An analysis of the U.S. meat industry from consumers' and processors' points of view

by

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Abstract

This thesis consists of two research papers on the meat industry focusing on locally processed meat. The first paper is based on a survey distributed to meat consumers throughout the U.S. with the objective of understanding their willingness to pay for locally processed meat. This goal was achieved with two economic models. The first was a Probit model to understand the likelihood of a consumer choosing to purchase meat as a portion of a carcass. The second was a bivariate Tobit model that was used to directly compare consumer purchasing levels between local and grocery providers.

In the first paper, multiple results were discovered about the willingness to pay (WTP) of consumers for meat as both carcasses and cuts. For the probit model results, chicken was the most sensitive to price changes. Of the demographic variables analyzed, the one with the most significance in the purchase of carcasses was gender. Males were more likely to buy a carcass. Additionally, freezer space was positive and significant for the purchase of beef and pork carcasses. For the Tobit model, cross-price, and own prices elasticities for local and grocery were estimated across all the meat cuts and an average WTP were calculated. Across most of the cuts, there was little difference between grocery and local WTPs, and, in most models, grocery cuts had a larger WTP. For the demographic variables in the Tobit model, there was variation of statistical significance across all cuts, except for household size that presented a significant positive impact on the purchase of most cuts.

The second paper is based on a survey distributed to meat processors throughout the U.S. with the goal of understanding processor interest in expansion and how it might line up with consumers' willingness to pay from the first paper. The main finding from the survey was that

the top barriers of expansion for the processors was employee availability and space and there was limited evidence of financial constraints for plant expansion.

These discoveries have implications for U.S. local meat processors, especially the findings related to the willingness to pay for local that were lower across most cuts. Additionally, the research contributes to the literature regarding consumer behavior on meat purchases in the U.S. using a direct comparison of local and grocery cut WTP and combining it with processor expansion interest. The low WTP that was found for local means that small and median processors will need to make a profit by a different means if consumers are not willing to pay a premium. If there are not profits to be made from sales expansion will need to be made with care. The research also includes a presentation of the current state of a sample of U.S. meat processors and their expansion plans and finances, which are relevant aspects to consider given the consumer side findings and make this thesis an informative tool for processors, and policy makers interested on incentivize small meat processing. With processors not being financially constrained to expand, future support for processors may need to consider a different approach than financing.

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Chapter 1 - Consumers' willingness to pay for locally processed meat

Introduction

Covid revealed uncertainty in many markets and the meat market was no exception. As meat processing availability was limited due to Covid shutdowns, federal and state-level governments focused on supporting small to medium-sized meat processors throughout the country to stabilize the amount of meat processing available as Covid caused processors to shut down on different occasions (U.S. Government 2022). Concentration in the meat packing industry has been considered a long-standing issue. The policy debate over support for small and, medium-sized packers increased with Covid. As of 2020, there were 2,700 slaughter plants in the United States with 800 of them federally inspected, (Gallagher et al. 2020). According to USDA's Packers and Stockyards Division Annual Report 2020, the big four packers account for an average of 61% of the total head across beef carcasses (steer), pork carcasses (hog), chickens, and lambs (USDA 2020). This degree of concentration has led to focus on small and medium-sized processors. With this shift, it is important to understand consumers' willingness to pay (WTP) for meat processed by small and medium-sized processors as it informs the consumer demand for small and medium plants in the processing industry.

This paper has two main focuses, the first is to estimate how likely consumers are to purchase meat as portions of the carcass across several species, due to this being the form many small processors sell meat. The second is to estimate the WTP for local meat cuts compared to grocery meat cuts. This was accomplished by a survey distributed to consumers to bring more understanding into the decision of purchasing local meat.

Related Research

Consumers' WTP for locally processed meat was of interest before Covid but with processing disruptions due to Covid, a new interest in local meat processing developed. Local meat processors help to create a more resilient supply chain by expanding access to processing. When larger companies experienced labor issues due to sickness and the closure of processing plants, the supply chain was severely disrupted. There has been limited research to understand medium and small-sized processors' constraints to viability in the meat processing space.

MacDonald et al. (2000) conducted cost comparisons of small and larger processors for both cattle and hogs. They conducted this research using U.S. Census Bureau data focusing on labor costs (MacDonald et al., 2000). The motivation of their research was to see if economies of scale motivated consolidation in U.S. meat processing. They focused their comparison on technological scale economies and pecuniary scale diseconomies (MacDonald et al., 2000). They had three main findings, first, the economies of scale that larger processors have is small at 3% to 5% (MacDonald et al., 2000). Second, competition in meat processing keeps prices near the cost of the low-cost processor (MacDonald et al., 2000). And finally, low demand growth in the processing market limits the number of successful large processors (MacDonald et al., 2000). Overall, they concluded that there are small economies of scale and that price competition were the main sources of consolidation of U.S. meat processing.

Dimock et al. (2021) examined the California meat supply chain focusing on its resilience to disruptions of Covid and the ransomware attack on JBS in June 2020. Twenty-seven interviews were conducted with individuals across various parts of the meat supply chain focusing on California and a few surrounding states (Dimock et al., 2021). The research objectives were to examine if the meat supply chain is less resilient due to the concentration of

the industry around a few larger processors and what could be done to support smaller processors and increase the resilience of the state's supply chain to various supply shocks. The study provided five main recommendations including supporting small and medium meat processing, examining the concentration in the processing industry, addressing the complexity of inspection requirements, examining the growing demand for what the authors label as "high-value meat," and providing more coordination from producer to end-user to level the playing field for smaller actors in the supply chain.

Baker et al. (2021) examined the effects of the Covid pandemic on the livestock supply chain in New York State by conducting 112 surveys with USDA, Custom Exempt, and 5A processors throughout New York from October 2020 to February 2021. Custom Exempt processors process meat for personal use and do not sell to retail or wholesale outlets. 5A is a classification for poultry processors in the state of New York, with wholesale licensing only within the state (NMPAN, 2012). The focus of Baker et al. (2021) was whether the pandemic created interest in expanding processing capacity, the barriers processors face in expansion, and how best to support interest in an expanded capacity. The survey assessed processors' desire to transition from Custom Exempt to USDA-inspected processors that would allow them to sell meat wholesale and across state lines. New York processors could market their products to those residing outside of New York. Without grant funding, 20% of processors indicated they were interested in expanding their operations to USDA inspected to allow for out-of-state sales. If grant funding were to be made available, the percentage of interested processors would increase to 32% (Baker et al., 2021).

Ma and Lusk (2021) differed from the interview approach of Dimock et al. (2021) and Baker et al. (2021) in that they used secondary USDA data and economic models to test the

resilience of different types of market structures. Ma and Lusk (2021) examined the bottleneck that occurs in meat processing creating disruptions in the flow of products from farmers to consumers. They argue that the meat supply chain has an hourglass shape where there are many farmers, few processors, and many consumers. This raises potential supply chain issues if the processor link in the supply chain is disrupted. Ma and Lusk (2021) focused their research on the beef supply chain and the effect of differing levels of the risk of processor shut down on the resilience of the beef supply chain. Using an economic model to conduct counter factual simulations to compare disruptions from 5% to 50% across various levels of processor concentration, they found that aggregate economic welfare is typically lower under a more diffuse packing sector because of the loss of economies of scale (Ma and Lusk, 2021). They conclude that more comprehensive policy designs are needed to improve short-term resiliency in the beef supply chain.

In addition to small processers and plant shutdowns, willingness to pay for meat and its effects on the viability of local meat processors have been a topic of interest for several researchers for many years. Gracia et al. (2012) conducted a non-hypothetical choice experiment through an experimental auction with an actual exchange of funds and products in the form of lamb ribs in Spain. The main interest of their research was the difference in WTP between males and females for local sheep meat focusing on social influences. Their research included 77 participants with 61% being female (Gracia et al., 2012). Women had a statistically significant positive WTP for locally raised lamb (€ 0.188), and men had a statistically significant negative WTP for locally raised lamb (-€0.281) (Gracia et al., 2012). Both results were economically small.

Li et al. (2018) conducted a hypothetical choice experiment that was conducted online at a national level focusing on the attributes that affect WTP for steak and ground beef. They obtained 1,688 usable responses using cheap talk to manage the level of overstatement of WTP. For steak and ground beef, the Angus label saw the highest WTP increase of $2.26 and $0.45 per pound respectively with a local production premium of $1.25 and $0.19 per pound respectively (Li et al. 2018). Even with cheap talk, it is difficult to get a precise WTP estimate due to people's tendency to overestimate WTP if they do not have to buy a product. This issue of overstating WTP decreases the value of WTPs but still allows WTP to be estimated, which can be expensive and otherwise difficult.

Tonsor et al. (2013) conducted an online hypothetical choice experiment survey through Survey Sampling International, with a focus on WTP for meat origin labels. They obtained 2,001 complete responses. The main test were double-bounded dichotomous questions to test the WTP for steak from North America, Mexico, Canada, and the U.S. due to the addition of the value of origin labels (Tonsor et al. 2013). They found the WTP for U.S. steak, chicken breast, and pork chops were $1.67, $1.44, and $1.53 per pound, respectively (Tonsor et al. 2013). Demographic factors, particularly education had a WTP of -$0.20 that indicates that increased education decreases WTP for meat origin information (Tonsor et al. 2013). This study used a hypothetical choice experiment and no exchange of goods and money that can lead to participants overstating WTP. Tonsor et al. (2013) addressed this concern with a cheap talk script to make consumers aware of the issue and hopefully reduce its impact. An additional issue with the survey being online is that participants may rush through the survey, possibly reducing the quality of the data.

Methods

The survey for this research was administered in Qualtrics beginning with base information to qualify the participant for the survey. Participants that are active in grocery purchasing for their household were the target audience. Participants were asked if they were active shoppers and excused from the survey if they had no involvement in the purchases. If the participants had some involvement in purchases, they were asked their ages and excused if they were under the age of eighteen. The participants were asked about their meat consumption of beef, pork, chicken, and lamb and randomly assigned questions regarding their WTP for one of the meat products they consume. The random assignment of questions regarding WTP was designed to keep the survey as short as possible to increase participation.

Data

The sample for this research consists of U.S. meat consumers that are active grocery shoppers and over the age of 18. An online survey was conducted through Dynata (Dynata.com), that provided a demographic sample with similar characteristics as the U.S. census. The survey was available from June to July 2022 and resulted in 5,000 complete surveys. Regressions were estimated on the carcass questions for beef and pork carcasses, chickens, and lamb, and the cut questions for ground beef, steaks, loin, bacon, ham, thighs, wings, and breasts.

To assess the quality of the data, verifications were made. First, was a question where participants were asked to answer blue and if they do not, they were removed from the sample because not answering blue implies that they were not reading and answering the questions carefully. Next, because the research focuses on willingness to pay for meat, there was a question asking to describe their diet. If they consider their diet vegan or vegetarian, they were removed from the results so the willingness to pay analysis would not be skewed. The participants were

asked questions about their willingness to pay for portions of the whole carcass for beef, pork, and lamb. To ensure the validity of these questions, they were asked the size and number of freezers that they have to ensure that the customer could realistically purchase and store portions of a carcass. It takes about fourteen cubic feet to store half of a beef carcass (5BarBeef 2022), and six to seven cubic feet for half a pork carcass (French, 2021).

To limit biases towards a meat type, participants were asked which of the following they have eaten in the last month beef, pork, chicken, lamb, or none. They were allowed to select multiple species and were randomly assigned to one of the meats they answered unless they answered lamb using background survey flow in Qualtrics. If they answered lamb, they were assigned to lamb because it was expected that there would be a lower number of consumers that have eaten lamb in the last month. After each participant was assigned to a group, they were given one carcass question at random, and three meat cut questions at random except for lamb. The lamb group was asked only one carcass question at random without any meat cuts questions due to the limited availability of cuts lamb. The participants were presented with a cheap talk paragraph to reduce the skewing of the hypothetical nature of an online consumer choice survey that could limit the overstatement of WTP (Tonsor et al. 2011).

Choice Experiment

Two different types of hypothetical consumer choice questions were used. The first type was for portions of carcasses of beef, pork, lamb, and chickens and was presented to the participants with a table of the cuts of each proportion of carcass of each animal and the total price and a per pound price for a portion of that carcass. Figure 1.1 through 1.4 are lists the cuts by species. The prices for beef carcasses for a quarter were $5.00 to 7.00 per pound for a half were $5.00 to 6.50 per pound and for a whole were $4.75 to 5.25 per pound. The prices for pork

carcass for a half were $4.29 to 5.95 per pound and for a whole were $3.45 to 4.64 per pound. The prices for the whole chicken were $2.86 to 5.71 per pound. The prices for lamb for a half were $14.50 to 16.50 per pound and for a whole were $15.50 to 16.50 per pound. The pricing ranges and the cut breakdowns in the tables of the questions were created using 5BarBeef (2022) for beef carcasses, ACMF (2020) for chicken, 37 Acres (2021) for pork carcasses, and Shepherd Song Farm (2022) for lamb.

Figure 1.1 Example Carcass Question for Beef Carcass

Would you be willing to purchase a quarter of a steer (125 pounds of beef) for $625 for $5.00/lb.?

Cut	Pounds of beef for quarter steer	Pounds of beef for half steer	Pounds of beef for whole steer
Arm/Chuck Roast	14	29	58
Rump Roast	7	14	29
Brisket	4	7	14
Bag of Bones	24	48	96
Beef Stew	2	5	10
Ground Beef	53	106	212
Ribeye Steaks	6	12	24
NY Strips Steaks	5	10	19
Top Sirloin Steaks	6	12	24
Beef Rips	4	7	14
Total	125	250	500

Yes ○

No ○

Figure 1.2 Example Carcass Question for Chicken

Would you be willing to purchase a whole chicken (3.5 pounds) for $15 or $4.29/lb.?

Cut	Pounds
Breast	1.44
Drumstick	0.60
Thighs	1.09
Wings	0.39
Total	3.50

Yes ○

No ○

Figure 1.3 Example Carcass Question for Pork Carcass

Would you be willing to purchase half a hog (105 pounds) for $575 or $5.48/lb.?

Cut	Half Hog in Pounds	Whole Hog in Pounds
Mix Sausage	30	60
Pork Chops	15	30
Spareribs	5	10
Ham or Ham Steaks	25	50
Shoulder Roast	15	30
Bacon	10	20
Ham Hocks	5	10
Total	105	210

Yes ○

No ○

Figure 1.4 Example Carcass Question for Lamb

Would you be willing to purchase half a lamb (24 pounds) for $350 or 14.50/lb.?

Cut	Half Lamb in Pounds	Whole Lamb in Pounds
Rack Ribs	1.5	3
Loin Chops	1.2	2.4
Leg Shanks	14	28
Leg Roast	2.5	5
Ground Lamb	5	10
Total	24	48

Yes ○

No ○

The second type of consumer choice questions are the meat cut questions for beef, pork, and chicken. As stated earlier for beef, steak, and ground beef were presented, for pork, loins, ham, and bacon were presented and for chicken breasts, wings, and thighs were presented. For each cut question, consumers had the option to purchase from a national grocery or a local meat processor at different prices with different volumes, and some questions with the same volumes with varying prices and sourcing. Figures 1.5 to 1.7 are examples from each of the provided cut questions from the meat cuts sets.

Figure 1.5 Example Cut Question for Steak

How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package you would want to purchase or mark none.)

1 Lb. Package of Ribeye steak from a National/Regional Grocery Store at $7.50/lb.

Number of Packages ☐

1 LB. Package of Ribeye Steak from Local Butcher At $11.60/LB.

Number of Packages ☐

None ☐

Image Sources

Ideal Meat. (n.d.). Ribeye Steak. Retrieved April 8, 2022, from https://www.idealmeat.net/product/ribeye-steak/.

Kroger. (n.d.). Beef Choice Boneless Ribeye Steak. Retrieved April 8, 2022, from https://www.dillons.com/p/beef-cho ice-boneless-ribeye-steak-1-steak-/0020202400000?fulfillment=PICKUP&searchType=suggestions.

Figure 1.6 Example Cut Question for Chicken Breast

How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package you would want to purchase or mark none.)

2 Lb. Package of Chicken Breast from a National/Regional Grocery Store at $3.00/lb.

Number of Packages ☐

5 LB. Package of Chicken Breast from Local Butcher At $6.00/LB.

Number of Packages ☐

None ☐

Image Sources

Ideal Meat. (n.d.). Chicken Breast, Boneless & Skinless. Retrieved April 8, 2022, from https://www.idealmeat.net/product/chicken-breast-boneless-skinless/.

Shutterstock. (n.d.). Chicken Breast. Retrieved April 8, 2022, from https://www.thedailymeal.com/eat/what-do-if-supermarket-chicken-smells-funky.

Figure 1.7 Example Cut Question for Pork Loin

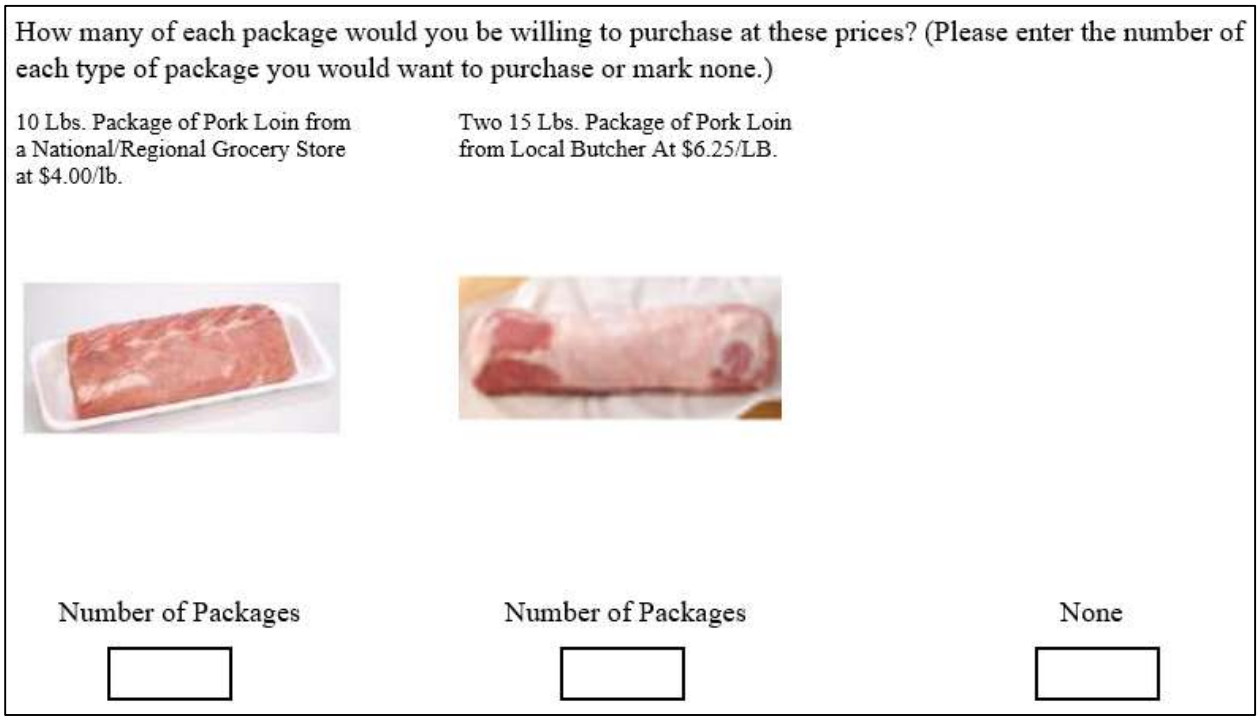


Image Sources

Smoked BBQ Source. (n.d.). Pork Loin. Retrieved April 8, 2022, from https://www.smokedbbqsource.com/pork-cuts-guide/.

Pavao Meats. (n.d.). Boneless Pork Loin Roast. Retrieved April 8, 2022, from https://pavaotogo.com/product/pork-boneless-loin-roast/

The survey was distributed from 6/9 through 7/23/2022. Grocery prices were taken from USDA's ERS Retail prices for beef, pork, poultry cuts, eggs, and dairy products for the grocery store report and were varied by 25% to provide three prices and have a 25% premium for each price for the local butcher prices from USDA ERS (Economic Research Service 2022). A set of prices was constructed for each cut and had a set of questions with the same quantity required to purchase and a set of questions where the consumer was asked to purchase a larger quantity at

the butcher shop than at the grocery store using the same sets of prices. After these questions, demographic questions were added to determine how WTP was affected for meat from a local butcher compared to a grocery store based on demographics.

Models

There were two types of questions asked to estimate WTP, so two types of models were estimated to analyze these responses. The first type of questions focused on different portions of carcasses of beef, pork, chicken, and lamb. For the beef carcasses questions, the participants had an option to purchase either a quarter, half, or whole and are informed of the cuts and portions of each they obtain for each portion of carcasses. For each size question, there were three different price levels, each with a 10% range. For the pork carcass questions, options were with a half and whole carcass with prices varied by 10% providing three different possible prices for each size. For the lamb questions, the participants were provided the opportunity to purchase a half and whole with 10% price range providing three different price options for each size. For chicken, a whole option was provided with a 10% range to provide three different possible prices. The prices are reported in Table 1.1.

Table 1.1 Carcass Price in Dollars per Pound

	Beef Carcass			Pork Carcass			Chicken			Lamb		
Quarter	$5.00	$6.00	$7.00									
Half	$5.50	$6.00	$6.50	$4.29	$5.48	$5.95				$14.50	$15.50	$16.50
Whole	$4.75	$5.00	$5.20	$3.45	$4.05	$4.64	$2.86	$4.29	$5.71	$15.50	$16.00	$16.50

For the cuts, the participants were provided with price and volume with two purchases, one from a national grocery store and one from a local butcher, or the ability option to purchases neither. The participants chose the number of packages they wanted to purchase for each option

or both at the given prices and volume. Prices from USDA ERS's retail prices for beef, pork, poultry cuts, eggs, and dairy products (USDA ERS 2022) were used for the cut questions given a 25% premium local butcher with a 10% range to have three different prices for both national grocery and local butcher seen in Table 1.2.

Table 1.2 Cut Price in Dollars per Pound

Beef				Pork				Chicken			
Ground Beef Grocery	$3.45	$4.60	$5.75	Loin Grocery	$3.00	$4.00	$5.00	Wings Grocery	$4.00	$5.20	$6.50
Ground Beef Local	$4.30	$5.75	$7.20	Loin Local	$3.75	$5.00	$6.25	Wings Local	$4.90	$6.50	$8.10
Steak Grocery	$5.60	$7.50	$9.40	Bacon Grocery	$5.25	$7.00	$8.75	Breast Grocery	$2.85	$3.80	$4.75
Steak Local	$7.00	$9.40	$11.70	Bacon Local	$6.50	$8.75	$11.00	Breast Local	$4.50	$4.75	$6.00
				Ham Grocery	$4.00	$5.25	$6.5	Thigh Grocery	$3.00	$4.00	$5.00
				Ham Local	$5.00	$6.50	$8.20	Thigh Local	$3.75	$5.00	$6.25

Probit Model

Probit models were estimated where the dependent variable is the probability of a participant purchasing with independent variables of price, the proportion of carcass and other demographic variables (Equation 1.1).

Equation 1.1:Base Probit

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1\ proportion_i\ + \beta_2\ price_i + \varepsilon \quad (1)$$

The own price for each model is expected to have a negative coefficient as purchase probabilities are expected to decline as the price increases. It is expected that the dummy for the larger portions will also have negative coefficients as the portion of the carcass the participant would be purchasing increases, and the participants are less likely to purchase.

Equation 1.2 Beef Carcass Probit

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1\ proportion\ steer_i + \beta_2\ price\ steer_i + \varepsilon \quad (2)$$

Equation 1.3 Pork Carcass Probit

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1\ proportion\ hog_i + \beta_2\ price\ hog_i + \varepsilon \quad (3)$$

Equation 1.4 Chicken Probit

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1\ price\ chicken_i + \varepsilon \quad (4)$$

Equation 1.5 Lamb Probit

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1\ proportion\ lamb_i + \beta_2\ price\ lamb_i + \varepsilon \quad (5)$$

Demographic variables were added including sex, household size, age, age squared, household income, education of bachelor's degree or more, if they have significant freezer space, and variables for if the participant lives in the West, Northeast, or the South with Midwest as the base are estimated using equation 1.6 for each carcass.

