

CHAPTER 11

WHY NOT SPLIT THE CHECK?
A Briefing on Market Failure

Last Friday, somewhere near you, a group of students slurped root beers at a popular burger joint. Frosted mugs cluttered the table like miniature Manhattan skyscrapers. Gossip and wisecracks filled the air. When the check arrived, a student in blue jeans and a black concert t-shirt called out, "Let's just split it." Those with the most mugs before them greeted the motion with nods. Those with fewer mugs had blank faces. One light drinker meekly mumbled something about fairness. An equal splitting of the check seemed inevitable. Then a baseball player sitting in the corner leaned up to the table, his face illuminated by the restaurant's blinking red neon light. "My friends," he inserted into the awkward silence, "to split the check isn't only an injustice to those who had fewer drinks; it also creates a strong incentive for overindulgence." The others were perplexed. But as he leaned back, the light illuminated his economics society t-shirt and they knew that logic was on his side. This chapter explains the error of these students' ways and reveals other sources of market failure that surround us daily and confound many of our stabs at efficiency.

MARKET FAILURE

Ideal market conditions yield efficient allocations of inputs and outputs. *Market failure* is the reason why some markets do *not* bring about the best outcomes for society.

As explained in Chapter 6, perfectly competitive firms achieve market efficiency by equating marginal costs and marginal benefits. This chapter provides a constructive overview of the sources of market failure: externalities, imperfect competition, imperfect information, and public goods. Each of these sources receives further mention later in the book: Imperfect information is the focus of Chapter 12; imperfect competition is central to the issues in Chapters 13 and 14; public goods are the topic of Chapter 18; and externalities are reprised in Chapter 29. As you're about to learn, some of the solutions to market failure are as simple as paying for your own root beers.

Externalities

Externalities are costs or benefits felt beyond, or external to, the people causing them. When you get a flu shot, you create positive externalities because other people won't catch the flu from you. When you drive a car, you create the negative externalities of road congestion and air pollution. To emit toxins into the air or water during a manufacturing process, smoke in public, play loud music, catch fish that other fishers are angling for, or paint your house a dreadful shade of green is to impose external costs—negative externalities—on other people.

You may not think of root beer as a potential source of negative externalities, but when you buy a root beer with a group that is splitting the check equally, you impose a cost on everyone in that group.¹ Suppose a root beer costs \$2 and you have 10 people in your group. Suppose also that diminishing marginal utility leads you to value your first 5 root beers at \$3, \$2.50, \$1.25, \$0.50, and \$0.10, respectively. If you were not splitting the check, you would buy 2 root beers for \$2 each—the first that's worth \$3 to you and the second that's worth \$2.50. You wouldn't pay \$2 for a third root beer that's worth \$1.25. The situation changes when you're splitting the check 10 ways. In that case each root beer raises the tab by \$2, but it raises your share of the tab by only $\$2/10 = 20$ cents. Thus, it's rational for you to purchase 4 root beers—all of those that are worth at least 20 cents to you—even though the last 2 are worth less than the \$2 price that the group pays.

The problem grows because everyone in the group faces the same incentive to over-consume. If your friends share your preference for root beer, each of the 10 friends will consume 4 beverages, bringing the total bill up to \$80. Each friend's share of the bill will be \$8—twice what they would have paid on their own and 75 cents more than the $\$3 + \$2.50 + \$1.25 + \$0.50 = \$7.25$ value of the root beers to them. Notice that you cannot improve on this situation by reducing your order. If you ordered 3 root beers, you would reduce your tab by \$0.20 and you would receive \$0.60 cents less worth of beverage. By splitting the check, your group creates externalities that thwart efficient decisions.

Externality problems can be resolved if ways can be found to have everyone internalize, or feel for themselves, the full costs or benefits of their decisions. In the root beer example, that means having everyone pay his or her own bill. The negative externalities from goods such as gasoline, cigarettes, and alcohol are internalized if *ex-*

¹ For more on the negative externality problem with splitting the check, and for empirical evidence of the problem, see www.gsb.uchicago.edu/fac/uri.gneezy/vita/Restaurant.pdf.

cise taxes (taxes levied on particular goods such as these) approximate the associated external costs. A solution to the underconsumption that accompanies positive externalities is for the government to subsidize purchases, as is the case for flu shots as well as education, tree planting, and clean energy.

Because goods creating positive externalities are underconsumed and goods creating negative externalities are overconsumed from a societal standpoint, another solution is to require people to purchase the efficient quantity of these goods. It is common for governments to require a particular number of childhood immunizations and education through high school while limiting the volume of power plant emissions and the number of pets that can be kept in a household. For example, in the interest of neighborhood serenity and sanitation, no resident in the city of Grand Junction, Colorado, may keep more than 3 adult pets, such as dogs or cats. Chapter 26 elaborates on the role of government and explains how the enforcement of private property rights can assist with externality problems.