view the proposal, what amendments members of Congress will suggest, and the likelihood that Congress will pass some version of the president's proposal into law. His political advisers will tell him which groups will organize to support or oppose the proposed policy, how this proposal will affect his standing among different groups in the electorate, and whether it will change support for any of the president's other policy initiatives. After weighing all this advice, the president then decides how to proceed.

Making economic policy in a representative democracy is a messy affair, and there are often good reasons why presidents (and other politicians) do not advance the policies that economists advocate. Economists offer crucial input to the policy process, but their advice is only one ingredient of a complex recipe.

QuickQuiz

5. Which of the following is a positive, rather than a normative, statement?
   a. Law X will reduce national income.
   b. Law X is a good piece of legislation.
   c. Congress ought to pass law X.
   d. The president should veto law X.

6. The following parts of government regularly rely on the advice of economists:
   a. Department of Treasury.
   b. Office of Management and Budget.
   c. Department of Justice.
   d. All of the above.

Answers at end of chapter.

2-3 Why Economists Disagree

"If all the economists were laid end to end, they would not reach a conclusion." This quip from George Bernard Shaw is revealing. Economists as a group are often criticized for giving conflicting advice to policymakers. President Ronald Reagan once joked that if the game Trivial Pursuit were designed for economists, it would have 100 questions and 3,000 answers.

Why do economists so often appear to give conflicting advice to policymakers? There are two basic reasons:

- Economists may disagree about the validity of alternative positive theories of how the world works.
- Economists may have different values and therefore different normative views about what government policy should aim to accomplish.

Let's discuss each of these reasons.

2-3a Differences in Scientific Judgments

Several centuries ago, astronomers debated whether the earth or the sun was at the center of the solar system. More recently, climatologists have debated whether the earth is experiencing global warming and, if so, why. Science is an ongoing search to understand the world around us. It is not surprising that as the search continues, scientists sometimes disagree about the direction in which truth lies.

Economists often disagree for the same reason. Although the field of economics sheds light on much about the world (as you will see throughout this book),

IN THE NEWS

Should the Minimum Wage Be $15 an Hour?

In 2016 California legislators passed a law increasing the state minimum wage to $15 an hour by 2022. An economist who studies the issue says there are better ways to help the working poor.

Why market forces will overwhelm a higher minimum wage

By David Neumark

The slogans are everywhere: Fight for 15; People Not Profits; One Job Should Be Enough. Worsening income inequality and the persistence of poverty have spurred a movement to raise the minimum wage, at both the national and state levels. Some West Coast cities have already voted to boost their minimum wage to $15, or more than double the federal standard. And Los Angeles is now considering a similarly aggressive move.

The labor market problems that these higher minimum wages are intended to fix are very real. But would a higher wage floor address the underlying problems? A large body of research shows that the answer is almost certainly no, and that there are better solutions, although they are harder for policymakers to embrace.

There are several reasons why workers' wages are currently too low to provide what many view as an acceptable standard of living. One big factor is that technological changes have increased the value of higher-skilled work and reduced the value of lower-skilled work. Globalization, meanwhile, has brought many lower-skilled American workers into greater competition with their counterparts in other countries.

Simply requiring employers to pay $15 won't provide much ballast against these market forces. In fact, data indicate that minimum wages are ineffective at delivering benefits to poor or low-income families, and that many of the benefits flow to higher-income families. That's because minimum wages target low wages rather than low family incomes. And many minimum-wage workers are not poor or even in low-income families; nearly a quarter are teenagers who will eventually find better-paid jobs. Moreover, most poor families have no workers at all.

As a result, for every $5 in higher wages that a higher minimum imposes on employers, only about $1 goes to poor families, whereas roughly twice as much goes to families with incomes above the median.

Higher minimum wages also reduce employment for the least-skilled workers. Certainly not every one of the hundreds of studies on the topic confirms this conclusion. But there are also studies claiming that humans have not contributed to climate change, and that supply-side economics did not contribute to massive budget deficits. The most comprehensive survey of minimum wage studies, which I conducted with William Wascher of the Federal Reserve System, found that two-thirds of studies point to negative employment effects, as do over 80% of the more credible studies.