Equation 1.6 Full Probit Equation

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1 price_i + \beta_2 Size\ Variables_i + \beta_3 Male_i + \beta_4 Household\ Size_i + \beta_5 Age_i + \beta_6 Agesq_i + \beta_7 Household\ Income_i + \beta_8 Bachelor's\ or\ more_i + \beta_9 FS_i + \beta_{10} W_i + \beta_{11} NE_i + \beta_{12} S_i + \varepsilon\ (6)$$

Price: USD/pound

Size variables were quarter, half, and whole depending on the animal

Male: 1 for Male and 0 for female

Household Size: Number of people in household

Age: age of participant

Agesq: age of participant squared

Household Income: in thousands dollars

Bachelor's or more: 1 for education level of bachelor's degree or more

FS: 1 for available freezer space to for storage

W: 1 for participant from West

NE: 1 for participant from Northeast

S: dummy for participant from South

Additionally, for the full probit models estimated for the sample population a conditional sample was created using the freezer dummy. This conditional sample dropped everyone from the sample who did not have sufficient freezer space to store half a beef carcass using FS dummy variable while dropping it from the equation in Equation 1.7

Equation 1.7 Full Conditional Probit Equation

$$Probability\ of\ Purchase_i = \beta_0 + \beta_1 price_i + \beta_2 Size\ Variables_i + \beta_3 Male_i + \beta_4 Household\ Size_i + \beta_5 Age_i + \beta_6 Agesq_i + \beta_7 Household\ income_i + \beta_8 Bachelor's\ or\ more_i + \beta_9 W_i + \beta_{10} NE_i + \beta_{11} S_i + \varepsilon\ (7)$$

Price: USD/pound

Size variables were quarter, half, and whole depending on the animal

Male: 1 for Male and 0 for female

Household Size: Number of people in household

Age: age of participant

Agesq: age of participant squared

Household Income: in thousands dollars

Bachelor's or more: 1 for education level of bachelor's degree or more

W: 1 for participant from West

NE: 1 for participant from Northeast

S: dummy for participant from South

OLS Model

OLS models were estimated for each of the cuts to examine the fit for the OLS models. To estimate the models for the cut questions, a Bivariate Tobit model for local and national were estimated simultaneously as the participants were presented with both grocery and local choices simultaneously. The reasoning behind choosing the Tobit model is due to the data being lower bounded at zero as they cannot select a quantity lower than zero and it was expected that there

would be a sizeable number of zero responses. The dependent variables were the quantity as a function of own price, cross-price, and any of the demographic variables.

Equation 1.8 OLS Grocery Quantity

$$QG_i = \beta_0 + \beta_1 PL_i + \beta_2 PG_i + \varepsilon \quad (8)$$

Equation 1.9 OLS Local Quantity

$$QL_i = \beta_0 + \beta_1 PL_i + \beta_2 PG_i + \varepsilon \quad (9)$$

QL is the quantity local QG is the quantity grocery

PL is the price local PG is the Price grocery

Bivariate Tobit Model

The bivariate Tobit model consists of purchased quantities from both a national/regional retailer and local butcher as dependent variables and functions of own price, cross-price of local processing, and demographic variables (Koul et al. 2013). R-studio and STATA were used to estimate the models. It is expected that the own price has a negative sign and cross prices have positive signs as grocery and local are more often viewed as substitutes. To estimate the models, the data was converted into panels because participants answered three questions.

Equation 1.10 Base Tobit Grocery Quantity

$$QG_i = \beta_0 + \beta_1 PL_i + \beta_2 PG_i + \varepsilon \quad (10)$$

Equation 1.11 Base Tobit Local Quantity

$$QL_i = \beta_0 + \beta_1 PL_i + \beta_2 PG_i + \varepsilon \quad (11)$$

QL is the quantity local QG is the quantity grocery

PL is the price local PG is the price grocery

After the base Tobit models were estimated, a full Tobit was estimated with demographic variables for household size, age, household income, education, and regional for equations 11 and 12 for each cut of meat.

Equation 1.12 Willingness to Pay for Tobit models

$$\mathrm{WTPi} = \beta_0/\beta_i P_i \quad (12)$$

WTP is willingness to pay β0 is the quantity coefficient β0 is the own price coefficient

Equation 12 was used to calculate WTP for all Tobit models by taking the quantity coefficient and dividing it by its own price coefficient.

Equation 1.12 Quantity Grocery Full Bivariate Tobit

$$\mathrm{QG}_i = \beta_0 + \beta_1 \mathrm{PG}_i + \beta_2 \mathrm{PL}_i + \beta_3 Household\ Size_i + \beta_4 Age_i + \beta_5 Agesq_i + \beta_6 Household\ Income_i + \beta_7 Bachcelor's\ or\ more_i + \beta_8 W_i + \beta_9 NE_i + \beta_{10} S_i + \varepsilon \quad (13)$$

Equation 1.13 Quantity Local Full Bivariate Tobit

$$\mathrm{QL}_i = \beta_0 + \beta_1 \mathrm{PG}_i + \beta_2 \mathrm{PL}_i + \beta_3 Household\ Size_i + \beta_4 Age_i + \beta_5 Agesq_i + \beta_6 Household\ Income_i + \beta_7 Bachelor's\ or\ more_i + \beta_8 W_i + \beta_9 NE_i + \beta_{10} S_i + \varepsilon \quad (14)$$

Data

Tables 1.3 through 1.8 are the descriptive stats of the population and quantities and prices. Sex and marital stats are not included here but are in appendix A because when included in the models, they were not statistically significant.

Table 1.3 Education Statistics for Survey86 Responses

	Bachelor's or Higher	Lower than Bachelor	Total
Number	1486	3456	4942
Percentage	30.1%	69.9%	100%

From Table 1.3, 30.1% of the data set population to had a bachelor's degree or more for their level of education.

Table 1.4 Regional Statistics for Survey Population

	Midwest	Northeast	South	West	Total
Number	1,060	877	1918	1087	4942
Percentage	21%	18%	39%	22%	100%

From Table 1.4, the regional statistics show that the South and Midwest had the largest levels of participants at 39% and 22% respectively.

Table 1.5 Continues Variables Descriptive Statistics for Population

	Min	Max	Median	Mean	Standard Deviation
Household Income	$19,000	$200,000	$50,000	$62,086	$43,745
Age	18	99	45	47	16.7
Household Size	1	6	2	2.6	1.26

Table 1.5 contains statistics of the continuous variables' descriptive statistics. The mean of each of these was used in the demand estimates of the models. Table 1.5 shows the average participant was 47, in a household of 2.6 and with an income of $62,086.

Table 1.6 Local primary purchase meat

Restaurants	Local Grocery Store	National Grocery Store	Farmers Market	Butcher or Local Meat Shop	Other	Total
194	2527	1555	110	268	90	4744
4.09%	53.27%	32.78%	2.32%	5.65%	1.90%	100%

Table 1.6 is the breakdown of where the participants primarily purchase meat. From the table, the top two answers were local and national grocery stores at 53.27% and 32.78%. With only 2.32% and 5.65% having purchased from farmer's markets and butchers or local meat shops

seems to show that there is a limited number of consumers willing to purchase their meat from different a location.

Table 1.7 Freezer space Statistics

Adequate Space	Not Adequate Space	Total
2,037	2,905	4942
41.22%	58.78%	100%

Table 1.7 is the breakdown for the freezer space variable that was "1" if the consumer had fourteen cubic feet of freezer space. Only 41.22% of the participants having adequate freezer space to store half a beef carcass, there would be some concern about the ability of the other to purchase a portion of the carcass.

Table 1.8 Statistics for Indicated Purchase for the Carcass Questions for Whole Sample

	Beef	Pork	Chicken	Lamb
Number of Yes	528	371	938	233
Total	1519	1042	1818	637
Percentage of Yes	34.76%	35.60%	51.60%	36.58%

Table 1.9 Statistics of Purchases for the Carcass Questions for Conditional Sample on Freezer Space

	Beef	Pork	Chicken	Lamb
Number of Yes	307	220	441	160
Total	675	478	810	375
Percentage of Yes	45.48%	46.03%	54.44%	42.67%

Table 1.8 are the statistics of the participants purchasing for the carcass questions for the whole sample. From the table, only chicken carcass saw participants choosing yes more than fifty percent of the time. Table 1.9 are the statistics of the participants choosing yes for the carcass questions for the conditional sample based on significant freezer space. From the table, chicken saw the lower increase in the percentages of just below three percent and the other saw about a ten percent increase but were still below fifty percent.

Table 1.10 Descriptive Statistics for All Cut Pounds Purchased

	Min	Max	Median	Mean	Standard.Deviation
Ground Beef Grocery	0	34	1	1.871	2.357
Ground Beef local	0	135	0	2.273	5.540
Steak Grocery	0	50	1	1.486	2.390
Steak Local	0	150	1	2.732	5.894
Loin Grocery	0	100	10	8.839	11.559
Loin Local	0	300	0	1.604	3.051
Bacon Grocery	0	55	1	9.612	2.501
Bacon Local	0	44	0	1.201	2.509
Ham Grocery	0	100	10	7.213	10.560
Ham Local	0	140	0	7.572	16.037
Wings Grocery	0	46	2	1.770	2.680
Wings Local	0	60	0	2.014	4.123
Breast Grocery	0	120	10	12.372	12.724
Breast Local	0	140	0	10.300	18.218
Thigh Grocery	0	33	3	3.003	3.829
Thigh Local	0	105	0	2.846	5.580

Table 1.11 Descriptive Statistics for All Cut Price Per Pound ($)

	Min	Max	Median	Mean	Standard Deviation
Ground Beef Grocery	3.45	5.75	4.60	4.617	0.937
Ground Beef local	4.30	7.20	5.75	5.733	1.189
Steak Grocery	5.60	9.40	7.50	7.442	1.528
Steak Local	7.00	11.70	9.40	9.381	1.908
Loin Grocery	3.00	5.00	4.00	3.967	0.817
Loin Local	3.75	6.25	5.00	5.055	1.029
Bacon Grocery	5.25	8.75	7.00	7.037	1.399
Bacon Local	6.50	11.00	8.75	8.787	1.864
Ham Grocery	4.00	6.500	5.25	5.272	1.015
Ham Local	5.00	8.20	6.50	6.560	1.302
Wings Grocery	3.90	6.50	5.20	5.011	8.768
Wings Local	4.90	8.10	6.50	6.448	1.306
Breast Grocery	2.85	4.75	3.80	3.807	0.775
Breast Local	3.50	6.00	4.75	4.821	9.798
Thigh Grocery	3.00	5.00	4.00	3.996	0.814
Thigh Local	3.75	6.50	5.00	5.095	1.089

Tables 1.10 and 1.11 are the descriptive statistics for both the quantities and prices. The quantities in Table 1.10 were calculated by taking the number of packages the participant wanted and multiplying it by the pounds in the package. There were observations on most cuts that were in the thousands of pounds but were deleted as outliers and less than 0.05% were dropped. The minimum quantity is zero pounds for all of the cuts for both grocery and local. The median for many of the cuts is zero or close to zero, which provides a picture of the number of zero

responses in the data and supports the use of a Tobit model. Looking at the means in Table 1.10, only grocery and local chicken breasts have means over ten pounds.

The prices from Table 1.11 have significantly less variation as the participants in the survey each cut had three price options in Table 1.2. With this in mind, the maximums, minimums, and median are the same as the maximums, minimums, and median prices in Table 1.2. One of the main points of interest in the table is with each has an average above the minimum and median.

Table 1.12 Purchases of Zero for Each Cut of Meat

	Zeros	Observations	Percentage With Zero
Ground Beef Grocery	531	2,265	23.44%
Ground Beef Local	1,226	2,265	54.13%
Steak Grocery	784	2,211	35.46%
Steak Local	984	2,211	44.50%
Loin Grocery	477	1,068	44.66%
Loin Local	654	1,068	61.12%
Bacon Grocery	497	1,082	45.93%
Bacon Local	600	1,082	55.45%
Ham Grocery	493	1001	49.25%
Ham Local	694	1001	69.33%
Wings Grocery	864	1,754	49.26%
Wings Local	1,098	1,754	62.60%
Breast Grocery	552	1,840	30.00%
Breast Local	1,128	1,840	61.30%
Thighs Grocery	776	1,811	42.85%
Thighs Local	1,106	1,811	61.07%

Table 1.12 presents the number of responses at zero for each cut of meat for both grocery and local. Only ground beef grocery and chicken breast grocery are below thirty percent.

Results

Probit models for beef, pork, chicken, and lamb carcasses questions were estimated and the Tobit models for the beef, pork, and chicken cuts questions were estimated. The coefficients

were converted into a percentage change for Probit, and elasticity was estimated for the Tobit model.

Probit Models

Base probit models were estimated for the carcass questions with price variables (USD/pound). Participants were given for both price per pound and a total portion of the carcass being purchased. The base probit models are reported in Table 1.13 using equations 2 to 5.

Table 1.13 Base Probit Model for Purchase of Beef, Pork, Chicken, and Lamb Carcass

Dependent variable:				
	Yes			
	Beef	Pork	Chicken	Lamb
Constant	-0.004	-0.919***	1.241***	-0.679
	(0.371)	(0.348)	(0.117)	(1.219)
Price	-0.035	0.129*	-0.280***	0.018
	(0.061)	(0.066)	(0.026)	(0.079)
Half	-0.236***			
	(0.080)			
Whole	-0.332***	-0.100		0.105
	(0.102)	(0.109)		(0.110)
Observations	1,519	1,042	1,818	637
Log Likelihood	-973.555	-671.795	-1,201.575	-417.635
Akaike Inf. Crit.	1,955.110	1,349.589	2,407.150	841.271

*p<0.1; **p<0.05; ***p<0.01

Table 1.14 Base Probit Model Percentage Change for Purchase of Beef, Pork, Chicken, and Lamb Carcass

	Beef	Pork	Chicken	Lamb
Constant	-0.002	-0.339	0.470	-0.255
Price	-0.013	0.048	-0.106	0.007
Half	-0.086			
Whole	-0.122	-0.037		0.039

Table 1.13 reports the results from the four base probit models for beef, pork, chicken, and lamb as carcasses. Table 1.14 reports the results converted into percentage change using R-Studio using the means of the normally distributed data for each of the models that are then multiplied by the results.

Price is statistically significant for pork and chicken but not beef and lamb (Table 1.13). The signs on prices, for beef, and chicken have negative signs that would be expected but pork

and lamb have positive signs which are not expected and would imply that as the price increases the likelihood that a participant would say yes to purchase would increase.

From Table 1.14, if the price increases by one percent, the likelihood a participant would purchase the pork carcass would increase by 4.8%. For chicken, if the price increases by one percent the likelihood of a participant purchasing decreases by 10.6%. Looking at the size variables, only the beef carcass size available was statistically significant for both the half and the whole compared to the base of a quarter. Looking at the signs of the half for beef carcasses along with the whole for both beef and pork carcasses all have negative signs as expected. As the size of the portion being purchased increases, the likelihood of saying yes decreases. The sign on the lamb whole is positive, which is not expected and implies that participants are more likely to purchase a whole lamb compared to a half. For a beef carcass, if a participant is presented as a half compared to a quarter the likelihood of saying yes decreases by 8.6%, and if the participant is presented as a whole compared to a quarter the likelihood of saying yes decreases by 12.2%.

Table 1.15 Full Probit Model for Purchase of Beef, Pork, Chicken, and Lamb Carcass

Dependent variable:									
Yes									
	Beef	Pork	Chicken	Lamb		Beef	Pork	Chicken	Lamb
Constant	-0.416	-0.617	1.767***	-1.597	Age Squared	-0.0004***	-0.0004**	-0.0002	-0.0004
	(0.530)	(0.571)	(0.310)	(1.389)		(0.0001)	(0.0002)	(0.0001)	(0.0002)
Price	0.001	0.074	-0.294***	0.012	Household Income	0.002**	0.002*	0.001	0.003*
	(0.066)	(0.071)	(0.028)	(0.084)		(0.001)	(0.001)	(0.001)	(0.001)
Half	-0.247***				Bachelor's or more	-0.035	-0.118	-0.124	-0.053
	(0.086)					(0.088)	(0.106)	(0.076)	(0.127)
Whole	-0.356***	-0.224*		0.165	Freezer Space	0.411***	0.513***-	0.013	0.151
	(0.110)	(0.119)		(0.118)		(0.073)	(0.088)	(0.065)	(0.119)
Male	0.319***	0.271***	0.247***	0.564***	West	-0.101	-0.114	0.027	0.003
	(0.074)	(0.089)	(0.065)	(0.118)		(0.111)	(0.131)	(0.095)	(0.166)
Household Size	0.064**	0.061*	0.041	0.134***	Northeast	-0.192*	-0.269*	0.056	0.049
	(0.030)	(0.036)	(0.028)	(0.048)		(0.115)	(0.145)	(0.101)	(0.172)
Age	0.014	0.009	-0.005	0.015	South	-0.021	0.058	0.062	0.244
	(0.014)	(0.018)	(0.012)	(0.023)		(0.094)	(0.110)	(0.085)	(0.153)
Observations	1,513	1,038	1,812	634					
Log Likelihood	-839.917	-566.868	-1,091.530	-364.378					
Akaike Inf. Crit.	1,707.883	1,159.736	2,205.059	754.757					
Note:									*p<0.1; **p<0.05; ***p<0.01

Table 1.16 Full Probit Model Percentage Change for Purchase of Beef, Pork, Chicken, and Lamb Carcass

	Beef	Pork	Chicken	Lamb		Beef	Pork	Chicken	Lamb
Constant	-0.131	-0.191	0.606	-0.524	Age Squared	-0.0001	-0.0001	-0.0001	-0.0001
Price	0.0002	0.023	-0.101	0.004	Household Income	0.001	0.001	0.0003	0.001
Half	-0.078				Bachelor's or more	-0.011	-0.036	-0.043	-0.017
Whole	-0.112	-0. 069		0.054	Freezer Space	0.129	0.159	0.004	0.050
Male	0.101	0.084	0.085	0.185	West	-0.032	-0.035	0.009	0001
Household Size	0.020	0.019	0.014	0.044	Northeast	-0.060	-0.083	0.019	0.016
Age	0.004	0.003	-0.002	0.005	South	-0.007	0.018	0.021	0.080

Table 1.15 contains the results for the Full Probit models for each of the carcass questions, with Table 1.16 the conversion of the results to percentage change. From Table 1.15, the price is only statistically significant for chicken. The signs for the price variables are positive for those that are not significant and negative for chicken, which is expected for a significant own price variable. If the price of chicken increases by one percent, then the probability of a

participant saying yes decreases by 10.1% (Table 1.16). Looking at the size variables, the half and the whole for beef carcass along with the whole for pork carcass are all statistically significant while the whole for lamb is not statistically significant. Signs of both beef carcass size variables along with the whole for pork carcass all have the expected negative sign compared to their base of quarters with lamb having a positive sign for the whole.

Looking at the percentage changes in Table 1.16, if a participant is given a half beef carcass option compared to a quarter beef carcass option, they are 7.8% less likely to say yes, and if a participant is given a whole option compared to a quarter option, they are 11.2% less likely to say yes. Looking at pork carcass, if a participant is given a whole option compared to a half option, they are 6.9% less likely to say yes. The sex dummy variable is statistically significant for all four carcass models, with positive signs indicating that a male is more likely to purchase.

Looking at the percentage changes from Table 1.16 if the participant offered a portion of a beef carcass is male, they are 10.1% more likely to say yes. For pork carcass, if the participant offered to purchase a portion of pork carcass is male then they are 8.4% more likely to say yes. For chicken, if the participant is male then they are 8.5% more likely to say yes. And finally for lamb if the participant is male, they are 18.5% more likely to say yes.

Moving on to household size from Table 1.15, it is only statistically significant for beef and lamb carcasses. Looking at signs for all the species have positive signs for household size. For beef carcass, if the household size increases by one, the participant is 2% more likely to say purchase. For lamb, if the household size increases by one, the participant is 4.4% more likely to purchase. None of the age variables are statistically significant. For beef and pork, age squared is statistically significant. Looking at signs, most have a positive sign for age and a negative sign

for age squared resulting in a bell-shaped curve that is expected with age. Only chicken has a negative sign for both age and age squared.

Household income is statistically significant for beef, pork, and lamb carcasses. All the carcasses have positive signs, which implies as income increases the likelihood of the participant purchasing increases. Looking at the percentage changes for the beef carcass, if household income increased by one thousand then the participant is 0.1% more likely to purchase. For pork carcasses, an increase in household income by one thousand leads a participant to be 0.1% more likely to purchase. For lamb, if a household income increases by one thousand then a participant is 0.01% more likely to purchase.

Looking at the dummy for a bachelor's degree or more, it is not statistically significant for any of the carcasses. The sign is negative of the four carcasses. As a participant's education increases, they would be less likely to say yes.

The dummy of having enough freezer space is significant for both beef and pork carcasses but not chicken and lamb. The significance of beef and pork carcasses is not surprising, as they are larger animals. They all have positive signs, as expected, for the large quantity of meat being offered to the participants. Looking at beef carcasses, if the participant has freezer space, then they are 12.9% more likely to purchase. For pork carcass, if the participant has enough freezer space, then they are 15.9% more likely to purchase. For the three regional dummies, only the northeast dummies for beef and pork carcasses are statistically significant. For beef carcasses, there are negative signs which implies participants that who are not from the base Midwest region are less likely to purchase. If a participant is from the Northeast, they are 6% less likely to say yes compared to the Midwest. For pork carcasses the West and the Northeast, dummies are negative, and the South dummy is positive that implies participants from

the West and Northeast are less likely to say yes to pork carcasses compared to those from the Midwest but participants from the South are more likely to purchase compared to those from the Midwest. Those from the Northeast are 8.3% less likely to purchase compared to those from the Midwest. For chicken and lamb, although not statistically significant, all three regional dummies have positive signs that imply that participants from these regions are more likely to purchase to chicken and lamb compared to those from the Midwest.

After looking at the full probit model for the sample population, we looked at the probit model for a conditional sample for those who had fourteen cubic feet of freezer space and re-estimated equation 1.7 for each carcass. Of note is the decrease in the number of observations. Lamb carcasses saw the smallest decrease at 262 observations, bringing them down to 372.

Table 1.17 Conditional Full Probit Model for Purchase of Beef, Pork, Chicken, and Lamb Carcass

	Dependent variable:								
	Yes								
	Beef	Pork	Chicken	Lamb		Beef	Pork	Chicken	Lamb
Constant	0.820	0.581	1.395***	-2.128	Age Squared	-0.0002	-0.0004	-0.001**	-0.0003
	(0.767)	(0.856)	(0.478)	(1.820)		(0.0002)	(0.0003)	(0.0002)	(0.0003)
Price	-0.049	0.019	-0.299***	0.052	Household Income	0.004**	0.004***	0.002*	0.003*
	(0.096)	(0.104)	(0.042)	(0.112)		(0.001)	(0.002)	(0.001)	(0.002)
Half	-0.348***				Bachelor's or more	0.2.31*	-0.046	-0.070	0.199
	(0.128)					(0.129)	(0.146)	(0.117)	(0.166)
Whole	-0.514***	-0.048		0.131	West	0.025	-0.225	-0.055	0.023
	(0.158)	(0.170)		(0.149)		(0.158)	(0.192)	(0.143)	(0.208)
Male	0.371***	0.252**	0.3.01***	0.726***	Northeast	-0.047	-0.330	-0.006	0.032
	(0.109)	(0.128)	(0.098)	(0.156)		(0.167)	(0.209)	(0.156)	(0.222)
Household Size	0.010	-0.039	0.0004	0.106*	South	0.048	-0.043	0.118	0.344*
	(0.045)	(0.054)	(0.041)	(0.062)		(0.136)	(0.153)	(0.124)	(0.191)
Age	-0.009	-0.0001	0.020	0.010					
	(0.021)	(0.027)	(0.019)	(0.031)					
Observations	671	478	806	372					
Log Likelihood	-393.173	-280.027	-466.242	-221.719					
Akaike Inf. Crit.	812.346	584.053	954.484	467.439					

Note: *p<0.1; **p<0.05; ***p<0.01

Table 1.18 Conditional Full Probit Model Percentage Change for Purchase of Beef, Pork, Chicken, and Lamb Carcass

	Beef	Pork	Chicken	Lamb		Beef	Pork	Chicken	Lamb
Constant	0.274	0.194	0.459	-0.725	Age Squared	-0.0001	-0.0001	-0.0002	-0.0001
Price	-0.016	0.006	-0.099	0.018	Household Income	0.001	0.001	0.001	0.001
Half	-0.116				Bachelor's or more	0.077	-0.015	-0.023	0.068
Whole	-0.171	-0.016		0.045	West	0.008	-0.075	-0.018	0.008
Male	0.124	0.084	0.099	0.247	Northeast	-0.016	-0.110	-0.002	0.011
Household Size	0.003	-0.013	0.001	0.036	South	0.016	-0.014	0.039	0.117
Age	-0.003	0.000	0.006	0.003					

Table 1.17 is the full probit model estimated for the conditional sample for the participants that had fourteen cubic feet of freezer space with Table 1.18 being the percentage change for the coefficients calculated at the means. The most noteworthy change in the results is the increase in the significance of household income which occurs for all four type. From table

1.18 if the participant's income increased by one thousand dollars the likelihood of purchasing a carcass would increase for beef by 0.01%, for pork by 0.02%, for chicken by 0.01%, and for lamb by 0.001%.

