

U.S. Meat and Poultry Demand

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Extension Facts 488 (see references) examines trends in beef, pork, and poultry consumption, prices, and production costs from 1950 to 1985. It shows clearly the decline in beef and pork's share of total meat consumption and the growth in poultry consumption. Too often, meat consumption is equated with meat demand. However, other factors must be considered. This Extension Facts explores demand changes for beef, pork, and poultry since 1960.

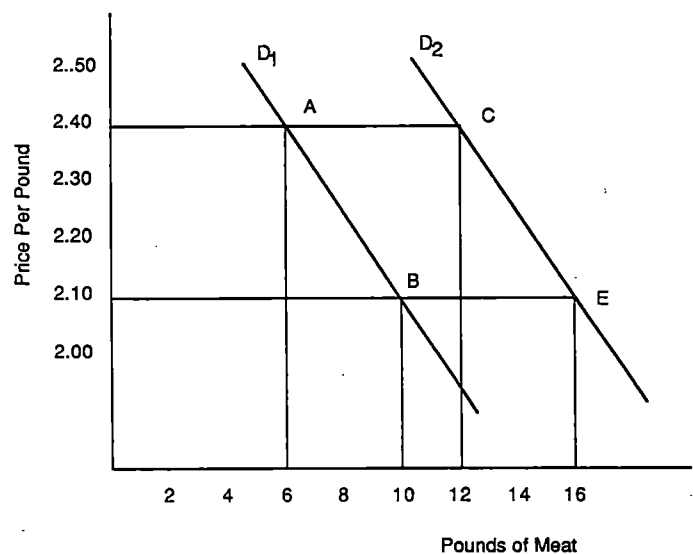
Demand Explanation

The economic law of demand simply indicates that a consumer will buy more of a given product at a lower price and will buy less at a higher price. Therefore, graphically, a demand curve (often shown as a straight line rather than a curve) slopes downward to the right. From each point on the demand curve, consumers will only purchase more if the price is lowered. Lower prices indicate that a given product is a better bargain relative to its alternatives, thereby providing an incentive to purchase more of the product.

Buying more of a product at lower prices is an example of moving along the demand curve. Figure 1 illustrates the above concept with a hypothetical example. Using demand curve D₁, if the initial price for beef is \$2.40 per pound, a consumer may purchase 6 pounds of beef per month (point A on demand curve D₁). Assume beef supplies increase. To sell more beef, the retail beef price must decline. Therefore, at point B on demand curve D₁, a consumer would pay \$2.10 per pound but would buy 10 pounds of beef per month. Moving from point A to point B represents a movement along the demand curve.

Increases in personal income, changes in prices of competing products, or changes in tastes and preferences may result in a shift in demand. Assume the consumer in our example takes a higher paying job. Now, the same consumer may behave as though he/she

Figure 1. Basic Meat Demand Concepts



is at point C on demand curve D₂. At the same initial retail price as before (\$2.40/lb.), the consumer in our example is willing to purchase 12 pounds of beef per month. And at \$2.10/lb., our consumer might purchase 16 pounds of beef (point E). There has been a shift in the demand curve from its original position (D₁) to its new position (D₂). An increase in income resulted in an increase in demand for beef.

A decrease in demand could occur also. In that case the shift in the demand curve is leftward. Therefore, if demand curve D₂ was the initial demand curve and D₁ the new position, there would have been a decrease in demand. Decreases in demand can result from reductions in personal income, reductions in prices of competing products, and taste and preference shifts to other products.

Meat Consumption

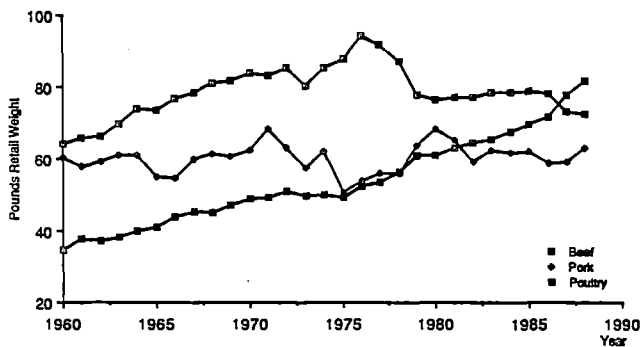
Data on actual consumption of meat are not available. Instead, the supply of meat reaching the consumer (based on retail weight) is used as a proxy for meat consumption. Figure 2 shows beef, pork, and poultry consumption from 1960 to 1988. Per capita beef consumption increased from 64 pounds in 1960 to a peak of 94 pounds in 1976. Since then, beef supplies and per capita consumption have declined relatively sharply, to 73 pounds per person in 1988.

