

60. Health and Safety Policy

Congress should

- limit health and safety regulations to cases where clear market failures exist; and
- mandate that all health and safety regulations must pass cost-benefit analysis, and do so by a considerable margin.

Before the 1970s, federal health and safety regulations did not exist, with the exception of certain regulations for food safety and prescription drugs. Ralph Nader's 1965 book *Unsafe at Any Speed*, about motor vehicle safety, started the modern politicized safety and health movement and led to the establishment of the National Highway Traffic Safety Administration in 1966. The Occupational Safety and Health Administration followed in 1970, the Consumer Product Safety Commission in 1972, the Nuclear Regulatory Commission in 1974, and the Toxic Substances Control Act in 1976.

Should the Government Regulate Risk?

People make many private decisions about their health and safety. Why should government become involved in those decisions? Proponents of government regulation argue that people sometimes make bad decisions, as a result of insufficient knowledge about the harms they face, or because their decisionmaking ability, itself, is flawed. Are those proponents correct?

When Risks Are Known

In many markets, safety risks are well-known. Using detailed data on wages and fatality risks across occupations, economists have estimated people's tradeoffs between money and fatality risk, thus establishing the "value of a statistical life"—that is, how much money people are willing to spend to reduce their statistical risk of death. Interestingly, though

there are many different ways to calculate this value, and though individuals can vary dramatically in their risk preferences, across-population estimates fall into a surprisingly small range. For instance, workers, on average, demand a risk premium of about \$910 to face an additional annual work-related fatality risk of 1 chance in 10,000 (\$9.1 million per statistical life).

That demand shows that market forces create safety incentives—employers must either pay the premium or pay for safety precautions that reduce the risk. We are not operating in a world in which there are no constraints other than regulatory intervention to promote safety. Because workers and employers are already using market forces to resolve their differences on the taking of known risks, government should not use regulations to override those resolutions.

When Risks Are Unknown

But what of unknown risks? Say a new drug has been invented. Won't consumers demand that a government agency determine that the drug is safe before it is put on the market?

Some people are risk averse and others are not. Some people would refrain from using the drug until it has undergone clinical trials with random assignment of subjects, while others would simply accept recommendations from friends and relatives. And the risk averse may have questions and concerns that will take an extensive period of clinical research to address (and may never be addressed to their satisfaction). If someone uses the product daily for 40 years, would life quality or expectancy be reduced or enhanced?

The beauty of markets is that they can accommodate all these possibilities simultaneously for private goods. One firm can offer something for sale with “evidence” while other firms can offer things for sale without “evidence.” Underwriters Laboratories and Kosher certification are examples of the private provision of quality “evidence.” Such a state of affairs is called a “separating equilibrium”: differing degrees of quality and safety are provided at different prices, and consumers choose the package of price and quality that they prefer.

A market that does not separate is said to “pool.” In a pooled market, price and quality variation are not sustainable: either consumers are unwilling to pay for the costs of quality differences, or market characteristics prevent firms from credibly committing to quality. In that last category, consumers have difficulty differentiating good- from poor-quality prod-

ucts. Only then is it possible for government intervention to improve human welfare.

Pooling and Safety Regulation

An example of a pooled market is one that consists of numerous small-scale, anonymous producers whose output is combined without branding. In such a market, consumers can't identify—and reward—producers that supply good products. Traditionally, many agricultural products have been sold this way.

When a safety scandal occurs in an anonymous pooled market, the government responds with “regulation” and “inspection.” Consumers are reassured. But the inspection budgets and systems are inadequate to prevent future safety and health events. New safety incidents occur and the cycle repeats.

In the past 10 years, Congress has responded to two health and safety episodes in this fashion. Lead paint was discovered on children's toys imported from China, and a salmonella outbreak was linked to peppers imported from Mexico. Those developments induced Congress in 2008 to pass new consumer product safety legislation and President George W. Bush to increase the appropriation request for the Food and Drug Administration (FDA) for fiscal year 2009 by \$275 million.

Such responses reinforce the mistaken belief that markets are incapable of credibly providing adequately safe products. The toy market isn't just anonymous producers from China. U.S. manufacturers emphasize quality and safety in return for a higher price. But consumers deserted such products, often sold in small independent stores, and bought imports from China sold for less at large chain stores.

