loans" that, apparently, will never be repaid—and Airbus was able to become competitive in the commercial jetliner market. Essentially, they pushed McDonnell Douglas and Lockheed out of that business, so that only Boeing and Airbus remained as dominant competitors in the large jetliner business. What's important to understand here is that if you invest enough money, you can buy a comparative

advantage. The theory of comparative advantage would have said that the Europeans shouldn't build jets, and the Japanese shouldn't build cars, and the Chinese shouldn't be building anything. Theory, however, provides few jobs and pays no taxes.

It doesn't always work; the French once spent a lot of money trying to develop a domestic computer industry, without much success. However, the ability to buy a comparative advantage undercuts the entire theory, since making what I'm good at may depend on how much I'm willing to invest in becoming good at making it.

It should also be noted that virtually no nation has built its economic success on free trade. The U.S. and Europe built up their economies in the 1800s in large part via protectionism—limits on imports while trying to maximize exports to other countries, while protecting jobs and profits in domestic industries. The roaring success stories of the last half century—Japan, South Korea, Taiwan, Hong Kong and Singapore—pretty much did the same thing. To a lesser extent, China has practiced the same approach to trade and economic development.

Pro-free trade economists would argue that if other governments want to subsidize the heck out of their products, we should sit back and enjoy the lower prices. This, however, creates the Wal-Mart conundrum. Wal-Mart, which gets about 80 percent of what it sells from China, is in fact a very efficient firm that offers lower prices on many products. However, it also pays very low wages and offers few affordable benefits to the majority of its employees. Wal-Mart has even gone to so far as to coach their employees on how to apply for public assistance, because many of them earn so little they qualify for some kinds of welfare benefits. So, to some extent, the lower prices are offset by the low wages. Low prices are of limited consolation if you're not making any money to begin with.

## The Case Against Trade

There are a number of arguments against trade, not all of which make sense, but which are worth considering:

**It promotes low wages**. This is true domestically, since if a factory threatens to move overseas, it's usually in pursuit of lower wages. However, while workers overseas are making less than their American or European counterparts, they're probably making more than they were before, or they wouldn't have taken those jobs. So in other countries it may force wages up. Meanwhile, workers in the countries which lost the jobs typically don't make as much as they did in their old jobs.

**It promotes poor working conditions**. This much seems to be true. The wages in overseas factories in nations such as China are generally good by local standards. However the working conditions can be terrible—long hours, no overtime, dangerous conditions. In fact, it looks a lot like factory conditions in Europe and America in the late 19th and early 20th century, conditions that were only addressed through extraordinary political efforts that included legalizing unions and creating workplace safety laws. Chinese workers frequently are unionized, but like non-communist Chinese political parties, they are powerless.

**It costs countries jobs**. There's certainly some truth to this. The United States lost more than 800 shoe factories between 1972 and 1992, and very little clothing is made in the U.S. anymore. These were not, on the whole, highly paid jobs, but if it was your job and it walked away, this couldn't have been much fun.

The United States in particular has been slow to do anything about lost jobs. In the 1980s, the Reagan administration had a trade assistance program for people who lost their jobs due to trade, but it was nearly impossible to qualify for and helped very few people. Only recently has government stepped up to try to help people who need to be retrained for new work. Nonetheless, in general, the jobs that people find after trade displacement don't pay as well as the jobs they lost. On the other hand, there's also a structural problem that has little to do with trade: Manufacturing employment has been falling worldwide for decades—it simply takes fewer people to make a widget than it used to.

**The infant industry argument**: To get an industry going, it may be necessary to protect it from competition until it gets on its feet. The evidence is not good that this works, however; only Harley-Davidson, among major American companies, has successfully used protective measures to recover from a down period and become profitable again.

**The strategic industry argument**: Without protection of vital national industries, a nation may lose capacity in important sectors such as shipping and shipbuilding. For a nation that sees itself as having global interests, such as the United States, this has to be a serious concern.

Similarly, some economists argue that nations should not do so much to protect domestic agriculture, probably the most protected sector in the global economy. Much to the frustration of poorer countries whose economies are still heavily dependent on agriculture, richer nations still erect substantial barriers to trade in food and agricultural products. Part of that is because farmers are usually politically influential—farm-region and farm-state legislators tend to be cohesive and focused on farm issues, and basically nobody hates farmers. It's hard to dislike

someone whose job is growing food. But perhaps more importantly, a nation that couldn't feed itself would be vulnerable to any kind of interruption in trade—either war or natural disaster. Allowing one's food domestic food supply to wither away, strategically speaking, is pretty much like putting a gun to your own head.

**Overspecialization** could leave a nation's economy vulnerable to downturns in a particular sector. This has been especially true for nations that have relied on a particular industry, such as nations whose foreign earnings depend on sales raw materials, such as minerals such as tin or copper. If copper prices fall, you're in trouble.

Nations who let their industries wander away to other countries also lose technological expertise and industrial infrastructure that makes it harder for them to participate in the next big thing, whatever that might be. As with food, disruptions in supply could then mean difficulty in acquiring products that people want.

**Dumping**: An exporting nation could engage in dumping—selling goods at below cost to drive competitors out of business. There's some evidence that this happened with Japan and television sets in the United States. There's less evidence in other industries, such as steel. What's also apparent is that U.S. firms failed to build on their comparative advantage in many industries after World War II. They got greedy, and didn't push their advantage with new technology and more innovative ways to pay workers to get wages to reflect actual costs and profits.

**Environmental damage**: This could be the single biggest argument against unfettered trade. For example, in the United States, the next bite of food you take traveled an average of 1,500 miles to get your plate. The pollution generated by transporting stuff around the world that could be produced closer to home—such as manhole covers from India to the West Coast of the U.S.—is one of the leading sources of greenhouse gases, which appear to be the main source of climate change. More about that later. Trade also can result in localized environmental degradation, such as cutting down tropical hardwood forests to produce chopsticks for the U.S. and Asia.

