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# Beef Demand and Health and Food Safety Risks

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October 2002



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## Introduction

The purpose of this paper is to provide an update on beef demand. More specifically, however, the purpose of the paper is to show how Canadian producers, processors and industry associations have helped to improve beef demand as a result of determined, focused efforts. By having the courage to address sensitive topics like health and safety, the beef industry has helped to improve the most important issue that they faced: the demand for their product.

## Demand Defined

Demand is the amount of a commodity consumed at a given price. At any given time, consumers typically eat more or less of a product depending on changes in prices. This is a normal demand response. What is interesting is not the normal demand response, but a change in demand itself. Changes in demand can be caused by changes in incomes, the price of substitute products, changing tastes and preferences, etc.

The beef industry is entering its fourth year of either steady or improved demand. This stands in sharp contrast to the 20-year decline in consumer demand for beef prior to 1999. Over the years in which demand was declining, economic research indicated that some of the reasons for declining demand were concerns regarding health and safety issues associated with beef. Other reasons included the price of substitutes such as pork or chicken as well as a lack of convenient product lines in the beef section of the meat case.

## The Relationship Between Demand and Health/Safety Issues

In addition to factors like incomes and changing tastes, there is a direct relationship between the demand for beef and the consumer perceptions of the health and safety of beef.

In 2000, members of the Agricultural Economics team at Kansas State University conducted an analysis of the determinants of beef demand.<sup>1</sup> The researchers expected that there was a relationship between the health and safety issues often associated with beef and the demand for beef. The researchers attempted to measure this relationship by tracking the number of articles in the media and journals that discussed the link between cholesterol and heart disease. This was to serve as the gage to measure the relationship between beef demand and health issues. With

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<sup>1</sup> Mintert, Schroeder et al see

<http://www.agecon.ksu.edu/livestock/Extension%20Bulletins/BeefDemandDeterminants.pdf>

regard to food safety and beef demand, the researchers measured beef product recalls against beef demand.

In summary of the KSU findings, the researchers found that as more articles were published supporting the linkage between cholesterol and heart disease, beef demand declined. With regard to food safety, US government food recalls also had a negative impact on retail beef demand. Their meat demand model indicated that during certain years beef recall events resulted in more than a 0.5% decline in per capita beef consumption from the previous year.

Essentially the KSU study was able to quantify something that is intuitively obvious. That is, if there are negative health or safety perceptions or issues associated with a food product, demand for that product can be negatively impacted. Based on the KSU tracking, it is also obvious that this risk is of a long-term nature. In other words, consumer perceptions take years to evolve.

## **Health/Nutrition**

Since the late 1990's, after the KSU data series was completed, there have been a number of positive developments associated with consumer health perceptions of beef. These include widely publicized protein diets and diet books as well as new medical information that challenge links between beef and heart disease or cancer.

In addition to those positives the Canadian Cattlemen's Association, the Beef Information Council, as well as beef processors and industry associations, had the foresight to take action on this front as well. Industry leaders determined that there was a need for science-based evidence to counter the misperceptions about beef that had been circulating since the 1980's. In fact, there was not only a need to counter misconceptions but also to prove the positive impacts of beef. The industry then took steps to commission independent scientific research at Canadian universities on a variety of health and nutrition topics related to beef.

These long-term commitments to research led to positive scientific results on the health benefits of beef and the correction of many mistaken impressions regarding beef. For example, medical research has tied beef to dietary iron and the importance of iron for women. Additional positive medical findings included the impact of lean beef in lipid lowering diets and how beef fat inhibits proliferation of mammary tumors.

Just as important as the positive research and scientific/medical findings is the fact that the information is making its way to Canadians. The Beef Information Council (BIC) tracks the circulation of the forums in which news of the research has been published. Thanks to BIC communication efforts, millions of Canadians have been exposed to the positive research news regarding beef. It is also apparent that positive health news is beginning to outweigh the negative in the popular media.

There is also additional information that consumers are hearing the message. Consumers view beef in a positive light with regard to health and nutrition. The following data were provided by the Beef Information Centre and are a result of consumer attitudinal tracking conducted by a Canadian market research firm:

- 77% of Canadian consumers think "Beef is an important part of a healthy eating plan"
- A declining number of Canadians have cut down on beef for health reasons

- 74%, an increasing number, of Canadians “don’t have any problems with the idea of eating beef 3 times a week”