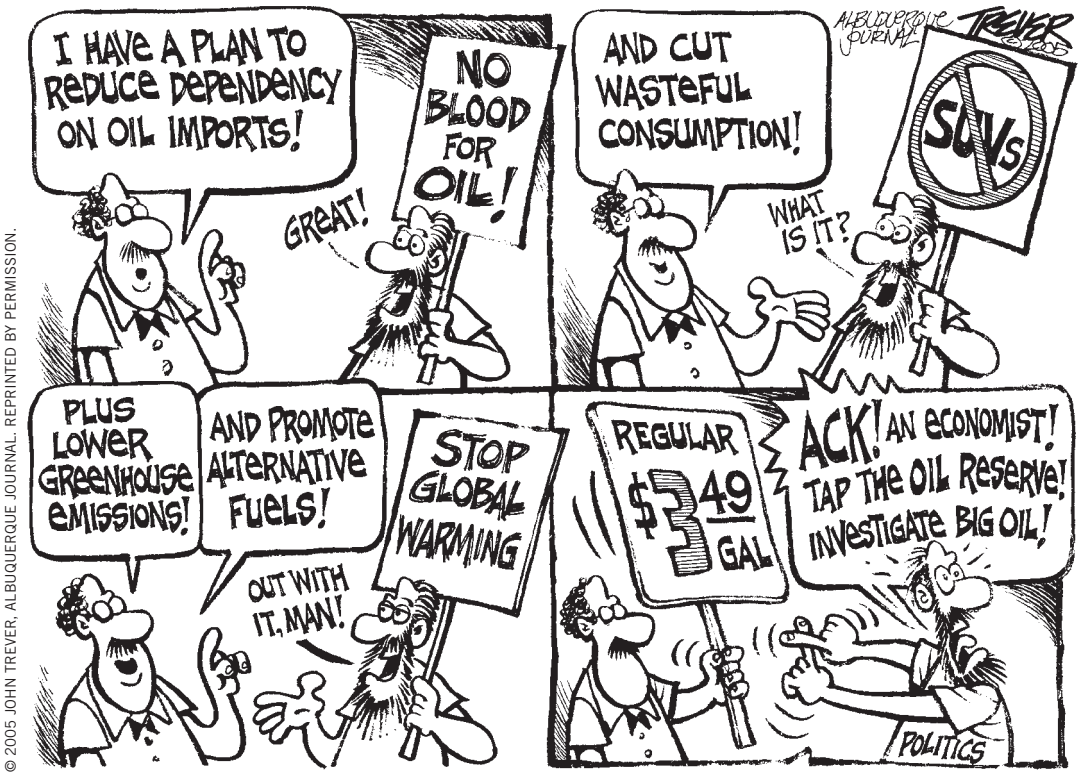
Yet another reason to be wary of raising the minimum wage is that modest job loss overall may mask much steeper job loss among the least skilled. Economists use the phrase "labor-labor substitution" to describe employers responding to a higher minimum wage by replacing their lowest-skilled workers with higher-skilled workers, whom they are more willing to hire at the higher minimum.

Based on my research, I think it is likely that a $15 minimum wage in Los Angeles will lead some teenagers currently focused on their education to take part-time jobs at the new, higher minimum, and displace low-skilled workers from the jobs they now hold. That seems like a bad outcome.

If we really want to help low-skilled workers, we need to recognize that the solutions

price received by sellers would be $1.50. Whatever the market price, sellers will supply a quantity of ice cream as if the price were $0.50 lower than it is. Put differently, to induce sellers to supply any given quantity, the market price must now be $0.50 higher to compensate for the effect of the tax. Thus, as shown in Figure 6, the supply curve shifts *upward* from S_1 to S_2 by the exact size of the tax ($0.50).