## The Political Dimension of Trade

In terms of politics, nations are faced with conflicting demands. On the one hand, trade has helped economies grow and lifted more people around the world out of poverty. Domestic political interests push for both more trade—such as firms that export a lot—and for less trade, such as firms that must compete with foreign

producers, and also labor groups who hope to see their members continue to have jobs.

This has led to an ongoing movement for **fair trade**[5], which usually means that the foreign producer has been fairly treated and paid. So, if you buy certified fair trade coffee, the grower in Burundi or Costa Rica is supposed to have been paid a better-than-market price for his crop. The market price is the price per pound currently being offered on world coffee markets, and markets don't much care if you're in the poorhouse or a millionaire. In commodities markets, such as wheat and coffee, the crop is worth what somebody is willing to pay for it, and not a dime more.

So governments around the world face conflicting demands when it comes to trade. To date, free trade advocates have been winning, despite widespread citizen protests against trade and globalization. Remember Sell's First Law of Political Economy: The decision is made in the direction of the greatest value. Usually that's money. So if increased trade makes somebody richer, the interest groups that represent those people will successful pressure government to keep trade barriers down. Governments have the idea of liberal commercialism on their side, so that makes it easier to accept the idea that more free trade will be better for everybody. And once free trade is established, the cost of reversing it gets added to the balance sheet. Limiting imports and thereby raising their prices won't be any more popular than watching jobs get shipped overseas.

## Trade Deficits and Currency Exchange

The one trade issue about which you shouldn't lose any sleep is the trade deficit. If a nation exports more than it imports, it has a surplus. If it imports more than it exports, it has a deficit. The United States has run a trade deficit since the 1960s. If, personally, you had in essence spent more than you earned over the last 50 years, you would either be broke or heavily in debt, and maybe both. However the U.S. trade deficit is in fact a tiny portion of the U.S. economy and hence not a major issue.

For example, in 2010 the total size of the economy was $14.6 trillion. The total trade deficit was $497.9 billion. That's about 3 percent of the total economy. We run a trade deficit in goods, which is partially offset by a surplus in services and by earnings of U.S. firms from overseas operations.

Left alone, this situation will resolve itself. Ultimately a U.S. trade deficit forces the value of the dollar down. Our trading partners end up holding more dollars than they know what to do with, and that surplus of dollars means they are worth less. Money is a commodity like any other. Meanwhile, the currency of the nation with

5. Trade, often involving commodities such as coffee, in which buyers agree to pay a higher price to support growers in other places.

the trade surplus gains in value, since there's a higher demand for that currency from nations who want to buy that country's goods and services. Those shifting currency values, by themselves, would address trade imbalances. For the nation with a weaker currency, imports become more expensive since it takes more dollars to acquire the equivalent amount of yen or euros. Exports, meanwhile, become cheaper for foreign buyers, since they need fewer euros to get the right amount of dollars. So exporting firms are helped, although consumers will see higher prices.

That's all true if currency values are allowed to float on open markets. An issue between China and the rest of the world is that China has tended to assign its currency at a fixed exchange rate relative to the dollar and the euro, for example. As China has been running a trade surplus, the yuan would normally be rising in value against the dollar and the euro, making Chinese exports more expensive but lowering the price of imports for Chinese consumers. Why are they doing this? Because the Chinese Communist Party maintains legitimacy in part through providing continuing economic growth, and a slowdown in its export-driven economy would mean higher unemployment and more civil unrest. So the U.S. and Europe continue to push China to let the yuan float, and the Chinese keep holding back. As serious as this issue sounds, you should keep in mind that if the yuan did float, it would only address about 3 percent of the U.S. trade deficit with China.

## Trade Policy Options

Presuming that we might be most concerned about the jobs issue, what should be done about trade? For much of modern history, the usual answer was **tariffs**[6], which are simply taxes on imported goods. Tariffs raise the price of imports, and make domestic goods more cost-competitive. The GATT and the WTO have largely done away with tariffs, which isn't necessarily a good thing. When, as in the 1800s, tariffs were up to 50 percent of the price of a good, they did indeed reward inefficiency among domestic producers and make it difficult for foreign firms to compete. However a low tariff, say 2–3 percent, wouldn't penalize or reward anybody too much, and the money could be used to help people who lost their jobs because of trade.

Truly protective tariffs, which would make imports unaffordable, are expensive. They cost a lot of money, hundreds of thousands of dollars per job for jobs, such as those at textile mills, that don't actually pay all that well. Unfortunately, tariffs have been replaced by **non-tariff barriers**[7], which still make products more expensive but don't produce any revenue. In short, they leave consumers holding the bill.

6. A tax on imports into a country that is paid for buy consumers in that country and effectively raises the price of the imported goods.

7. Regulations such as quotas and environmental and safety regulations that may restrict the quantity of goods imported into a given country.

Non-tariff barriers include quotas, which are limits on the number of units that can be shipped into the importing country. U.S. steel firms, which emerged from World War II with a comparative advantage over the rest of the world, failed then to invest in new products and processes and so fell behind Europe and Japan. Producers in Europe and Japan, having been destroyed by the war, were forced to build new mills with the latest technology. U.S. firms responded by getting quotas on steel imports. Foreign steel makers responded by moving into specialty steel, where U.S. firms had previously held an advantage, and so they lost that business too. American steel manufacturers have limped into the 21st century after dominating the 20th.

Another form of non-tariff barriers include health and safety requirements. The Japanese protected that country's tiny and nearly sacred apple industry safe from competition with U.S. apples by barring imports for fear of an infestation of the coddling moth, which can in fact devastate orchards. It wasn't until U.S. producers shipped apples packed in nitrogen gas—so that no pests could live—that the Japanese finally opened up that market. The Japanese did the same with various arcane measurements on automobiles, contending that U.S. cars were not safe. Of course, it didn't help that Japan is a right-hand drive market, and U.S. cars exported to Japan still had the steering wheel on the left side.

