

Did BSE Announcements Reduce Beef Purchases?

Fred Kuchler and Abebayehu Tegene

Introduction

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 and the accompanying media coverage had the potential to influence consumers' food choices and retail food markets in the United States.

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. Researchers at Kansas State University (Coffey et al., 2005) summarized results of five such surveys, each with more than 1,000 respondents, taken by different news media and research organizations. Across all five surveys, between 14 and 29 percent of respondents reported reducing their beef consumption. In three of the surveys, between 3.5 and 7 percent of respondents indicated they stopped eating beef. A survey conducted the following spring (Thilmany et al., 2004) showed similar results, with 13 percent of the surveyed population reporting they reduced their beef purchases. Such surveys allow researchers to quickly gauge consumers' response to announcements. However, survey responses may systematically differ from actual market behavior, where consumers have to pay for each of their choices.

Economists have also used market data to estimate impacts of food safety information on food demand.¹ These studies answer some questions about the likely impacts of BSE announcements, and many proffer smaller impacts than the opinion surveys suggest. Dahlgran and Fairchild (2002) showed that demand for chicken fell in response to news coverage of bacterial contamination, but impacts were small and transitory. Piggott and Marsh (2004) estimated demands for beef, pork, and poultry as functions of prices and publicized food safety information—an index of newspaper articles on food safety concerning meats. They found that the “direct economic effects of the food safety variables were noticeably small in comparison to price and expenditure effects” (p. 169).

¹Piggott and Marsh (2004) summarize the results of many market-data based studies investigating the impact of food safety information reported in the media and product recall information.

International experience suggests that beef demand can fall significantly with news about BSE. McCluskey et al. (2005) described how BSE changed the retail beef market in Japan in 2001. Japanese beef consumption had been rising rapidly for three decades. After three BSE cases were detected, sales of domestic and imported beef fell by 70 percent. Pennings et al. (2002) reported that German beef consumption traditionally reaches a seasonal peak in November and December each year. When the first case of BSE was detected in Germany on November 26, 2000, purchases declined dramatically; the traditional peak did not occur.

Prior to the U.S. announcements, there was no way to be sure what signal U.S. consumers would receive from government announcements or how consumers' food choices might change. The proof of how consumers interpret such messages is in the market. Our goal is to see if market data reveal impacts, and if so, the magnitude and duration of those impacts.

Here, we retrospectively examine markets that are good candidates for announcement impacts: retail purchases of fresh beef from grocery store meat counters, frozen beef, and frankfurters. Frozen beef is generally more processed than fresh beef at the meat counter, and frankfurters even more so. Together, these three products show the extent of consumer adjustments to BSE announcements.

Retrospective market analysis is challenging. Market data—prices, quantities purchased, and expenditures—summarize what people choose. Market data reveal what did occur, but only rarely make obvious what would have occurred under alternate conditions. With markets, certainty about what might have been is rare. To establish impacts, we need both what we observe and what we would have seen under different conditions.

Our data on beef purchases display complex patterns: long-term trends, strong seasonality, and sensitivity to market prices of beef and other meats. These patterns imply that timing is a major determinant of the measurement of impacts. The patterns, however, are detectable and we can account for their impact, disentangling impacts of BSE announcements from preexisting purchase patterns.