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 a 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 decision-making 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 trade-offs between money and fatality risk, thus establishing the "value of a statistical life"—that is, how much money people require in extra compensation to accept an increased statistical risk of death. Recent estimates suggest workers require a risk premium that ranges from $280 to $1,000 to accept an additional annual

work-related fatality risk of 1 chance in 10,000 ($2.8 to $10.0 million per statistical life).

Market forces create safety incentives—employers must either pay the premium or pay for safety precautions that reduce the risk. An unregulated world is not a world without incentive 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 whether the drug is safe before it is put on the market?

Some people are risk averse; others are not. Some people would refrain from using the drug until it has undergone clinical trials with random assignment of subjects, whereas 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 their life quality or expectancy be reduced or enhanced?

The beauty of markets is that they can accommodate all those possibilities simultaneously for private goods. One firm can offer something for sale with "evidence," while other firms can offer things for sale without "evidence." UL (formerly Underwriters Laboratories) and kosher certifications 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 products. 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 sup-

ply 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.

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. American 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 that were 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 five 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 its products in response to consumer concerns: phthalates, preservatives that result in the formation of formaldehyde, and 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 its 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 animals raised for food to increase their growth rates and prevent disease. They have also called for regulation to implement their views, but the FDA issued only voluntary guidelines in 2012. In 2015, poultry processor Perdue Farms ran 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.
- Annie's Macaroni and Cheese and Taco Bell both pledged in 2021 to eliminate a controversial class of chemicals, ortho-phthalates, from their food packaging and products even though FDA researchers concluded in 2018 that "there have been no studies to date which show any connection between human dietary exposure to phthalates and adverse health effects."

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 their sale. 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 makers of unregulated products like supplements to engage in rigorous private development and certification of knowledge and efficacy. Unfortunately, they do not. Thus, those products 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 the chemical 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 *dis*incentive 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 modified 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 with 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 1 lists various health and safety regulations and their estimated opportunity cost per life saved (in 2002 dollars). Because the legislative mandates vary, great variance also exists 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, whereas the regulation of sewage sludge disposal has an estimated cost per life saved of $530 million. 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 (from approximately $3 to $10 million), and it would also reallocate resources from the high- to the low-cost regulations. Such a system 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).

Table 1

Opportunity costs per statistical life saved (millions of 2002 dollars)

Regulation	Year issued	Agency	Opportunity cost per statistical life saved, in dollars
Childproof lighters	1993	CPSC	0.10
Unvented space heaters	1980	CPSC	0.20
Trihalomethane	1979	EPA	0.30
Food-labeling regulations	1993	FDA	0.40
Children's sleepwear flammability	1973	CPSC	2.20
Child restraints	1999	NHTSA	3.30
Grain dust	1988	OSHA	11.00
Benzene	1987	OSHA	22.00
Coke ovens	1976	OSHA	51.00
Asbestos ban	1989	EPA	78.00
DES (cattle feed)	1979	FDA	170.00
Sewage sludge disposal	1993	EPA	530.00
Land disposal restrictions: Phase II	1994	EPA	2,600.00
Drinking water: Phase II	1992	EPA	19,000.00
Formaldehyde	1987	OSHA	78,000.00
Solid waste disposal facility criteria	1991	EPA	100,000.00

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

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. Figures 1–3 summarize fatality rates from accidents. The basic message is that accident rates have declined throughout the past 90 years (that trend has recently stopped because of an increase in 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.

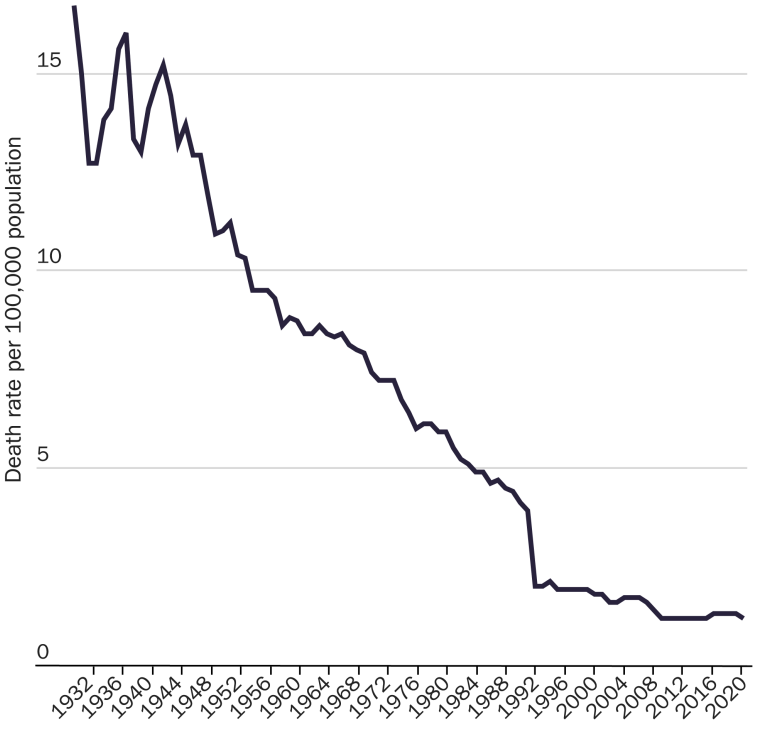
Figure 1

Unintentional injury deaths in the United States, 1930–2020: all accidents

Source: "Historical Preventable Fatality Trends: Standardized Rate," Injury Facts, National Safety Council.

Figure 2

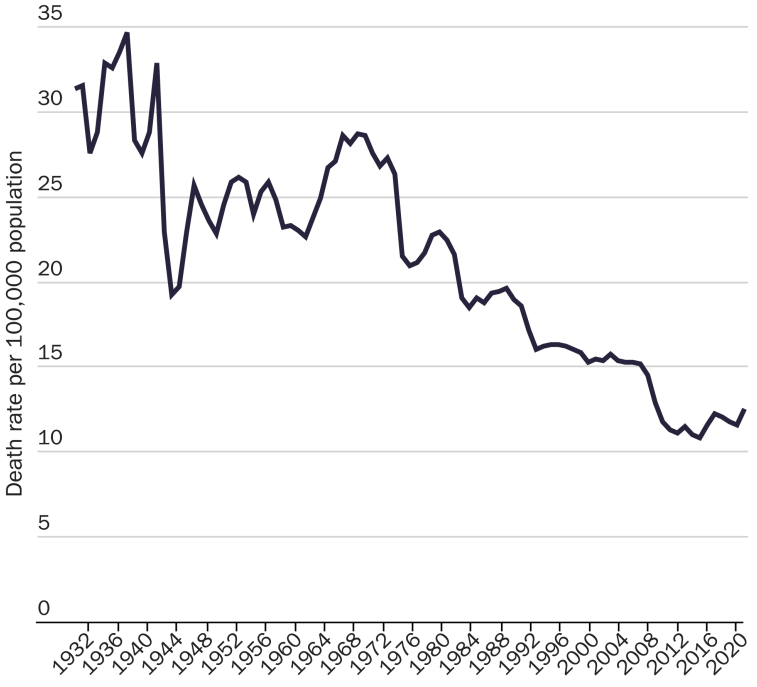
Age-adjusted unintentional injury deaths in the United States, 1930–2020: work



Source: "Historical Preventable Fatality Trends: Standardized Rate," Injury Facts, National Safety Council.

Figure 3

Age-adjusted unintentional injury deaths in the United States, 1930–2020: motor vehicle



Source: "Historical Preventable Fatality Trends: Standardized Rate," Injury Facts, National Safety Council.

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

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