A nation also could simply devalue its currency, declaring a low official exchange rate to raise the price of imports and lower the price of its own exports. This in effect is what China has done. Nations also engage in export subsidies: using various financial means to make buying your products cheaper for foreign customers. The U.S. uses the Export-Import Bank to make loans to buyers of U.S. products, particularly Boeing aircraft. Finally, nations rely on domestic content legislation: Laws that dictate that a given product will have so much "domestic content," that is material or parts that come from the importing nation. Sometimes also called offset agreements—we'll buy your jets if you buy enough parts from us—these are supposed to be outlawed under the WTO. And if you believe this, I'd like to sell you your neighbor's car. He said it would be OK. Honest.

In fact, the WTO is supposed to address all these kinds of barriers, but as we've seen, nations have all kinds of strategic and domestic political reasons for resisting free trade when it comes to imports but being all for it when it comes to exports. For example, WTO-style free also makes it more difficult for a nation such as the U.S. to bar imports of fish that are captured in an unsustainable way. It is these kinds of environmental issues that may create the biggest political challenges of the current century.

## KEY TAKEAWAYS

- Trade is neither all good nor all bad.
- Trade imposes both costs and benefits on states and consumers. It can provide greater selection, quality and better prices for goods; it can also cost people jobs and lower wages in countries that lose jobs. It also can add to environmental damage around the world.

## EXERCISE

1. Think of the last thing you bought. Where did it come from? How far did it travel to get to you? Could you have bought the same product closer to home? What would that have meant in terms of price or quality?

## 10.2 Debt and Deficits

PLEASE NOTE: This book is currently in draft form; material is not final.

**LEARNING OBJECTIVES**

In this section, you will learn:

1. How the European debt crisis came to be.
2. How much the U.S. budget deficit matters.

A current problem is many parts of the world is debt. Nations spend a lot of public money to provide people with the services they say they want. If tax revenues exceed expenditures in these public budgets, the nation has a budget surplus. If, however, spending exceeds revenue, nations have a budget deficit. Nations fund budget deficits in one of two ways—either by printing money, which is fortunately fairly rare anymore, or by borrowing on the open market. If you have a U.S. Savings Bond, you are helping the fund the federal budget deficit. Governments sell **bonds**[8], which are financial obligations that come in specific denominations ($1,000, $5,000 and $10,000 for U.S. treasury securities) to cover expenditures in the short term. Investors lend money to governments by buying the bonds, collecting interest payments for the life of the bond and getting their initial investment back when the bond matures, in say 10 or 20 years.

*Figure 10.3* *[To Come] International budget deficits*

Part of the recent debt problem has been in Europe. In 1999, 17 nations in Europe adopted a single currency, the euro. The goal was that by lowering the transaction costs that follow from having to turn francs into deutschmarks, the single currency would in fact raise gross domestic product (GDP) by 1 percent. That may not sound like a lot, but 1 percent across an economy that's bigger than that of the United States is both a lot of money and a huge economic gain.

8. Debt instruments sold to investors by governments and businesses. The borrower gets the money upfront; the investor gets regular interest payments and receives the loan amount back at the end of the bond's term, which could be five to 20 years.

As always, however, there were tradeoffs. It meant that all the member nations of the Eurozone would have the same monetary policy. In practical terms, this means the monetary policy of the German central bank, since they are the biggest economy in Europe. The Germans, dating back to their experience of hyperinflation in the 1920s—which helped Hitler take power—are fairly obsessed with keeping inflation at bay. But what's good for one country might not be good for another. One nation wants to control inflation; another nation wants monetary stimulus. Under the Eurozone, that's not happening.

For whatever reason, the economies of northern Europe—Germany, France, the Netherlands, Sweden—are stronger than the economies of southern Europe, in particular Spain, Italy and Greece. So the latter three nations have been running larger **budget deficits**[9]. But without the ability to engage in monetary policy on their own, they cannot inflate their currencies so as to pay back their debts with cheaper money.

Why are these governments budgets' so out of whack? In Greece, for example, tax evasion is apparently a way of life, so that the Greek government is not collecting all the taxes it should. Government benefits are extraordinarily generous, so people retire after age 50, and even more taxable earnings are lost to the state. It should be easy to see why the government pays out such benefits: Government largesse is a key source of maintaining legitimacy in the eyes of voters. Voters come to view this every-day-is-Christmas approach to governing as a social contract, and change becomes difficult to achieve.

As Greece's debts have mounted, lenders begin to demand higher interest rates so as to cover the risk of Greece defaulting on its debts. Default would mean that investors lose a lot of money. You might be tempted to think, "sucks to be them," but the losses would mean investors would be more wary of loaning money to anybody, raising borrowing costs all over the world, and making the global economy shrink. Even in the U.S., a Greek default would have echoes, beginning with higher interest rates on credit cards and on home and auto loans. In short, it would be a lose-lose situation.

European policy makers, particularly the leaders of Germany and France, have responded by bailing out the Greeks, the Spaniards and the Italians, in exchange for tight "austerity" budgets, in which government spending is greatly reduced. The problem with this is that quick, large-scale reductions in government spending will mean that those three economies go toward if not into recession, impacting their neighbors and trading partners as well as making the governments' revenue problems even worse.

9. When expenditures exceed revenues.

The Greeks could pull out of the Eurozone, but that would mean high inflation on imports and a substantial whack to the Greek economy. So there are no easy answers here, at least until the Greek government can convince people that what they need to do is pay their taxes. But, the world over, telling people that they need to tighten their belts and pay their taxes is never politically very popular. And saying "revenue enhancements" instead of taxes doesn't fool as many people as perhaps it once did.

## The American Problem

The United States faces a somewhat similar problem with regard to its budget deficit, although the U.S. economy is much larger than the Greek economy, giving the U.S. a lot more wiggle room when it comes to monetary and fiscal policy. The U.S. budget deficit is not nearly as serious as, say, the Greek deficit, and the U.S. can still engage in monetary policy to suit the needs of the moment.

