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**Public and Private Preferences for Policies
Related to Meat and Milk from Clones**

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Introduction

Surveys and experiments are often conducted to determine consumers' willingness-to-pay (WTP) for new products in a market. The preferences for product attributes inferred from these studies are often used to draw implications about citizen's WTP for food policies. But, are people's preferences that are reflected in private shopping choices reflective of their preferences for public policies? Hamilton, Sunding, and Zilberman (2003) suggest that the answer may be no: WTP for product attributes and referendum voting choices may not be equal.

These techniques are analyzed by applying them to animal cloning technology and consumers preferences for banning the use of it in meat and milk production.

- January 2008 U.S Food and Drug Administration (FDA) "meat and milk from clones of cattle, swine, and goats, and the offspring of clones from any species traditionally consumed as food, are as safe to eat as food from conventionally bred animals."
- Several large food processors and retailers announced their intention to prohibit the sales of products from cloned animals.
- Are consumers WTP to ban products from cloned animals?

Objectives

➤ To determine whether people's WTP for policies to ban the use of cloning technology in meat and milk production as inferred from peoples private shopping choices (i.e., choice-based conjoint experiments) are the same as inferred from direct questions about the public desirability of such policies (i.e., contingent valuation).

Data & Methods

- 1,825 web-based surveys administered to Knowledge Networks (KN) panel of respondents
 - Respondents selected using random digit dialing techniques
 - True probability sample based on the general U.S. population
- Choice experiments regarding which meat or milk option (or none) a consumer would buy when grocery shopping were used to measure private preferences
- Contingent valuation question focused on a ban on the practice of animal cloning was used to measure public preferences



Jewel and her clone Diamond, winner of the Winter Yearling Class in the Jr. Show and 4th in the Open Show at the World Dairy Expo. From clonesafety.org

Public WTP (contingent valuation question)

➤ Public preferences measured using a contingent valuation question focused on a ban on the practice of animal cloning

- Percentage price increases (5%, 10%, 15%, 25%, 50%, 75%, and 100%) were randomly chosen for each individual
- Answers to this question provide a direct estimate of people's WTP for that policy – using interval censored regression as illustrated in the approach of Cameron (1988).