When the lead paint came to light, toy suppliers didn't respond by shifting to U.S.-made toys. Rather, the large importers requested that the Consumer Product Safety Commission increase its regulation of the industry. The importers wanted to use regulation to force the market to pool again—to convince the consumer not to think about price and quality tradeoffs because of government assurances of quality. That is a clear form of corporate welfare.

The use of regulation by some firms to provide quality assurance exacerbates the tendency of consumers to think that everything for sale should be approved by the government. That tendency, in turn, increases the probability that low- and high-quality products will “pool” rather than “separate,” which undermines the market provision of safety.

Separation and Market Provision of Safety

The decisions of three firms illustrate how markets can provide safety and health benefits when they separate rather than pool:

- In 2012, Johnson & Johnson announced the elimination of three ingredients in their products in response to consumer concerns: (1) phthalates; (2) preservatives that result in the formation of formaldehyde; and (3) triclosan, an antibacterial agent used in soaps. Each of those ingredients had come under public scrutiny because of safety concerns.
- In 2013, Whole Foods became the first retailer in the United States to require labeling of all genetically modified foods sold in its stores because of consumer demand. Some of their vendors have seen a 15 percent increase in sales since they labeled their products as not having such ingredients. It should be noted that no scientific basis exists for concerns about genetically modified foods, but markets respond to preferences regardless of their scientific validity.
- Animal welfare advocates and those concerned about the development of antibiotic-resistant bacteria have long condemned the widespread use of antibiotics in the raising of food animals to increase their growth rates and prevent disease. They also have called for regulation to implement their views, but the FDA issued only voluntary guidelines in 2012. In 2015, poultry processor Perdue Farms announced an ad campaign to promote its “antibiotic-free” chicken. In 2016, Perdue announced new animal welfare standards, including more light and space for the animals and the use of anesthesia before slaughter.

When consumers care about, are informed (and even misinformed) about, and are willing to pay for health and safety, firms have incentive to provide it.

The Development and Provision of Knowledge

Current federal policy treats the development of knowledge about health and safety effects inconsistently across products. Pharmaceuticals must undergo clinical trials before the FDA will even consider allowing them to be sold. But surgery is completely unregulated. And food supplements are sold with a label that states, “This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.”

Given the earlier discussion of market demand for safety, one might expect that unregulated products like supplements engage in rigorous private development and certification of knowledge and efficacy. Unfortunately, they do not. Thus, they are susceptible to the “scandal–regulate–rinse–repeat” cycle described earlier.

Even the existence of regulation does not necessarily result in the development of knowledge necessary for consumers to make informed decisions about safety and health. For instance, the Toxic Substances Control Act of 1976 gave the Environmental Protection Agency (EPA) limited powers to regulate “existing” chemicals—those substances that were in commerce at the time of enactment (roughly 60,000 in number). The EPA could regulate an existing chemical if it first determined that it posed an unreasonable risk. But to make that determination, the agency had to gather significant amounts of data, which were simply unavailable. Producers, of course, now had *disincentive* to gather that information because it could lead to their products being prohibited. Without any information, the EPA could not regulate. This stalemate lasted for 40 years. Markets cannot possibly operate to reduce risk under such circumstances: the information that would aid decisionmaking is actively suppressed by the disincentives created by the law.

Other players—including other countries, U.S. states, major retailers and consumer product companies, and trial lawyers—filled the gap created by the federal stalemate. But chemical companies did not want an “arms race” to develop among those actors in which the companies might have to respond to strong anti-chemical preferences. Congress finally reacted in 2016 by granting the EPA increased powers (and fewer hurdles) to gather knowledge about existing chemicals in return for greater preemption of potentially more-hostile state action. Once the EPA makes a final decision about one of the existing chemicals, states lose their regulatory authority over that chemical.

Preemption of state regulation is also the driving force behind congressional action on the labeling of foods with genetically modified ingredients. Like the stalemate with the Toxic Substances Control Act, the lack of federal action on this issue over the years has led to political pressure at the state level. A Vermont law requiring the labeling of foods with genetically modified ingredients went into effect on July 1, 2016. But national food processors want uniform national labeling and preemption of state action. So, even though the National Academies of Sciences, Engineering, and Medicine reported finding no scientific basis for linking genetically modi-

fied crops to any adverse health effects, Congress enacted legislation to preempt the Vermont effort.