Step Three Having determined how the supply curve shifts, we can now compare the initial and the new equilibria. Figure 6 shows that the equilibrium price of ice cream rises from $3.00 to $3.30, and the equilibrium quantity falls from 100 to 90 cones. Because sellers sell less and buyers buy less in the new equilibrium, the tax reduces the size of the ice-cream market.



when their large, gas-guzzling vehicles impose risk on others. It would induce them to take this risk into account when choosing what vehicle to purchase.

- *Pollution*: Cars cause smog. Moreover, the burning of fossil fuels such as gasoline is widely believed to be the primary cause of global climate change. Experts disagree about how dangerous this threat is, but there is no doubt that the gas tax reduces the threat by discouraging the use of gasoline.

So the gas tax, rather than causing deadweight losses like most taxes, actually makes the economy work better. It means less traffic congestion, safer roads, and a cleaner environment.

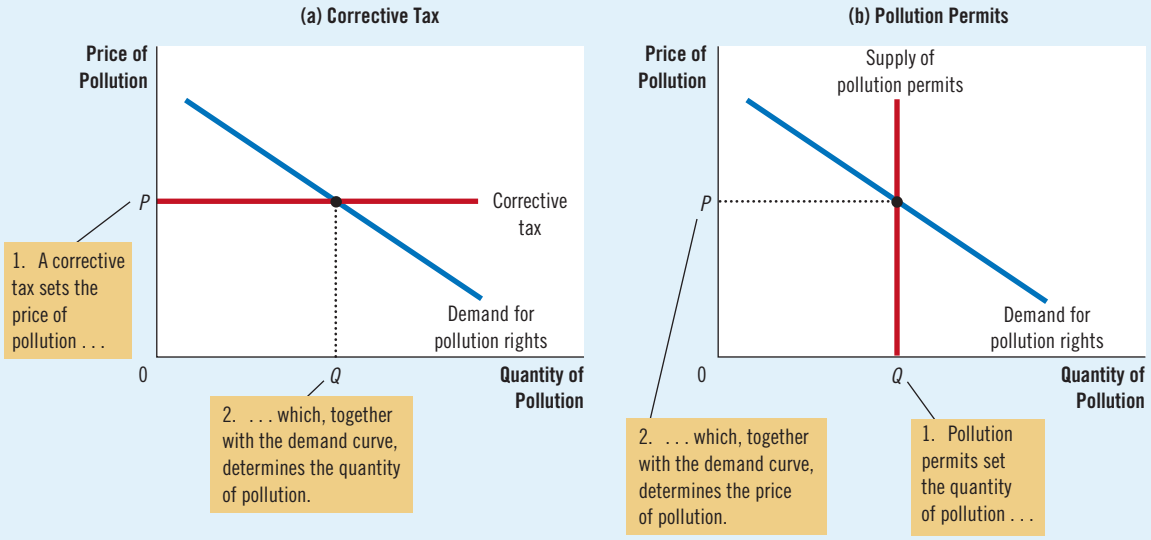
How high should the tax on gasoline be? Most European countries impose gasoline taxes that are much higher than those in the United States. Many observers have suggested that the United States should also tax gasoline more heavily. A 2007 study published in the *Journal of Economic Literature* summarized the research on the size of the various externalities associated with driving. It concluded that the optimal corrective tax on gasoline was $2.28 per gallon in 2005 dollars; after adjusting for inflation, that amount is equivalent to about $2.95 per gallon in 2018 dollars. By contrast, the actual tax in the United States in 2018 was only about 50 cents per gallon.

The tax revenue from a gasoline tax could be used to lower taxes that distort incentives and cause deadweight losses, such as income taxes. In addition,

FIGURE 4

The Equivalence of Corrective Taxes and Pollution Permits

In panel (a), the EPA sets a price on pollution by levying a corrective tax, and the demand curve determines the quantity of pollution. In panel (b), the EPA limits the quantity of pollution by limiting the number of pollution permits, and the demand curve determines the price of pollution. The price and quantity of pollution are the same in the two cases.



IN THE NEWS

What Should We Do about Climate Change?

This editorial describes one approach to dealing with global climate change.