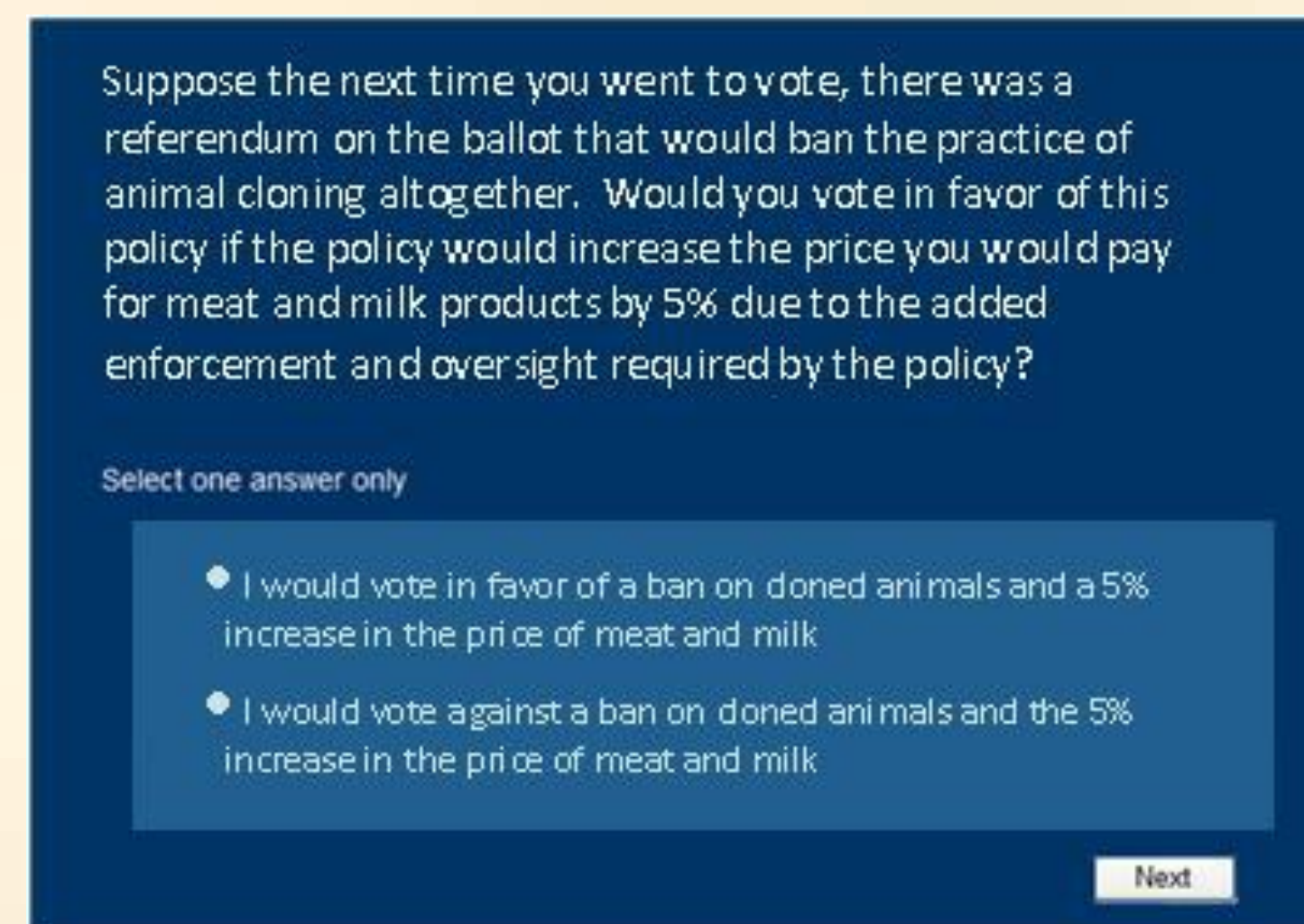
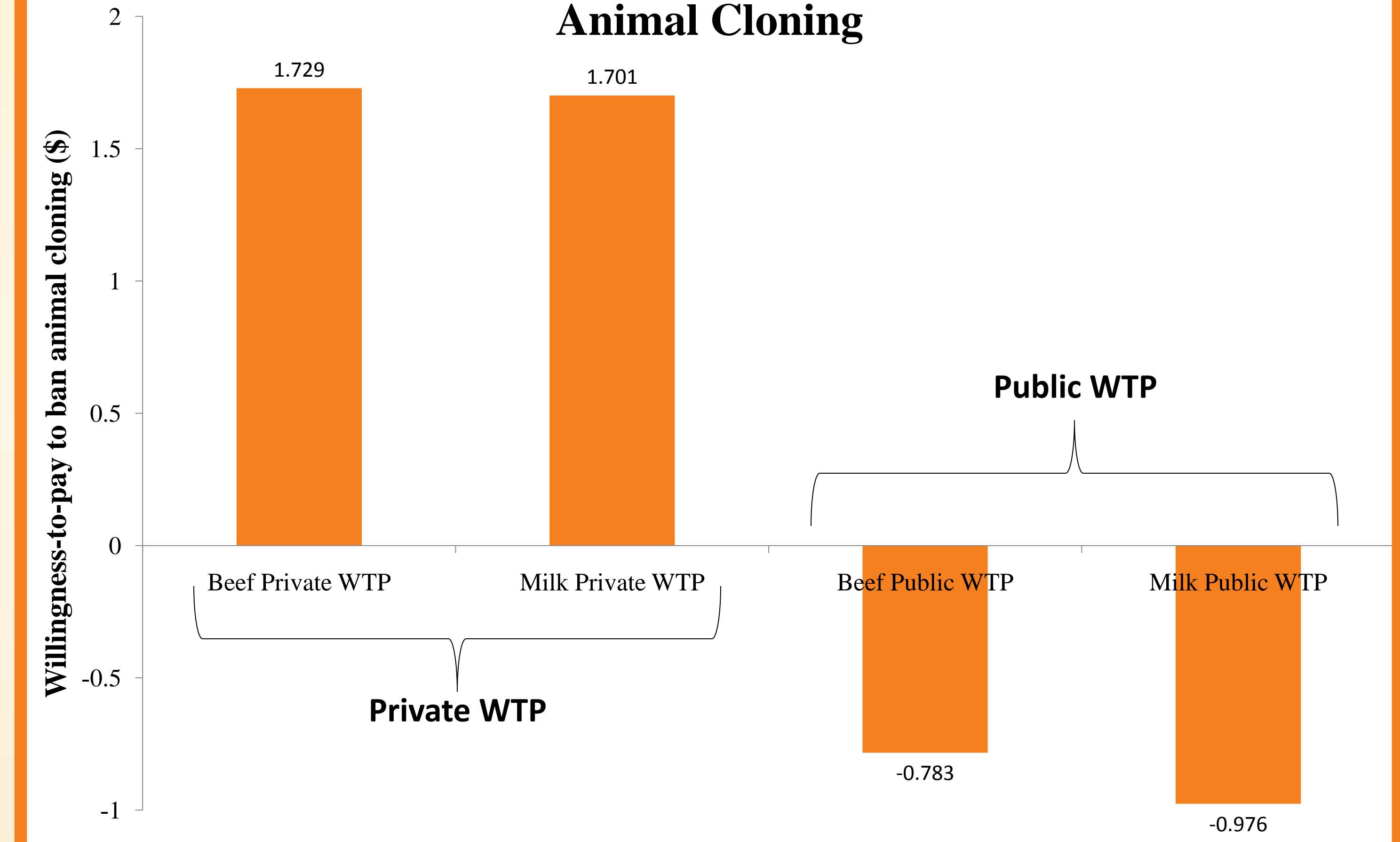


