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U.S. Consumer Appetite for Climate Claims on Beef Products

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Selected Poster prepared for presentation at the 2024 Agricultural & Applied Economics Association Annual Meeting, New Orleans, LA: July 28-30, 2024

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BACKGROUND

- Demand for "climate-friendly" beef could create economic incentives needed to spur U.S. cattle producers to adopt emissions reducing practices
- Beef products with varying climate claims have recently been introduced in the retail sector (e.g., Tyson's BRAZEN[™] Beef claims a 10% greenhouse gas (GHG) emissions reduction ⁽¹⁾; Uruguay's Cradle-to-Gate beef claims carbon neutrality ⁽²⁾)

OBJECTIVE

To quantify differences in U.S. consumer willingness-to-pay (WTP) for distinct climate claims on ground beef and ribeye products, accounting for country-of-origin (COO) impacts.

DATA

Nationally representative survey of U.S. public (N=2288) Administered online in November 2023

SURVEY DESIGN

This study uses a split-sample experimental approach. Respondents were randomly assigned into one of four groups:

> Group A Ground Beef Included COO

Group C Ribeye Steak Included COO

Group B Ground Beef Did not include COO

Group D Ribeye Steak Did not include COO

Choice sets varied on climate claim, country-of-origin (if included), and price.

Climate Claims:

- Carbon Neutral
- Lower Carbon Footprint
- 10% GHG Emissions Reduction
- [no claim]

Figure 1. Group A survey choice set example

in the second **Ground Beef** Lower Carbon Footprint Country of Origin: Canada \$7.99/lb

and the second **Ground Beef**

10% GHG Emissions Reduction

Country of Origin: United States

If these were the only options, I would buy something else.

- **Countries-of-Origin**:
- Australia
- Canada
- United States
- Uruguay



U.S. Consumer Appetite for **Climate Claims on Beef Products**

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Table 1. Estimated WTP for attributes

Attribute

Climate Claim

Carbon Neutral

Lower Carbon Footprint

10% GHG Emissions Reduction

Country-of-Origin

Australia

United States

Uruguay

Notes: WTP estimates are derived from mixed logit model coefficients estimated using simulated maximum likelihood in NLOGIT. Lower and upper levels of 95% confidence intervals are included in square brackets. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively. Canada is the "base" country dropped for country-of-origin comparisons.

EMPIRICAL ESTIMATION

Mixed logit models are used to estimate WTP for beef product attributes, including climate claims and COO⁽³⁾

A consumer's random utility is *U*, where the utility for option *j* for individual *i* in choice situation *t* is described by

 $U_{ijt} = \lambda'_{i} X_{ijt} + \varepsilon_{ijt}$

x_{iit}: A vector of observed variables λ_i : Unobserved for each individual and varies within the population density $f(\lambda_i | \theta^*)$

 θ^* : The true parameters of the distribution ε_{iit} : The stochastic i.i.d. error component

REFERENCES

⁽¹⁾ Tyson Foods, Inc. (2024). Doing better together. 10% is just the start. Brazen Meats: Our Process. ⁽²⁾ Dempsey, C. (2022). Uruguay pioneers carbon neutral meat. ⁽³⁾ Revelt, D., & Train, K. (1998). Mixed logit with repeated choices: households' choices of appliance efficiency level. Review of *Economics and Statistics*, *80*(4), 647-657.

Group A	Group B	C
(Ground Beef)	(Ground Beef)	(Rib
0.17	-0.16	
[-0.20, 0.54]	[-0.46, 0.14]	[0
0.54***	-0.10	
[0.16, 0.91]	[-0.38, 0.19]	[0
0.41**	-0.55***	
[0.04, 0.78]	[-0.91, -0.18]	[-0
-0.83***		
[-1.30, -0.36]		[-3
2.25***		
[1.68, 2.83]		[1
-1.97***		
[-2.55, -1.38]		[-5

- is confounded with climate claims.
- varying climate claims.

ACKNOWLEDGEMENTS

This work was supported in part by the U.S. Department of Agriculture [Award no. 2019-68008-29901]



Group D

(Ribeye Steak)

0.63

[-0.23, 1.47]

0.49

[-0.32, 1.31]

-0.68

[-1.72, 0.38]

Group C beye Steak)

1.29***).25, 2.34] 1.68*** .58, 2.78] 0.97* 0.09, 2.03

-2.43*** 8.55, -1.32] 3.19*** .78, 4.59] -4.49*** 5.86, -3.13]

CONCLUSIONS

Lower Carbon Footprint elicits the highest WTP among climate claims. For ground beef, \$0.54/lb. is an approximate 9.0% price premium. For ribeye steak, \$1.68/lb. is an approximate 11.2% price premium.

2. WTP estimates for country-of-origin labels indicate consumer preference for U.S. beef products with climate claims. Lack of significance in WTP estimates for climate claims in Groups B and D could indicate country-of-origin

3. Future work is needed to identify the characteristics and size of the potential target market for beef products with