Pork consumption has averaged close to 60 pounds per capita over the past three decades, ranging from a low of 51 pounds in 1975 to a high of 68 pounds both in 1971 and 1980.

Over the 1960 to 1988 period, poultry consumption increased sharply, from 34 pounds per person in 1960 to 82 pounds in 1988. Per capita poultry consumption (chicken plus turkey) surpassed per capita pork consumption in 1982 and surpassed per capita beef consumption in 1987.

Adding per capita consumption for beef, pork, and poultry together indicates that U.S. meat consumption has increased considerably, from 159 pounds per person in 1960 to 217 pounds per person in 1988.

Figure 2. Per Capita Beef, Pork and Poultry Consumption.

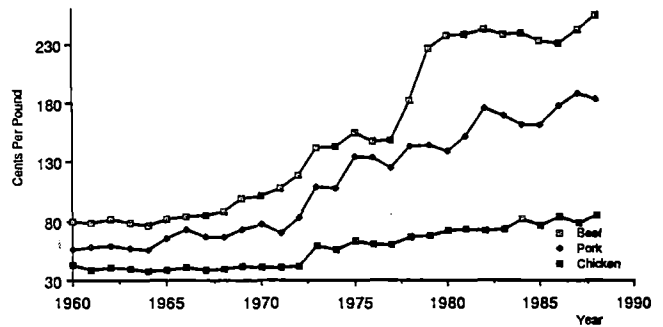


Meat Prices

Many factors affect the changes in per capita consumption of beef, pork, and poultry. Among them, as the law of demand suggests, is the price of each respective meat. Figure 3 shows annual average retail prices for beef, pork, and broiler chickens. Prices increased modestly in the 1960s for beef and pork, but prices for all meats increased sharply in the 1970s.

The widening gap between rising broiler prices and rising beef and pork prices indicates that beef and pork prices increased more rapidly than broiler prices. As expected from the law of demand, consumers purchased more chicken and less beef and pork. On the average, a pound of chicken cost only 34 percent as much as a pound of beef and 46 percent as much as a pound of pork in 1988, compared with 53 and 76 percent for beef and pork, respectively, in 1960. It

Figure 3. Retail Prices of Beef, Pork, and Broiler Chickens.



appears consumers substituted less expensive meat (chicken) for more expensive meats (beef and pork).

The available data may be somewhat misleading. Many new poultry products emerged in the 1970s and 1980s. Many of these further-processed products may be as expensive on a per pound or per serving basis as beef and pork. Consequently, retail price data may not reflect changes in the product mix of the respective meats.

Meat Demand

The demand for beef, pork, and broiler chicken are discussed individually. Data are graphically presented using scatter diagrams in which deflated annual retail meat prices are plotted along with the corresponding per capita meat consumption for that year. Figures 4, 5, and 6 use the same axes scales. Therefore, comparisons can be made among the three figures.

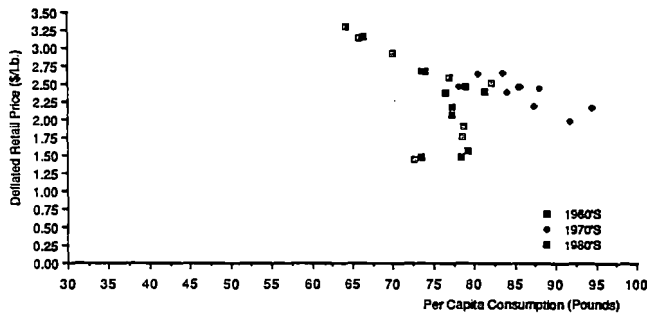
Economists recognize several ways to analyze meat demand (Buse). Here, retail meat prices were deflated by (divided by) annual disposable personal income per capita, using 1980 as a base (1980=100). Using income-deflated prices adjusts for expanding income of consumers over time, though it assumes a constant income elasticity. Using per capita consumption adjusts for expanding population growth over time. Thus, two demand determinants, income and population, are accounted for in the graphic presentation.

Beef Demand

The relationship between annual deflated retail beef prices and per capita beef consumption is shown in Figure 4. If a demand curve was fitted to the data for the 1960s and 1970s, it would be downward-sloping as economic theory suggests.

Price-consumption points for the 1980s are below the demand points for the 1960s and 1970s. Economists do not agree on why the apparent change has occurred (Buse). Some argue that there has been a structural or fundamental change in demand within the meat complex. Some argue changes are explained by relative

Figure 4. Demand for Beef, 1960 to 1988.



