ECONOMIC ANALYSIS OF MEAT PROMOTION

PROCEEDINGS FROM THE NEC-63 CONFERENCE

Adam's Mark Hotel
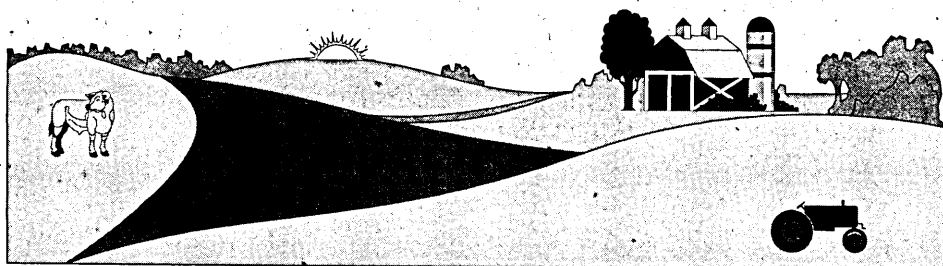Denver, Colorado

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DISCUSSION SUMMARY

Thomas L. Cox

Session 2 focused on three case studies of meat promotion effectiveness. The first study by Alston, Chalfant, and Piggott presented an analysis of single equation versus systems of equation estimates of demand response and returns to incremental advertising in the Australian meat industry. Nick Piggott made the presentation. This study's basic premise is that there can be important cross-commodity price as well as advertising effects that single equation models tend to ignore. In more conceptual terms, the questions raised concern the implications of fairly strong separability assumptions on the econometric estimates of advertising effectiveness. The authors demonstrate and conclude two key points: 1) that cross-advertising, as well as cross-price effects, should not be ignored in this type of advertising/sales response research; and 2) that econometric estimates of advertising effectiveness are quite "fragile" to these separability, as well as other specification assumptions.

The authors estimated non-linear and the linear approximation of the AIDS, as well as double-log (quantity dependent) and semi-log (share dependent) single equations. While estimates of demand elasticities with respect to prices, incomes and advertising were not found to be sensitive to either functional form or systems versus single equation specifications, measures of net benefits due to advertising were quite sensitive to the approach used to measure the incidence of advertising costs.

When asked for an intuitive explanation of the single versus systems results, Nick Piggott summarized by pointing out that, for example, the systems approach generated impacts twice as large as the single equation impacts due to the presence of direct and indirect (via prices) impacts.

In response to a question concerning the cost to consumers of the advertising, Nick noted that these costs were smaller due to the large exports of Australian beef (i.e., foreign importers bore some of these costs).

In response to questions concerning costs to producers, Nick noted that the Australian beef checkoff is an excise tax (% cost of production). Producer impacts were measured as a surplus/welfare measure.

In response to questions concerning the estimated impacts of no beef promotion program, the authors noted that this impact is symmetric to increasing the program 100% as the model is linear in advertising/sales response. Questions concerning the curvature of the advertising/sales response were noted to involve CRTS issues and left for further exploration in future research.

The second case study, by Cranfield and Goddard, was presented by John Cranfield. This research extends the system arguments one step further by hypothesizing that, in addition to cross-commodity price and advertising effects, noncompetitive market structures and international commodity trade can also influence econometric estimates of advertising effectiveness. The authors basically extend the Applebaum model to allow for trade, as well as conjectural variations, with respect to advertising.

In the context of the Canadian beef processing sector, the authors demonstrate that oligopoly power in the U.S. beef packing sector is translated into the Canadian sector via U.S. Canada trade in livestock products. Given the price setting power of the dominant U.S. beef sector, the authors argue that it is appropriate to model Canadian beef promotion with "small" country trade assumptions. The results of this research suggest that Canadian beef producers would obtain higher returns by spending their promotion dollars in the U.S. market to increase the U.S. price.

In response to the question: "Would demand elasticity results be different if estimated as a competitive model?" John Cranfield answered "No, we estimated both ways, and there was no difference in the results."

The third case study was presented by Ron Ward and summarized evidence from the National Purchase Diary (NPD) on the effects of beef advertising on U.S. beef demand. This household data included over 21,000 observations from 1984-95. With respect to meat consumption, the data measures the number of servings/capita in the household over a two week period. Ron stressed these are not quantity data. Considerable demographic, attitudinal and health awareness/concerns detail with respect to meat consumption behavior are available. Principle component techniques were used to consolidate these multifaceted measures to more manageable factors. As prices are not available in these data, aggregate U.S. prices, as well as beef promotion expenditures, are added to the basic NPD data.

Due to the censoring in meat consumption (14%, 58%, 25%, and 70% of household reported no servings of beef, pork, chicken, and turkey, respectively), two step Sample Selection models were estimated.

In response to a question concerning different impacts due to prices rising versus falling, Ron noted that these were modeled as symmetric effects. In response to questions concerning the correlation between attitudes and behavior with respect to meat consumption, Ron noted that there is a strong positive correlation in these NPD data. As to the measurement of portions, Ron noted that these data track the number of servings as reported, with no conversion to standardized portions. As to questions concerning indirect effects of advertising (through attitudes and awareness) as well as direct effects, Ron noted there are likely feedbacks over time but likely with in short time periods. More explicit modeling of these indirect effects using Fishbien type models was noted as a fruitful area for further research.