USDA Surveillance of Animal Handling at Auction and Processing Facilities

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2009 NEC-63/FAMPS Meetings
Feb 2-3, 2009

Introduction/Problem Statement

- Animal welfare is a growing issue with U.S. consumers
  - State-specific changes: FL, AZ, OR, CO, CA
- Chino, CA – Westland/Hallmark processing plant case (1/08')
  - Triggered calls for increased gov't surveillance of animal handling at public transaction points
  - USDA restructuring has been discussed – food safety & animal handling concerns with current structure
- Animal welfare & handling information reaches consumers from a range of sources
  - Industry – lack of separation; serving self-interest in claims???
  - Consumer Groups – seeking to stop all meat production???
  - Government and University – ???

Needed Information

- Current unknowns include:
  - Who desires public surveillance increases?
  - What would they be willing to pay?
  - What is the impact of diverse information on votes?

Research Design/Data Used

- Oct./Nov. 2008, online survey of 2,001 U.S. consumers
  - Purposely done immediately before Proposition 2 vote in CA.
- Assessed perceptions, knowledge and preferences on a range of animal welfare/handling issues
- Contingent valuation approach

Perceived Animal Welfare Information Accuracy (1=Very Inaccurate, …, 7=Very Accurate)

The Humane Society of the U.S. (HSUS)	4.93
University Scientists/Researchers	4.47
People for the Ethical Treatment of Animals (PETA)	4.22
National Milk Producers Federation (NMPF)	4.20
U.S. Poultry & Egg Association	4.18
National Cattlemen's Beef Association (NCBA)	4.11
United Egg Producers (UEP)	4.10
National Pork Producers Council (NPPC)	4.07
State Governmental Agencies	4.00
Federal Govemmental Agencies	4.00

Perceived Ability to Influence and Assure Animal Welfare (1=Very Low Ability, …, 7=Very High Ability)

Farmer/Grower	5.33
Government Inspectors/Regulators	5.16
The Humane Society of the U.S. (HSUS)	5.00
Meat or Milk Processor	4.68
Animal Industry Representative Groups	4.58
People for the Ethical Treatment of Animals (PETA)	4.44
Consumer – Food Purchaser	4.38
Retail Grocer	3.71
Food Service Restaurant	3.59

Factor Analysis

- Factor analysis generates smaller set of variables (6) summarizing perceptions (19):
  - F1_Info – “Industry” (producer groups)
  - F2_Info – “Government & University”
  - F3_Info – “Consumer Groups”

  - F1_Ability – “Food Preparation” (grocer, restaurant, consumer)
  - F2_Ability – “Supply Chain” (farmer, processor, and gov’t inspector)
  - F3_Ability – “Consumer Groups)

    - 6 variables enter our contingent valuation model (Boxall & Adamowicz, 2002)

Core Question:

There has been a recent increase in media attention to handling of animals at livestock auction markets (facilities where animals are transacted and change ownership) as well as at processing plants (slaughter or packing plants where animals are processed, generating products for human consumption).

*Suppose the next time you go to vote, there is a related referendum on the ballot. If the referendum passes, mandatory USDA (United States Department of Agriculture) surveillance of animal handling at livestock auction markets and processing facilities in the U.S. will increase by **X**%. Please answer as if you were actually voting on a real referendum. Would you vote (circle answer) **FOR** or **AGAINST** the referendum?*

Core Question: Follow-Up

A follow-up question was asked of those *FOR* the initial question: *Suppose you were told that the referendum, if it passes, would result in a **Y**% increase in **YOUR** federal income taxes. Would you then change your vote to "**AGAINST?**"*

Answers identify one of three WTP points/intervals (Lusk & Fox, 2002; Cooper, Hanemann, and Signorello, 2002):

1) WTP = (0) if AGAINST 1st question
2) WTP ~ (0, Y) if FOR/AGAINST
3) WTP ~ (Y, inf) if FOR/FOR

One-and-one-half-bound Dichotomous Choice Model

- Optimized log-likelihood function is:

$$LL = \sum \begin{Bmatrix} I_{j=1} \ln G(\delta + \gamma X_i + \beta' Z_i) + \\ I_{j=2}\left[\ln G(\delta + \gamma X_i + \beta' Z_i + \alpha Y_i) - \ln G(\delta + \gamma X_i + \beta' Z_i)\right] \\ + I_{j=3}\left[1 - \ln G(\delta + \gamma X_i + \beta' Z_i + \alpha Y_i)\right] \end{Bmatrix}$$

- G(*) is logistic distribution; Z is vector of explanatory variables; X & Y are from the presented question
- Mean WTP -= $\dfrac{-\left(\delta + \gamma \overline{X} + \beta' \overline{Z}\right)}{\alpha}$

Results

- 76.9% supported initial referendum question
  - Mean of 3 response combinations was:
    - 23.1% NO
    - 47.5% YES/NO
    - 29.5% YES/YES

