
Killer Cars and the Rise of the SUV

Things are not always what they seem.

—Phaedrus, circa A.D. 8

If there were a Murphy's Law of economic policy making, it would be this: *The costs are always higher than promised, and the benefits are always lower.* The federal law that regulates automobile fuel economy provides just one example of this fundamental principle and along the way demonstrates that what Phaedrus had to say two thousand years ago is true today.

Our story begins in the 1970s, when the United States was in the middle of a so-called energy crisis. The Organization of Petroleum Exporting Countries (OPEC), a cartel of major oil-producing countries, had succeeded in raising the prices of petroleum products (including gasoline) to record-high levels. Consumers reacted by conserving on their use of gasoline and other petroleum products, and Congress responded by enacting legislation mandating energy conservation as the law of the land. One of these laws, known as the corporate average fuel economy (CAFE) standard, requires that each auto manufacturer's passenger cars sold in this country meet a federally mandated fuel economy standard. The new car fleets for the year 2005, for example, had to average 27.5 miles per gallon (mpg) of gasoline. If an automaker sells a gas-guzzler that gets only 15 mpg, somewhere along the line it must also sell enough gas-sipping subcompacts so that the average fuel economy of the entire fleet of cars sold by the company works out to 27.5 mpg. If an automaker's average fuel economy is worse than 27.5 mpg, the

corporation is fined \$5 per car for each 0.1 mpg it falls short. For example, if General Motors were to fail to meet the CAFE standard by only one mpg, it could be subject to penalties of \$200 million per year or more.

The CAFE standard was first introduced at a time when the price of gasoline, measured in terms of today's dollars, was about \$3 per gallon. During the mid-1980s, price-cutting by members of the OPEC cartel, combined with a rise in oil production elsewhere, sent gasoline prices into free fall. With gasoline now about half as expensive (in inflation-adjusted dollars) as it was in the 1970s, the legally mandated CAFE standard of 27.5 mpg almost certainly results in cars that don't consume *enough* gasoline. This seems like a strange conclusion, so we want to be sure we understand why it is correct.

There is no doubt that conserving gasoline is a good thing, for gasoline is a scarce good. If we are able to accomplish the same objectives (such as making a trip to the grocery store) and use less gasoline in doing so, the money that would have been spent on the gas can now be spent on other goods. Yet conserving gasoline is itself a costly activity. In the extreme case, we could engage in 100 percent conservation of gasoline, but doing so would mean giving up automobiles altogether! Somewhat more realistically, reducing the amount of gasoline that cars burn requires that they be lighter, have smaller engines, and be smaller and sometimes less crash-resistant. To meet the CAFE standards, for example, automobile manufacturers had to switch to production techniques that are more costly, use materials (such as aluminum and high-tech plastics) that are more easily damaged in accidents and more costly to repair, and design engines that are less responsive and more difficult and costly to repair. Although these are all things that probably would make sense if the price of gas were \$4 per gallon, many economists believe that with gas at \$1.50 or even \$2 per gallon the principal effect of the CAFE standard is to raise consumers' total transportation costs: The costs of conserving on gasoline exceed the savings from consuming less of it.

But the costs of the CAFE standard are measured not just in terms of the dollars and cents of reduced economic efficiency. They are also measured in terms of people whose lives are lost as the result of the law—thousands of lives every year.

The seemingly obvious way to respond to a law that requires enhanced fuel efficiency is to redesign engines so that they burn less fuel. Indeed, the automakers have done exactly this. But another highly effective means of reducing the fuel appetite of automobiles is to downsize them by making them smaller and lighter. A major study by Robert Crandall of The Brookings Institution and John Graham of Harvard found that the CAFE standard forced automakers to produce cars that are about 500 pounds lighter than they would have been without the law. A 500-pound weight reduction implies a 14 percent increase in the fatality risk for the occupants of a car involved in an accident. That translates into approximately 3000 additional deaths per year, plus another 15,000 or so serious nonfatal injuries each year.

