



RESEARCH FACTS

RESEARCH & TECHNOLOGY DEVELOPMENT FOR THE CANADIAN BEEF INDUSTRY



Impact of Beef Quality on Canadian Beef Demand

Project Title:

Does Canadian beef demand respond to food safety recalls and food quality improvements?

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Researchers:

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Background:

Beef demand is an indication of consumers' willingness to purchase, and refers to how much beef will be consumed at a given price. Higher beef consumption at higher prices indicates stronger demand; smaller consumption at a lower price indicates weaker demand. However, stronger demand can also be the result of lower consumption at higher prices or higher consumption at lower prices if the positive change is larger than the negative change. This is measured by the Canadian Retail Beef Demand Index.

Beef demand is influenced by consumer income, prices of competing proteins (e.g. poultry, pork and lentils) and evolving consumer preferences for convenience, health benefits and taste. All sources of information indicate price is among the most important determinants of consumption, but previous studies have also shown that *food safety* and *product quality* are consistently the top two demand shifters for both ground beef and steak. *Health* ranks third¹.

Industry has put substantial effort into improving beef quality over the years in order to support beef demand. Product quality includes a wide range of attributes from taste, juiciness, consistency, color and appearance to freshness, shelf life, preparation ease, convenience and tenderness. One might expect that improvements in beef quality enhance consumer satisfaction and lead to increased beef demand or at least prevent a decline in beef demand. However, it is unclear how broad improvements in beef quality have supported beef demand in Canada.

Objective:

- to determine how changes in beef quality impact beef demand in Canada.

What They Learned

Measuring Beef Quality & Challenges in Interpretation

The first challenge is finding a measure of beef quality. [Canada's 2009 Beef Consumer Satisfaction Survey](#) found that consumer satisfaction was higher in 2009 than in 2001 across all attributes measured (tenderness, juiciness, and flavour) regardless of which steak participants were given. However, this information did not provide a continuous time series that could be used in this study. Therefore, AAA and Prime as a percentage of all A grades was used as a proxy, which is admittedly imprecise given what all is included in product quality attributes, but it is what producers have available to focus on as a quality measure. By using quality grading we cannot draw conclusions about changes in tenderness or other specific attributes over time. In addition, some consumers may avoid the higher marbling due to health concerns that are not related to quality perceptions.

U.S. studies have shown that wholesale and retail beef demand is influenced by quality grade and seasonality (Lusk et al. 2001). In general, demand for U.S. Select beef (equivalent to Canada AA) is more sensitive to price change at the wholesale level compared to Choice (equivalent to Canada AAA) product because Select has more substitutes available. For example, Choice beef can be substituted for Select more readily than the reverse. Seasonal demand for both Choice and select beef is less sensitive to price changes during the spring grilling season.

The second challenge is to recognize the diversity among consumers who rank beef product preferences differently. This is noted in the “tale of two consumers” in the 2013 Power of Meat report. This report indicated that roughly 10% of American consumers are “trading up” to increasingly higher end cuts and leaner products. At the same time, a large portion of the American population was “trading down”, purchasing more ground beef and other cheaper cuts. This latter group is also eating meat less often and reducing per capita consumption as their incomes have been reduced. These consumption trends will have a significant impact on beef demand in the future. This dichotomy must be kept in mind as it creates challenges in drawing clear conclusions.

Quantity-Quality Tradeoffs

A one percent increase in beef quality (measured by AAA and Prime as a percentage of all A grades) lead to a 0.2 percent reduction in Canadian beef demand. While seemingly counterintuitive, this relationship could be explained by quantity-quality tradeoffs. Keep in mind that price is almost always the number one demand driver. When buying a better quality cut of beef at a higher price, consumers may be buying less quantity, resulting in reduced beef expenditures. Canada is predominately a middle meat country, eating loin and rib products. As quality increases, so does consumption of middle meats that are the most affected by a change in quality grade, but total beef consumption does not necessarily increase with improved quality.

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This would imply that middle meats, which provide a consistently tender product that meets consumer expectations has supported demand for those cuts and reinforces the importance of providing consistently tender product to avoid bad experiences that negatively impact beef consumption.

The next challenge is to broaden demand to include more cuts of the carcass.

Relationships with Competing Meats

As beef quality increased, pork demand fell, while chicken demand increased. Price relationships between protein categories are important influencers of consumer decisions.

Consumer income and meat price are the drivers of meat purchases if all meat prices increase by the same amount relative to each other. But if the prices of different meats increase at differing rates (e.g. beef prices increase by 25%, pork increases by 10%, and chicken increases by 5%), consumers must consider different value options.

Beef and pork are “net substitutes”, and so are pork and chicken. “Net substitutes” means that when beef gets more expensive, consumers buy less beef and more pork. When the price of pork rises, consumers buy less pork and more chicken. Other examples of “net substitutes” include butter and margarine, and coffee and tea.

Beef and chicken are “net complements”. Net complements are goods whose demand increases when the price of the other good decreases. Beef demand increases when the price of chicken decreases; and beef demand decreases when the price of chicken increases.

What It Means:

Schroeder et al. (April 2013) notes that product quality is a significant demand driver. The industry needs high quality products that offer consistently excellent flavor, colour, tenderness, and juiciness that is offered in a form that consumers prefer. Development of new products presents an important opportunity but consistency, clarity and integrity of product labels is another component that should not be lost. Standardized product names help consumers make purchasing decisions that match their preferences. Products that consistently fail to meet consumers' quality expectations have a significant negative impact on beef demand. Improving beef quality and developing new products that appeal to consumers should be one of the beef industry's highest priorities.

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Increasing beef quality can have unintended consequences, particularly if it results in consumers focusing on a limited number of cuts from a small portion of the carcass and avoiding the rest. Increasing overall beef demand requires increasing the total value of cuts from the entire carcass. Predictable, consistent eating quality in middle meats (loin and ribeye) are very important, but beef quality research that leads to increased consumer satisfaction with and consumption of end cuts (rounds and chucks) is equally important. Opportunities may exist to develop thin meats (e.g. cuts from the diaphragm and flank) into new products that are consistent, convenient, enjoyable and appealing to Canadian consumers.

1Schroeder, Tonsor and Mintert. April 2013. Beef Demand: Recent Determinants and Future Drivers. Prepared for the Cattlemen's Beef Board

Find the full report of the study "Does Canadian beef demand respond to food safety recalls and food quality improvements?" by Dr. John Cranfield at: <http://www.beefresearch.ca/research-topic.cfm/economic-analysis-75>

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