Federal policy toward genetically modified organisms is contradictory. Compare the Vermont labeling case to that of salmon. The scientific consensus is that no health or environmental consequences exist as a result of the genetic modification of salmon, which allows the fish to grow to market weight faster. In 2015, the FDA approved the sale of genetically modified salmon and concluded that the fish would not have to be labeled as such because of the scientific consensus.

Assessing Regulatory Performance

Table 60.1 lists various health and safety regulations and their estimated opportunity cost per life saved (in 2002 dollars). Because the legislative man-

Table 60.1
Opportunity Costs per Statistical Life Saved
(Millions of 2002 Dollars)

Regulation	Year Issued	Agency	Opportunity Cost per Statistical Life Saved
Childproof lighters	1993	CPSC	\$0.1
Unvented space heaters	1980	CPSC	0.2
Trihalomethane	1979	EPA	0.3
Food-labeling regulations	1993	FDA	0.4
Children’s sleepwear flammability	1973	CPSC	2.2
Child restraints	1999	NHTSA	3.3
Grain dust	1988	OSHA	11.0
Benzene	1987	OSHA	22.0
Coke ovens	1976	OSHA	51.0
Asbestos ban	1989	EPA	78.0
DES (cattle feed)	1979	FDA	170.0
Sewage sludge disposal	1993	EPA	530.0
Land disposal restrictions: Phase II	1994	EPA	2,600.0
Drinking water: Phase II	1992	EPA	19,000.0
Formaldehyde	1987	OSHA	78,000.0
Solid waste disposal facility criteria	1991	EPA	100,000.0

NOTE: CPSC = Consumer Product Safety Commission; DES = diethylstilbestrol; EPA = Environmental Protection Agency; FDA = Food and Drug Administration; NHTSA = National Highway Traffic Safety Administration; OSHA = Occupational Safety and Health Administration.

SOURCE: W. Kip Viscusi, “Regulation of Health, Safety, and Environmental Risks,” National Bureau of Economic Research Working Paper no. 11934, January 2006.

dates vary, there is also great variance in the cost per life saved. Indeed, the cost varies even within certain regulatory agencies. For example, the EPA’s regulation of trihalomethane in drinking water has an estimated cost per statistical life saved of only \$300,000, while the regulation of sewerage sludge disposal has an estimated cost per life saved of \$530 billion. A regulatory system based on sound economic principles would not spend more than the risk premium found in private markets to value a statistical life (approximately \$9.1 million) and it also would reallocate resources from the high- to the low-cost regulations. That would result in more lives saved at the same cost to society (or equivalently, shifting resources could result in the same number of lives saved at a lower cost to society).

Effect of Regulation on Accident Rates

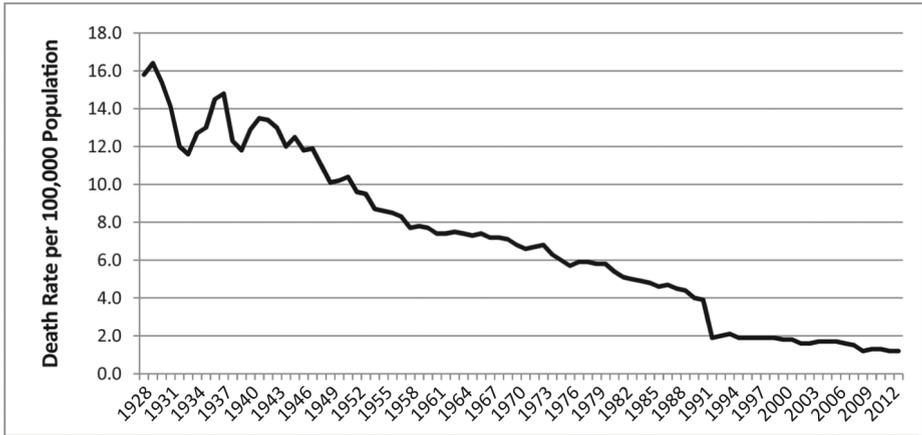
What has been the overall effect of the emergence of health and safety regulations since the early 1970s? One yardstick of performance is whether accident rates have declined. Figure 60.1 summarizes fatality rates from accidents. The basic message of Figure 60.1 is that accident rates have declined throughout the past 85 years (that trend has recently stopped because of an increase in falls due to an aging population and drug overdoses included in “poisonings”). The improvement in our safety is not a new phenomenon that began with the advent of regulatory agencies commissioned to protect the citizenry.