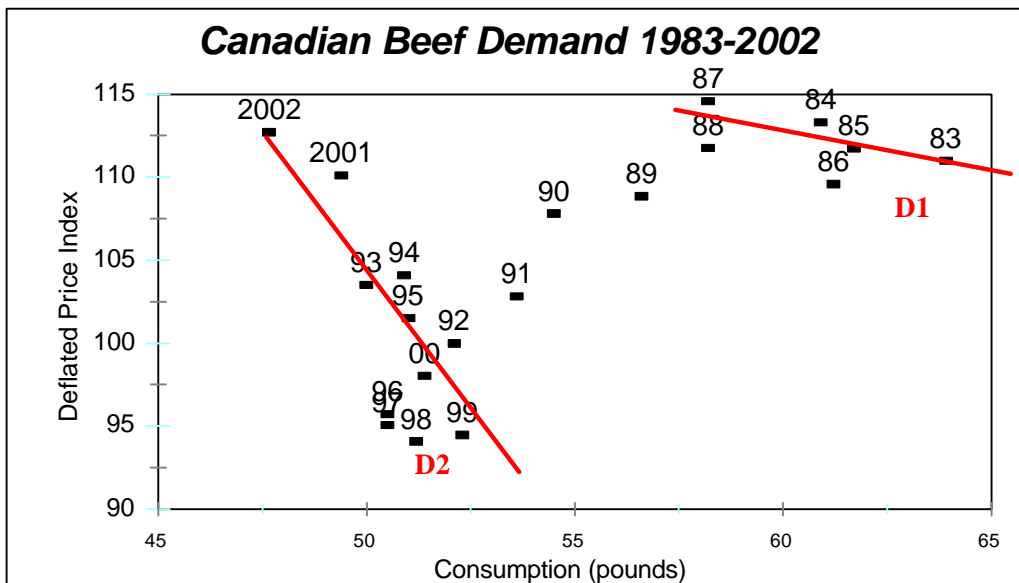
### Food Safety

The biggest food safety threats are recalls or incidences involving Escherichia coli O157:H7 (E. coli). A review of Canadian Food Inspection Agency recall-data over the last three years reveals that there have been about 100 food recalls per year. Of those, about one to two/year have been beef e.coli related. That means that of the 1.1 million metric tonnes of beef produced in Canada each year, an infinitesimal share would be affected. It is also important to note that the very fact that there is a recall is an indication that the Canadian meat safety system is working well to protect consumers. Of course it does not really matter what the share of production is that is contaminated with E. coli; the issue is consumer perception about safety. A beef recall generates concern amongst the public.

So while the risk of E. coli entering the Canadian food chain is infinitesimal, the fact is that the Canadian beef industry is continuing to work to reduce that risk even further. The industry is spending millions of dollars on technologies that reduce the risk. The focus of the effort is on advanced technologies including decontamination processes and carcass washes. The industry is also adopting less sophisticated but equally important handling methods to prevent the pathogen from cross-contaminating carcasses. Furthermore, the industry and inspectors are testing smaller and smaller bin lots and is not shipping product until test results are known.

### Changing Perceptions and the Impact on Demand

The following graph shows Canadian demand for beef from 1983 to 2002 (2002 demand is an estimate). As noted above, demand is the combination of consumption and price. The graph shows the various combinations of Canadian per capita consumption of beef and the deflated price index for beef. The vertical axis is deflated prices and the horizontal axis is per capita consumption. The numbers above each data point are the years in which the combinations occurred. The lines D1 and D2 are estimates of demand curves over a set number of years in the early 1980’s and the late 1990’s. The data are from Statistics Canada.



The graph shows that during the last twenty years Canadian consumers ate less and less beef per capita at lower and lower deflated prices. This was a period of declining demand. The demand curves shifted left from D1 to D2. In 1999, however, the situation appeared to change. Consumers began to eat more beef at slightly higher prices. In 2000, consumption declined (tighter supplies) but prices rose indicating continued strong demand. In 2001, beef demand stayed on the improved path of the previous two years. That is, consumption is down but the prices consumers are willing to pay continue to be very high. Preliminary estimates for 2002 demand indicate a similar scenario: demand remains strong.

As the industry continues to focus on safety, the number of recalls will decline and as such, the potential erosion of demand will also decline. Furthermore it appears that the industry is on the right path on the subject of consumer perceptions related to health and nutrition. Positive news and attitudes can only help beef demand, although it might take years to determine the magnitude of the benefit. While it is still early to state categorically whether positive news and increased safety is aiding beef demand, the fact is that beef demand is improving.

Cattle producers, beef processors and industry associations can take a great deal of pride in contributing to an increase in demand. The industry faced these sensitive issues directly and took on the challenge of improving the situation. Consumer perceptions, however, are very unpredictable and, at times, erratic. In other words, this is a task that is never ending and must be maintained.