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Did BSE Announcements Reduce Beef Purchases?

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In May 2003, several U.S. Government agencies announced that Bovine Spongiform Encephalopathy (BSE—also known as Mad Cow disease) had been found in a cow in Alberta, Canada. The following December, agencies reported that BSE had been found in a cow in Washington State. Both of these sets of announcements had the potential to influence consumers' food choices and retail food markets in the United States.

What Is the Issue?

Knowing how consumers responded to these announcements and, more generally, to news about the safety of the food supply, is important for the design of food policy. Public information programs that effectively communicate risk information could prevent consumers from responding out of proportion to the risks they face. Consumers and food suppliers might both gain if consumers do not avoid foods that are safe. When consumers make informed risk decisions, they create incentives for food suppliers to take cost-effective safety precautions. Also, accurate assessments of consumer responses to food safety risk information will help the public sector gauge the need for industry relief.

Currently, most of the quantitative information about consumers' responses to the BSE announcements has come from consumer opinion surveys. Such surveys allow researchers to quickly gauge consumers' response to announcements. However, survey responses may differ from actual market behavior where consumers have to pay for each of their choices.

The proof of how consumers interpret news about food safety is in the market. Our goal is to see if market data reveal impacts of the BSE announcements, and if so, the magnitude and duration of those impacts.

What Did the Study Find?

Among the three markets examined—fresh beef, frozen beef, and frankfurters—fresh beef provided the strongest case for an impact of the BSE announcements. There is no evidence that the Canadian announcement altered purchase patterns of fresh beef, but purchases during the first 2 weeks after the Washington State announcement were unusually low. Frozen beef purchases fell only for the first week after the Washington State announcement. Frankfurter purchases dropped in the second week following each announcement, but purchases of no-beef frankfurters also fell, suggesting that unrelated events were more likely responsible for the decline.

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The magnitude of responses in the market was difficult to estimate precisely, but the duration was clear: within 2 weeks, consumers were behaving exactly as they had before the announcements.

For each of the three commodities, the variation in weekly purchases is large, with seasonal purchasing peaks 2-10 times higher than seasonal troughs. However, about three-quarters of this variation can be explained by trend and seasonality, and, to a lesser extent, retail prices. Having explained most of the variation in weekly purchases with these factors, large and persistent market impacts related to BSE announcements could be easily detected. In fact, such effects were not detected.

Other food safety announcements could meet with different responses. But, similar responses could reasonably be anticipated in situations where consumers' prior awareness of food safety risks is comparable and where risks have similar characteristics.

How Was the Study Conducted?

The study used purchase records from the ACNielsen Homescan panel (1998-2004) to create nationally representative weekly estimates of U.S. retail purchases. The ACNielsen Homescan panel is a nationally representative panel of households that scan their grocery purchases at home, thereby providing information on each food item purchased. For each item purchased, the data set shows the date of purchase, expenditure, quantity, and attributes of each food (finely differentiating food products). Thus, the researchers were able to construct high-frequency purchase data that were suitable for testing for the presence of even short-lived impacts.