The implications from the results are that price has a considerably smaller impact on the likelihood of purchase of a portion of a carcass than expected. The limited impact of the price implies that other factors are important in the decision-making of purchasing a portion of a carcass. The only variable that is statistically significant for all four carcasses was the male variable that was positive for all models that implies marketing efforts made by processors who sell carcasses should be focused on male audiences. Of additional interest, household income and freezer space were significant for beef and pork. The impact of household income is most likely tied to a carcass purchase being a larger purchase that would be more difficult for lower-income households to make. Freezer space is important with a carcass purchase as it is a larger quantity of meat purchased at one time which means processors who sell in portions of carcasses will need customers to have freezer space. The findings over freezer space and household income were reinforced in the conditional model which found that once the participants who did not have the freezer space were removed the household income variable became highly significant which is most likely explained by the large total price of the portion of a carcass optionally making it a large purchase for a household depending on household income level.

OLS Model

After estimating the probit models for the carcass questions, the analysis of the cut questions began with OLS models estimating equations 1.8 and 1.9 to test the fit of the model. For the OLS models, each equation was estimated separately.

Table 1.19 Quantity Purchases in Pounds for Grocery and Local for Beef, Pork, and Chicken Cuts using OLS

	Dependent variable:															
	GBG	GBL	SG	SL	LG	LL	BG	BL	HG	HL	WG	WL	BRG	BRL	TG	TL
Constant	3.058***	2.522***	2.669***	4.613***	12.126***	28.371***	2.023***	1.619***	7.655***	6.829*	3.153***	3.708***	19.685***	14.685***	4.395***	5.092***
Standard Error	(0.344)	(0.814)	(0.344)	(0.856)	(2.406)	(6.370)	(0.541)	(0.538)	(2.513)	(3.785)	(0.500)	(0.773)	(2.067)	(2.995)	(0.610)	(0.888)
Price Grocery	-0.345***	0.357***	-0.221***	-0.215***	-1.649***	0.652	-0.092*	0.143***	-0.325	1.521***	-0.359***	-0.066	-2.904***	1.242**	-0.452***	0.182
Standard Error	(0.052)	(0.124)	(0.033)	(0.082)	(0.430)	(1.140)	(0.055)	(0.054)	(0.330)	(0.496)	(0.073)	(0.112)	(0.376)	(0.545)	(0.110)	(0.160)
Price Local	0.071*	-0.331***	0.049*	-0.030	0.644*	-2.951***	-0.047	-0.162***	0.194	-1.109***	0.064	-0.211***	0.895***	-1.886***	0.081	-0.584***
Standard Error	(0.041)	(0.098)	(0.026)	(0.066)	(0.342)	(0.905)	(0.041)	(0.041)	(0.257)	(0.387)	(0.049)	(0.075)	(0.297)	(0.431)	(0.082)	(0.120)
Observations	2,265	2,265	2,211	2,211	1,068	1,068	1,082	1,082	1001	1001	1,754	1,754	1,840	1,840	1,811	1,811
R^2	0.020	0.009	0.021	0.003	0.016	0.010	0.004	0.022	0.002	0.018	0.015	0.005	0.036	0.013	0.010	0.014
Adjusted R^2	0.019	0.008	0.020	0.002	0.014	0.008	0.002	0.020	-0.0004	0.016	0.014	0.003	0.035	0.012	0.009	0.013
Residual Std. Error	2.334 (df = 2262)	5.518 (df = 2262)	2.366 (df = 2208)	5.887 (df = 2208)	11.475 (df = 1065)	30.382 (df = 1065)	2.498 (df = 1079)	2.484 (df = 1079)	10.562 (df = 998)	15.905 (df = 998)	2.661 (df = 1751)	4.116 (df = 1751)	12.496 (df = 1837)	18.107 (df = 1837)	3.812 (df = 1808)	5.545 (df = 1808)
F Statistic	23.331*** (df = 2; 2262)	10.071*** (df = 2; 2262)	23.613*** (df = 2; 2208)	3.608** (df = 2; 2208)	8.836*** (df = 2; 1065)	5.417*** (df = 2; 1065)	2.011 (df = 2; 1079)	11.894*** (df = 2; 1079)	0.816 (df = 2; 998)	9.361*** (df = 2; 998)	13.556*** (df = 2; 1751)	4.005** (df = 2; 1751)	34.777*** (df = 2; 1837)	12.356*** (df = 2; 1837)	8.854*** (df = 2; 1808)	12.457*** (df = 2; 1808)

*p<0.1; **p<0.05; ***p<0.01

GBG = Ground Beef Grocery
GBL = Ground Beef Local
SG = Steak Grocery
SL = Steak Local
LG = Loin Grocery
LL = Loin Local
BG = Bacon Grocery
BL = Bacon Local
HG = Ham Grocery
HL = Ham Local
WG= Wings Grocery
WL = Wings Local
BRG = Breast Grocery
BRL = Breast Local
TG = Thigh Grocery
TL = Thigh Local

Table 1.20 Price Elasticities for Beef, Pork, and Chicken Cuts using OLS

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery								
Own Price	-0.1398	-0.0441	-3.6742	-0.1257	-0.4447	-0.1268	-9.4374	-0.3397
Cross Price	0.0350	0.0180	0.2604	-0.0080	0.2786	0.0257	2.4214	0.0577
Local								
Own Price	-0.1312	-0.0087	-0.9364	-0.0221	-1.2801	-0.0659	-4.0294	-0.3262
Cross Price	0.1165	-0.0341	1. 1401	0.1564	1.6724	-0.0181	3.473	0.1073

Table 1.19 is the OLS results from equations 1.8 and 1.9. For ground beef own and cross prices are statically significant for both grocery and local. For steak own and cross prices are statistically significant for grocery, but only the cross price is statistically significant for local. For loin, own and cross prices are statistically significant for grocery and for local only own price is significant. For bacon, own and cross prices are statistically significant for local, and only own prices are significant for grocery. For ham, own and cross prices are statistically significant for local. For chicken wings, own prices are statistically significant for local and grocery. For chicken breast, own and cross prices are statistically significant for both grocery and local. For chicken thigh, own price is statistically significant for both grocery and local.

All the signs for beef are as expected with own negative and cross price positive except for local steak cross price that would imply that participants view grocery steaks as compliments for local steaks (Table 1.19). For pork, the signs match what is expected with own negative and cross price positive except for grocery bacon cross price which is negative which implies that participants view local bacon as a compliment for grocery bacon. For chicken, all signs are as expected with own negative and cross price positive, except for local wings cross price, which was negative, which implies that participants view grocery wings as a compliment for local wings.

Table 1.20 is the elasticities from the OLS model for only the statistically significant variables starting with beef. If grocery ground beef prices increase by one percent, the quantity of ground beef grocery will decrease by 0.140% and local quantity purchased will increase by 0.117%. This implies participants view grocery ground beef as a substitute for local ground beef. If the price of local ground beef increases by one percent, the local quantity will decrease by 0.121% and the quantity of grocery will increase by 0.035%. This implies participants view grocery ground beef as a substitute for local ground beef. If grocery steak prices increase by one percent, the quantity of grocery steak will decrease by 0.044% and the quantity of local steak will decrease by 0.034%. This implies participants view grocery steak as a compliment for local steak. If local steak price increases by one percent, the quantity of grocery steak will increase by 0.018%. This implies participants view local steak as a substitute for grocery steak.

For pork starting with pork loin, if the price of grocery pork loin increases by one percent, the quantity of grocery pork loin will decrease by 3.674%. If the price of local pork loin increases by one percent, the quantity of local pork loin will decrease by 0.936% and the quantity of grocery pork loin will increase by 0.260%. This implies participants view grocery pork loin as a substitute for local pork loin. If the price of grocery bacon increases by one percent, the quantity of grocery bacon will decrease by 0.126% and the quantity of local bacon will increase by 0.156%. This implies participants view grocery bacon as a substitute for local bacon. If the price of local bacon increases by one percent, the quantity of local bacon will decrease by 0.022%. If the price of grocery ham increases by one percent, the quantity of local ham will increase by 1.672%. This implies participants view grocery ham as a substitute for local ham. If the price of local ham increases by one percent, the quantity of local ham will decrease by 1.280%.

For chicken starting with wings, if the price of grocery wings increases by one percent, then the quantity of grocery wings will decrease by 0.127%. If the price of local wings increases by one percent, the quantity of local wings decreases by 0.066%. For chicken breast, if the price of grocery breast increases by one percent, the quantity of grocery breast will decrease by 9.437% and the quantity of local breast will increase by 3.473%. This implies participants view grocery breasts as a substitute for local breasts. If the price of local breasts increases by one percent, the quantity of local breasts will decrease by 4.029%, and the quantity of grocery breasts will increase by 2.421%. This implies participants view grocery breast as a substitute for local breast. If the price of grocery thighs increases by one percent, the quantity of grocery thighs will decrease by 0.340%. If the price of local breasts increases by one percent, then the quantity of local breasts will decrease by 0.326%.

Bivariate Tobit Model

After the OLS results were estimated, bivariate Tobit models were estimated for each set of grocery and local cuts with just own and cross price using equations 1.11 and 1.12 solved dependently.

Table 1.21 Quantity Purchases in Pounds for Grocery and Local for Beef, Pork, and Chicken Cuts using Base Bivariate Tobit

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery								
Constant	3.180***	2.381***	7.362*	2.658***	2.221	3.665***	18.758***	3.530***
	(0.43)	(0.50)	(4.06)	(0.89)	(4.54)	(0.92)	(2.84)	(1.01)
Price Local	0.132**	0.107***	1.409*	-0.017	0.4503	0.082	1.459***	0.239*
	(0.05)	(0.04)	(0.58)	(0.07)	(0.47)	(0.09)	(0.41)	(0.14)
Price Grocery	-0.539***	-0.372***	-2.958***	-0.429***	-0.835	-0.834***	-4.368***	-0.905***
	(0.07)	(0.05)	(0.73)	(0.09)	(0.60)	(0.13)	(0.52)	(0.18)
Local								
Constant	0.970	2.836**	3.652	0.843	-15.885	5.042***	1.842	1.968
	(1.54)	(1.35)	(14.67)	(1.05)	(10.60)	(1.82)	(7.08)	(2.06)
Price Grocery	0.813***	-0.343***	6.597**	0.310**	5.53***	-0.416	4.043***	0.949**
	(0.23)	(0.13)	(2.65)	(0.11)	(1.39)	(0.27)	(1.29)	(0.37)
Price Local	-1.195***	-0.060	-9.549***	-0.445***	-4.794***	-0.904***	-5.729***	-1.831***
	(0.18)	(0.10)	(2.12)	(0.08)	(1.11)	(0.18)	(1.03)	(0.28)
lnsigma1								
Constant	1.036***	1.177***	2.891***	1.312***	2.866***	1.488***	2.806***	1.775***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
lnsigma2								
Constant	2.211***	2.156***	4.105***	1.447***	3.596***	2.118***	3.605***	2.409***
	(0.02)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)
atrho12								
Constant	0.318***	1.092***	0.533***	0.402***	0.557**/	0.635***	0.287***	0.509***
	(0.05)	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)

*p<0.1; **p<0.05; ***p<0.01

Table 1.22 Price Elasticities for Beef, Pork, and Chicken Cuts using Base Tobit Elasticities

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery								
Own Price	-0.2184	-0.0743	-6.5908	-0.5860	-1.1434	-0.2946	-14.1951	-0.6801
Cross Price	0.0650	0.0393	0.5697	-0.0029	0.6463	0.0330	3.9474	0.1702
Local								
Own Price	-0.4738	-0.0175	-3.0300	-0.0608	-5.5336	-0.2824	-14.7022	-1.0228
Cross Price	0.2653	-0.0543	11.5353	0.3391	6.0805	-0.1142	8.6378	0.5593

Table 1.21 is the base Bivariate Tobit result for the cuts. Starting with ground beef, for grocery and local ground beef, own and cross prices are statistically significant with own prices having the expected negative sign and the cross prices having positive signs as expected. The results imply that both grocery and local ground beef are substitutes for each other. Table 1.22 is the own and cross price elasticities for the base Bivariate Tobit results. If the price of grocery increases by one percent, the quantity of grocery purchased would decrease by 0.218% and the quantity of local ground beef will increase by 0.265%. If the price of local ground beef increases by one percent, the quantity of local ground beef will decrease by 0.474% and the quantity of grocery ground beef will increase by 0.065%.

For steak, grocery both own and cross prices are statistically significant but for local only, the cross price is statistically significant. For grocery steak, own price is negative and cross is positive that implies participants view grocery and local steaks as substitutes. The local steak's own price and cross price elasticities are negative implying that participants view grocery steaks as complements to local steaks. If the price of grocery steak increases by one percent, the quantity grocery steak will decrease by 0.074% and the quantity of local steak purchased will decrease by 0.054%. If the price of local steak increased by increased by one percent the quantity of grocery steak will increase by 0.039%.

For pork loin, own and cross prices elasticities are statistically significant for both grocery and local. The signs for both own prices are negative, which is expected and implies that as own price increases the quantity demanded of loin will decrease. For cross price both have positive signs that implies participants view grocery and local loin as substitutes. If the price of grocery loin increases by one percent, the quantity of grocery loin purchase will decrease by 5.951% and the quantity of local loin will increase by 11.535%. If the price of local loin

increases by one percent, the quantity of local loin will decrease by 3.030% and the quantity of grocery loin will increase by 0.570%.

For bacon, only own price is statistically significant for grocery and for local own and cross prices are statistically significant. Grocery bacon has negative signs on both own and cross price, the own price is expected and the negative sign on cross implies that local bacon is a complement for grocery bacon. For local bacon, the own price is negative as expected, and the cross price is positive that implies participants view grocery bacon as a substitute for local bacon. If the price of grocery bacon increases by one percent, the quantity of grocery bacon will decrease by 0.586% and the quantity local bacon will increase by 0.339%. If the price of local bacon increases by one percent, the quantity of local bacon will decrease by 0.061%.

For ham, for local, own and cross price are statistically significant. Grocery own price has a negative sign as expected, and the cross price has a positive sign implying that participants view local ham as a substitute for grocery ham. Local ham's own price negative sign is as expected, and its cross price has a positive implying that participants view grocery ham as a substitute for local ham. If the price of grocery ham increases by one percent, the quantity of local ham increases by 6.081%. If the price of local ham increases by one percent, then the quantity of local ham will decrease by 5.534%.

For chicken wings, grocery and local own price is statistically significant. For grocery wings own price is negative as expected, and cross price is positive implying that participants view local wings as substitutes for grocery. For local chicken wings, own price has a negative sign as expected, and cross price is negative implying that participants view grocery wings as a complement for local wings. If the price of grocery wings increases by one percent, the quantity

of grocery wings will decrease by 0.295%. If the price local wing increases by one percent, the quantity of local wings will decrease by 0.282%.

For chicken breasts, both own and cross prices are statistically significant for both grocery and local. Grocery chicken breasts' own price has a negative sign as expected, and cross price has a positive sign implying that participants view local breast as a substitute for grocery breast. Local own price has a negative sign as expected, and cross price has a positive that implies participants view grocery breast as a substitute for local. If the price of grocery breasts increases by one percent, the quantity of grocery decreases by 14.195% and the quantity of local breast will increase by 8.638%. If the price of local breast increases by one percent, the quantity of local breast will decrease by 14.702% and the quantity of grocery would increase by 3.947%.

For chicken thighs, own prices are statistically significant for grocery and local. Looking at signs grocery's own price has a negative sign which is expected, and cross price is positive implying that participants view local thighs as a substitute for grocery thighs. Local has a negative own price as expected and a positive cross price implying that participants view grocery thighs as a substitute for local thighs. If the price of grocery thighs increases by one percent, the quantity of grocery thighs decreases by 0.680%. If the price of local thighs increased by one percent, the quantity of local would decrease by 1.023%.

Table 1.23 Base Bivariate Tobit Willingness to Pay for Beef, Pork and Chicken Cuts

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery WTP	$5.90/lb	$6.40/lb	$2.49/lb	$3.19/lb	$2.66/lb	$4.39/lb	$4.29/lb	$3.90/lb
Local WTP	$0.81/lb	$47.27/lb	$0.38/lb	$1.89/lb	-$3.31/lb	$5.58/lb	$0.32/lb	$1.07/lb

Table 1.24 Bootstrap WTP Min/Max Base Tobit for Beef, Pork, and Chicken Cuts

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery	$4.91/lb	$4.30/lb	-$0.41/lb	$3.84/lb	-$18.52/lb	$2.81/lb	$3.41/lb	$2.20/lb
Min/Max	$7.16/lb	$8.36/lb	$4.64/lb	$9.07/lb	$21.72/lb	$5.75/lb	$5.18/lb	$5.69/lb
Local	-$2.06/lb	-$308.60/lb	-$3.97/lb	-$3.40/lb	-$13.10/lb	$2.03/lb	-$3.07/lb	-$1.12/lb
Min/Max	$3.00/lb	$292.55/lb	$2.93/lb	$5.55/lb	$0.70/lb	$9.20/lb	$2.37/lb	$2.67/lb

Table 1.23 is the average participant's willingness to pay for the cuts. These WTPs were estimated by taking the coefficients for constants and dividing them by their own price coefficients from Table 1.24. Because this is done using the coefficients, the WTPs are for the average participant. Steak has the only WTP point estimate that is higher for local compared to grocery, implying that participants do not consider local cuts as premium goods for most meat. Another interesting result is the high WTP for local steak and wings.

To test the confidence of these WTPs, confidence intervals were estimated for each WTP using the bootstrap method (Brownlee, 2019). The bootstrap method involves creating a loop that was estimated in STATA one thousand times randomly drawing from the sample and estimates the regression and computes the WTP calculations for each draw. The WTP estimates were sorted from smallest to largest and the top and bottom 2.5% were dropped to provide a 95% confidence interval. This method worked for all except for the base ham data which was only able to 906 complete simulations before it was unable to converge, and the confidence intervals

were calculated for it using the 906. The minimum and maximum of these intervals are found in Table 1.24.

From the confidence intervals created in Table 1.24, for the grocery side only the WTP for grocery loin, and ham are not statistically different from zero, as the confidence interval contains zero. Of the remaining WTP ground beef, steak, wings, breast, and thigh both contain the estimated WTPs and are statistically different than zero. Meaning that for these five cuts, the estimate falls within the 95% confidence interval. On the local side, all except wings are not statistically different than zero. Additionally, the estimate for the WTP is within the 95% confidence interval meaning this estimate is within the correct range.

The main implication is that the customer sample might have low exposure to local meat or that the base model constructed fits the data poorly which leads to the full model that was estimated later. From Table 1.23's WTPs for steak or wings would be the best options for a local processor to sell.

After calculating the WTP, the demand was estimated for each base Tobit. The demand estimates were created by taking the coefficients from Table 1.21 and multiplying them by their averages from the data and then varying the own price variables and reporting the resulting quantities. As a consumer cannot purchase a negative quantity any time a negative quantity was estimated it was replaced with zero.

Figure 1.8 Base Tobit Grocery Ground Beef

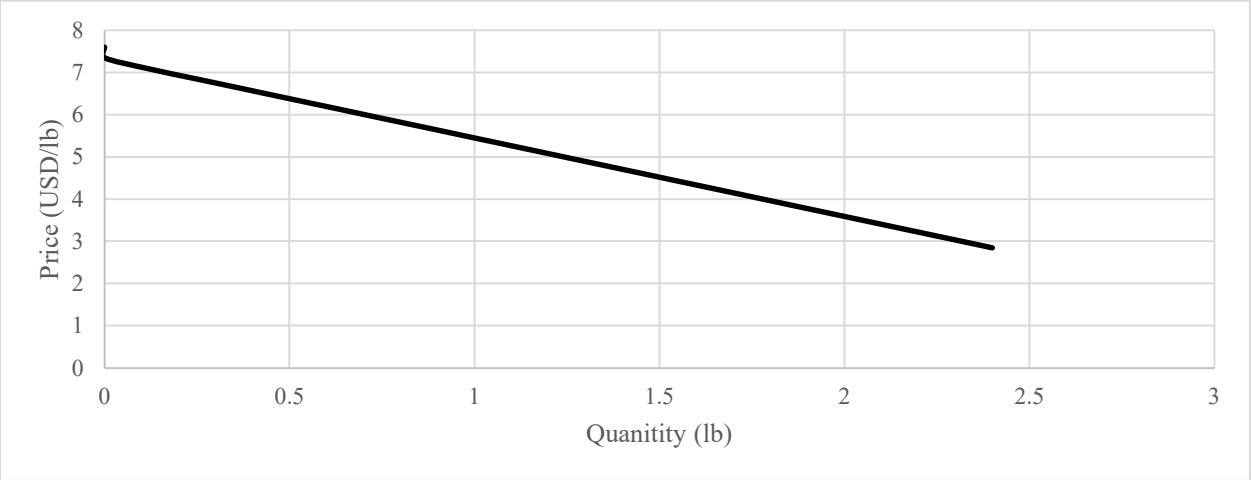
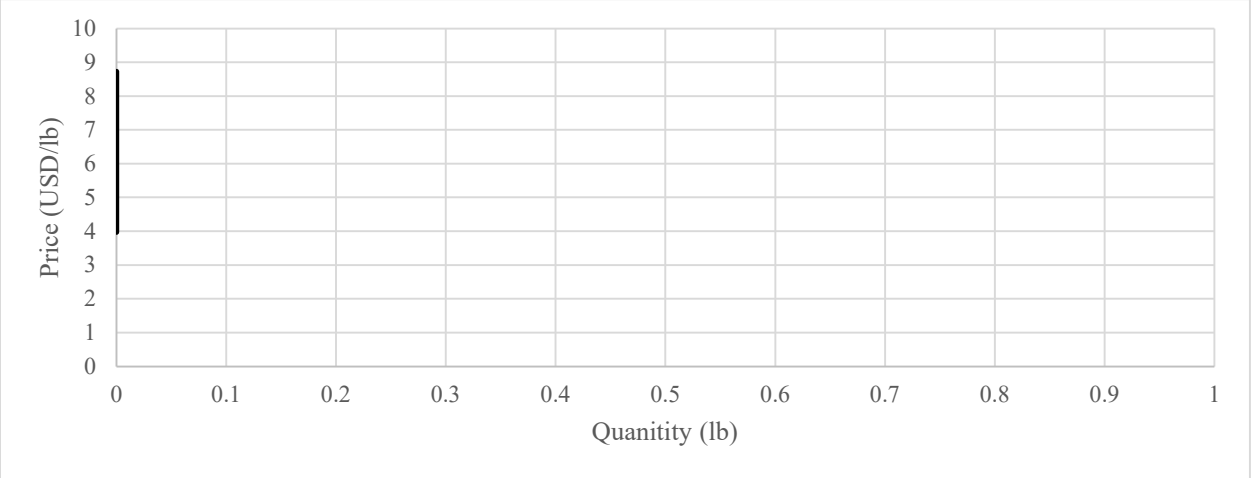


Figure 1.9 Base Tobit Local Ground Beef



The base demand estimates for ground beef grocery and local are presented in Figures 1.9 and 1.10 with the remaining graphs for the other cuts in the appendix. These estimates followed WTP when viewed against the prices used for the questions with cuts with WTPs below the prices presented to participants having negative demand which is not possible and results in a quantity of zero. The low WTP for local is reflected in the demand estimate for local and it is only zero and the consumer had no demand for local ground beef at the prices included in the estimate. As a result, only the grocery ground beef had a positive demand implying that within the prices presented, there was only demand for grocery ground beef.

A full Tobit was estimated with demographic variables including household size, age, household income, education, and regional for equations 13 and 14.