Figure 60.1
Unintentional Injury Deaths in the United States, 1928–2013:
All Accidents



SOURCE: *Injury Facts* (Itasca, IL: National Safety Council, 2015), pp. 46–47.

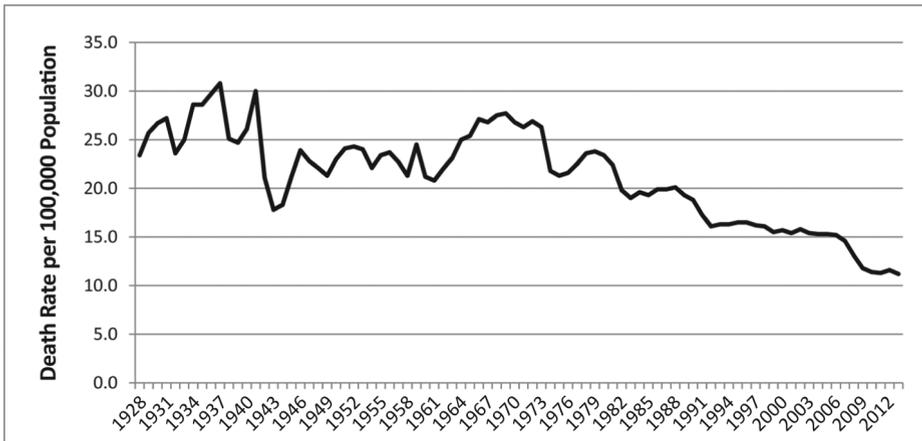
Figure 60.2
Unintentional Injury Deaths in the United States, 1928–2013:
Work



SOURCE: *Injury Facts* (Itasca, IL: National Safety Council, 2015), pp. 46–47.

For example, Figure 60.2 shows no significant downward shift in the trend for job fatality risk after the establishment of OSHA in 1971. (The break at 1992 is the result of changes in the Bureau of Labor Statistics’ census of fatal occupational injuries for work-related deaths.) And Figure

Figure 60.3
Unintentional Injury Deaths in the United States, 1928–2013:
Motor Vehicles



SOURCE: *Injury Facts* (Itasca, IL: National Safety Council, 2015), pp. 46–47.

60.3 shows that auto fatalities declined steadily throughout the last 85 years as well. As in the case of the other accident statistics, there is no evidence of a sharp, discontinuous break in the downward trend that occurred with the advent of regulatory policies.

The steady decrease in risk over time supports the hypothesis that market forces rather than regulatory policy have likely been the most important contributor to safety improvements.

Suggested Readings

- Lipton, Eric, and Louise Story. "Toy Makers Seek Standards for U.S. Safety." *New York Times*, September 7, 2007.
- Lytton, Timothy D. "Kosher Certification as a Model of Private Regulation." *Regulation* (Fall 2013).
- Martin, Andrew. "U.S.-Made Toys Benefit from China's Troubles." *New York Times*, August 15, 2007.
- Miller, Henry I. "The Use and Abuse of Science in Policymaking." *Regulation* (Summer 2012): 26–35.
- Miller, Henry I., and Peter Van Doren. "Food Risks and Labeling Controversies." *Regulation* 23, no. 1 (Spring 2000): 35–39.
- Pollack, Andrew. "Genetically Engineered Salmon Approved for Consumption." *New York Times*, November 19, 2015.
- Strom, Stephanie. "Major Grocer to Label Foods with Gene-Modified Content." *New York Times*, March 8, 2013.
- Thomas, Katie. "Johnson & Johnson to Remove Formaldehyde from Products." *New York Times*, August 15, 2012.
- Viscusi, W. Kip. "Regulation of Health, Safety, and Environmental Risks." National Bureau of Economic Research Working Paper no. 11934, January 2006.
- Viscusi, W. Kip, and Ted Gayer. "Safety at Any Price?" *Regulation* (Fall 2002): 54–63.
- Wilson, Richard. "Regulating Environmental Hazards." *Regulation* 23, no. 1 (Spring 2000): 31–34.

—Prepared by Peter Van Doren