The Impact of Health Information and Women in the Work Force on Aggregate Meat Demand

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Over the past few decades, U.S. meat consumption patterns have changed. Changes in food consumption patterns can be the result of changing demographic characteristics, changing lifestyles, increasing health awareness, and nutritional concerns. Prior research suggests that these factors have significant influence on the demand for meat (Capps and Schmitz; Kinnucan, Hsia, and Jackson). The recent interest in low carbohydrate diets and the association with increased red meat consumption is an anecdotal example of this phenomenon.

By incorporating measures of demographic and health information into meat demand analysis, this study aims to quantify and interpret important non-price determinants of meat demand in an aggregate demand setting. Demographic and health information act as demand shifters in this model that could either increase or decrease demand and the share of meat expenditures going to different types of meat (i.e., pork, beef, and poultry). Evaluating the effects of changes on meat demand delivers information on the potential existence of structural change in the underlying consumer consumption decisions and lends direction to further research and marketing strategies of producers and purveyors of meat products.

To explore these effects, we statistically estimate the impact of health and demographic information on the aggregate U.S. demand for beef, pork, poultry and fish over the period of 1970 to 1999. To estimate these demands, this study employed both the quantity dependent Almost Ideal Demand System by Deaton and Muellbauer and the price dependent Inverse Almost Ideal Demand System by Eales and Unnevehr. The inverse demand system is used in this study, because of the focus on perishable meat products. That is, it seems appropriate to have quantities as exogenous permitting prices to adjust in order to allow short-run market clearance rather than the reverse, because in the short run the quantities of meat on the market are largely fixed by the breeding and production decisions undertaken by producers in the past that cannot be completely reversed in the short run.

Measuring Health Awareness and Demographic Shifts

The health index in the model is represented by the cumulative sum of the net number of medical journal articles published, that support a linkage between cholesterol consumption and heart disease. The study uses the original Brown and Schrader index as base data, subsequently weighted by a factor representing the relative proportion of all journal articles providing negative cholesterol information (Kinnucan, Hsia, and Jackson). Demographic information is represented by female participation in the labor force. Results from this study indicate that the index of the percentage of women in the work force is a determining factor in estimating meat demand. This variable represents several demographic changes that have occurred over the past two decades. More women are now working outside the home which leads to an increase in households without a stay-at-home adult. With more time spent outside the household, less time can be devoted to preparing meals for the family. The demand for easy-to-prepare meal solutions is hypothesized to have risen as a result leading to a modification in consumption behavior.

Results and Implications

Results between the two demand models indicate that the shares of meat expenditure for poultry and fish consumption has responded positively to the increased female workforce,

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while in general, the shares of meat expenditure on beef and pork has responded negatively. Fish and chicken are both more microwavable and thus more suited for preparation by "latch-key" children. In addition, poultry and fish have undoubtedly gained in consumption from greater access via fast food and other away from home food consumption options. Away from home food consumption has likely increased as a result of more women in the workforce.

In contrast to previous research (Kinnucan, Hsia, and Jackson; Capps and Schmitz), this study shows that the cholesterol index does not have a significant effect on aggregate meat demand in any category of meat. While this may be true in aggregate, it is probably not true uniformly for all households. Thus, a next step is to determine what types of households have adjusted their meat consumption patterns as a result of health awareness.

Further investigation is needed of the effects of health information and demographic changes on meat demand. The availability of this information will help producers develop products more suited to consumer tastes, preferences, and demographics. Retailers will also benefit by developing more effective marketing strategies and take advantage of an opportunity to expand market share. Consumers would benefit from improved availability of products and information that meet their needs and circumstances. The results in this paper specifically suggest that the pork and beef industries should improve the convenience characteristics of their products. They need to enhance their products appeal to busy families and individuals with less time for meal preparation and a higher demand for consumption away from home.

References

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