Figure 3. Example of contingent valuation question presented to survey respondents

Differences Between Private and Public WTP to Ban Animal Cloning



* Note: Differences are statistically significant between public and private WTP.

Private WTP (choice experiments)

➤ Four different attributes used to construct the choice experiments used to measure private preferences

Milk attributes

- Price/gallon (\$2.99 or \$5.99)
- Fat Content (Whole, 1%, 2%, or Skim)
- No rbST used vs rbST used
- Use of cloning (Non-cloned, cloned, offspring of cloned animal)

Ground beef attributes

- Price/pound (\$1.99 or \$3.99)
- Percent lean (80% or 90%)
- Percent Saturated Fat (5% or 10%)
- Use of cloning (Non-cloned, cloned, offspring of cloned animal)

➤ Responses used to determine attribute-based utility function

$$V_{ij} = \alpha_1(\text{price})_{ij} + \alpha_2(\text{whole})_{ij} + \alpha_3(2\%)_{ij} + \alpha_4(1\%)_{ij} + \alpha_5(\text{rbST free})_{ij} + \alpha_6(\text{nonclone})_{ij} + \alpha_7(\text{clone off spring})_{ij} + \alpha_8(\text{none})_{ij}$$

$$V_{ij} = \beta_1(\text{price})_{ij} + \beta_2(\% \text{ lean})_{ij} + \beta_3(\% \text{ saturated fat})_{ij} + \beta_4(\text{nonclone})_{ij} + \beta_5(\text{clone off spring})_{ij} + \beta_6(\text{none})_{ij}$$

➤ Estimated using MNL model

➤ Used to calculate the welfare effects of policies such as a ban on cloned milk and ground beef.

$$WTP_{\text{conjoint}} = \frac{\ln \left(\sum_{k=1}^9 e^{v_{ik}^{\text{post-ban}}} \right) - \ln \left(\sum_{k=1}^5 e^{v_{ik}^{\text{pre-ban}}} \right)}{-\alpha_1^{\text{pooled}}}$$

Characteristic	Option A: milk from non-cloned animal	Option B: milk from cloned animal	Option C: milk from offspring of cloned animal	Option D
Fat Content	Whole	Whole	Skim	If options A, B, and C were all that was available when shopping at my local grocery store, I would not purchase milk from this store.
Price per Gallon	\$5.99	\$2.99	\$2.99	
rbST Use	no rbST used	no rbST used	no rbST used	
I would choose...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 1. Example milk choice question presented to survey respondents

Characteristic	Option A: Meat from non-cloned animal	Option B: Meat from cloned animal	Option C: Meat from offspring of cloned animal	Option D
Price per pound	\$3.99	\$3.99	\$1.99	If options A, B, and C were all that was available when shopping at my local grocery store, I would not purchase ground beef from this store.
Percent Lean	90%	90%	90%	
Saturated Fat Content	5%	10%	5%	
I would choose...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2. Example beef choice question presented to survey respondents

Results and Discussion

- Based on public choices, consumers are WTP to ban meat and milk products from cloned animals
- Based on private choices, consumers are not WTP to ban meat and milk products from cloned animals
- Results reveal a policy reversal between consumers preferences reflected in their private shopping choices compared to their preferences for public policy.
- What causes the differences in consumer preferences?
 - Voting as a citizen
 - Constrain self (Don't want to lose options in the future)
 - Constrain others (Don't want to impose views on others)
 - Characteristics of respondents

References

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Clone Beef Calves - Courtesy of Trans Ova Genetics. Picture from clonesafety.org

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