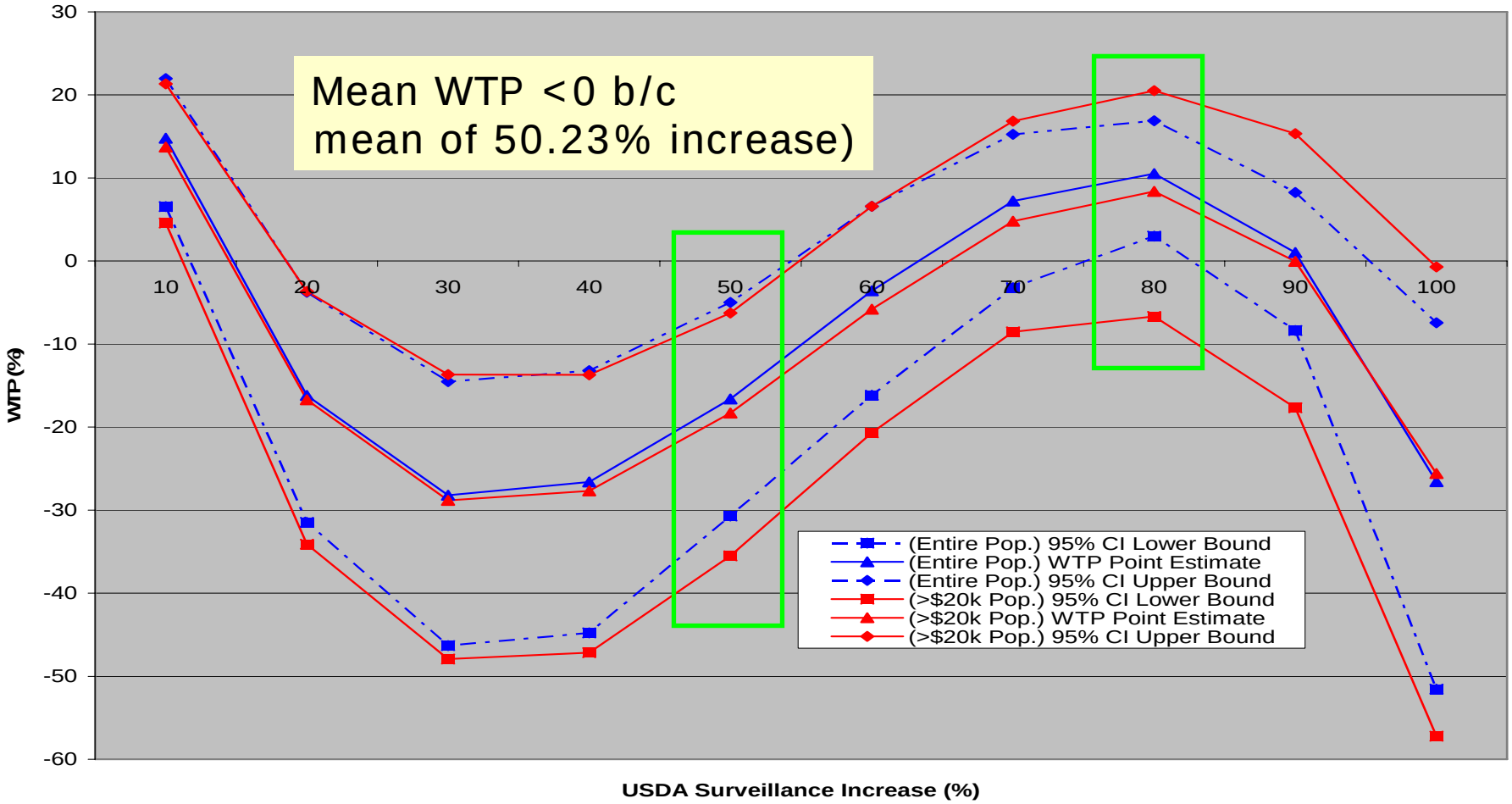
Results: Entire Population

- Negative:
  - Tax increase, Income, F1_Info:Industry
- Positive:
  - Female, Consume, F3_Info:Consumer Groups, F1_Ability: Food Prep, F3_Ability: Consumer Group
- Surveillance Increase
  - Cubic preferences
- Mean WTP: -15.3% [-30.1%, -4.6%]
  - 50% surveillance increase

Results: Incomes> 20k (“tax binding segment”)

- Negative:
  - Tax increase, F1_Info:Industry
- Positive:
  - Female, Consume, F3_Info:Consumer Groups, F1_Ability: Food Prep, F3_Ability: Consumer Group
- Surveillance Increase
  - Cubic preferences
- Mean WTP: -17.2% [-32.4%, -4.4%]
  - 50% surveillance increase

WTP % vs. Surveillance Increase %



- Local max WTP of 10.52% for 80% surveillance increase
  - Only point WTP>0 [3.0%, 16.9%]
  - No WTP point > 0 in conditional model

Implications/Conclusions

- Residents perceiving:
  - Livestock industry groups (consumer groups) to provide accurate AW info. are less (more) WTP for surveillance
  - Consumer group or food preparation entities have influence on AW are more WTP for surveillance
- Important distinction between voting behavior & consumer demand
  - Everyone gets to vote, regardless of tax situations or meat consumption habits
  - Residents may believe higher surveillance should come from reallocation of public funds.
  - Gov't surveillance requires tax increase or reallocations; voluntary or industry surveillance likely funded by food price increases

QUESTIONS

- Tonsor's website (includes presentation):
  - http://www.msu.edu/user/gtonsor/