Nonetheless, the budget deficit became a very big political issue in the 2012 presidential campaign, with Republicans decrying the deficits of the Obama administration. Where did they come from?

In 2001, George W. Bush became president and inherited a **budget surplus**[10]. He convinced Congress to pass rather substantial tax cuts, thus reducing revenue and ending the surplus. Then, following 9.11, the president and Congress got the U.S. involved in two wars, and the budget deficit returned with a vengeance.

And then came the financial meltdown. With low interest rates in the 2000s, and a financial industry that discovered it could make a lot of money on the fees on home loans to people who couldn't really afford them, the nation got a bubble in the housing market. A bubble is when investment exceeds potential in a particular market. In the case of housing, which represents about a quarter of the entire U.S. economy, the bubble was of substantial proportions, perhaps $1.4 trillion. This was fine as long as housing prices continued to rise, but as with any bubble, prices could not and would not rise forever. In 2007, prices began to fall, and the housing market collapsed. People could no longer sell their homes for more than they paid for them. Once your home is worth less than you paid for it, you are unable to sell it any price. As a home represents the single largest investment most people will ever make, overall wealth in the economy shrank and the entire economy went into recession.

Economists expected a recession; we've had lots of bubbles before, most recently in internet and technology stocks in the late 1990s, and going all the way back to railroads in the 1800s. People lose their jobs, some wealth evaporates, and

10. When revenues exceed expenditures.

eventually the economy recovers and we move ahead. It's not pretty, but since the Great Depression, we're usually able to recover in a year or so.

But this time, the problem was much bigger than a typical bubble. People used to say "safe as houses" with regard to home loans, because financial institutions subjected prospective borrowers to intense scrutiny. The loans are then bundled into blocks of loans, and resold to big borrowers who want a safe, profitable place to park their money. So the new bundled home loans, which included loans to people who were likely to default, were sold to investors all over the world.

What economists didn't realize was that the biggest banks had made side bets on the mortgage loans. Called derivatives, because they derive their value from the value of something else, such as a bundle of home loans, they were unregulated bets on which way the market would go. In some instances, banks even bet against the people they were lending to (without telling them, of course). In some senses, these were insurance policies on the loans. But if everybody files a claim at once, you have a problem. Say I'm Lehman Bros., a big Wall Street investment bank. I've sold billions in bundled home loans to investors. Then I go to AIG, the world's largest insurance firm, and buy an insurance policy on the loans, in case they go bad.

Then say everybody else does this. (They did.) Then say many of the loans go bad. (They did.) With everybody having bet the same way, like everybody betting on the same horse at the race track, there's nobody left on whom to lay off the risk. And so instead of a $1.4 trillion mortgage bubble, we were faced with a $60 trillion derivative bubble, or more than four times the size of the entire U.S. economy. It's worth noting that U.S. investment banks had lobbied heavily to prevent the regulation of the derivatives market in the 1990s. So the derivatives bubble threatened to destroy the financial system and provoke a second Great Depression.

Even with bailouts of the banking system and a fiscal stimulus package to help right the economy, the United States still endured the steepest recession since the Great Depression of the 1930s. Increased federal expenditures and reduced state, federal and local revenues meant a bigger budget deficit. As of 2012, the economy hasn't fully recovered, with private sector job gains offset by reductions in public sector employment.

So how important is the budget deficit? As a percentage of GDP, the U.S. budget deficit is slightly higher than Greece's, both at around 10 percent. Then again, at $15 trillion, the U.S. economy is 50 times larger than Greece's. So the scope of the problem is not quite the same. We should understand that no one in or near government in the United States, Republican or Democrat, conservative or liberal,

thinks the United States can sustain that level of deficit forever. Nor do they plan to.

Conservatives propose to cut spending and taxes and shrink the overall size of the federal government. If they just proposed cutting spending, this would help balance the budget, but cutting taxes as well will probably not fix the deficit. First, cutting spending would lower overall demand in the economy, threatening the push the nation back into recession. The argument for cutting taxes is that lower tax rates will help the economy grow, but tax cuts have a somewhat uninspiring record for spurring economic growth. It's not difficult to grasp how they should work: Tax cuts mean more money in people's pockets, which, hopefully, they will go out and spend, creating more economic activity and percolating throughout the economy. Firms get more business, place more orders and hire more people. However, that doesn't happen as often as you might expect. The problem could be that tax cuts most often come in response to a soft economy. So that people who have jobs, despite having more money in their wallets, are afraid that they, too, will get laid off or have their hours cut, so rather than spending the money, they save it. Increased saving is not bad for the economy, or for people, but it doesn't generate the rapid bounce that policymakers are hoping for.

Liberals propose to address the deficit by raising taxes and trying not to bust the piggy bank on spending, while maintaining public investment in things such as infrastructure and public education. They argue that this kind of spending will in fact make the economy grow more than tax cuts will. In their defense, it was the combination of a growing economy, small tax increases and restraint on federal spending that allowed Democrat President Bill Clinton and a Republican-controlled Congress to balance the federal budget in the 1990s. On the other hand, government has to have the political will to spend on things that will generate economic recovery, and it has to be just as willing to use any budget surplus in the future to reduce the deficit. None of that is a given.

Are budget deficits a problem? As then-Vice President Dick Cheney said, responding to criticism of the Bush-era budget deficits, "Deficits don't matter." Or maybe they do, as in 2012 the budget deficit was a big campaign issue for many Republican candidates. In political terms, deficits seem to matter more if somebody else is responsible. The usual argument against deficits is that if the federal government borrows too much, it will crowd out private sector borrowing, hurting the economy. There is no evidence that this ever happens. A more serious problem is that the bigger the deficit, the more of the federal budget that is spent on interest on the debt. That leaves less money available for everything else, from investment to tax cuts.

