Updated Analysis of the Effectiveness of Lamb Promotion

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JOINT SESSION WITH THE AMERICAN LAMB BOARD
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DR. ORAL CAPPS, JR.
Executive Professor and AFCERC Co-Director,
Texas A&M University

DR. GARY W. WILLIAMS
Professor and AFCERC Co-Director,
Texas A&M University
Objective

Update the analysis of the effectiveness of the American Lamb Board advertising/promotion efforts using the most recent data available.
Key Questions:

- Have Expenditures on Lamb Promotion Over the Years Shifted Out the Demand for Lamb?

- Have Expenditures by the American Lamb Board Shifted Out the Demand for Lamb?
Key Questions:

- Have producers benefited from paying their checkoff dollar assessments?

- Has the checkoff program really enhanced the demand for AMERICAN lamb?
Consider this Scenario

Have Producers Benefited from their Checkoff Dollars?

Graph showing the relationship between Demand, Supply, Price, and Sales with arrows indicating that higher demand leads to higher sales and higher prices.
Numerous factors affect the demand for a lamb besides promotion, many of which have a much greater influence on demand than promotion.
The First Step...

... is to statistically disentangle the effects of promotion from those of other forces.

We use state-of-the-art statistical procedures to isolate and measure the specific effects of promotion on sales/demand.
Sales/Demand Impact Analysis

The Second Step...

... is to use the statistical results from the previous step to derive the impact of promotion on sales/demand.

We calculate Impact Elasticities...

... which measure the percent change in demand/sales from a 1% change in promotion expenditures.
Data

- **Time period of analysis:**
  FY 1978/79 to 2009/10 (annual)

- **Data for ALB promotion only available since 2002/03 so that data are added from the 1978/79 to 2001/2002 period to obtain adequate observations for statistical analysis.**
Potential drivers of lamb consumption include:

- Retail price of lamb
- Retail prices of beef, pork, and broilers
- Disposable personal income
- Population
- Inflation
- Lamb advertising and promotion expenditures
Annual Per Capita Lamb Consumption
(in pounds) from 1978/79 to 2009/10

Source: Livestock Marketing Information Center
Annual Nominal Lamb Promotion Expenditures
(in thousands of dollars) Over the Period 1978/79 to 2009/10

Source: ASI and ALB
American Lamb Board expenditures began in 2002/03 and in real terms amounted to roughly $96,000 ...

... before falling to slightly more than $1.5 million in 2004/05 and $1.2 million in 2005/06.

... and then rose to more than $2.4 million in 2003/04 ...

... before falling to about $1.1 million in 2009/10.
Lamb Advertising to Sales Ratio, 1978/79 to 2009/10

Ratio ranged from 0% to 0.40% ...

... for an average of only 0.15%.

This ratio is very low for checkoff programs.
Model Specifications

1. **Specification 1**-- Contemporaneous promotion expenditures

2. **Specification 2**-- Polynomial distributed lag of promotion expenditures, order 2, lag length of 1 period (year), and use of endpoint restrictions

3. **In both specifications**-- Use of square root transformation to accommodate zero promotion expenditures for selected years and to allow for diminishing marginal returns
Key Results of Analysis

The respective models explain nearly 85% to 88% of the change in per capita lamb consumption over 1978/79 to 2009/10

Significant economic influences on lamb consumption:

- Responsive to LAMB price (A 10% increase in lamb price leads to an 6.5% to 7.3% drop in lamb consumption)
- Responsive to BEEF price (A 10% increase in beef price leads to a 2.7% to 3.1% increase in lamb consumption)
Responsive to **PORK price** (A 10% increase in lamb price leads to a 3.1% to 4.9% increase in lamb consumption)

**BEEF** and **PORK** are substitutes for lamb

**BROILER prices** are NOT a key driver of lamb consumption

**INCOME** also is NOT a key driver of lamb consumption
Lamb demand results are similar to the findings presented in past updates.

Lamb demand results also are consistent with most past studies of lamb demand.

The results speak to the robustness of the findings.

We observe declines in the magnitude of the own-price elasticity for lamb as well as the cross-price elasticity with respect to beef.
HISTORICAL PERIOD (1978/79 to 2001/02)

Lamb consumption responsive to promotion:

- Promotion elasticity in the range of 0.0386 to 0.0406.

- Each dollar invested in advertising/promotion over this period boosted total lamb consumption by 5.1 to 5.4 pounds and increased retail sales by about $24.30 to $25.72.

- The promotion elasticity is consistent with those of other checkoff commodities.
WHAT ABOUT ADVERTISING/PROMOTION?

AMERICAN LAMB BOARD (2002/03 to 2009/10)
Lamb consumption responsive to promotion efforts of the ALB:

- Promotion elasticity in the range of 0.0270 to 0.0278. The sensitivity of per capita lamb consumption to promotion expenditures is lower in this period in comparison to the period 1978/79 to 2001/02.

- But for every dollar spent by ALB on promotion, total lamb consumption increased by 7.1 to 7.5 pounds...

- ... or roughly $37.16 to $39.34 in additional lamb sales.
AMERICAN LAMB BOARD (2002/03 to 2009/10)

Our results are slightly lower than those from our earlier analyses - improvements in the quantitative model used in the evaluation process and more recent data.

But, clearly the efforts of ALB have resulted in higher returns than in 1978/79 to 2001/02 period:

**Benefit-Cost Ratio**

<table>
<thead>
<tr>
<th>Period</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978/79 to 2001/02</td>
<td>24.30 to 25.72</td>
</tr>
<tr>
<td>2002/03 to 2009/10</td>
<td>37.16 to 39.34</td>
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</tbody>
</table>
The slightly lower returns to ALB promotion expenditures in our updated analysis is consistent with:

- the theory of advertising
- experience of other commodity checkoff organizations

The relatively high marginal returns to ALB promotion will tend to diminish over time as the program matures. In previous updates, we have seen this tendency.
Summary of Lamb Promotion Impacts

Historical Period (1978/79 to 2001/02)

- Roughly 5.1 to 5.4 additional lbs of TOTAL lamb consumption per dollar spent.
- Translates to about $24.30 to $25.72 in additional lamb sales per dollar spent.

American Lamb Board (2002/03 to 2009/10)

- Roughly 7.1 to 7.5 additional lbs of TOTAL lamb consumption per dollar spent.
- Translates to about $37.16 to $39.34 in additional lamb sales per dollar spent.
How Much of the Additional Retail Sales Dollars Go to Producers?

- **USDA estimates share of retail dollar earned by livestock producers (2004 to 2009):**
  - Beef: 45.8%
  - Pork: 29.2%
  - Lamb: Not estimated by USDA

- **The return to sheep producers if they earned the same share as:**
  - Beef producers: $17.03 to $18.02 per dollar spent
  - Pork producers: $10.84 to $11.47 per dollar spent

- **The return if they only earned 10%:**
  - $3.72 to $3.93 per dollar spent

American Lamb Board

Agribusiness, Food, and Consumer Economics Research Center
CONCLUSIONS

✓ Past promotion efforts (1978/79 to 2001/02) successfully stimulated the demand for lamb.

✓ Current efforts by ALB have been successful in further stimulating lamb demand compared to past efforts. The checkoff has slowed the decline in lamb consumption in recent years.

✓ The relatively high marginal returns to ALB promotion at the retail level will continue to drop as program matures.

✓ Primary implication of our analysis is that lamb promotion is still under-funded.
Our Goal Is To Support Your Efforts In Promoting American Lamb

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We Appreciate the Opportunity to be of Service to ALB and the Lamb Industry