Table 1.25 Quantity Purchases in Pounds for Grocery and Local for Beef, Pork, and Chicken Cuts using Full Bivariate Tobit

	Ground Beef Grocery	Steak Grocery	Loin Grocery	Bacon Grocery	Ham Grocery	Wings Grocery	Breast Grocery	Thigh Grocery	Ground Beef Local	Steak Local	Loin Local	Bacon Local	Ham Local	Wings Local	Breast Local	Thigh Local
Constant	2.218***	2.134**	-7.526	3.218**	2.677	3.874***	16.319***	4.157***	2.014	4.065*	-9.975	0.802	-20.766	7.010**	9.839	4.065
	(0.69)	(0.81)	(6.59)	(1.50)	(7.32)	(1.29)	(4.54)	(1.56)	(2.44)	(2.17)	(23.29)	(1.76)	(16.64)	(2.59)	(11.06)	(3.25)
Price Local	0.132***	0.115**	1.428**	-0.013	0.511	0.099	1.371***	0.230*	-1.292***	-0.037	-10.303***	-0.450***	-4.405***	-0.937***	-6.090***	-1.970***
	(0.05)	(0.04)	(0.56)	(0.07)	(0.45)	(0.08)	(0.40)	(0.13)	(.18)	(0.10)	(2.01)	(0.08)	(1.06)	(0.17)	(0.99)	(0.28)
Price Grocery	-0.561***	-0.394***	-2.824***	-0.463***	-1.055*	-0.807***	-4.261***	-0.826***	0.803***	-0.412***	7.163**	0.260**	5.093***	-0.365	4.648***	1.061***
	(0.06)	(0.05)	(0.70)	(0.09)	(0.58)	(0.13)	(0.50)	(0.17)	(0.23)	(0.13)	(2.52)	(0.10)	(1.33)	(0.25)	(1.24)	(0.36)
Male	-0.081	0.605***	2.153*	-0.074	2.433**	0.716***	0.052	1.081***	1.477**	1.583***	9.319**	0.391	8.278***	1.471***	1.813	1.878***
	(0.13)	(0.15)	(1.16)	(0.25)	(1.21)	(0.23)	(0.81)	(0.29)	(0.45)	(0.40)	(4.14)	(0.29)	(2.77)	(0.46)	(2.00)	(0.61)
Household Size	0.200***	0.153**	1.911***	0.145	1.494**	0.380***	1.268***	0.468***	0.550***	0.161	6.908***	0.440***	2.765**	0.158	0.121	0.395
	(0.05)	(0.06)	(0.48)	(0.11)	(0.51)	(0.09)	(0.34)	(0.12)	(0.18)	(0.16)	(1.71)	(0.12)	(1.16)	(0.19)	(0.84)	(0.25)
Age	0.055**	0.004	0.564*	-0.018	0.060	-0.006	0.225	-0.014	0.0132	-0.019	1.039	0.012	0.099	-0.013	0.205	0.035
	(0.02)	(0.03)	(0.22)	(0.05)	(0.23)	(0.04)	(0.15)	(0.05)	(0.08)	(0.07)	(0.79)	(0.06)	(0.54)	(0.08)	(0.38)	(0.11)
Age Squared	-0.0007***	-0.0003	-0.008***	-0.000	-0.003	-0.001**	-0.004***	-0.001	-0.002**	-0.0007	-0.022***	-0.001	-0.007	-0.002**	-0.010**	-0.003**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Household Income	0.0003	0.004**	0.019	0.008**	-0.002	0.001	0.011	-0.006	0.021***	0.012**	0.028	0.011**	0.126***	0.003	0.113***	0.007
	(0.00)	(0.00)	(0.02)	(0.00)	(0.02)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.06)	(0.00)	(0.04)	(0.01)	(0.02)	(0.01)
Bachelor's or more	-0.092	0.114	2.119	-0.138	0.639	-0.344	-0.904	-0.183	-0.116	0.203	-1.320	-0.271	-6.512*	0.503	-5.274**	1.487**
	(0.15)	(0.18)	(1.38)	(0.29)	(1.47)	(0.27)	(0.96)	(0.35)	(0.53)	(0.47)	(5.03)	(0.34)	(3.37)	(0.55)	(2.39)	(0.72)
West	-0.381**	-0.480**	-1.199	0.511	1.128	0.860**	-2.183*	0.875*	-0.474	-1.273**	-7.270	-0.645	0.434	1.495**	-3.102	-0.226
	(0.19)	(0.22)	(1.73)	(0.38)	(1.83)	(0.34)	(1.21)	(0.44)	(0.68)	(0.60)	(6.21)	(0.44)	(4.16)	(0.69)	(3.00)	(0.90)
Northeast	-0.080	-0.119	-4.844*	0.948**	-1.459	0.608*	-1.320	0.790*	-.989	-0.471	-3.394	0.187	3.365	1.883**	1.668	1.496
	(0.19)	(0.23)	(1.91)	(0.40)	(2.00)	(0.36)	(1.22)	(0.47)	(0.68)	(0.62)	(6.73)	(0.46)	(4.39)	(0.73)	(2.99)	(0.95)
South	-0.049	0.107	1.611	0.433	2.145	0.926***	-0.616	0.921**	-0.201	0.484	2.250	0.080	0.352	1.981***	0.031	0.395
	(0.16)	(0.19)	(1.49)	(0.32)	(1.55)	(0.30)	(1.07)	(0.38)	(0.58)	(0.52)	(5.32)	(0.37)	(3.53)	(0.61)	(2.66)	(0.80)
Lnsigma1	1.018***	1.147***	2.837***	1.291***	2.867***	1.410***	2.770***	1.713***								
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)								
Lnsigma2	2.218***	2.119***	4.023***	1.405***	3.595***	2.044***	3.545***	2.351***								
	(0.02)	(0.02)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)								
Atrho12	0.279***	1.055***	0.447***	0.343***	0.557**/	0.536***	0.217***	0.423***								
	(0.02)	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)								

Note: *p<0.1; **p<0.05; ***p<0.01

Table 1.26 Price Elasticities for Beef, Pork, and Chicken Cuts using Full Bivariate Tobit

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery								
Own Price	-0.2273	-0.0787	-6.2923	-0.6324	-1.4434	-0.2851	-13.8474	-0.6207
Cross Price	0.0650	0.0422	0.5774	-0.0022	0.7339	0.0398	3.7093	0.1638
Local								
Own Price	-0.5123	-0.0108	-3.2692	-0.0615	-5.0846	-0.2927	-15.629	-1.1004
Cross Price	0.2621	-0.0653	12.5250	0.2844	5.6000	-0.1002	9.9304	0.6254

Table 1.25 are the results from the estimation of equations 13 and 14. Table 1.26 reports the own and cross price elasticities from the results. The price local is statistically significant for grocery and local for ground beef, loin, breast, and thigh, only grocery for steak, and only local for bacon, and wings. Looking at signs, cross price elasticity for grocery all except for bacon have positive signs implying for those cuts, participants view local as a substitute for grocery. Bacon has a negative sign implying that participants view local bacon as a complement for grocery bacon. For own price, local cuts all have negative signs as expected. From Table 1.26, if the price of local ground beef increases by one percent the quantity of grocery ground beef will increase by 0.0650% and if the price of local ground beef increases by one percent, quantity of local ground beef will decrease by 0.512%. If the price of local steak increases by one percent, the quantity of grocery steak will increase by 0.042%.

If the price of local loin increases by one percent, the quantity of grocery loin will increase by 0.577% and the quantity of local would decrease by 3.269%. If the price of local bacon increases by one percent, the quantity of local bacon will decrease by 0.062%. If the price of local ham increases by one percent, the quantity of local ham will decrease by 5.085%.

If the price of local wings increases by one percent, the quantity of local wings will decrease by 0.293% (Table 1.26). If the price of local breasts increases by one percent, the

grocery breast quantity will increase by 3.71% and the quantity of local breasts will decrease by 15.629%. Finally, if the price of local thighs increases by one percent, the quantity of local thighs will decrease by 1.100% and the quantity of grocery thighs will increase by 0.625%.

For grocery price, own price is statistically significant for all grocery cuts. Cross price is statistically significant for all local cuts except for wings. Own price grocery elasticities have negative signs for all as expected. The cross price elasticities for local have positive signs for all expected for steak, and wings which implies that participants view these as complements for grocery steak and wings, and the other local cuts are viewed as substitutes for their grocery counterparts. If the price of grocery ground beef increases by one percent, the quantity of grocery would decrease by 0.227% and the quantity of local ground beef will increase by 0.262%. If the grocery price of steak increases by one percent, the quantity of grocery steak will decrease by 0.079% and the local steak quantity will decrease by 0.065%.

If the grocery price of loin increases by one percent, then the quantity of grocery loin will decrease by 6.292% and the quantity of local loin will increase by 12.525%. If the price of grocery bacon increases by one percent, then the quantity of grocery bacon will decrease by 0.629% and the quantity of local bacon will increase by 0.284%. If the price of grocery ham increases by one percent, the quantity of grocery ham will decrease by 1.443 and the quantity of local ham will increase by 5.600%.

If the price of grocery wings increases by one percent, the quantity of grocery wings will decrease by 0.285%. If the price of grocery breasts increases by one percent, the quantity of grocery breasts will decrease by 13.847% and the quantity of local breast quantity will increase by 9.930%. And finally, if the price of grocery thighs increases by one percent, the quantity of grocery thighs will decrease by 0.621% and the quantity of local thighs will increase by 0.625%.

The dummy variable for male respondents is statistically significant on the grocery side for steak, loin, ham, wings, and thighs. On the local side, the dummy is statistically significant for all cuts except for bacon and breast. Grocery ground beef and bacon have negative signs implying that except for these two cuts, the participant being male increases the quantity of the cuts purchased. If the participant is male the quantity of local ground beef increases by 1.477 pounds, and the quantity of grocery steak increases by 0.605 pounds, and local steak increases by 1.583 pounds, the grocery loin increases by 2.153 pounds, local loin increases by 9.319 pounds, grocery ham increases by 2.433 pounds, local ham increases by 8.278 pounds, and grocery thighs increases by 1.081 pounds and local thighs increase by 1.878 pounds.

For household size on the grocery, it is statistically significant for all except bacon, and for local, it is statistically significant for ground beef, loin, bacon, and ham. Looking at signs across grocery and local, household size has positive signs implying that in all situations household size increases the quantity of grocery and local purchases. As household size increases by one member, the quantity of ground beef increases for grocery by 0.200 pounds and for local by 0.550 pounds. As household size increases by one member the quantity increases for grocery steaks by 0.153 pounds.

As household size increases by one member the quantity of loin increases for grocery by 1.911 pounds and for local by 6.908 pounds. As household size increases by one member, the quantity of bacon increases for local bacon by 0.440 pounds. As the household size increases by one member the quantity of ham increases for grocery by 1.494 pounds and for local by 2.765 pounds.

As household size increases by one member, the quantity of wings increases for grocery by 0.380 pounds. As household size increases by one member the quantity of breasts increases

for grocery by 1.268 pounds. And finally, as household size increases by one member the quantity of thighs for grocery increases by 0.468 pounds.

For age and age squared, both are statistically significant for grocery ground beef, and loin only age squared for grocery wings and breast and for local ground beef, loin, wings, breast, and thighs. The expected positive sign for age and negative for age squared occurs for grocery for ground beef, steak, loin, ham, and breast. For local, the signs are as expected for loin, bacon, ham, breast, and thighs. Both signs are negative for grocery bacon, wings, and thigh, and for local, this occurs for ground beef, steak, and wings.

Household income is statistically significant on the grocery side for steak and bacon, and on the local side, it is statistically significant for ground beef, steak, bacon, ham, and breast. On the grocery side, the income variable is negative for ham and thigh, and on the local side, it is positive across the board, implying participants viewed grocery ham and thighs as inferior goods.

For ground beef, if household income increases by one thousand dollars, the quantity of local ground beef purchases increases by 0.022 pounds. For steak, if household income increases by one thousand dollars the quantity of grocery steak increases by 0.004 pounds, and the quantity of local steak increases by 0.012 pounds. For bacon, if household income increases by one thousand dollars, the quantity of grocery bacon increases by 0.008 pounds and local bacon will increase by 0.011 pounds. For ham, if household income increases by one-thousand-dollar local ham quantity will increase by 0.126 pounds. For breasts, if household income increases by one thousand dollars, the quantity of local breasts will increase by 0.113 pounds.

Education is only statistically significant for local ham, breasts, and thighs. On the grocery side, the steak, loin, and ham have positive signs with the rest having negative signs which implies for most grocery cuts having an education of a bachelor's degree or higher

decreases the quantity grocery. On the local side, steak, wings, and thighs have positive signs. Local has a similar implication when it comes to education, as education increases past a bachelor's, quantity will decrease. For ham, if a participant has an education level of a bachelor's or higher local quantity decrease by 6.512 pounds. For breasts, if a participant has an education level of a bachelor's or higher local quantity decreases by 5.274 pounds. For thighs, if the participant has an education level of a bachelor or higher local quantity increases by 1.487 pounds.

For the regional dummies using the Midwest as the base, the West is statistically significant on the grocery side for ground beef, steak, wings, and thighs, and on the local side for steak, and wings. On the grocery side, it is negative for ground beef, steak, loin, and breast with positive signs and on the local side, it is negative for ground beef, steak, loin, bacon, breast, and thighs. Negative signs imply that if the participant is from the West, they will purchase less of the cut of meat. For ground beef, if the participant is from the West the quantity of grocery ground beef is decreased by 0.381 pounds. For steak, if the participant is from the West the quantity of grocery steak is decreased by 0.480 pounds and the quantity of local is decreased by 1.273 pounds. For wings, if the participant is from the West, the quantity of grocery is increased by 0.860 pounds and the quantity of local is increased by 1.495 pounds. For thighs, if the participant is from the West, the quantity grocery is increased by 0.875 pounds.

For the dummy for Northeast on the grocery side loin, bacon, wings, and thigh are statistically significant and on the local side, only wings are statistically significant. On the grocery side bacon, wings, and thighs have positive estimates and on the local side bacon, ham, wings, breast, and thigh have positive signs. A positive sign implies that if a participant is from the Northeast, the quantity will increase compared to Midwest. If a participant is from the

Northeast, the quantity of grocery loin will decrease by 4.844 pounds. If a participant is from the Northeast, the quantity of grocery bacon increases by 0.948 pounds. If a participant is from the Northeast, the quantity of grocery wings increases by 0.608 pounds and the quantity of local wings will increase by 1.883 pounds. If a participant is from the Northeast, the quantity of grocery thigh increases by 0.790 pounds.

For the South, grocery wings and thighs are statistically significant and on the local side only wings are statistically significant. On the grocery side ground beef and breast have negative signs and on the local side ground beef also has negative a sign. If a participant is from the South, the quantity of grocery wings increases by 0.926 pounds. and the quantity of local wings increases by 1.981 pounds. If a participant is from the South the quantity of grocery thighs will increase by 0.921 pounds.

Table 1.27 Full Bivariate Tobit Willingness to Pay

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery WTP	$3.95/lb	$5.42/lb	$2.67/lb	$6.95/lb	$2.54/lb	$4.80/lb	$3.83/lb	$5.03/lb
Local WTP	$1.56/lb	$109.86/lb	$0.97/lb	$1.78/lb	$4.71/lb	$7.48/lb	$1.62/lb	$2.06/lb

Table 1.28 Bootstrap WTP Min/Max Full Tobit

	Ground Beef	Steak	Loin	Bacon	Ham	Wings	Breast	Thigh
Grocery	$1.55/lb	$0.37/lb	-$10.78/lb	$2.06/lb	-$36.16/lb	$2.12/lb	$1.84/lb	$1.54/lb
Min/Max	$6.01/lb	$10.19/lb	$1.50/lb	$13.39/lb	$27.21/lb	$7.45/lb	$5.67/lb	$8.85/lb
Local	-$2.64/lb	-$339.45/lb	-$6.21/lb	-$8.82/lb	-$16.67/lb	$2.78/lb	-$2.21/lb	-$0.90/lb
Min/Max	$5.09/lb	$627.52/lb	$2.93/lb	$8.74/lb	$1.86/lb	$13.04/lb	$4.76/lb	$4.87/lb

Table 1.27 is the willingness to pay for the average participant for the full Tobit model. The main result from this table is that WTP is greater on the local level for steak, ham, and wings. The WTP estimates imply that these cuts are the cuts participants value the local over

grocery cuts. For the full Tobit, compared to the base Tobit only local steak has what seems to be a high WTP. Similarly, as with the base Tobit model to generate confidence intervals for the WTP a bootstrap method was used. A loop was estimated in STATA one thousand times randomly drawing from the sample and WTP was estimated for each draw. After which the WTP estimates were sorted from smallest to largest and the top and bottom 2.5% were dropped to give a 95% confidence interval. The minimum and maximum of these intervals are found in Table 1.22.

From confidence intervals in Table 1.28 starting with the grocery side the WTP estimates for loin and ham are not statistically different from zero as the interval includes zero. For the remaining WTP estimates they are within their 95% confidence intervals and are statistically different from zero meaning that for these estimates there is a 95 % confidence that the estimates are greater than zero. On the local side, only the WTP estimate for wings was statistically different from zero and within its confidences interval meaning there is a 95% confidence that it is within the correct range and is statistically different from zero.

After WTPs were estimated, demands were estimated for both grocery and local for all cuts. When comparing the WTP to prices that were presented to participants, it is expected to see demand estimates that are negative for most prices, especially on the local cuts. As with base Tobit here are ground beef estimates for grocery and local for the full Tobit are here in Figure 1.11 and Figure 1.12 and the remaining cut estimates are in the appendix.

Figure 1.10 Full Tobit Grocery Ground Beef

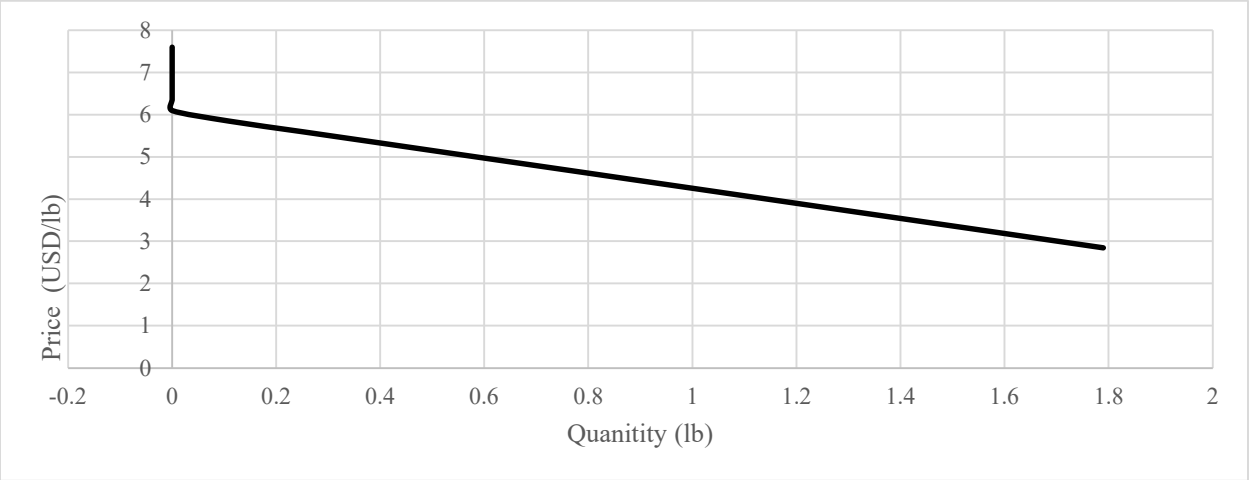


Figure 1.11 Full Tobit Local Ground Beef

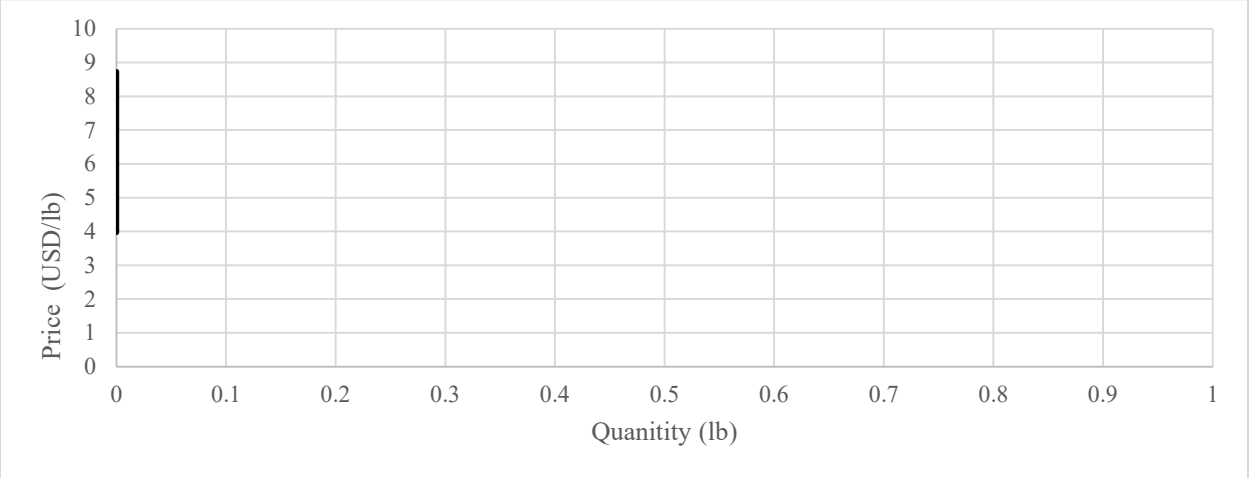


Table 1.29 Cuts Percentage of Sales Grocery and Local

	Ground Beef		Steak		Loin		Bacon		Ham		Wings		Breast		Thigh	
	Pound	Percentage	Pounds	Percentage	Pounds	Percentage	Pounds	Percentage	Pounds	Percentage	Pounds	Percentage	Pounds	Percentage	Pounds	Percentage
Grocery	4238	45	3285	35	9440	35	1040	44	7220	49	3104	47	22765	55	5439	51
Local	5148	55	6039	65	17134	65	1300	56	7580	51	3532	53	18953	45	5155	49
Total	9386	100	9324	100	26574	100	2340	100	14800	100	6636	100	41718	100	10594	100

Table 1.29 takes the total of each cut that participants said they would be willing to purchase both grocery and local and then converted it to a percentage. These percentages infer what percent of the estimated market locally produced meat has. Local cuts have higher percentages of the market for ground beef, steak, loin, bacon, ham, and wings. Part of these percentages could be influenced by the larger size packages that are offered on the local side compared to grocery. With this noted, for these markets it is implied that participants have a higher percentage of pounds purchased for local compared to grocery despite what was observed in the demands estimated and WTPs. This may be explained by the hypothetical nature of this survey and the lack of an exchange of goods and money.

The implications of interest from the bivariant Tobit models start with the increase of the significance of price when moving from the carcass questions to the cuts question which goes from only a half the carcass to own price only not being significant for grocery ham and local steak. Cross prices have similar levels of significance for all but grocery bacon, wings, and thighs. The implications are that local processors need to benchmark grocery prices and track the impact they have on their sales. This implication is supported by the findings that local cuts are highly price-elastic goods with readily available substitutes and require considerable differentiation either real or perceived for the local processors to be profitable. The main policy implications of this study would be to evaluate a campaign for local processors in their efforts to

differentiate their products and possibly increase demand for local meat before increasing the number of processors. A valuable way policymakers could consider the implementation of support for local meat processors could be through additional research and marketing.

Conclusion

For the probit and Tobit results compared to Gracia et al. (2012), the participant being male more often has a positive effect on the likelihood or quantity purchased unlike the negative effect found in their research. This could be due to the limited number of participants Gracia et al. (2012) had for their research. For the Probit model, the likelihood of yes was less affected by price and more by the portion of the carcass, sex of participants, and having freezer space. If this is the case, processers that sell by the carcass need to be focused on whom they market to compared to any sort of price advantage they may be able to offer. This was reinforced with the conditional sample which saw if the participant had the freezer space to store a carcass price was still not significant for most of the carcasses, but household income became very significant for all four carcasses. The only region that had statistically different results was the Northeast for beef and pork carcasses, implying that processors who sell buy the carcass will be more successful in the Midwest compared to other regions.

For the Tobit models, the own price for grocery has a greater effect than the cross price for all cuts and for the local models cross price had a greater effect than the own price. This implies that participants purchasing grocery cuts were less sensitive to local prices compared to those purchase local cuts were sensitive to grocery prices. Participants having larger households had a greater effect on grocery cut quantity compared to local cut quantity. Grocery cuts had higher WTPs for five out of the eight cuts which was surprising and does not support the average participant being willing to pay premiums for local cuts. This is further illustrated in the

estimated demands for local cuts being negative at almost all prices. Despite WTP being lower, local cuts had a higher percentage for the market in pounds. The premiums that local processers require to be viable, due to them operating at a small cost disadvantage, will need to be lower due to the low WTPs that were estimated in this research, for small processors to be vital. The main method for local processors to secure these premiums is be through product differentiation that could be added by policies supporting local research and marketing.