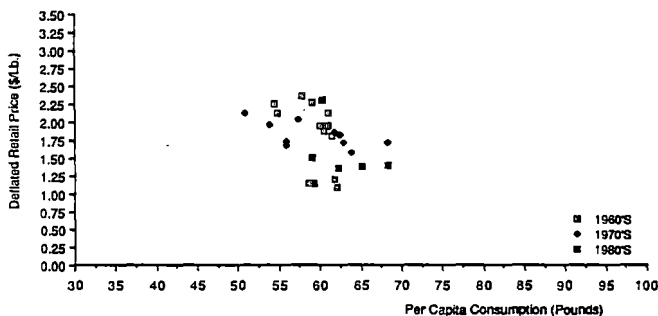
prices for competing meats or changes in life styles and related eating habits, among other explanations. It appears the beef demand curve has been shifting downward, meaning a decline in the demand for beef. Clearly, per capita consumption of beef in the 1980s was relatively stable while income-deflated retail prices were declining.

Pork Demand

Comparable data for pork is shown in Figure 5. While the distribution of price-consumption points differs for pork compared with beef, a similar phenomenon has occurred.

A downward-sloping demand curve could be fitted to the pork price-consumption data for the 1960s and 1970s. Data points for the 1980s lie below the data points for the 1960s and 1970s. If a demand curve was fitted to the 1980s data, it would lie below the demand curve for the previous two decades. Consequently, it can be argued that the demand for pork has also declined.

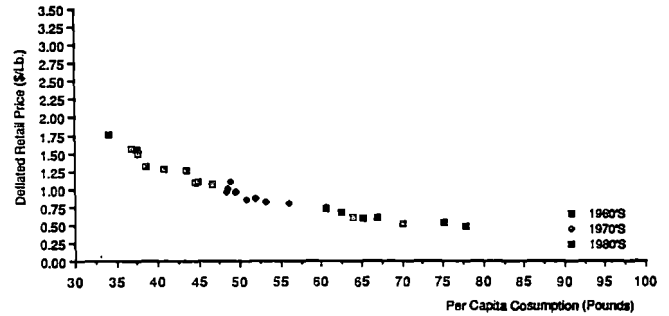
Figure 5. Demand for Pork, 1960 to 1988.



Broiler Chicken Demand

Figure 6 shows comparable price-consumption data for broiler chicken. A considerably different picture emerges. As with beef and pork, if a demand curve was fitted to the data for chicken, it would be downward sloping. However, unlike beef and pork, broiler chicken price-consumption points have quite

Figure 6. Demand for Broiler Chicken, 1960 to 1988.



consistently moved rightward, sometimes with little change in price. Consequently, it can be argued that the demand for chicken has increased, causing a rightward shift in the demand curve.

Implications

Based on available data and analysis, poultry has achieved significant gains in market share at the expense of beef and pork. The answer to the question "Why?" has several components.

Poultry meat prices have been consistently lower than either beef or pork and have trended lower over time in comparison to the two competing meats. Consequently, consumers have behaved just as economic theory suggests. They have purchased more of the less expensive meat.

Increased numbers of women in the workforce has contributed to an increased demand for convenience in at-home-cooked meals. And the poultry industry's new product development efforts have focused on consumer convenience. Two-income families also tend to eat away-from-home meals more often. Again, the poultry industry has made impressive gains in new product development, especially in the food service industry. Most fast-food restaurant chains now have at least one chicken product on their menu, usually a sandwich or some kind of reformed product (nuggets or strips). New product development in the beef and pork industry, both for the eat-at-home market and for the away-from-home market, has lagged the poultry industry.

How much of a factor consumer diet-health concerns have been is unclear. Negative reports linking beef and pork to health problems may have caused consumers to change their diets and life styles. On the other hand, salmonella concerns with poultry products seems to have affected poultry consumption comparatively little. Economists are unsure how much effect diet-health concerns have had on meat demand changes.

The livestock-meat industry has made some adjustments in recent years that may have an impact in the future. Livestock producers began spending more on beef and pork promotion and new product

development than in previous years. Also, meatpackers and retailers have worked together to offer closer trimmed beef and pork products to consumers. However, it is too early to conclude that such steps have halted the decline in demand for beef and pork.

Conclusions

The demand for beef, pork, and poultry has been undergoing a period of change. The demand for chicken appears to have increased while the demand for beef and pork has declined. Aggressive new product development is believed to be a significant causal factor in poultry's per capita consumption growth. Only time

will tell whether the beef and pork industries' efforts to meet consumer demands, coupled with increased promotion and new product development, will curb the decline in beef and pork demand.

References

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- Ward, Clement E. and James N. Trapp. Meat Trends: Consumption, Prices, and Production Costs. OSU Extension Facts 488. June 1986.



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