## U.S. Debt Abroad

A third complaint you may hear is that the trade deficit and budget deficit together mean we have to borrow money from China. China holds around $1.2 trillion of the United States' total outstanding debt of around $14 trillion. Nonetheless, repeat after me: We do not borrow money from China. First, China holding U.S. debt is not a remarkable thing. In fact, foreign nations hold close to half (47 percent) of outstanding U.S. debt. Why? Because they end up holding more dollars than they know what to do with in their foreign currency accounts. They could use the money to buy things, or invest, and one safe place to invest is U.S. government treasury securities. If you were left more Euros than you know what to do with, you might buy Eurozone bonds. Ditto for yen and Japanese bonds, or Canadian dollars and Canadian bonds. At this point, you probably only buy Greek bonds if you're feeling frisky and risky. It's important to note that no foreign investor, public or private, buys U.S. debt instruments directly from the U.S. Treasury. They buy them in the open market, sold by other investors such as the large banks that participate in Treasury auctions.

There is small potential risk in having foreign states holding U.S. debt. If, for example, China were to dump its U.S. debt holdings on the world market, the value of the dollar would fall and U.S. consumers would experience inflation in the price of imported goods. And that would mean that they would buy fewer Chinese-made goods as well, hurting China along with the U.S. For better or worse, the U.S. and Chinese economies are currently joined at the wallet if not the hip.

What is likely to happen with the U.S. deficit? Most U.S. states by law must balance their budgets, and so they have tried various methods to restrain spending. However, items such as sunset laws and line-item vetoes also have proved incapable of reining in spending. A line-item veto allows an executive the ability to strike only part of a bill as opposed to the whole thing. States where governors have line-item vetoes do not have budgets noticeably more in balance than do states without. Sunset laws require legislatures to reauthorize state agencies, or they go the way of the sunset. But sunset laws typically haven't been effective at ending the lives of government agencies, which tend to find new reasons to exist once their original tasks are complete. Congress went so far as to give the president a line-item veto in 1996, but the Supreme Court invalidated it as an unconstitutional delegation of budgetary power to the executive branch. In 1985, the Gramm-Rudman Act, named for its two authors, was to pare down non-essential spending when Congress failed to balance the budget. However this was voided by the courts because it gave executive power to the Congressional Budget Office, which is simply a tool of Congress.

Rest assured that the deficit dilemma will not persist forever. American politics look like this: There's a lot of posturing, particularly in election years, and then the problem gets serious enough that Democrats and Republicans come to some kind of compromise, so that between growth, taxes and spending restraint, the budget is balanced again. The simple answer then becomes using the resulting budget surplus to buy back and retire the debt, at least to a more manageable level. And sometimes that looks like the harder task.

## KEY TAKEAWAYS

- Nations can sustain budget deficits for a while, but not forever.
- Too much debt raises borrowing costs for the government and leaves less money available for other things.

## EXERCISE

1. Look at the U.S. federal budget. What categories of spending would you cut? What would be the consequences of those cuts?

## 10.3 The Environment

PLEASE NOTE: This book is currently in draft form; material is not final.

**LEARNING OBJECTIVES**

In this section you will learn:

1. Why climate change appears to be a problem.
2. Why doing something about it is politically difficult.
3. How resource shortages pose political problems, but also invite market-based solutions.

Perhaps the most difficult political issue of our time is the environment. Although some people try to cast this as a scientific issue, there's actually less scientific disagreement over the challenges of the environment than you may realize. As with everything in life, and especially in this book, you will have to make up your own mind; in the meantime, I won't hide anything I believe from you.

### Resource Shortages

The unfortunately common idea that conservation—using less of finite resources, or using them more efficiently—means a lower standard of living, is generally wrong. Conservation means not wasting resources needlessly. It doesn't mean living like a medieval peasant or a caveman. Equally unfortunate is the notion that running out of a particular resource, such as oil, will result in society reverting to a dark and distant past when, as the historian William Manchester put it, our ancestors lived in a world lit only by fire.

Indeed, it was a sad day in the mid-1800s when the world ran out of whale oil and everyone had to live in darkness. In fact, electricity really did revolutionize human existence. Electricity expanded the day wherever it went. Before electricity, people tended to go to bed a lot earlier, and the night shift was a largely unheard of event. The advent of the internal combustion engine and automobiles saved major cities the world over from a sea of horse manure and, often, abandoned dead horses.

The point is not that technology will save us from resource shortages, but markets might. A shortage of any resource raises its price and thereby makes substitutes more affordable and desirable. In your own lifetimes, higher gasoline prices have prompted consumers to seek and auto makers to provide hybrid and electric cars. The documentary *Who Killed the Electric Car* misses the key point that at the time, the economics of building a new technology car didn't justify the expense of developing and selling that vehicle. One could argue that General Motors and other auto makers were a bit shortsighted in not pushing the idea further, but at the time it was essentially a market-based decision, and not terribly surprising.

So there's good news and bad news on the energy front. First the good news: For 200 years, until the mid-19th century, whale oil was the chief source of lighting for much of the United States, and in some other parts of the world. And yet the demise of the whaling industry didn't plunge the nation into darkness. People discovered uses for oil from the ground, such as refining it into kerosene, and gave the whales a break. The great advantage of oil and its derivative fuels, such as diesel oil, gasoline and kerosene, which is used in jet fuel, is that they are energy dense: They pack a lot of energy into a small volume.

What has many people's knickers in a twist at the moment is Hubbert's Peak. M.K. Hubbert was a Shell Oil geologist who, back in the 1950s, predicted that U.S. oil production would peak about 1967. Derided by experts at the time, he was pretty close to perfect in his estimate. Using Hubbert's methods, others have now predicted when world oil production will peak. Estimates have ranged from 2004 to 2112, with the gloomiest group aiming for sometime this decade.

Someday, we will run out of oil. With China and India's economies blooming into fuel-burning, car-driving splendor, consumption of oil is rising. There are a couple of rocks in the path of this wheel of misfortune, however. First, the estimates all depend on how much recoverable oil you assume is out there. Estimates range from 1.8 trillion to nearly 4 trillion barrels.