Chapter 2 - Survey of meat processors throughout the U.S.

Introduction

Covid-19 added to the interest in the meat processing industry at several levels of government. Many believe that small to medium meat processors are important industry participants in an effort to reduce the possibility of health-related closures that occurred during Covid-19. The main driver for pushing for small and medium sized processors is the current concentration of processing by the big four processors with an average of 61% of total processing across species USDA (2020). This level of concentration has led to lawsuits against the big four such as Ranchers-Cattlemen Action Legal Fund United Stockgrowers of America vs. the "Big Four" in 2019 accusing them of price fixing in the cattle market (Fassler 2019). The first chapter investigated the consumer side of the viability of small processors taking on larger amounts of the processing level through a consumer survey to understand their willingness to pay for local meat with results that would lead to the questioning of the viability of the smaller processors due to low willingness to pay (WTP) for local compared to grocery cuts of meat. If these low WTPs are correct, then a cost disadvantage faced by local processors would need to be lower than the WTPs that were estimated or the WTPs would need to increase.

The first purpose of this paper are to understand the interest in expansion in the processing industry. The second is to understand the greatest obstacles to expansion. The objective are addressed by a survey that was distributed to members of the North American Meat Institute (NAMI).

Related Research

Although little research has directly contacted meat processors, the Swenson, (2011) brings some interesting insights into the discussion of the future of meat processing. He explored

the labor implication of local meat processing in Iowa. In 2011, Iowa was the national leader in meat processing (Swenson, 2011). The goal of his research was to determine if it was profitable for small processors to compete with national companies with a focus on labor costs (Swenson, 2011). He found that small processors required 8.6 more jobs per head from farm to table compared to the state average (Swenson, 2011). At a cost level these additional jobs create a cost disadvantage for small processors.

Bir et al., (2021) researched the lasting impact of COVID-19 on interest in local meat and whether it will last (Bir et al., 2021). Bir focuses on the number of small processors in Oklahoma that obtained grant funds that have been made available in Oklahoma (Bir et al., 2021). They hypothesized that an increase in the freezer capacity of consumers adds to the long-term viability of smaller processors that sell portions of animals that require storage by the consumer (Bir et al., 2021). Bir's research supported the early research done by this team that found the freezer space was a significant factor in the purchasing of meat as a portion of a carcass.

Gwin and Thiboumery (2014), explored meat processing supply issues, the role of small processors, and the industry as a whole. Due to the perishable nature of meat and processors being the weakest link in the supply chain, they believe that outsiders could add valuable additional resources to this industry (Gwin and Thiboumery, 2014). They examined four options for outsiders to aid processors: management advisement, assisting in grant writing, assisting in securing inspection certifications, and finally lobbying (Gwin and Thiboumery, 2014).

Belk et al. (2014) explored the interest in local meat through the lens of globalization. The success of the meat industry in the U.S. and other countries has been influenced heavily by vertical integration for the U.S., especially in poultry and hogs (Belk et al., 2014). While large companies have a global presence, they argue there is space for geography-labeled production to

become a brand such as local or U.S. beef combined with the more recent mistrust in larger companies by consumers leading to growth in demand for local meat (Belk et al., 2014). They saw globalization and vertical integration as a means to decrease short-term volatility and risk in the meat industry. They believe that local meat has a place for diversification in the meat industry going forward (Belk et al., 2014).

Gwin et al., (2013) completed a case study of seven local and regional processors to understand the factors that make a processor successful. Their study was motivated by the increase in demand for local meat (Gwin et al., 2013). They found that processing infrastructure limits the supply of local meat and the key to successful local processing is communication and relationship between the farmers and local processors, which leads some processors to become farmers and be their own customers (Gwin et al., 2013). This shift highlights the need for small farmers and processors to move from one-off transactions to active relationships (Gwin et al., 2013). A couple of options to facilitate relationships include active scheduling between the farmer and the processor to limit the seasonality of production and variable pricing to reward farmers for staying with the same processor (Gwin et al., 2013).

This chapter adds to a better understanding of the processors through primary research in the form of a survey. This survey is focuses on understanding processor interest in expansion as demand changes and what issues might be barriers to their expansion.

Methods

The survey for this research was distributed by NAMI from November 28, 2022, to January 10, 2023. Participants were meat processors that are members of NAMI with varying levels of processing. The survey collected processor demographics: their level of processing, if they did both slaughtering and processing or only one, what species they worked with, and if

they only sourced their animals in-state. Participants were asked about their interest in expanding their operations and what they considered as barriers to expanding such as the physical footprint, financing, and labor availability as the constraints that were presented.

Data

A total of forty-seven processors opened the survey, but only thirty-six processors completed enough of the survey to be reported. The number of responses per question decreased throughout the survey.

Table 2.1 Level of Inspection

USDA	*State*	*Other*
33	1	2

Table 2.2 Additional Processing Certifications

Kosher	*Halal*	*Organic*	*Other*	*None*
2	10	9	6	13

Table 2.3 Single versus Multi Additional Certification

Single	*Multi*	*None*
13	6	13

Thirty-three of the processors were USDA inspected and only one was state inspected. The advantage of being USDA inspected is that it allows processors to sell across state lines which is likely why only one of the processors had state-level inspections. Only thirteen of the processors have no form of additional certification. Halal was the most common certification. Six of the nineteen processors that have additional certifications have multiple certifications

(Table 2.3). The low number of companies having more than one additional certification maybe due to the higher cost of adding certifications or a lower profitability from adding certification.

Table 2.4 Company Organization

LLC	*Partnership*	*Corporation*
14	2	18

Table 2.5 Processing Servers Offered

Slaughter	*Processing*	*Both*
3	23	10

Table 2.6 Animal Sourcing

All In-State	*More than One State*
2	28

Only ten of the thirty-six processors offer both slaughter and processing servers with most only offering processing only 23(Table 2.5). Two of the processors sourced all of their animals in-state (Table 2.6).

Table 2.7 Species Slaughtered

Cattle	*Hogs*	*Chicken*	*Lamb*	*Goat*	*Turkey*	*Game Animal*	*Other*
7	9	1	4	3	0	2	0

Table 2.8 Single vs Multi Species Slaughtering

Single	*Multi*
5	7

Table 2.9 Species Processed

Cattle	*Hogs*	*Chicken*	*Lamb*	*Goat*	*Turkey*	*Game Animal*	*Other*
22	27	11	6	2	8	2	3

Table 2.10 Single vs Multi Species Processing

Single	*Multi*
8	23

None of the processors slaughtered turkeys or other species not listed. Of the twelve processors with responses, five had single-species slaughter and the rest had multi-species slaughter (Table 2.8). On the processing side, there was not a listed species that was not processed. Additional species not listed were also processed by three processors (Table 2.9). Of the thirty-one processors, eight had single-species processing (Table 2.10). For both slaughter and processing, the advantage of single processing is the ability to specialize but occurs the risk of the availability of animals to process.

Table 2.11 Primary Form of Sales

Cuts of Meat	*Portions of Carcass*	*Meat for Additional Processing*
14	0	13

Figure 2.1 Breakdown of Customer Base as Percentages For 29 Processors

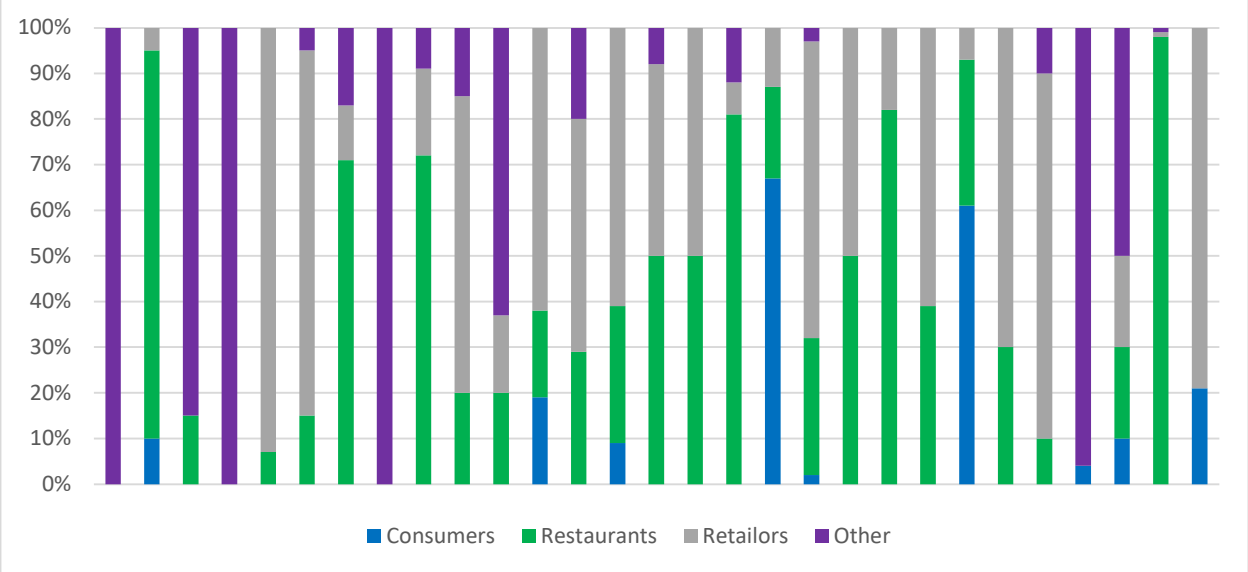


Table 2.12 Average Percentage Customer Base Across the 29 Processors

Consumer	*Restaurants*	*Retailors*	*Other*
7%	33.62%	35.45%	23.93%

None of the processors had their primary sales in the form of portions of the carcass (Table 2.11). Sales are either in the form of cuts or meat for additional processing. Figure 2.1 reports the distribution of the 29 processors' customers between consumers, restaurants, retail, and other. The average processor had over two-thirds of their customer base made up of restaurants and retailers (Table 2.12).

Constraints

Two types of questions were asked. The first style was hypothetical choice experiments that presented to participants that marked financing as a barrier to their expansion goals. The

questions focused on the likelihood of a participant starting an expansion project at varying levels of interest rate on a loan from 1% to 9% for the first set and the second on varying levels of cost-sharing 10% to 30%. Below is an example of both the interest rate question and a cost-sharing question.

Figure 2.2 Example of Interest Rate Question

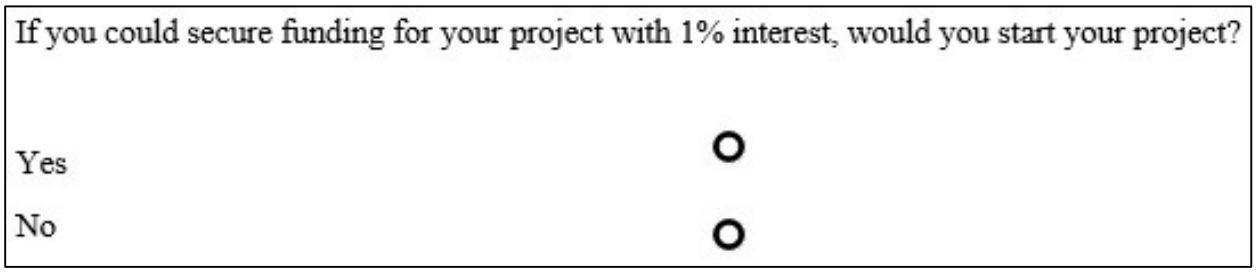
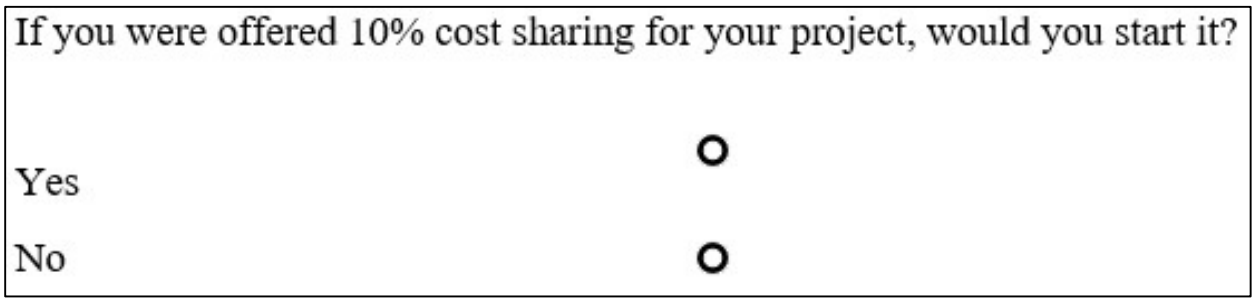


Figure 2.3 Example of Cost Sharing Question



The second style of questions focused on the processor's cost of processing, and the price received based on the species they processed. The first was based on their average cost of processing per head. The next two were on the price they receive for cuts of meat, and the last one focused on the range that best represented what they would get in dollars per pound for either the carcass or cuts. Ground beef and steak were the presented cuts for beef with the price varying from $3.75 to 8.00 per pound and $6.50 to 13.00 per pound respectively. The prices presented for half a beef carcass ranged from $4.25 to 8.50 per pound. Pork loin and ham were the cuts presented for pork with the prices varying from $3.00 to 6.75 per pound and $4.50 to 8.75 per pound. The prices presented for half a pork carcass varied from $4.00 to 8.50 per pound.

Chicken breast and thighs were the cuts presented for chicken with the ranges from $4.00 to 7.25 per pound and $3.00 to 7.25 per pound respectively.

Questions

Two types of questions asked to further analyze responses. The first type of questions focused on the probability of the processor being willing to start their project depending on either the level of the interest rate on a loan or the percentage of cost share they were being offered. For the interest rate questions, there were three percentage levels (Table 2.13) along with three cost sharing percentage levels. Each processor that indicated that financing was a barrier was randomly presented with one of the interest rate questions and one cost sharing question.

Table 2.13 Interest Rates and Cost Sharing Levels

Interest Rates	1%	5%	9%
Cost Sharing	10%	15%	30%

The second type of questions focused the costs of processing per head and prices received per pound at the cut level and the portion of a carcass. For the cost question, a processor was presented with a range of costs and asked which range best represented their cost per head for each species. They were either processed or slaughtered. These ranges are reported in Table 2.14. If a processor indicated that they had meat processing, they were asked two different questions about the range they received per pound with two cuts per species. that they processed with the ranges in Table 2.15. The last type of questions the processors were presented with was a range of prices and asked which best represented the price they received per pound for a portion of a carcass of a species they processed for beef, pork, and lamb carcasses with the ranges seen in Table 2.16.

Table 2.14 Cost of Processing per Head Range in Dollars Present for Each Specie

Beef Carcass						
Lower	$100-150	$175-225	$250-300	$325-375	$400-450	Higher
Pork Carcass						
Lower	$100-150	$175-225	$250-300	$325-375	$400-450	Higher
Chicken						
Lower	$2.50-2.75	$3.00-3.25	$3.50-3.75	$4.00-4.25	$4.50-4.75	$5.00-5.25	Higher
Lamb						
Lower	$50-75	$100-125	$150-175	$200-225	$250-275	$300-325	Higher

Table 2.15 Range of Prices Presented for Each Cut in Dollar Per Pound

Beef									
Ground Beef	Lower	$3.75-4.00	$4.25-4.50	$4.75-5.00	$5.25-5.50	$5.75-6.00	$6.75-7.00	$7.25-7.50	$7.75-8.00	Higher
Steak	Lower	$6.50-7.00	$7.50-8.00	$8.50-9.00	$9.50-10.00	$10.50-11.00	$11.50-12.00	$12.50-13.00		Higher
Pork									
Loin	Lower	$3.00-3.25	$3.50-3.75	$4.00-4.25	$4.50-4.75	$5.00-5.25	$5.50-5.75	$6.00-6.25	$6.50-6.75	Higher
Ham	Lower	$4.50-4.75	$5.00-5.25	$5.50-5.75	$6.00-6.25	$6.50-6.75	$7.00-7.25	$7.50-7.75	$8.00-8.25	$8.50-8.75	Higher
Chicken									
Breast	Lower	$4.00-4.25	$4.50-4.75	$5.00-5.75	$6.00-6.25	$6.50-6.75	$7.00-7.25			Higher
Thigh	Lower	$4.00-4.25	$4.50-4.75	$5.00-5.75	$6.00-6.25	$6.50-6.75	$7.00-7.25			Higher

Table 2.16 Prices Present for each Carcass Question in Dollars Per Pound

				Half a beef carcass				
Lower	$6.50-7.00	$7.50-8.00	$8.50-9.00	$9.50-10.00	$10.50-11.00	$11.50-12.00	$12.50-13.00	Higher
				Half a pork carcass				
Lower	$4.00-4.25		$4.75-5.25	$5.50-6.00		$6.25-6.75	$8.00-8.50	Higher
				Half a Lamb				
Lower	$50-75	$100-125	$150-175	$200-225		$250-275	$300-325	Higher

Results

After the survey was distributed by NAMI from November 28, 2022, to January 10, 2023, thirty-four of the processors completed the survey. A lower number answered the demographic breakdown of the processor.

Table 2.17 29 Processors' Interest in Expansion

	Expanding Processing Facilities	Expanding Slaughter Facilities	Expanding Storage	Modernizing Existing Facilities	Add Processing Facilities	Add Slaughter Facilities	Other	None
Number	*15*	*4*	*8*	*13*	*7*	*2*	*0*	*5*
Percent of Processors	51.7%	17.2%	27.6%	44.8%	24.1%	6.9%	0.0%	17.2%

Table 2.18 29 Processors' Interest in Expansion Single vs Multiple

Single	*Multiple*	*None*	*Total*
9	*15*	*5*	*29*
31%	52%	17%	100%

Interest in expanding processing facilities and modernizing existing facilities were the top two choices for fifteen and thirteen processors, respectively (Table 2.17). Of the twenty-nine

processors that answered this question, fifteen were interested in multiple forms of expansion with a total of twenty-four processors interested in expansion (Table 2.18). There is demand from the processors for expansion which leads to interest in what they consider barriers to their expansion.

Table 2.19 Perceived Barriers to Expansion ofr 27 Processors

	Physical Footprint	Financing	Labor Availability	Other
Number	*18*	*9*	*22*	*1*
Percent of Processors	*66.7%*	*33.3%*	*81.5*	*3.7%*

Table 2.20 Multiple vs Single Perceived Barrier to Expansion Across 27 Processors

Single	Multiple	Total
9	18	27
33.3%	66.7%	100%

The top barriers to expansion listed by the processors were labor availability and physical footprint for twenty-two and eighteen respectively. Of the twenty-seven processors, eighteen perceived several barriers to expansion. Financing was lowest response rate.

Table 2.21 Labor Issues

Cost of Labor	*Availability of Labor*	*Training Cost*	*Other*
2	19	0	1

Table 2.22 Processors Labor Issues Solutions

More Labor Available	*Immigration Reform*	*Employee Retention/Training*	*Automation*	*Tax Legalization*	*Lessened Restrictions on Employers s*
2	4	4	1	1	1

Table 2.21 reports the responses of the processors that perceived labor availability as a barrier to their expansion projects. Of the twenty-two processors, nineteen viewed labor available as their main issue while two reported the cost of labor as their main issue. An open-ended question asked what the processors perceived as the solution to their labor issues. The top answers for a possible solution to their labor availability issues were immigration reform and employee retention and training.

Table 2.23 Processors Foot Print Issues Breakdown

Land Foot Print	*Building Foot Print*	*Other*
6	9	2

Table 2.23 reported the responses of the processors that perceived either the footprint of the current land they own or of their building as a barrier to expansion. The main issue was the building footprint with the land footprint close behind it (Table 2.23).

Table 2.24 Breakdown of Processors who Applied for Loans in 2021-2022

Yes	*No*
10	18

Table 2.25 Reason Processors did not Apply for a Loan

Sufficient Funds	*Expected Rejection*	*Cost of Appling for Loan*	*Risk from Additional Debt*
12	0	0	6

Table 2.26 Was a Loan Request Rejected or Received Less than Applied for

Yes	*No*
0	9

Table 2.27 If you got a Loan was it SBA Guaranteed

Yes	*No*
0	9

Twenty-two processors answered this section, and ten of the processors applied for loans from 2021 to 2022. The main reason many of them did not apply for loans was they had sufficient funds. The only other reason was the risk of additional debt. For those processors that did apply for loans from 2021 to 2022, none of the processors were rejected or received less than they applied for.

Conclusion

Although the response rate was low, this study found that, processors have interest in expanding their processing and for many, it has multiple focuses. It is also interesting that the level of concerns in regard to financing was low for these processors. The main concerns were with labor availability and the footprint needed to expand. Of those processors whose issue was labor availability, they had more interest in immigration reform than other solutions. Additional time and more responses would be the best option to gain additional understanding. Overall,

these reported constraints may mean that policymakers may need to shift their focus away from financing over to labor.

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Appendix A

Figure A.1 Map 1: From U.S. Census Bureau for regions. Puerto Rico was added to the South region due to it being an option on the survey.

