

This report presents ERS research on the interaction between food safety and international trade. Food safety challenges are mounting and crises like “mad cow disease” are becoming more pronounced. Growth in world food trade means that U.S. consumers are more dependent on the food safety measures used in other countries and that there are greater opportunities for U.S. food exports.

This research was performed by examining the conceptual relationships between food safety and international trade and by examining the meat and poultry, produce, food/animal feed crop, and seafood sectors for trends in trade, food safety regulation, and the resolution of incidents and disputes related to both.

Food safety regulations and standards evolve differently around the world as countries respond to food safety crises and prepare for perceived exposure to emerging food safety risks. Regulations and standards worldwide are shaped by: (1) countries’ experiences with food safety, (2) inherent food safety risk levels in each country’s food supply (e.g., livestock host factors), (3) countries’ and industries’ ability and willingness to allocate resources to control these risks, and (4) differences in consumers’ food safety perceptions and, hence, preferences for targeting risk reduction efforts. For example, countries’ perceptions about *Salmonella* risks in poultry vary tremendously, as do their commitments and methods of control. As a result, countries’ trade restrictions for *Salmonella* vary by type, extent, and duration.

These differences in regulations and standards among countries can lead to international trade conflicts or disputes and can ultimately affect global patterns of food demand and reduce trade. In particular, food safety-related disputes among trading partners may arise from:

- New or more stringent standards and rapidly changing food safety regulations,
- The difficulty of separating the roles of food safety and non-science issues (e.g., consumer preferences) in regulatory decisionmaking,
- Difficulties in determining whether an equivalent safety outcome has been achieved when process standards are used,
- Strong differences in consumer risk perceptions and preferences,
- Newly identified or unfamiliar hazards, and
- Increased trade volumes from new or less proven sources.

Therefore, the causes of food safety-related trade disputes are varied, complex, and tenacious. For example, the 1989 European Union ban on animal growth hormones originated from concerns there about the effects of hormones used in beef production on human health. The scientific basis of the ban was later successfully challenged by the U.S. and Canada, but the European Union (EU) has still not lifted its ban. This is the only food safety dispute that has advanced to a World Trade Organization dispute panel.

Although differences in standards and regulations may lead to conflicts and disputes, they may also spur fruitful dialogue between countries, causing some countries to alter and improve their food safety systems. For example, regulatory agencies worldwide are increasingly adopting the Hazard Analysis and Critical

Control Point (HACCP) system as a foundation for new regulations to control microbial pathogens in food.

There has been relatively little disruption to food trade for safety reasons when considering the magnitude of global food and agricultural trade (\$436 billion in 2001), notable changes over the past decade in food consumption, production, and trade (for example, the increased consumption of food away from home, greater live-stock concentration, and increased volume of food trade); the vast number and variety of food categories and products traded; the roughly 200 countries participating in food trade; and challenges to food safety that include pathogens, pesticide and drug residues, food additives, environmental toxins, persistent organic pollutants, unconventional agents such as those associated with “mad cow disease,” and zoonotic diseases. However, the globalization of the food supply could introduce new food safety risks, revive previously controlled risks, and spread contaminated food wider. For the United States, there is no evidence as to whether food safety risks are increasing, remaining stable, or decreasing with trade.

Trade frictions related to food safety can be persistent, and any coherency between trade and food safety goals will likely require private costs and/or public intervention and investment. Global food trade will continue to increase due to improvements in transportation, infrastructure, and marketing networks, and to global increases in per capita income levels and populations. Consumers in developed countries are demanding certain attributes in food, like safety. Therefore, improving food safety and expanding international trade are compatible—even mutually reinforcing—goals. Governments and the private sector must react quickly to new food safety crises in order to minimize human illness and financial losses. But governments also invest in food safety to protect human health and expand food markets indefinitely. The private sector will be similarly pre-emptive where market incentives are strong.