A carbon tax that could put money in your pocket

The indications of a warming world are numerous and hard to miss. Last year was the third-warmest year on record for both the planet and the United States—exceeded only by 2015 and 2016. In June, scientists reported that Antarctica has lost 3 trillion tons of ice since 1992—yielding "enough water to cover Texas to a depth of nearly 13 feet," the Associated Press reported.

The indications of inaction on the subject are also abundant and visible. Last year, Donald Trump pulled the United States out of the Paris agreement on greenhouse gas emissions. The Environmental Protection Agency has moved to ease regulations on power plants and motor vehicles that were integral to the Obama administration's efforts to slow climate change.

Bipartisan action—once a normal response to environmental harms—is not on the agenda for Congress or the White House. But a growing group of farsighted pragmatists are nonetheless trying to find a middle ground between the entrenched adversaries.

They have a proposal for combating global warming with something for both sides. And though getting current Republican and Democratic officeholders to unite behind it seems impossible, the advocates have managed to win the support of such environmental groups as Conservation International as well as oil giants ExxonMobil, Shell and BP.

Former Senate Republican Leader Trent Lott and former Federal Reserve chair Janet Yellen are part of a new organization called Americans for Carbon Dividends. They support a plan offered last year by the Climate Leadership Council, a group featuring such GOP stalwarts as former Secretary of State George Schultz and Council of Economic Advisers chairman N. Gregory Mankiw.

The idea is to impose a tax on carbon dioxide emissions, starting at $40 per ton and gradually increasing. That would raise the price of a gallon of gasoline by about

firms can pollute as much as they want by paying the tax), and the position of the demand curve determines the quantity of pollution. In panel (b), the EPA sets a quantity of pollution by issuing pollution permits. In this case, the supply curve for pollution rights is perfectly inelastic (because the quantity of pollution is fixed by the number of permits), and the position of the demand curve determines the price of pollution. Hence, the EPA can achieve any point on a given demand curve either by setting a price with a corrective tax or by setting a quantity with pollution permits.

The choice between selling pollution permits and levying a corrective tax starts to matter, however, if the demand curve for pollution rights is uncertain. Suppose the EPA wants no more than 600 tons of glop dumped into the river, but because the EPA does not know the demand curve, it is not sure what size tax would hit that target. In this case, it can auction off 600 pollution permits. The auction price would, in effect, yield the corrective tax needed to achieve the EPA's goal. On the other hand, suppose the EPA knows the external cost of pollution is $50,000 per ton of glop but is uncertain how much glop factories would emit at that price. In this case, the EPA can reach the efficient outcome by setting a corrective tax of $50,000 per ton and letting the market determine the quantity of pollution.

The idea of the government auctioning off the right to pollute may at first sound like a creature of some economist's imagination. And in fact, that is how the idea began. But increasingly, the EPA has used this system as a way to control pollution. A notable success story has been the case of sulfur dioxide (SO_2), a

38 cents. The tax would foster conservation, make alternative energy sources such as solar and nuclear power more competitive, and give consumers and companies time to adapt without painful disruptions. Economists generally agree that a levy of this type would produce the most benefit for the least cost.

Some on the right dispute the wisdom of any government action to reduce carbon output, seeing global warming as wildly overhyped if not entirely fictitious. Others simply think it would be dangerous to give the government the power to regulate so many economic activities. They are suspicious of a carbon tax because it would provide a big new source of revenue, potentially funding an expansion of government.

But the people supporting this particular carbon tax have an answer for that objection. They want to rebate the money to citizens as "carbon dividends"—which would amount to about $2,000 per family of four at the start. All the revenue would be returned to the public.

Why collect money only to give it back? The intent is to change consumer behavior when it comes to energy use without creating a pot of money for elected officials to squander. Individuals who conserve would come out ahead, while those who drive gas-guzzlers with abandon would pay in more than they get back.

In this scenario, the tax would also replace the current regulations on emissions and energy use, dramatically reducing the role of government bureaucrats. "Less government, less pollution" is the theme.

The next president may be more eager than Trump to combat global warming. With a carbon tax in place, though, carbon emissions would be reduced without expensive new federal dictates.