It was probably easier for Hubbert to estimate how much U.S. oil was left, if only because the OPEC nations—the Organization of Petroleum Exporting Countries, which includes the nations of the Middle East—tend to try to keep the wraps on just how much oil they have in the ground. Nor do the estimates include oil from the tar sands of Alberta or the oil shale of Colorado. As prices rise, reclaiming those becomes profitable. The average estimate is for oil production to peak about 2037, including 2 percent annual growth in consumption. This seems like a reasonable guess.

Left alone, oil prices will rise, which will make substitutes such as hydrogen fuel cells more economical. Markets aren't good at everything, but they are very good at allocating resources. Expensive oil eventually means more transportation choices. It's no accident that higher prices have coincided with more offerings of hybrid gas-electric vehicles for sale. Moving from a petroleum-based economy to one based on another source of energy will have costs, but they are likely to be gradual and spread across the nation and the world.

Such a transition also will have benefits. Automobiles continue to be a major source of air pollution and greenhouse gases. And that's what markets aren't good at: dealing with the unintended consequences (externalities, in economese) of economic activity, such as pollution.

The pressure is thus on policymakers in governments the world over to plan for the day when in fact oil becomes scarce. The challenge there is the up-front cost of developing new technologies, and whatever technologies the government chooses to support means that some technologies will not be supported. Remember the role of interest groups in government; the people who have put their money on the technologies not chosen will campaign both to get government support and to block support for the other technologies. It is possible right now to reduce one's dependence on oil. Brazil, the fifth largest country in the world with the sixth largest economy, essentially imports no oil from anywhere, as they have developed fuel alcohol production to the point where they don't need foreign oil. In Brazil's case, they rely on sugar cane, a relatively cheap feedstock from which to distill alcohol.

### The Corn Problem

In the United States, in contrast to Brazil, we heavily subsidize the production of corn, a lot of which gets turned into ethanol, which gets added to gasoline to produce a slightly cleaner burning fuel. The problem with ethanol is that it takes nearly as much energy to produce alcohol from corn as you get from the alcohol produced. It's not very efficient. Corn also requires copious amounts of nitrogen to grow, which then washes into the Mississippi River basin and into the Gulf of Mexico, where the overabundance of nitrates is slowly turning the gulf into an underwater desert. Meanwhile, a lot of the corn is fed to cattle in industrial feedlots to help fatten them up before they are slaughtered. Unfortunately, beef cattle can't properly digest corn, so if they're not pumped full of antibiotics, they become sick. The overuse of these antibiotics is quite likely breeding strains of drug-resistant bacteria, since, like our ancestors who survived the plague in the Middle Ages, some of the bacteria will simply survive the assault of antibiotic drugs. These bacteria eventually will be consumed by humans who may then become ill.

This raises the question of why the U.S. adopted this policy. First, the corn farmers are not inherently evil people. They are, like most of us, just trying to make a living. Agricultural subsidies in the United States were ratcheted up during the Nixon Administration, when inflation was high and food prices in particular were rising. Oil prices were rising, and energy costs tend to affect everything else. A policy that provided for more affordable food would help the government maintain legitimacy, and so it was pursued. Farm-state members of Congress would of course be very supportive of such policy, because their constituents are likely to be very connected to and reliant upon the farm economy.

But say that current U.S. policymakers recognized what was going on and found themselves on the corns of a dilemma. How could they respond? Simply ending subsidies for corn and for ethanol production would impact a lot of people and their jobs, and so the corn lobby, the ethanol lobby and the farm-state legislators would all work to keep that from happening. Whether you think this is right or wrong, you should not be surprised that this is how politics works. People seek to preserve and advance their own interests.

The answer might be to pay the farmers to do something else, such as grow a better feedstock, such as sugar beets, from which alcohol can be produced more cheaply and with less environmental impact. The challenges here are that 1. People don't like change and 2. This would have a substantial up-front cost. So even if the government were able to offer a low-cost conversion to another way of making a living for some corn farmers, there would be resistance.

It's worth noting that some resource shortages aren't as easily dealt with. Overfishing of the world's oceans has caused many fish populations to collapse, threatening a major source of food for the world. Although nations by themselves can check this through various methods, when the problem spills over into disputes between nations, the situation gets trickier, as we'll see with the question of water.

### Water

Another resource issue is water, in particular fresh water. Current estimates suggest that one-fith of the world's population lacks consistent access to clean drinking water. Moreover, several large aquifers are steadily running dry. Aquifers are the often-gravelly spaces under the ground where rainwater collects. Ever since human beings figured out how to dig wells, people have been tapping aquifers to get water for drinking and irrigation. Along with rivers, aquifers are one of the chief sources of usable water. But now, with population growth and thereby rising demand for water, the Ogallala aquifer, which stretches from the Dakotas to Texas and irrigates one-fifth of U.S. farmland, is being depleted faster than rainfall can fill

it up. Aquifers in Africa, the Middle East and China face the same problem. Water is being pumped out of the ground in the world's largest city, Mexico City, at such a rate that the city is literally sinking into the earth.

Rivers pose additional challenges. Rivers are useful for raising fish, generating power, irrigation, and capturing fresh water for drinking. However any one use reduces the amount available for any other use. Hydroelectric dams generate clean electricity, but greatly decrease the numbers of fish, since even with fish ladders, fish returning to spawn upriver get there in much lower numbers. Running more water through the turbines for electricity affects both fish and the water available for irrigation and consumption; diverting more water for irrigation or consumption impacts fish and electricity.

People the world over waste a lot of water. In the city of Phoenix, Ariz., two rivers flow into the city, and none flow out, even as citizens' lawns remain green and outdoor malls employ battalions of nozzles spraying mist to keep the walkways cool for shoppers. Estimates are that the United States loses 7 million gallons a day to leaky pipes and faucets; another estimate says England and Wales are wasting 20 percent of their treated water through leakage. And these are developed countries. Worldwide, estimates range as high as 60 percent.

Meanwhile, 2.6 billion people in the world live without adequate sewage treatment, and another chunk of the world's sewage system needs repair and upgrading. Sewage treatment helps prevent disease and limits the pollution of groundwater, which could further extend drinking water resources.

