Secondary Effects Matter

By Robert F. Graboyes
Equilibria #1, Federal Reserve Bank of Richmond, 1996/97

Economics, at its very best, is an assault on common sense. Common sense is often incomplete, misleading, or flat-out wrong. And commonly held beliefs, no matter how wrong they might be, are exceedingly difficult to dislodge.

The greatest strength of economics is its ability to impose a logic that allows truths to combat truisms. Common sense often falls short by failing to consider the secondary effects that follow an initial result. The meaning of "secondary effects" can be illustrated by a physical example: The initial effect of adding a bit of water to a lake might be to raise the surface level by five feet. A secondary effect might be to add just enough weight and pressure to burst a dam, unleash a torrent, and lower the surface by thirty feet. Other secondary effects might include killing the lake's fish, submerging a town downstream, and wrecking some boats.

Economic activity is rife with secondary effects, the search for which gives the field its depth and complexity. A clear act of altruism may ignite a chain of events that eventually impoverish or kill the recipient of the initial gift. Or, an act of greed or avarice may, in the end, enrich its initial victim; and it may be that neither party ever realizes the malevolent origin of the windfall gain. The toughest job of economics is to expose and quantify the paradoxical results that these secondary effects yield. The following sobering example illustrates one such problem that economists have studied in recent years:
A Paradox of Safety

Can prudent safety requirements kill the objects of their good intentions? In airline safety, this could be the case. Few would doubt that a child who wears a seat belt is less likely to die in an airline crash than one who sits unrestrained in her mother's lap. Yet, some studies find that a requirement that children wear belts might increase the number of youthful fatalities. The reason lies in the secondary effects. The initial effect of a seat-belt mandate would be to save lives; some parents who would have carried children on their laps will now pay for seats in which to strap their children. And, inevitably, some of those children will survive accidents in which they otherwise would have died. Common sense, based on initial effects, suggests that such a mandate would be wise.

But the villain lurks in the secondary effects. Suppose again that a regulation requires that all children have their own seats so they can be properly secured. Of course, seats are costly, and some parents will be unwilling or unable to pay the cost of an additional ticket. Some simply will not travel, and some will opt to drive. In all likelihood, more of this last group of children will die in car wrecks than would have died as a result of flying without a safety belt. (A few years back, research indicated that the chance of dying in a car trip of a given length was about 40 times the chance of dying in an airline flight of the same distance.)

A conscientious regulator thus may find her decisions more complicated than they seem at first glance. And in this case, the advice of economists can be a life-and-death matter. It is the job of scientists and engineers and statisticians to calculate the probabilities that riders in cars and riders in planes will perish en route. But it is the job of economists to ask how many people will choose one mode of transport versus the other as their relative costs change (including the costs of mandatory belts).
Secondary Effects and the Economist

Initial results are almost always easier to see and to measure than are secondary effects, and a large part of the economists role is to envision and measure or estimate the latter.

Understanding the importance of secondary effects is essential to an intelligent reading of the financial pages of a newspaper or magazine. Failure to look beyond initial effects undoubtedly confuses many a reader attempting to understand a piece of legislation, an international embargo, or a new technology.

A fruitful exercise for teachers is to ask students to question whether secondary effects might undermine the validity of some of their most cherished beliefs. For each of the following examples, ask students to compile lists of secondary effects that reinforce or contradict the common viewpoint:

- Newspaper recycling has been widely accepted as a means of conserving natural resources. Is it possible that because of secondary effects, recycling paper may destroy more natural resources than burying newspapers in landfills and manufacturing new paper? (Example: Recycling makes it less profitable for paper manufacturers to plant new trees.)

- National governments sometimes place limits on foreign imports as a way of preserving domestic jobs. For example, the United States might seek to bolster the U.S. auto industry by placing a numerical limit on imports of Japanese cars to be sold in America. Can such limits on foreign trade cost Americans more jobs than the restrictions save?

- In order to save endangered species, some developing nations have banned the hunting of certain wildlife. Can an outright ban kill more animals than it saves? Would a partial ban with limited hunting save more animals?

- Some large cities limit how much a landlord may raise tenants' rent in a given year. Is it possible that such restrictions may, over time, cause rents to rise more rapidly instead of more slowly?

- Suffering a theft initially costs a homeowner money. But is it possible that a theft will, in the long run, save the homeowner more money than it costs her?

The lesson to be taught here is not that there is a clear right or wrong answer to any of these questions. Rather, the goal is to show students that economics is detective work, and the evidence of any important belief is seldom obvious and readily visible.

One final word: everything in the world affects everything else, and part of the economist's job is also to say, “Enough!” A seat belt mandate might decrease the number of air travelers, some of whom would otherwise have returned with fatal tropical diseases. This is a legitimate secondary effect, but it would be horribly impractical to include tropical disease epidemiology in a study of seat belt usage. For the economist, then, the trick is deciding where to stop.