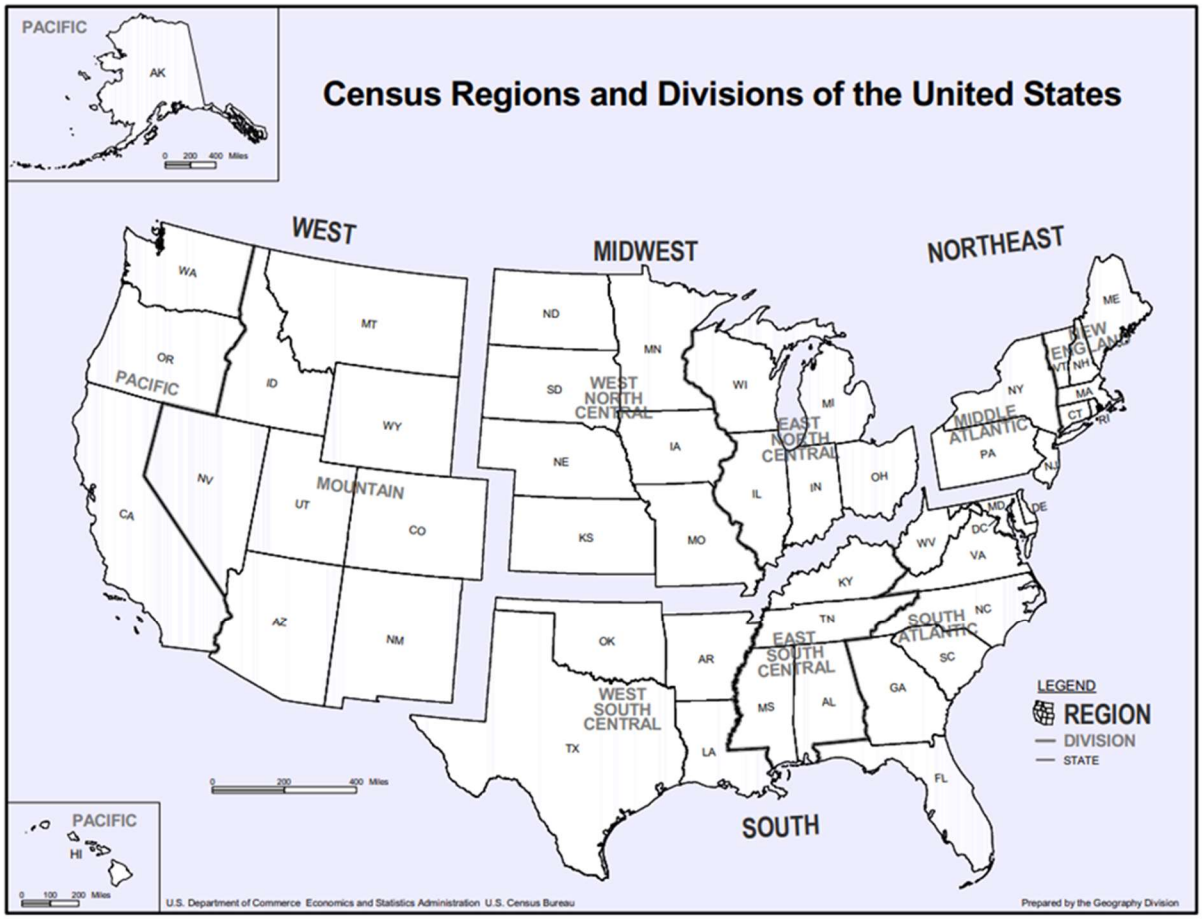

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Table A.1 Gender Break Down of Consumers

	Male	Female	Other	PNTA	Total
Number	2293	2622	22	4	4941
Percentage	49.2%	53.1%	0.4%	0.08%	100

Table A.2 Marital Statistics Breakdown of Consumers

	Single	*Married*	*Separated*	*Divorced*	*Widowed*	*PNTA*	*Total*
Number	1660	2264	111	647	238	22	4942
Percentage	33.6%	45.8%	2.2%	13.1%	4.80%	0.40%	100

Table A.3 Purchase Location Breakdown of Consumers

	Restaurant	*Local Grocery Store*	*National Store*	*Farmers Market*	*Butcher*	*Other*	*PNTA*	*Total*
Number	181	2413	1489	103	252	84	420	4942
Percentage	4%	49%	30%	2%	5%	2%	*8%*	100