The importance of sewage treatment can't be overstated. On Hood Canal, near where I live, houses are on septic systems, which leak into the canal, creating a zone of water devoid of oxygen, and hence devoid of fish. The easy answer would be replace the septic tanks with a sewage treatment facility. The technology is fairly simple: Pipes run from people's homes to the treatment facility, where the effluent is pumped into a vat, slowly stirred by a large agitating blade, like you'd find in a washing machine, and bacteria do their job. Primary sewage treatment involves one vat; secondary treatment involves two. Tertiary treatment, which is both expensive and uncommon, can remove 99 percent of impurities. Experiments with running sewage through mini-canals of swamp plants, has produced drinkable water as well. But even adequate secondary treatment systems would do a lot to prevent water pollution and improve human hygiene, and create at least temporary construction jobs all over the world.

So why doesn't this happen? At this point, you should be able to break down the steps of seeing the political challenges of making something like this happen, even

with the obvious benefits involved. First, none of this would be free. Somebody will have to pay. In the U.S., homeowners can jointly agree to pay the cost of hooking up to a sewer line. That can cost thousands of dollars per home, money people may not have or may not want to spend. Otherwise government will have to step in and foot the bill. Local or national legislatures will have to vote to allocate funds, and sources of revenue will have to be found. And all for a project that, while important, lacks the excitement of more obvious economic development projects, or the immediate gratification of a new bridge or highway. We should note that the World Bank has helped finance wastewater treatment projects in several locations around the world.

Some scholars predict that the relatively near future could see wars over water allocation. The technological fix, desalination of seawater, is growing in use but still very expensive. Nations might solve the problem within their own borders. Leaking pipes and faucets and excessive irrigation consume an apparently frightening amount of water, as you may discover when you own a home of your own one day. But disputes between nations over water allocation poses greater challenges. Remember that unlike within the borders of a sovereign state, where the authority of the government can, ultimately, impose a solution, between states there is no higher authority. Anarchy prevails because no one is in charge.

Once again, domestic politics complicates a bilateral or multilateral solution. A treaty with a neighboring state to share a water resource will provoke some opposition inside each state, and it's an open question as to whether those interest groups will compel a change in policy. Moreover, the realist perspective on the part of the stronger state may suggest thumbing the collective nose at the weaker state and sharing less of the water, if any at all.

Market forces will help; increasing shortages of water will raise prices and encourage conservation, while making desalination more affordable. Of course, inland communities and states without ready access to ocean water will face greater challenges than will coastal states. Areas where desalination plants already are a major source of drinking water, such as Dubai on the Persian Gulf and Key West, Florida, have plenty of water close at hand. Either way, states will face increasing pressure to do something more. If states can force themselves to think ahead, so that water allocation and resource development can be planned an implemented on a regional and global scale before tempers become too hot and lines are drawn in the spreading desert sand, there may be a way past this problem. States that successfully navigate the water course may also find ways to convince their neighbors that the solution is one that somehow makes the well wider and deeper.

## Climate Change

**Climate change**[11] may be the most important issue of our time, and also the most challenging. The great majority of scientific research and evidence suggests that it's happening, and that human activity is a major contributing factor. The evidence against climate change tends to come from scientists who have been paid by the energy industry.See, for example, Oreskes and Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. New York: Bloomsbury Press, 2010. The argument that some people make, that people who believe that climate change is both a problem and a manmade problem simply want to lower our standard of living, is absurd from every angle. Nobody really wants a lower standard of living. Even people who contrive to live "off the grid," in homes that are largely energy self-sufficient, are not really trying to live like our pioneer ancestors. It's difficult to imagine what profit there could be to people who argue that climate change is a serious issue that should be dealt with.

How do we know there's climate change? Ice and snow have been piling up on Greenland for at least 110,000 years. The ice includes tiny pockets of air. By drilling and taking core samples from lower strata in the ice, scientists are able to tap those tiny air pockets and see what the atmospheric composition was like in previous millennia. What they have found is that the amount of carbon in the atmosphere has never risen so far so fast as it has since the dawn of the Industrial Revolution in the 1800s. That's when humans began cutting down forests and burning large amounts of fossil fuels such as coal and oil. They're called fossil fuels because they were created from layers of vegetation laid down millions of years ago, which then was compressed by layers of sediment piled on top over time. The pressure turned the decaying vegetation into coal, oil and natural gas. As we noted earlier, fossil fuels have the great advantage of being energy dense—they pack a lot of power into a very small space. A coal fire, for example, burns much hotter than a wood fire; steam engines became much more powerful and efficient when they changed from burning wood to burning coal, and more efficient still when they burned oil. In many ways, they made the modern world possible.

They do, however, release large amounts of carbon into the atmosphere, which creates the greenhouse effect. A greenhouse works because it traps heat inside, raising the average temperature and allowing you to grow plants out of season, for example. On a global scale, however, this means average higher temperatures worldwide, as evidenced by steadily retreating glaciers around the world.

This phenomenon led to the use of the term global warming, which is probably unfortunate because the real effect includes not just global warming but more temperature extremes everywhere, including colder temperatures in some places and warmer temperatures in others. It also means more and more powerful storms,

11. Rising average annual temperatures, resulting in more extremes of weather throughout the world, likely caused by deforestation and increased burning of fossil fuels.

more droughts in some areas, and rising sea levels, threatening coastal communities and islands around the world. In a worst-case scenario, the arctic ice cap melts at the North Pole, releasing massive quantities of frozen carbon now held in check under the ice cap, greatly raising average temperatures and radically altering the biosphere. Trees, as we know them, likely would disappear. And, among other places, goodbye, Florida; so long, Seychelle Islands; adios, Aruba.

In any event, scientists now speak of climate change as opposed to global warming. We've known this for a while; the second Bush administration suppressed a study by government scientists who concluded both that climate change is real and that people are causing it. One study concluded that it would only really impact food production, but that in itself should be enough to be cause for alarm. By one estimate, climate change will lower world GDP by 1–3 percent, and that is a lower standard of living for everybody.

