

Food Safety Innovation in the United States

Economic Theory and Empirical Evidence from the Meat Industry

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Introduction

The last decade marked a period of extensive innovation in the science and regulation of food safety in the United States. New production technologies, supply management systems, detection methodologies, regulatory approaches, and surveillance networks are improving the safety of the Nation's food supply. Improved food safety is in turn lowering the incidence of food-borne illness in the United States. Data from the Centers for Disease Control and Prevention show a 23-percent overall decline in bacterial foodborne illness in the United States from 1996 to 2001 (CDC, 2002).

Despite this progress, bacterial contamination and large recalls are still making news. Unprecedented recalls of hamburger patties in 2002 because of pathogen contamination indicate that control programs have yet to be reliably successful. Can producers do more to efficiently control pathogen contamination? What motivates producers to invest in food safety innovation? How can policymakers and regulators best target policy to increase efficient food safety investment?

The drive for food safety innovation has come from a number of sources. The food industry, consumers, and lawmakers have all played a part in stimulating the development and adoption of food safety innovations. In

some cases, lawmakers or consumer organizations have prodded industry into making improvements to food safety. In other cases, food manufacturers have pioneered new methodologies to improve the safety of their products, often producing foods that exceed government safety requirements. When industry successfully innovates to produce safe foods, a win-win situation arises, with the innovating firm, consumers, and government all benefiting from improved food safety.

In this report, we investigate the factors that motivate firms to invest in food safety innovation and identify government policies supporting such motivation. We begin with an overview of the economic literature on innovation in which we examine the core drivers of innovation in the economy. We then conduct a theoretical analysis of the strength of these core drivers for motivating investments in food safety innovation. We hypothesize that the core drivers of innovation are relatively weak for food safety. We test this hypothesis with evidence from a recent survey of U.S. meat and poultry slaughter and processing plants and two case studies of food safety innovation. We find that industry has developed a number of mechanisms for overcoming weaknesses in the food safety incentive structure and for stimulating food safety innovation. We build on industry experience to suggest government policies that may best support food safety compliance and innovation.