Figure A.2 Base Tobit Grocery Steak

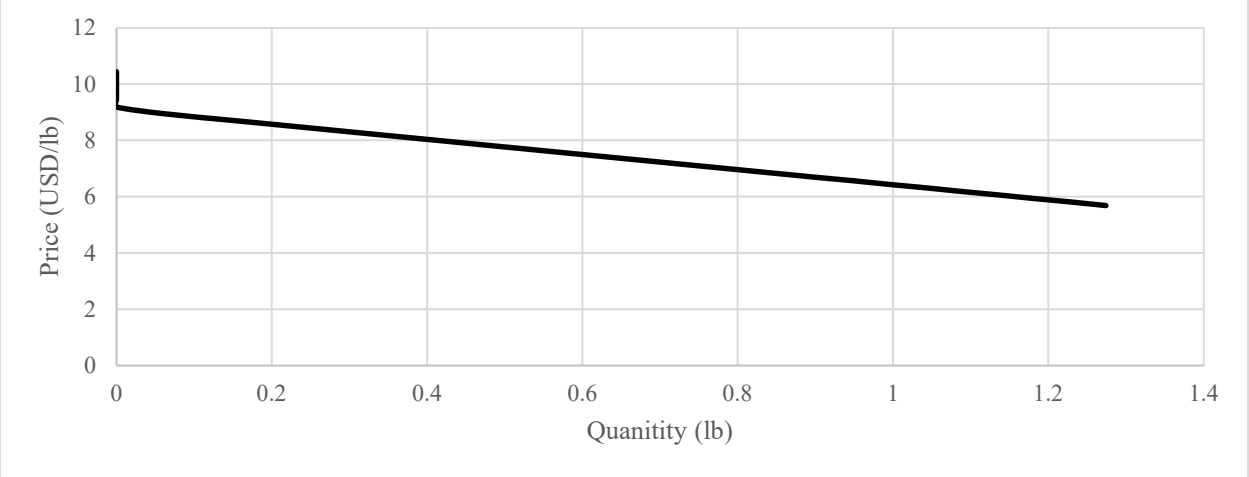

Figure A.3 Base Tobit Local Steak

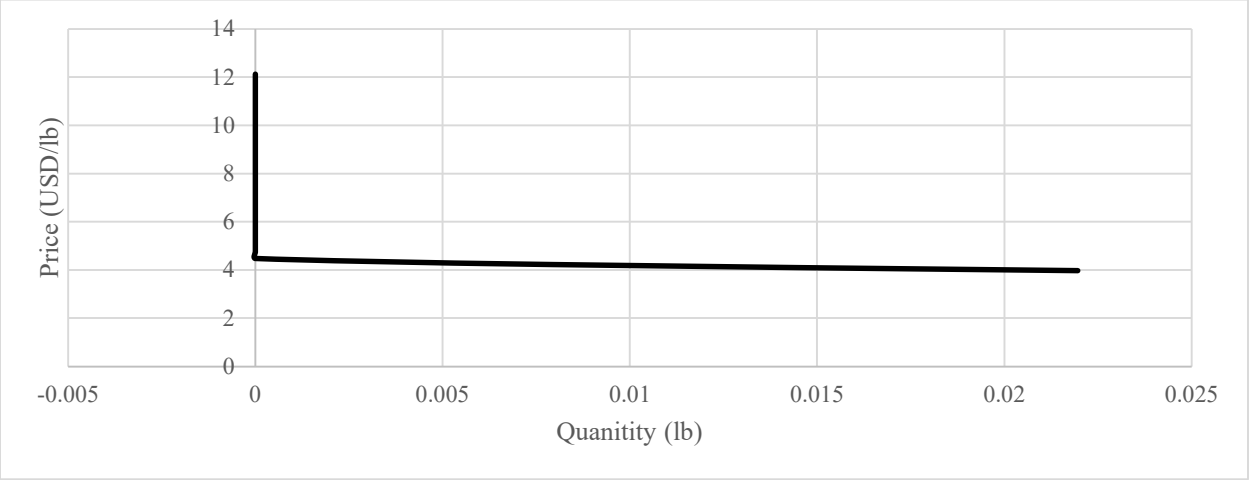

Figure A.4 Base Tobit Grocery Loin

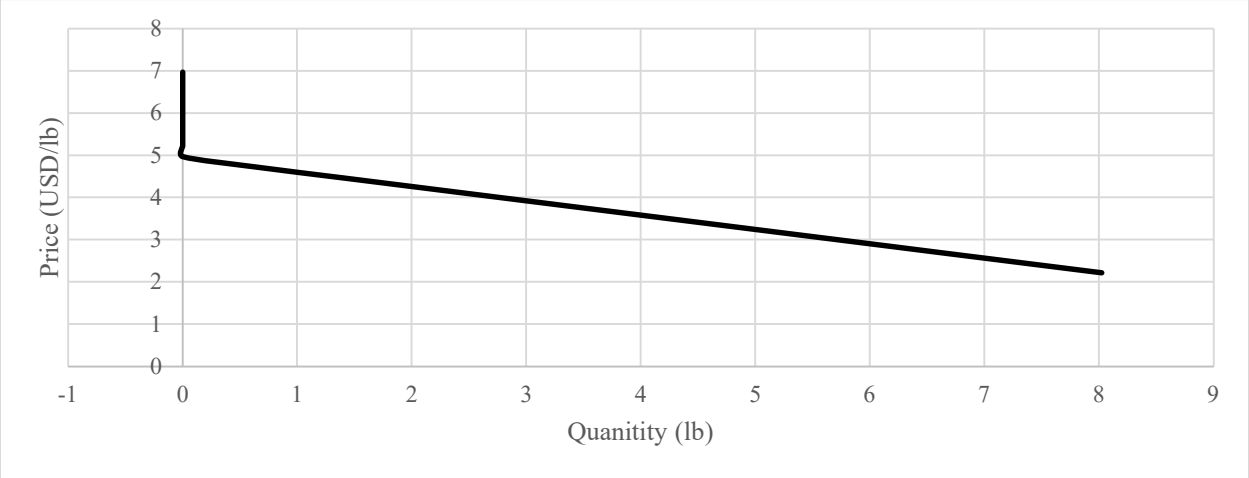

Figure A.5 Base Tobit Local Loin

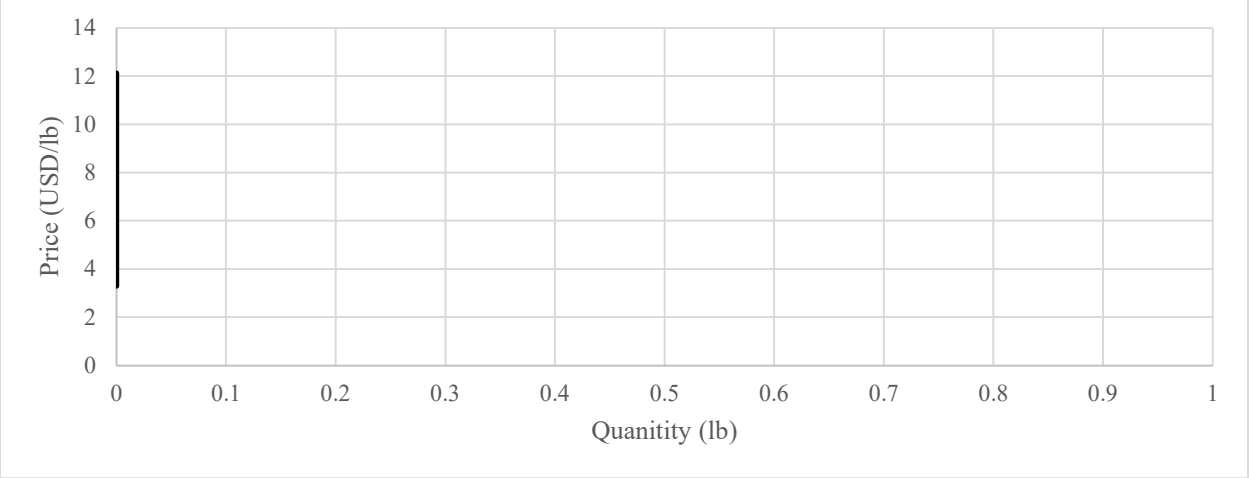

Figure A.6 Base Tobit Grocery Bacon

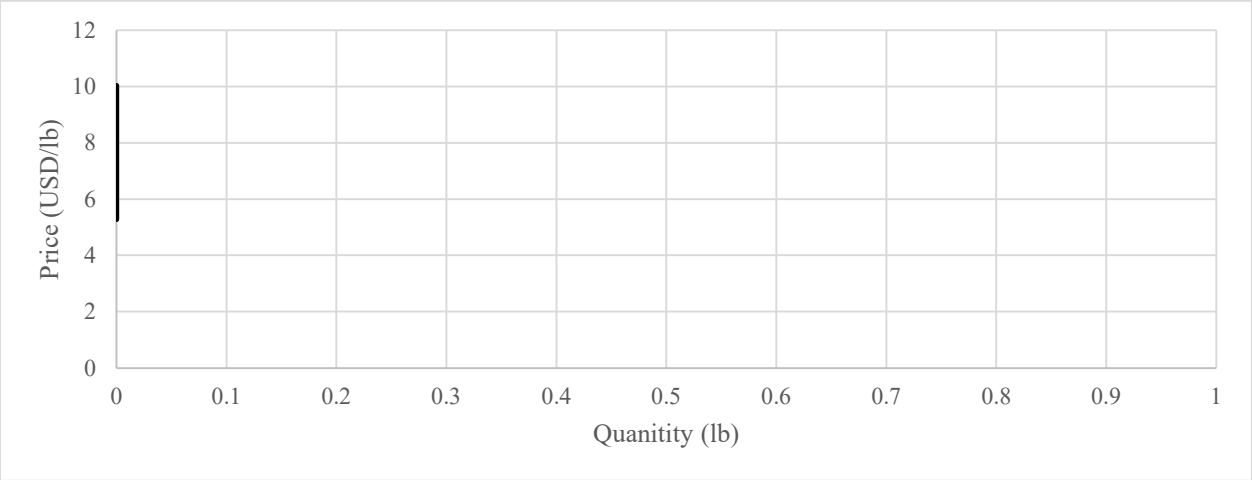

Figure A.7 Base Tobit Local Bacon

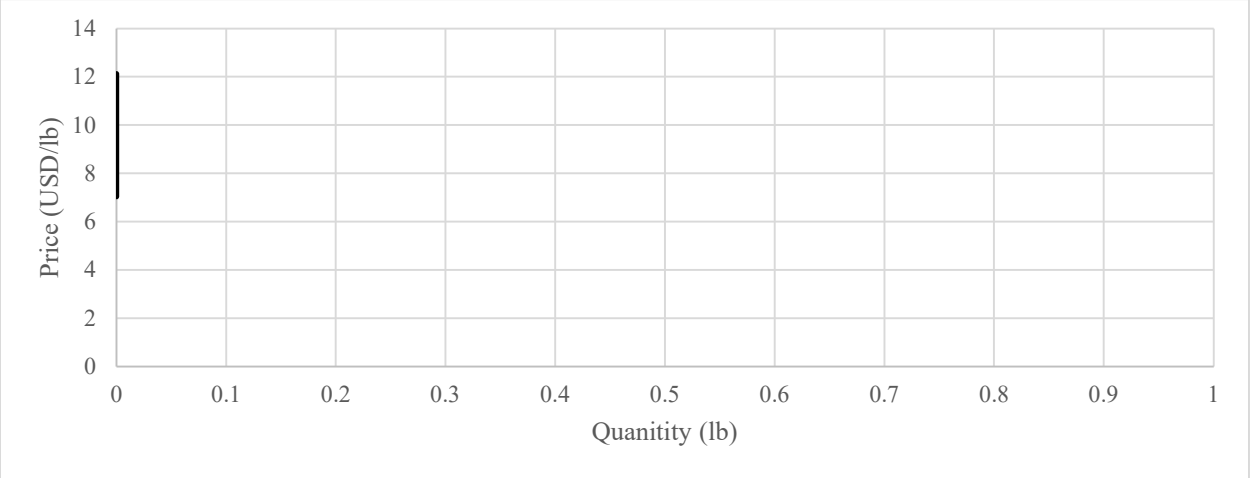

Figure A.8 Base Tobit Grocery Ham

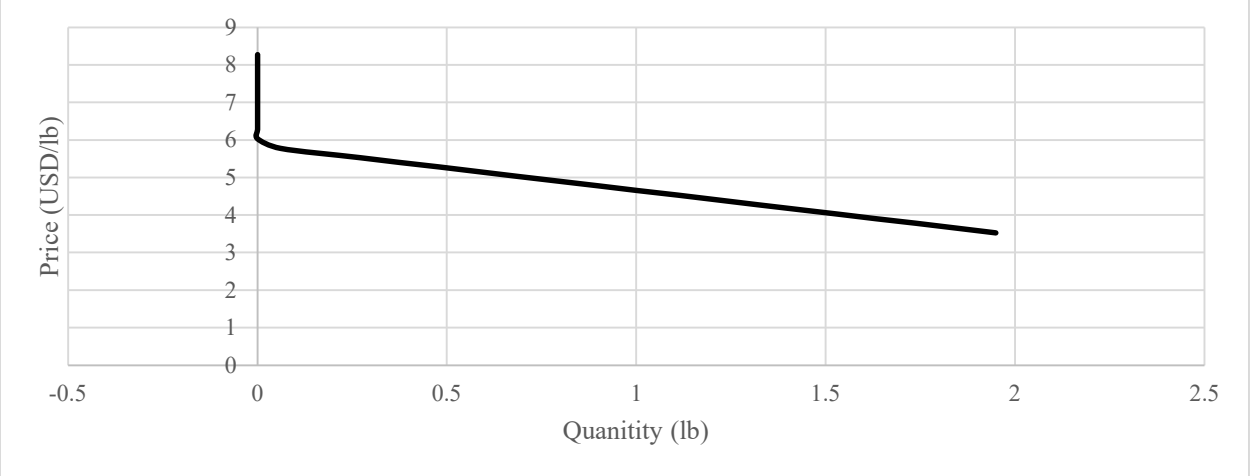

Figure A.9 Base Tobit Local Ham

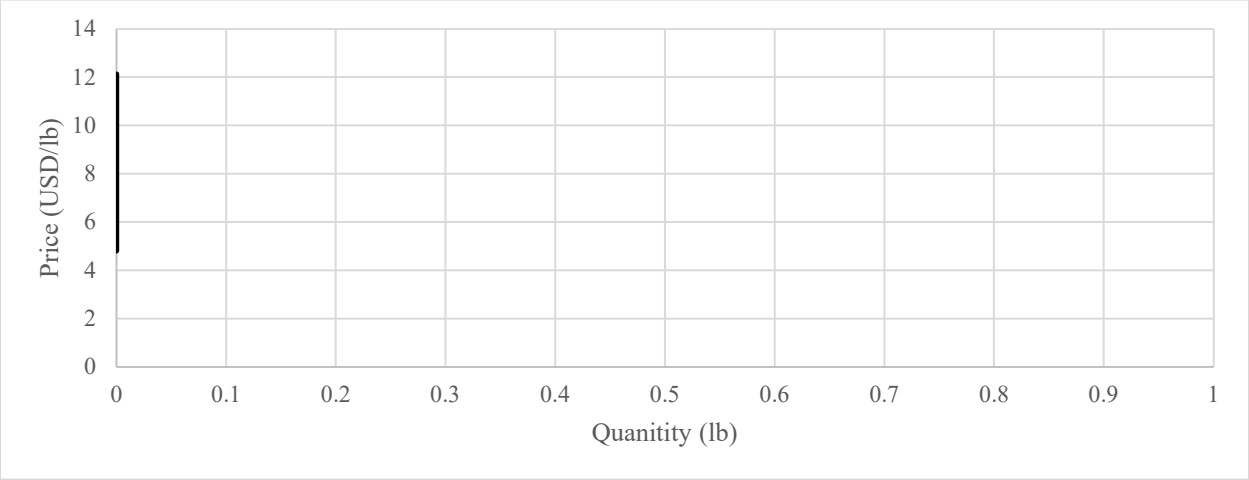

Figure A.10 Base Tobit Grocery Wings

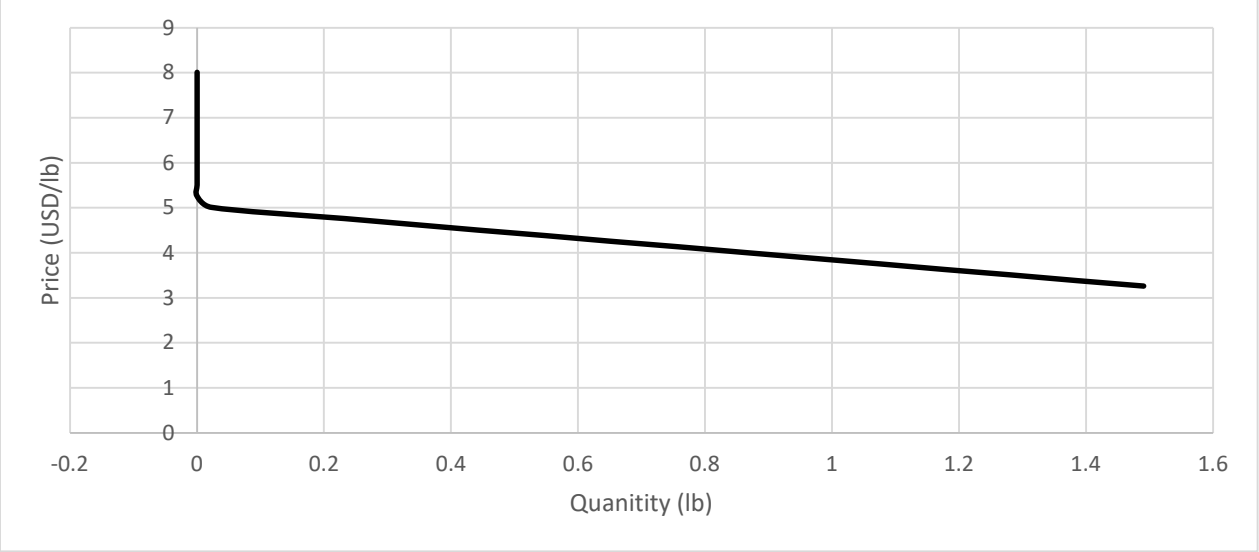

Figure A.11 Base Tobit Local Wings

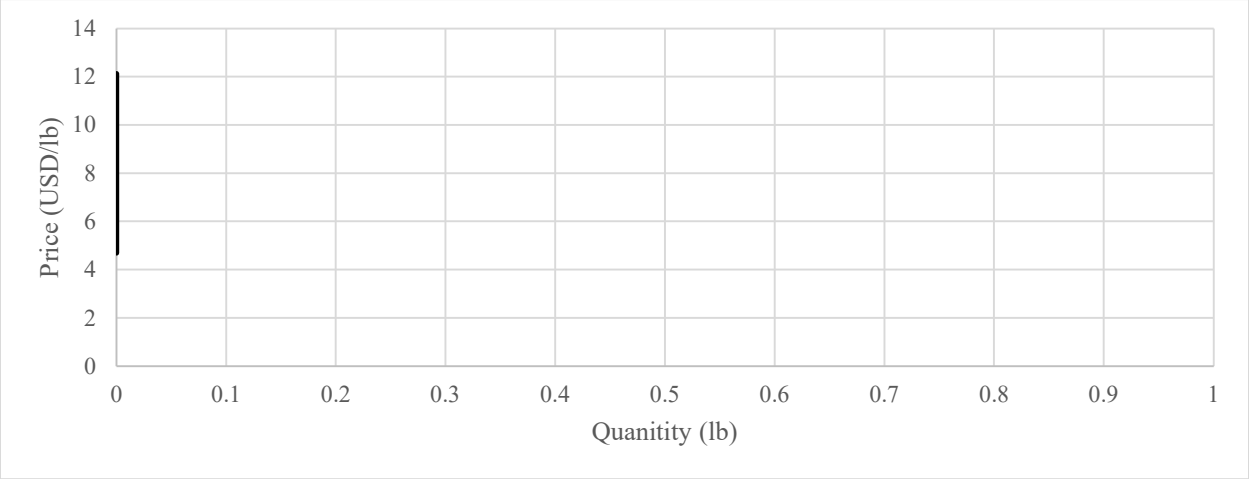

Figure A.12 Base Tobit Grocery Breast

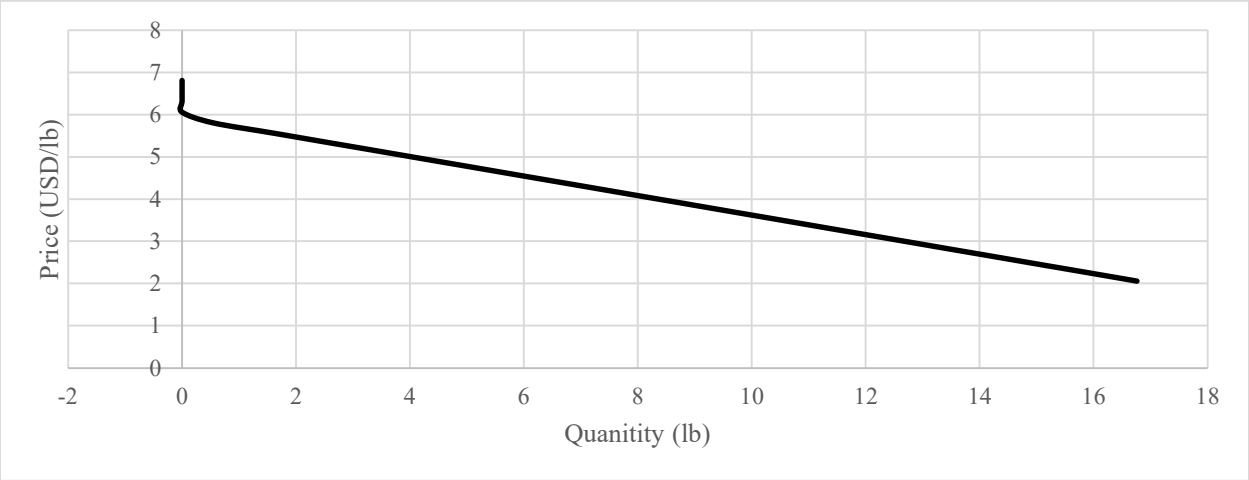

Figure A.13 Base Tobit Local Breast

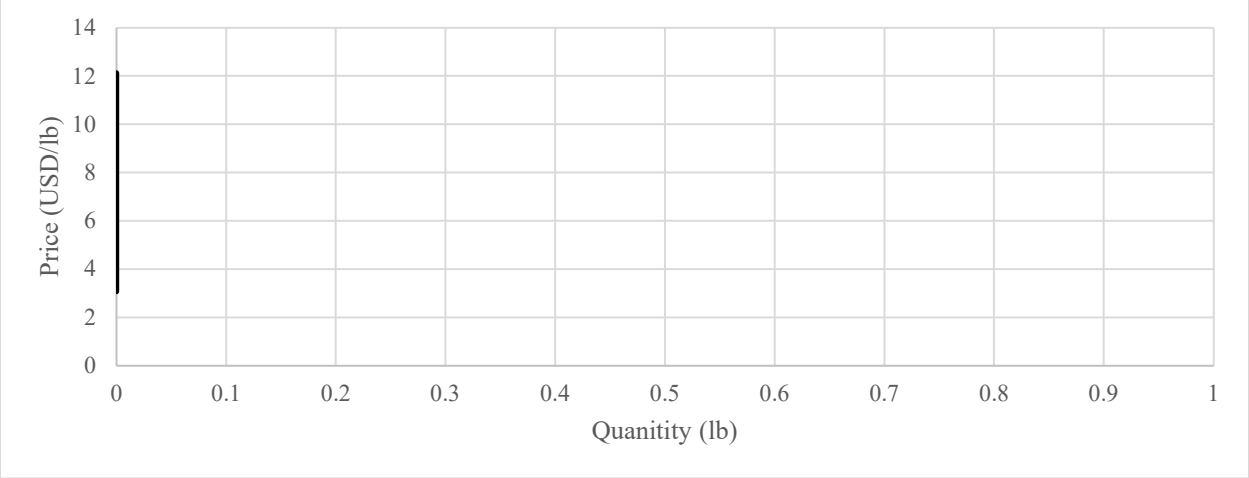

Figure A.14 Base Tobit Grocery Thigh

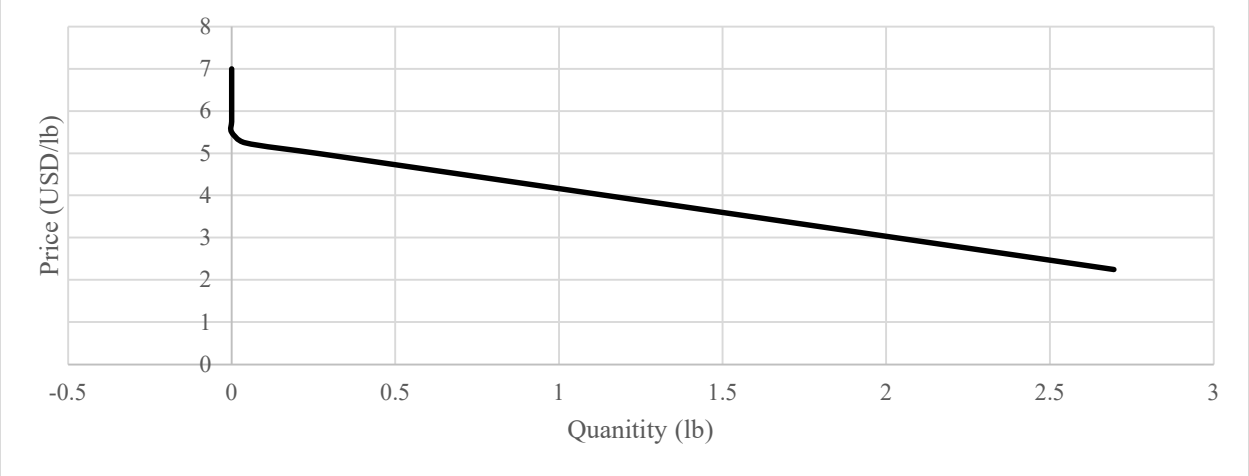

Figure A.15Base Tobit Local Thigh

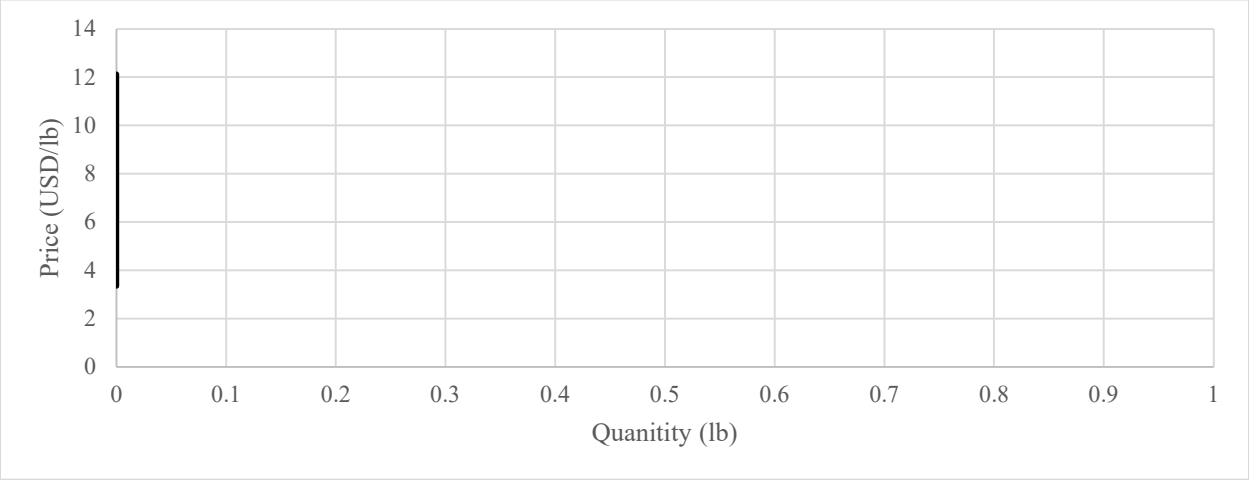

Figure A.16 Full Tobit Grocery Steak

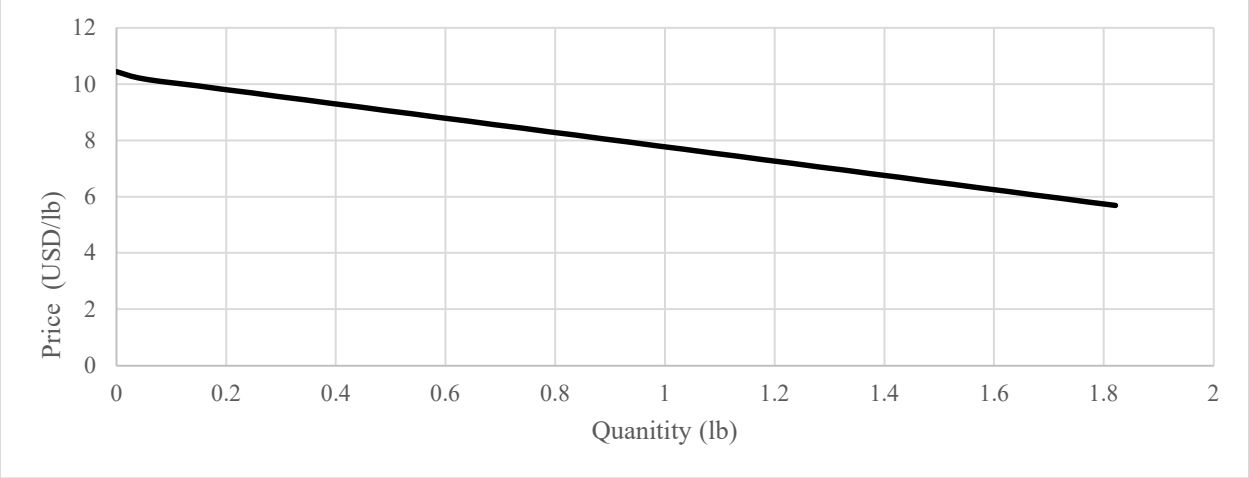

Figure A.17 Full Tobit Local Steak

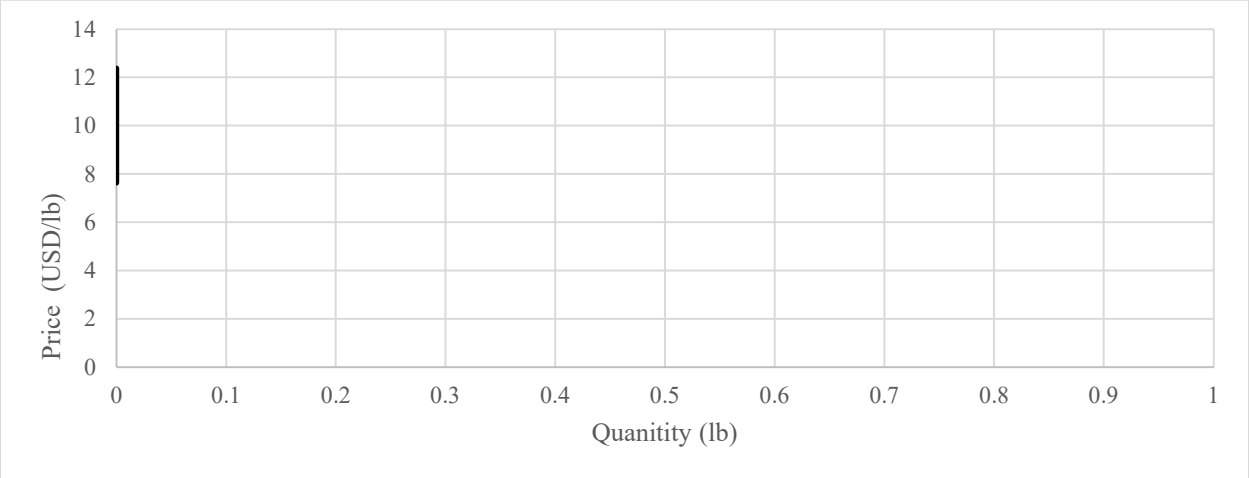

Figure A.18 Full Tobit Grocery Loin

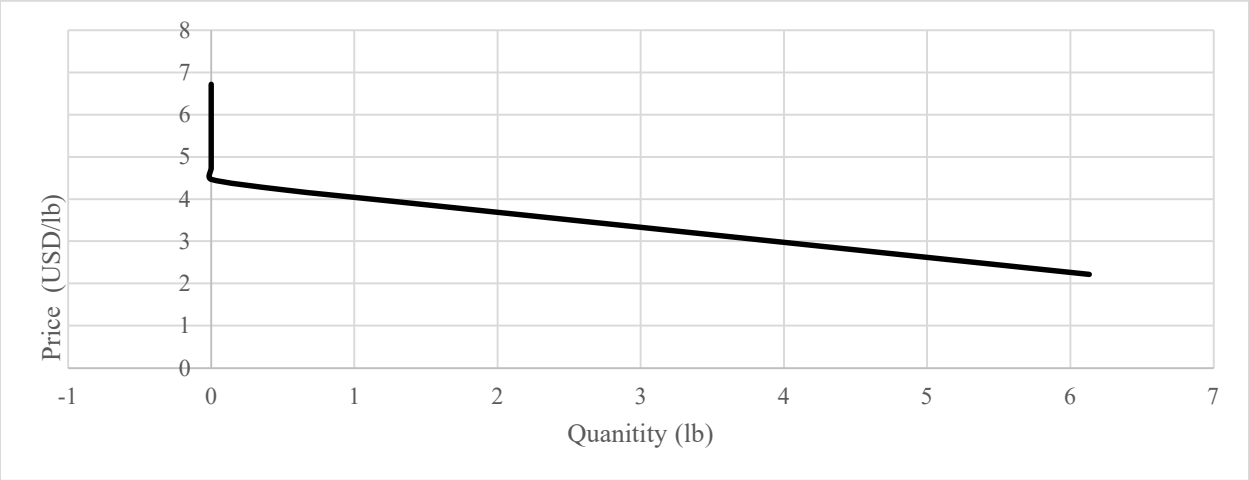

Figure A.19Full Tobit Local Loin

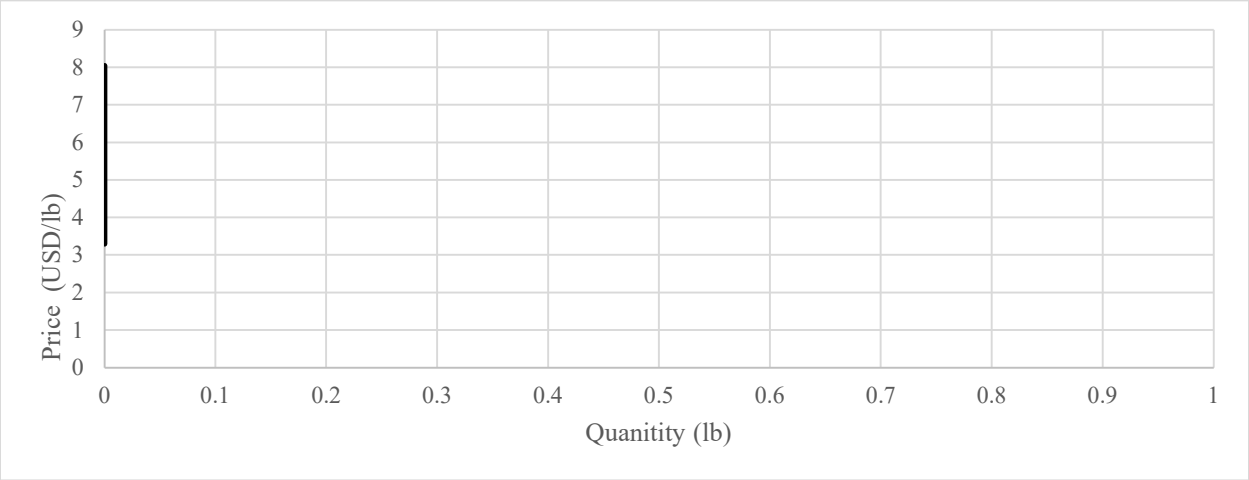

Figure A.20 Full Tobit Grocery Bacon

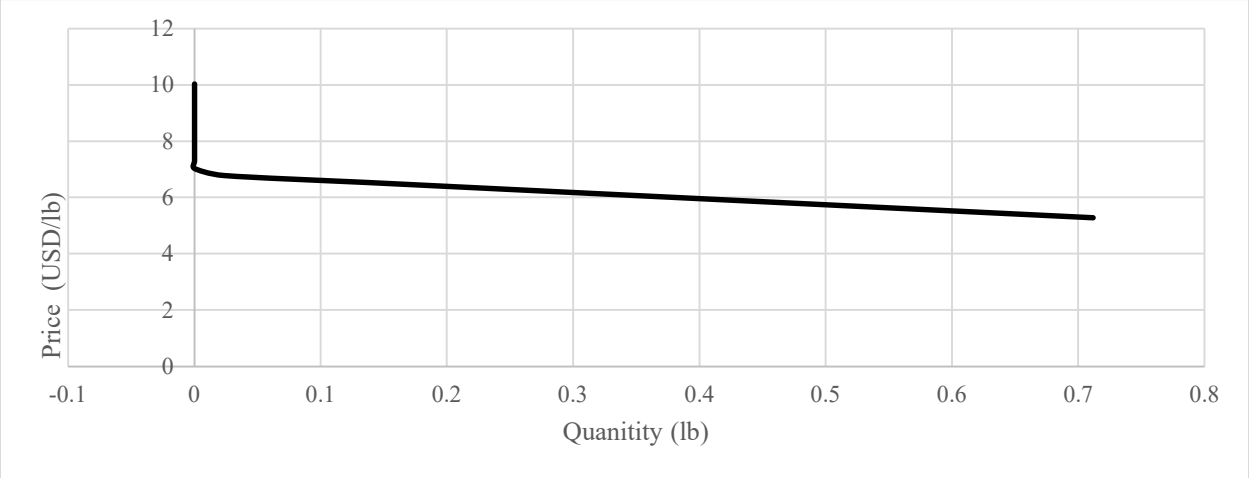

Figure A.21 Full Tobit Local Bacon

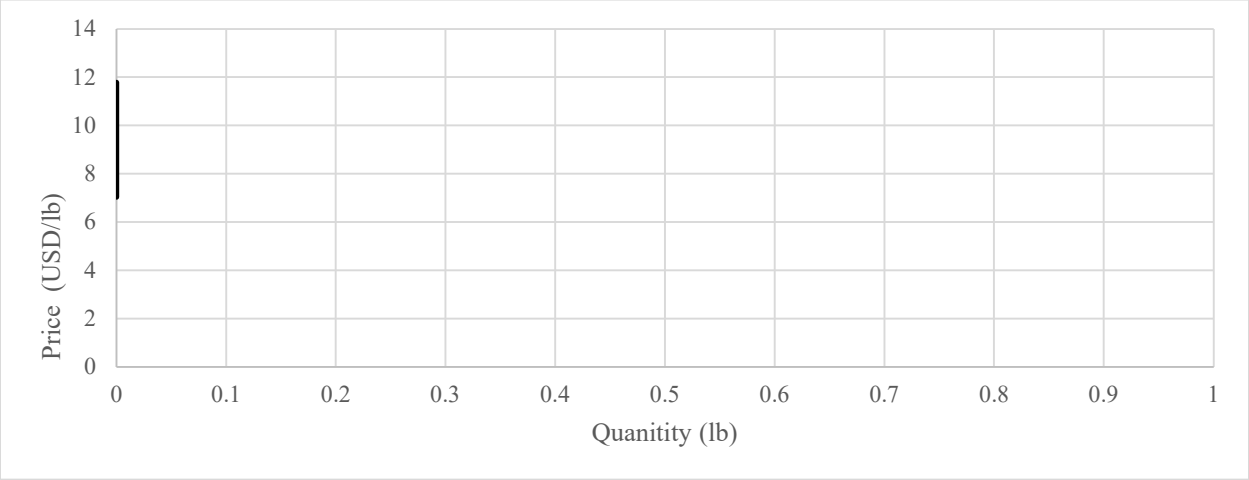

Figure A.22 Full Tobit Grocery Ham

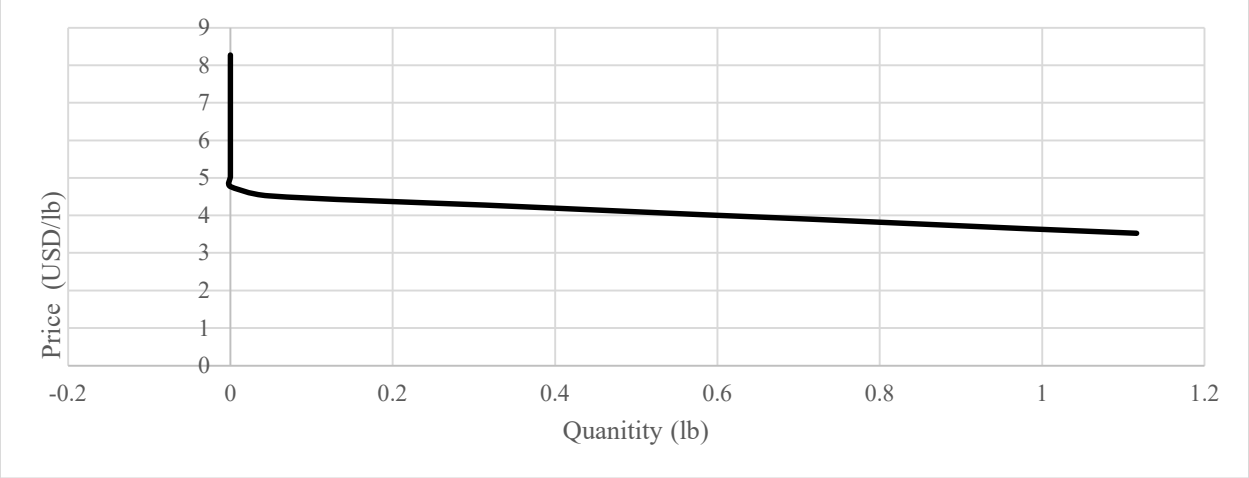

Figure A.23 Full Tobit Local Ham

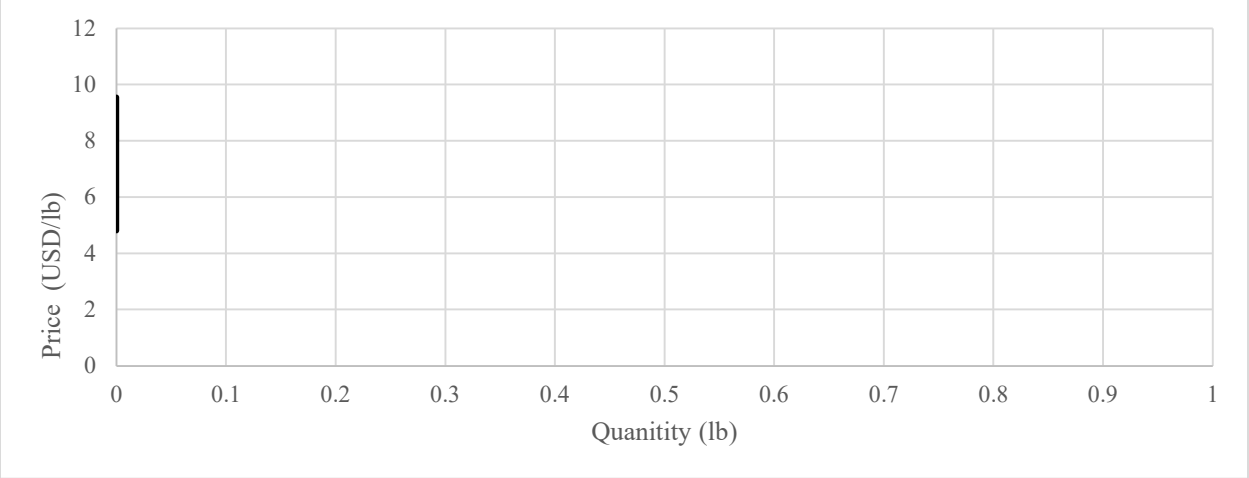

Figure A.24 Full Tobit Grocery Wings

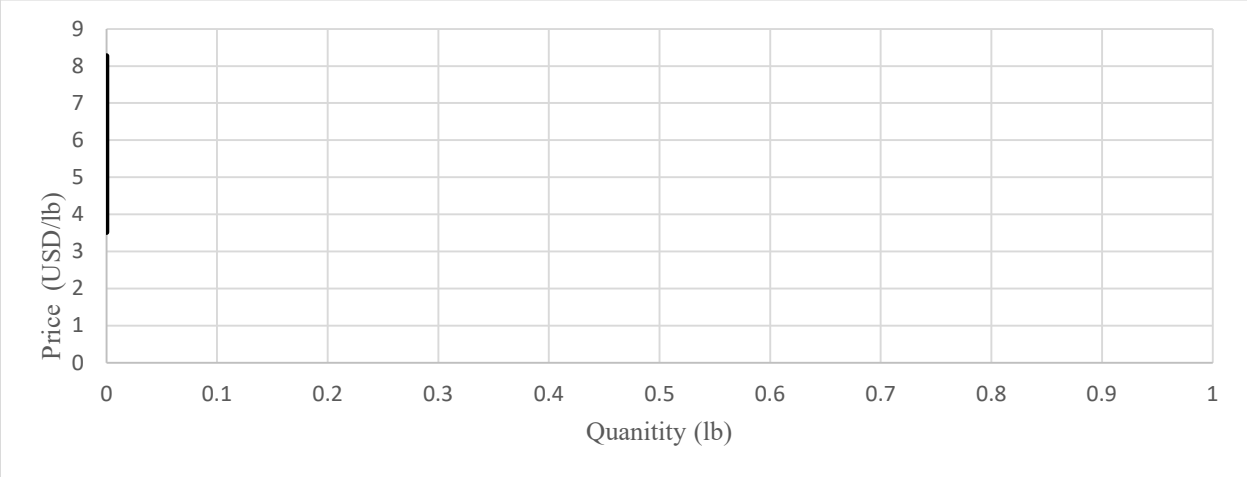

Figure A.25 Full Tobit Local Wings

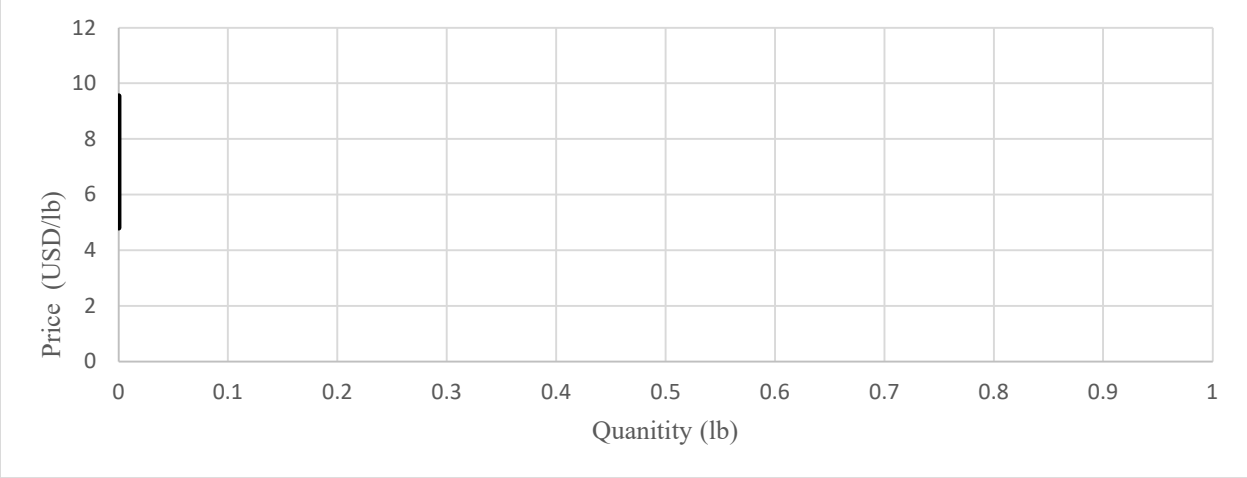

Figure A.26 Full Tobit Grocery Breast

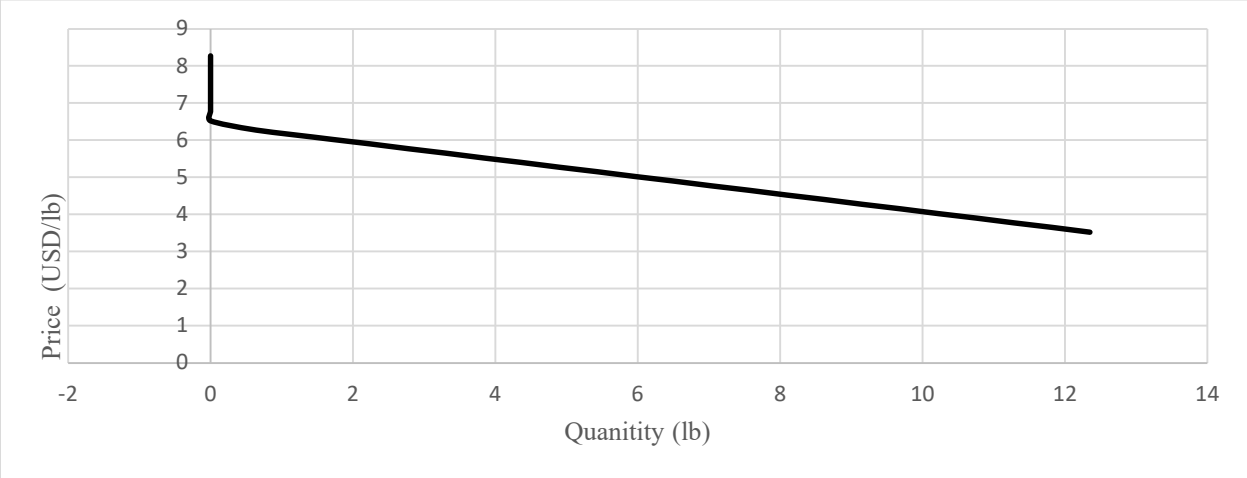

Figure A.27 Full Tobit Local Breast

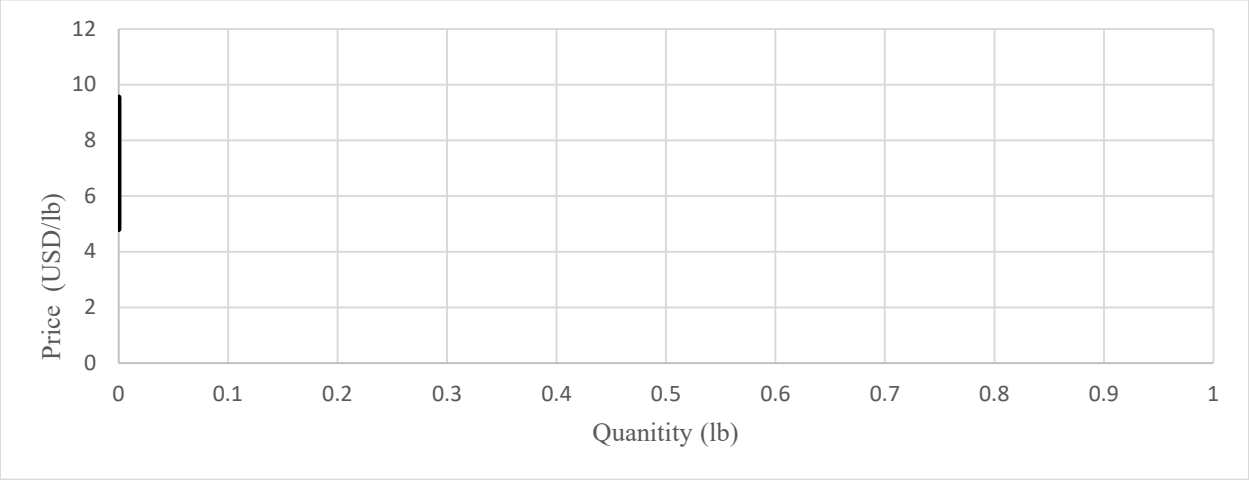

Figure A.28 Full Tobit Grocery Thigh

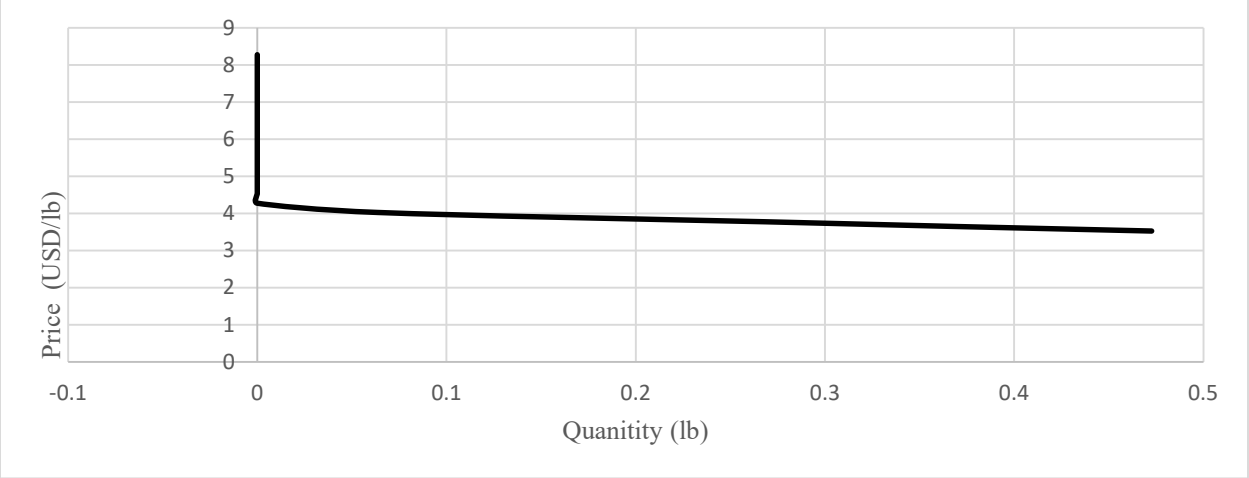

Figure A.3.29 Full Tobit Local Thigh

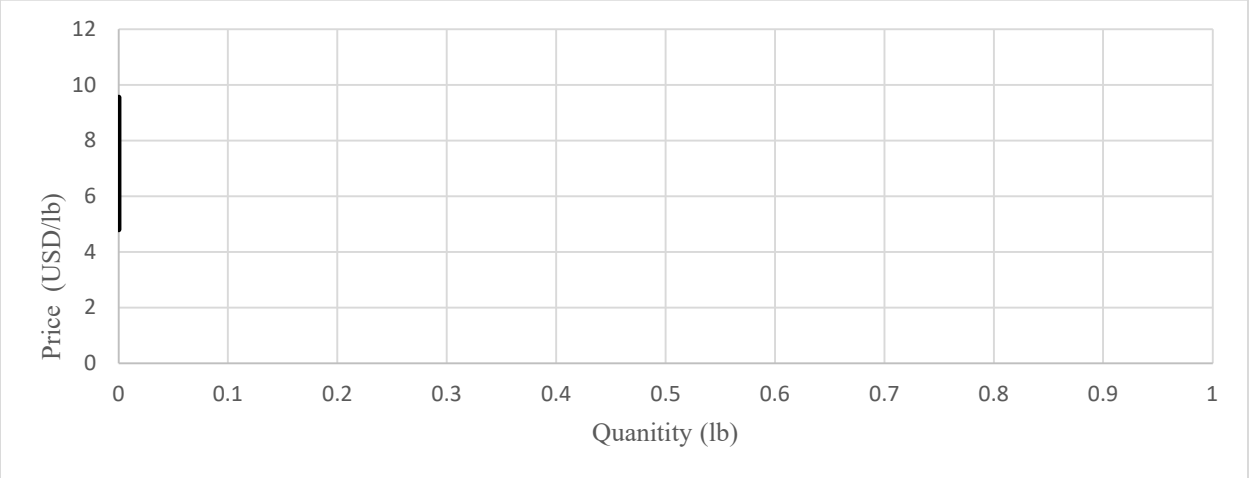

Table A.4 Reginal Breakdown of Processors

	Midwest	*Northeast*	*South*	*West*	*Total*
Number	13	4	1	6	24
Percentage	54.2	16.7	4.2	25.0	100

Figure A.30 Consumer Survey IRB Approval Letter

KANSAS STATE UNIVERSITY | University Research Compliance Office

TO: Glynn Tonsor
Agricultural Economics
Manhattan, KS 66506

Proposal Number: IRB-11125

FROM: Rick Scheidt, Chair
Committee on Research Involving Human Subjects

DATE: 04/06/2022

RE: Proposal Entitled, "Food Consumption (Mar. 2022)."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §104(d), category:Exempt Category 2 Subsection ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Electronically signed by Rick Scheidt on 04/07/2022 7:50 PM ET

203 Fairchild Hall, Manhattan, KS 66502 | (785) 532-3224 | fax: (785) 532-3278

Figure A.31 Processor Survey IRB Approval Letter

KANSAS STATE UNIVERSITY | University Research Compliance Office

TO: Glynn Tonsor
Agricultural Economics
Manhattan, KS 66506

Proposal Number: IRB-11404

FROM: Lisa Rubin, Chair
Committee on Research Involving Human Subjects

DATE: 11/10/2022

RE: Proposal Entitled, "Processor Survey (Nov 2022)."

The Committee on Research Involving Human Subjects / Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is EXEMPT from further IRB review. This exemption applies only to the proposal - as written – and currently on file with the IRB. Any change potentially affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Based upon information provided to the IRB, this activity is exempt under the criteria set forth in the Federal Policy for the Protection of Human Subjects, **45 CFR §104(d), category:Exempt Category 2 Subsection ii.**

Certain research is exempt from the requirements of HHS/OHRP regulations. A determination that research is exempt does not imply that investigators have no ethical responsibilities to subjects in such research; it means only that the regulatory requirements related to IRB review, informed consent, and assurance of compliance do not apply to the research.

Any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Electronically signed by Phill Vardiman on 11/14/2022 11:37 AM ET
On Behalf of IRB Chair

203 Fairchild Hall, Manhattan, KS 66502 | (785) 532-3224 | fax: (785) 532-3278

Figure A.32 Consumer Survey

Survey update (June9 Soft Launch for Matthias)

Survey Flow

Block: IRB_QUALIFY_BaseFreq (14 Questions)

Branch: New Branch
If
If In Beef Is Not Selected
And In Chicken Is Not Selected
And In Pork Is Selected

EmbeddedData
Group = Pork

Branch: New Branch
If
If In Beef Is Not Selected
And In Chicken Is Selected
And In Pork Is Not Selected

EmbeddedData
Group = Chicken

Branch: New Branch
If
If In Beef Is Selected
And In Chicken Is Not Selected
And In Pork Is Not Selected

EmbeddedData
Group = Beef

Branch: New Branch
If
If In Beef Is Selected
And In Pork Is Not Selected
And In Chicken Is Selected

BlockRandomizer: 1 - Evenly Present Elements

EmbeddedData
Group = Beef
EmbeddedData
Group = Chicken

Branch: New Branch
If
If In Beef Is Selected

And In Chicken Is Not Selected
And In Pork Is Selected

BlockRandomizer: 1 - Evenly Present Elements

EmbeddedData
Group = Pork
EmbeddedData
Group = Beef

Branch: New Branch
If
If In Beef Is Not Selected
And In Chicken Is Selected
And In Pork Is Selected

BlockRandomizer: 1 - Evenly Present Elements

EmbeddedData
Group = Chicken
EmbeddedData
Group = Pork

Branch: New Branch
If
If In Beef Is Selected
And In Chicken Is Selected
And In Pork Is Selected

BlockRandomizer: 1 - Evenly Present Elements

EmbeddedData
Group = Beef
EmbeddedData
Group = Pork
EmbeddedData
Group = Chicken

Branch: New Branch
If
If Group Is Equal to Beef

Standard: Steer (9 Questions)
Standard: Beef (36 Questions)

Branch: New Branch

If

If Group Is Equal to Pork

Standard: Hog (6 Questions)
Standard: Pork (54 Questions)

Branch: New Branch

If

If Group Is Equal to Chicken

Standard: Chicken Whole (3 Questions)
Standard: Chicken (54 Questions)

Branch: New Branch

If

If In Lamb Is Selected

Standard: Lamb (6 Questions)

Branch: New Branch

If

Invalid Logic Click Here to Edit Logic
Invalid Logic Click Here to Edit Logic
Invalid Logic Click Here to Edit Logic

EndSurvey: Advanced

Standard: SocioEcon (13 Questions)
Standard: END (1 Question)

EndSurvey: Advanced

Page Break

Start of Block: IRB_QUALIFY_BaseFreq

INTRO Thank you for participating in this study. The following contains information about this study and your rights as a research participant.

Project Title: Food Consumption

Investigator: Glynn T. Tonsor, Ph.D., Kansas State University

Purpose: This is a web-based survey research study designed to track consumer preferences and sentiments on food consumed at home and away from home. Procedures: Proceeding with the web-based survey will imply your consent to participate in this study. There are about 35 questions focusing on food topics. The survey will take most 10-15 minutes to complete.
Risks of Participation: The risks associated with this study are minimal. The risks are not greater than those ordinarily encountered in daily life. Moreover, you may stop the survey at any time.
Benefits: This research will assist researchers anticipate the demand for various food products.
Confidentiality: The researchers will not have access to your name. At no point will a data file be constructed in which your name is linked with your responses. The data will be stored by the principal investigator in his office with no intention to destroy the data.
Contacts: If you have any questions or concerns about this project, please contact Dr. Glynn Tonsor, (785) 532-1518, gtonsor@ksu.edu. If you have questions about your rights as a research volunteer, you may contact Rick Scheidt, IRB Chair, 785-532-1483 or rscheidt@ksu.edu.
Participant Rights: Your participation in this research in voluntary. You can discontinue the survey at any time without reprisal or penalty.

Consent: I have read and fully understand the consent form. I understand that my participation is voluntary. By clicking below, I am indicating that I freely and voluntarily and agree to participate in this study and I also acknowledge that I am at least 18 years of age.

Page Break

GroceryPurchasing What is your level of involvement in groceries purchasing?

- ○ I purchase most or all groceries for my household (1)
- ○ I purchase about half of all groceries for my household (2)
- ○ I purchase less than half of all groceries for my household (3)
- ○ I am not normally involved in groceries purchasing (5)
- ○ Not sure of my level of purchasing an involvement (6)

Skip To: END_DQ If GroceryPurchasing = I am not normally involved in groceries purchasing

Page Break

Age What is your current age?

_____

Skip To: END_DQ If Condition: What is your current age? Is Less Than 18. Skip To: Thank you for your time. To prope....

Page Break

Diet Which of the following statements best describes your personal diet?

- ○ Vegan Vegetarian (do not eat meat, fish, dairy, eggs, honey or any food derived from animals) (1)
- ○ Vegetarian (do not eat meat or fish, but do eat dairy and eggs) (2)
- ○ Flexitarian/Semi-Vegetarian (mostly follow a vegetarian diet, but occasionally eat meat or fish) (3)
- ○ Regularly consume meat, fish/seafood, or products derived from animals (4)
- ○ None of the above (5)

Skip To: END_DQ If Diet = Vegan Vegetarian (do not eat meat, fish, dairy, eggs, honey or any food derived from animals)

Skip To: END_DQ If Diet = Vegetarian (do not eat meat or fish, but do eat dairy and eggs)

Page Break

Meat In the last month which of the following proteins have you consumed? (Check all that apply)

- ☐ Beef (1)
- ☐ Chicken (2)
- ☐ Pork (3)
- ☐ Lamb (4)
- ☐ Other (5)
- ☐ None (6)

Skip To: END_DQ If Meat = None

Page Break

Grocerypurchase How often do you purchase food from either grocery or other markets?

- ○ Daily (1)
- ○ Weekly (2)
- ○ Monthly (3)
- ○ Less than once per month (4)

Page Break

meatpurchase How often do you purchase meat?

- ○ Daily (1)
- ○ Weekly (2)
- ○ Monthly (3)
