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BRIEFING

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Biotech Food Labeling and Consumer Response: An Analysis of the Effects of Voluntary rBGH-labels on the Market for Fluid Milk

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Increasingly, product labeling is increasingly being used to provide information about product characteristics such as biotechnology content that cannot otherwise be observed. This study examines the effects of voluntary labeling about the biotechnology used in the production of fluid milk in major U.S. markets. The U.S. fluid milk market provides an appealing case study for examining the effects of biotechnology labeling for several reasons. First, the bovine growth hormone rBGH has been used in U.S. milk production since 1994, providing one of the earliest examples of the use of biotechnology in agricultural production. Second, fluid milk is a relatively standardized and ubiquitous processed commodity. Third, and perhaps most importantly, fluid milk consumption patterns involve cross sectional differences across markets within the U.S. with respect to both rBGH-free labeled and unlabeled products, and conventional fluid milk products that include milk from dairy cows receiving rBGH supplements.

the effects of voluntary labeling on U.S. milk consumption patterns. Two important practical empirical questions were of concern. First, to what extent does credible labeling affect the market size for a GMO-free product. Second, do the effects of labeling with respect to GMO content in a food product erode over time, as some commentators have suggested with respect to rBGH free milk.

The study is innovative in several respects. A household production model of the effects of labeling was developed that properly accounts for search costs and uncertainty about product attributes and the quality of information within a random utility framework. Second, as noted above, an important new scanner based data set was utilized to provide relevant quantitative information about a controversial food policy debate. Third, the study demonstrated that, when combined with product code information, scanner data has the potential to be useful in the analysis of highly differentiated product specific issues.

Objective
Analysis
for Informed
Decision Making

Unlike most previous work on biotechnology labeling that uses survey or experimental data, this study uses national-level supermarket scanner data from the period 1995-1999. These data, made available to the authors through a cooperative agreement with the USDA Economic Research Service, were combined with information on product brands compiled by the authors to estimate

The econometric results of the study indicate that the provision of labeling information increases the quantity demanded of rBGH free milk, a result consistent with the predictions of the theoretical model. The estimates indicate that credible labeling typically more than doubled sales of rBGH free milk in those markets where labeling was provided, even though the market share of

rBGH free milk remained small (on average about 1 percent of the sales of reference brands of milk that could contain milk from cows treated with rBGH). This result confirms the findings of previous studies based on surveys of consumer attitudes (but not consumer behavior in the market place) that indicate some consumers strongly prefer milk and other foods that are produced without biotechnology. Providing them with

low cost (or almost no cost) access to credible product information enhances their economic welfare.

Another finding of interest in this study is that there is no evidence that consumer preferences for rBGH free milk products have diminished since the introduction of rBGH milk products in the late 1980s. The positive effects of labeling on rBGH free fluid milk demand appear, if

anything, to become larger in the period 1998-1999 as compared to the period 1995-1997. This suggests that food processors who believe that consumer concerns over GMO products will diminish over time in response to a lack of evidence about adverse health effects may be wrong. Rather, at least some consumers appear to have strong and persistence preferences for GMO free products.