Apparently, consumers have not been happy with the lighter and less powerful cars, nor with their higher attendant risk of death. Fortunately, consumers have found a way out. Light trucks, which include vans, pickups, and sport utility vehicles (SUVs) have been subject to a less demanding fuel economy standard. In contrast to the standard for cars, established in 1978 at 18.0 mpg, and now at 27.5 mpg, the CAFE standard for light trucks, initially set in 1980 at 17.5 mpg, is currently 20.6 mpg. Hence, the CAFE standards initially were less stringent for light trucks than for cars, and they have been raised less sharply (up 17 percent for light trucks, versus up 53 percent for cars).

Frustrated—and safety-conscious—consumers thus have been able to substitute light trucks for passenger cars and thereby escape some of the consequences that Congress otherwise would have inflicted on them. Indeed, according to research by economist Paul E. Godek, CAFE has induced millions of consumers to move away from small cars and into larger, higher-powered SUVs and other light trucks. Between 1975 and 1995, the light-truck share of passenger vehicles rose to 41.5 percent from 20.9 percent. Godek estimates that without CAFE the light-truck share would have been only 29.2 percent. Hence, about three-fifths of the rise in the light-truck market share has been induced by the CAFE standards. By the year 2005, the market share for SUVs and other light trucks reached fully 50 percent of the passenger vehicles sold each year, a remarkable transformation in the market in just 25 years.

The original goal of CAFE was (in part) to induce substitution from large cars to small ones. But the rise of the SUV has, to some extent, frustrated this intent. Two consequences have resulted. First, light trucks are less fuel-efficient than passenger cars, so fuel economy has risen less than if light-truck substitution had not been possible. A rough estimate is that overall fuel economy has been reduced by about 1.0 mpg.

More important are the consequences in the area of passenger vehicle safety. Despite their name, light trucks are heavier than cars. Because there are more light trucks on the road with CAFE-lightened cars, drivers of those cars are now at increased risk of death in crashes involving light trucks. This effect has made national headlines from time to time, as people have worried about the adverse effects for the occupants of small cars that tangle with large SUVs.

Beginning a few years ago, it also became apparent that, because of their high centers of gravity, SUVs and other light trucks are much more likely to roll over in accidents than are passenger vehicles. The results can be deadly, particularly for occupants who are not wearing their seat belts. Nevertheless, the higher mass of light trucks that protects their occupants from cars also protects them from heavy trucks, trees, wildlife, and so on. On balance, and particularly with recent improvements in the stability of SUVs, the substitution toward these vehicles may actually have reduced overall fatalities—meaning that CAFE is not killing quite as many extra people each year as it would without the rise of the SUV.

There remains one mystery in the CAFE story, which is why the law was originally enacted. If the real objective of CAFE was fuel economy (and thus, in part, environmental protection), this could have been accomplished much more cheaply with a direct tax on gasoline. According to Godek, the structure of the law suggests a different congressional motive. CAFE treats domestic and imported cars separately. Manufacturers must meet the standard for both fleets, so they can't simply import fuel-efficient cars to bring up the average mileage of their domestic cars. Instead, they must make more small cars here in America. Thus, CAFE has protected the jobs of domestic autoworkers—giving us one more example of a law supposedly enacted to achieve a high-minded goal that instead serves chiefly to insulate a U.S. industry from the rigors of competition.

So, the next time a minivan takes your parking place, or an oversized four-wheeler tailgates you, remember this: Their owners are just trying to prevent Congress from killing them to save jobs in Detroit.

DISCUSSION QUESTIONS

1. Why do you think Congress passed the CAFE standard?
2. Does your answer to Question 1 imply either (1) consumers do not know what is in their own best interest, or (2) firms will not voluntarily provide the goods (including fuel economy) consumers want to purchase?
3. Suppose Congress really knows what the best average fuel economy for automobiles is. How do you think "best" is (or should be) defined? Do the costs and benefits of achieving a particular level of fuel economy play a role in determining that definition?
4. If Congress wanted to increase the average fuel economy of cars, could it accomplish this by imposing a tax on gasoline? What are the advantages and disadvantages of using taxes rather than standards to achieve an improvement in fuel economy?