Right now, most people in Washington show little interest in finding sensible solutions that can attract support across the political spectrum. If and when that changes, the carbon dividends plan should be high on the list. ■

Questions to Discuss

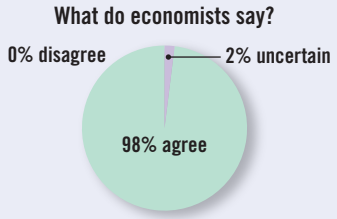
1. If a tax on carbon emission increased the price of gasoline, how might you and your family members alter your behavior in response?
2. Despite the support from many economists, a carbon tax is not popular among many voters. Why do you think that is the case?

Source: *Chicago Tribune*, July 3, 2018. This is the opinion of the Chicago Tribune's Editorial Board. Editorials reflect the opinion of the Editorial Board, as determined by the members of the board, the editorial page editor and the publisher.

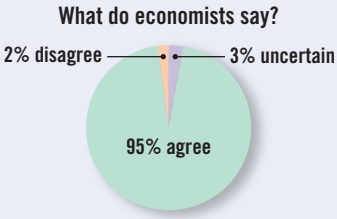
ASK THE EXPERTS

Carbon Taxes

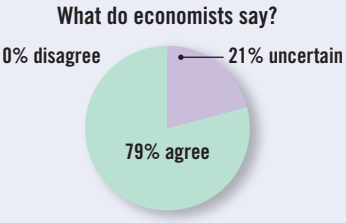
"The Brookings Institution recently described a U.S. carbon tax of $20 per ton, increasing at 4 percent per year, which would raise an estimated $150 billion per year in federal revenues over the next decade. Given the negative externalities created by carbon dioxide emissions, a federal carbon tax at this rate would involve fewer harmful net distortions to the U.S. economy than a tax increase that generated the same revenue by raising marginal tax rates on labor income across the board."



"A tax on the carbon content of fuels would be a less expensive way to reduce carbon-dioxide emissions than would a collection of policies such as 'corporate average fuel economy' requirements for automobiles."



"Carbon taxes are a better way to implement climate policy than cap-and-trade."



Source: IGM Economic Experts Panel, December 4, 2012, December 20, 2011, and November 13, 2018.

leading cause of acid rain. In 1990, amendments to the Clean Air Act required power plants to reduce SO_2 emissions substantially. At the same time, the amendments set up a system that allowed plants to trade their SO_2 allowances. Initially, both industry representatives and environmentalists were skeptical of the proposal, but over time the system reduced pollution with minimal disruption. Pollution permits, like corrective taxes, are now widely viewed as a cost-effective way to keep the environment clean.

10-2d Objections to the Economic Analysis of Pollution

"We cannot give anyone the option of polluting for a fee." This comment from the late Senator Edmund Muskie reflects the view of some environmentalists. Clean air and clean water, they argue, are fundamental human rights that should not be debased by considering them in economic terms. How can you put a price on clean air and clean water? The environment is so important, they claim, that we should protect it as much as possible, regardless of the cost.

Economists have little sympathy for this type of argument. To economists, good environmental policy begins by acknowledging the first of the *Ten Principles of Economics* in Chapter 1: People face trade-offs. Certainly, clean air and clean water have value. But their value must be compared with their opportunity cost—that is, with what one must give up to obtain them. Eliminating all pollution is impossible. Trying to eliminate all pollution would reverse many of the technological advances that allow us to enjoy a high standard of living. Few people would be willing to accept poor nutrition, inadequate medical care, or shoddy housing to make the environment as clean as possible.

Economists argue that some environmental activists hurt their own cause by not thinking in economic terms. A clean environment can be viewed as simply another good. Like all normal goods, it has a positive income elasticity: Rich countries can afford a cleaner environment than poor ones and, therefore, usually have more rigorous environmental protection. In addition, like most other goods, clean air and clean water obey the law of demand: The lower the price of environmental protection, the more the public will want. The economic approach of using pollution permits and corrective taxes reduces the cost of environmental protection and should, therefore, increase the public's demand for a clean environment.