*Figure 10.4* *[To Come] Per Capita Carbon Emissions by Country*

Do we know that all these terrible things will come to pass? We don't, but it's a big bet to make that they won't. Assuming all this is true—and at the moment, it doesn't appear to be a big assumption—it will require global policy solutions. It's unlikely that the market forces by themselves will address this. As valuable as clean air and more stable temperatures are, they are hard to put a price tag on. The production of greenhouse gases is a classic free-rider problem. Any one of us can do something to lower our carbon footprint, but the individual (or nation) assumes all the cost of doing that and shares the benefit with everybody else for free. Under that scenario, few people are likely take on that expense. Once again, absent a world government the power to enforce the decision, anarchy prevails and nations do not unilaterally change policy.

In 1997, the nations of the world went to Japan and negotiated what became known as the Kyoto protocol. To date, 191 nations signed the agreement to lower their output of greenhouse gases, but the two big kids on the block—the U.S. and China—have not complied. Profit and legitimacy seem to be the two drivers. In the case of China, the legitimacy of the government largely relies on continued economic growth. China's booming economy is every hungry for more electricity, so China keeps building coal-fired electric plants and gets nearly 70 percent of its electricity from coal. Burning coal is a major source of greenhouse gas emissions. Reducing its reliance on coal would cause at least short-term dislocations in China's energy supply and threaten the country's stability.

Coal is the leading source of the world's energy, including 68 percent in China and 50 percent in the U.S. Technology to create energy from "clean coal" is at best decades away. No one is even sure if solutions such as sequestering carbon emissions from coal in abandoned mine shafts would even work. The excess carbon produced does eventually filter to the ground, including seawater, which is becoming more acidic and less hospitable to fish as it happens.

Again, it's probably not helpful to look at coal companies or coal miners as inherently evil. Coal mining is a dangerous and therefore well-paid occupation. U.S. states with big coal interests will feature members of Congress who will stand by their constituents in the coal industry and try to protect them from being put out of business by the government. A lot of jobs and profit are at stake, and those things are important too. Unlike oil, we're apparently in little danger of running out of coal anytime soon.

Alternatives are uncertain at the moment. The process known as **fracking**[12] is getting more natural gas, a much cleaner-burning fuel, out of the ground, but threatens underground drinking water sources in the process. Nuclear power is actually remarkably safe, overall, but when things go wrong, as at Chernobyl and more recently in Japan, they go wrong in a big way. Consequently safe nuclear power is one of the most expensive forms of electricity available. Hydropower from dams is very clean, but poses all kinds of other challenges, as we've already noted. Biofuels don't add more new carbon to the atmosphere but require substantial resources, such as water, to produce.

Economists in the last few decades suggested a market-based solution to help deal with carbon emissions, generally known as **cap-and-trade**[13]. Under cap-and-trade, government sets a lid (the cap) on allowable carbon emissions. So, major carbon producers such as factories and power plants pay a tax on higher emissions, or get a credit if they fall below the cap. They can sell those credits on the open market to firms that go over, who thereby avoid the tax. This puts a market value on pollution, and gives firms an incentive to clean up even as it rewards clean producers. It has been used with some success in the western United States, and in Europe. The Europeans, however, dealt with the cap in part by moving the most-polluting factories to India and China, and that's one of the problems. Unless it's a global system, a major polluter can simply relocate to someplace where there's no cap. It also doesn't address a major source of pollution—individual people and their households. Non-point source pollution, as it's known, is in some ways harder to deal with. One nasty factory could be cleaned up directly; a million smoky car exhausts is a different sort of challenge.

12. Hydro-fracturing, a process by which water is pumped underground to fracture underground pockets where natural gas may be found and pumped to the surface. It makes more gas available, but also appears to threaten drinking water sources.

13. A proposed market-based solution to carbon emissions, in which government sets a cap on total emissions, and industrial polluters are rewarded or penalized for going under or over the cap, respectively.

It's not difficult to imagine a world where every house features solar panels and some kind of windmill on the roof, and a hydrogen fuel cell in the back yard. And therein lies the policy challenge: a high short-term cost in exchange for a long-term benefit that many people will not live to see. As with corn farmers, the answer for coal producers may be to pay them to do something else. But that requires revenue, in the form of taxes from people who may very well question why they have to spend money to convince other people to stop producing a product they don't see as affecting their immediate lives. And as soon as government starts picking winners, it also is picking losers, and nobody likes to be on the losing side.

This chapter is a bit of a downer, but ignoring problems, like ignoring exams, doesn't make them go away. The broader point is that all of these problems will require something in the way of policy solutions, which is government's job. Perhaps you can now see that within one country, such problems are challenging enough; in the global society, convincing a collection of sovereign states that they all need to take the same steps may be even more difficult.

None of this is impossible; human beings have a remarkable ability to adapt. Remember that your ancestors, wherever they were from, were the clever ones, the resilient ones, the ones who could cope with and make the best of change. Your ancestors were the ones who figured out how to survive. So you come into this world with a very, very good genetic history. As college students perhaps just beginning your way in the world, you should at least understand that this is the world you are inheriting. And perhaps understanding the business of politics and government will help you navigate that world a little more skillfully.

### KEY TAKEAWAYS

- Resource shortages often are dealt with effectively by markets. Rising prices for a resource can make alternatives more affordable and hence more available.
- Items on which it is more difficult to put a price, such as clean air, are less amenable to market-based solutions, and may require government intervention to address.

## EXERCISES

1. Assume for a minute that you agree that climate change is both caused by humans and is a problem, what would you do about it. Presuming that governments have to involved in policy solutions, what groups in society would have to be convinced to go along? What would it take to convince people that these kinds of changes are in their own self-interest?
2. Contact your local water provider. Do they have estimates on how much water is being wasted within their service area? What plans do they have to deal with this?

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