- ○ Less than once per month (4)

Page Break

Locationofmeat Where do you primarily purchase meat?

- ○ Restaurants (1)
- ○ Local grocery store (2)
- ○ National/regional ("chain") grocery stores (3)
- ○ Farmers market (4)
- ○ Butcher or local meat shop (5)
- ○ Other (6)
- ○ Not applicable (7)

Page Break

amountofmeat When you purchase meat, how many pounds do you usually buy at a time?

▼ 1 lb or less (1) ... Not Applicable (5)

Page Break

consumeofmeat How often do you consume meat?

- ○ Daily (1)
- ○ Two to six times a week (2)
- ○ Once a Week (4)
- ○ One to three times a month (5)
- ○ Less than once a month (6)
- ○ Not applicable (7)

Page Break

FreezerQ1 Please select the type and number of freezers you have

Image:Picture3 (1)	▼ None (1) ... 5 or more (7)
Image:Picture4 (2)	▼ None (1) ... 5 or more (7)
Image:Picture1 (3)	▼ None (1) ... 5 or more (7)
Image:Picture2 (4)	▼ None (1) ... 5 or more (7)

Page Break

timeinfreezer How long do you store meat in a freezer?

- ○ 1 Month or less (1)
- ○ 1-2 Months (2)
- ○ Longer than 2 months (3)
- ○ Never (4)

Page Break

Cheap talk Research has shown that consumers will state that they are willing to pay a certain amount for a product in a survey but will not be willing to pay the amount when they are at the store so, please answer the following questions carefully and with this in mind.

Page Break

Display This Question:

If GroceryPurchasing = I am not normally involved in groceries purchasing

Or Or What is your current age? Text Response Is Less Than 18

Or Diet = Vegan Vegetarian (do not eat meat, fish, dairy, eggs, honey or any food derived from animals)

Or Diet = Vegetarian (do not eat meat or fish, but do eat dairy and eggs)

END_DQ Thank you for your time.

To properly record and complete this session, please ${e://Field/psid}">CLICK HERE

End of Block: IRB_QUALIFY_BaseFreq

Start of Block: Steer

SteerQtrp6 Would you be willing to purchase 1/4 of a steer (125 lbs of beef) for $750 or $6.00/lbs?

Image:Steer (8)	▼ Yes (7) ... No (8)

Page Break

SteerQtrp5 Would you be willing to purchase 1/4 of a steer (125 lbs of beef) for $625 or $5.00/lbs?

Image:Steer (4)	▼ Yes (7) ... No (8)

Page Break

SteerQtrp7 Would you be willing to purchase 1/4 of a steer (125 lbs of beef) for $875 or $7.00/lbs?

Image:Steer (8)	▼ Yes (7) ... No (8)

Page Break

SteerHalfp6 Would you be willing to purchase 1/2 of a steer (250 lbs of beef) for $1,500 or $6.00/lbs?

Image:Steer (4)	▼ Yes (7) ... No (8)

Page Break

steerHalfp6.5 Would you be willing to purchase 1/2 of a steer (250 lbs of beef) for $1,625 or $6.50/lbs?

Image:Steer (4)	▼ Yes (7) ... No (8)

Page Break

steerhalfp5.5 Would you be willing to purchase 1/2 of a steer (250 lbs of beef) for $1,375 or $5.50/lbs?

Image:Steer (4)	▼ Yes (7) ... No (8)

Page Break

Steerwholep5 Would you be willing to purchase a whole steer (500 lbs of beef) for $2,500 or $5.00/lbs?

Image:Steer (4)	▼ Yes (7) ... No (8)

Page Break

steerwholep5.25 Would you be willing to purchase a whole steer (500 lbs of beef) for $2,625 or $5.25/lbs?

Image:Steer (8)	▼ Yes (7) ... No (8)

Page Break

Steerwholep4.75 Would you be willing to purchase a whole steer (500 lbs of beef) for $2,375 or $4.75/lbs?

Image:Steer (8)	▼ Yes (8) ... No (9)

End of Block: Steer

Start of Block: Beef

steakgp7.5lp9.4 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $7.50/lb (1)	1lb package of Ribeye Steak from Local Butcher at $9.40/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp7.5lp11.7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $7.50/lb (1)	1lb package of Ribeye Steak from Local Butcher at $11.70/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp7.5lp7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $7.50/lb (1)	1lb package of Ribeye Steak from Local Butcher at $7.00/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp9.4lp9.40 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $9.40/lb (1)	1lb package of Ribeye Steak from Local Butcher at $9.40/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp9.4lp11.7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $9.40/lb (1)	1lb package Ribeye Steak from Local Butcher at $11.70/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp9.4lp7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $9.40/lb (1)	1lb package of Ribeye Steak from Local Butcher at $7.00/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp5.6lp7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $5.60/lb (1)	1lb package of Ribeye Steak from Local Butcher at $7.00/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp5.6lp9.4 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $ 5.60/lb (1)	1lb of package Ribeye Steak from Local Butcher at $9.40/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp5.6lp11.7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $5.60/lb (1)	1lb package of Ribeye Steak from Local Butcher at $11.70/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp7.5l3lblp9.4 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $7.50/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $9.40/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp7.5l3lblp11.7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $7.50/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $11.70/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp7.5l3lblp7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $7.50/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $7.00/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp9.4l3lblp7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $9.40/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $7.00/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp9.4l3lblp9.4 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $9.40/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $9.40/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp9.4l3lblp11.7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $9.40/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $11.70/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp5.6l3lblp11.7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $5.60/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $11.70/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgl5.6l3lblp9.4 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $5.60/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $9.40/lb (2)	None (3)
Number of Packages (1)			

Page Break

steakgp5.6l3llp7 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Ribeye Steak from a National/Regional Grocery Store at $5.60/lb (1)	3 lb package of Ribeye Steak from Local Butcher at $7.00/lb (2)	None (3)
Number of Packages (1)			

Page Break

gbgp4.6l3lblp5.57 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $4.60/lb (1)	3lb Packages of Ground Beef from Local Butcher at $5.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp4.6l3lbllp7.2 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $4.60/lb (1)	3lb Packages of Ground Beef from Local Butcher at $7.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp4.6l3lblp4.3 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $4.60/lb (1)	3lb Packages of Ground Beef from Local Butcher at $4.30/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75l3lblp5.75 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $5.75/lb (1)	3lb Packages of Ground Beef from Local Butcher at $5.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75l3lblp7.2 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $5.75/lb (1)	3lb Packages of Ground Beef from Local Butcher at $7.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75l3lblp4.3 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $5.75/lb (1)	3lb Packages of Ground Beef from Local Butcher at $4.30/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp3.45l3lblp5.75 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $3.45/lb (1)	3lb Packages of Ground Beef from Local Butcher at $5.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75l3lblp7.2 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $3.45/lb (1)	3lb Packages of Ground Beef from Local Butcher at $7.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75l3lblp4.3 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $3.45/lb (1)	3lb Packages of Ground Beef from Local Butcher at $4.30/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp4.6lp5.75 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $4.60/lb (1)	1lb Packages of Ground Beef from Local Butcher at $5.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp4.6lp7.2 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $4.60/lb (1)	1lb Packages of Ground Beef from Local Butcher at $7.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp4.6lp4.3 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $4.60/lb (1)	1lb Packages of Ground Beef from Local Butcher at $4.30/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75lp5.75 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $5.75/lb (1)	1lb Packages of Ground Beef from Local Butcher at $5.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75lp7.2 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $5.75/lb (1)	1lb Packages of Ground Beef from Local Butcher at $7.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp5.75lp4.30 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $5.75/lb (1)	1lb Packages of Ground Beef from Local Butcher at $4.30/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp3.45lp5.75 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $3.45/lb (1)	1lb Packages of Ground Beef from Local Butcher at $5.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp3.45lp7.2 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $3.45/lb (1)	1lb Packages of Ground Beef from Local Butcher at $7.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

gbgp3.45lp4.3 How many of each package would you be willing to purchase at these prices? (Please enter the package quantity for each or mark none.)

	1lb Ground Beef from a National/Regional Grocery Store at $3.45/lb (1)	1lb Packages of Ground Beef from Local Butcher at $4.30/lb (2)	None (3)
Number Purchased (1)			

End of Block: Beef

Start of Block: Hog

hoghalfp4.29 Would you be willing to purchase 1/2 hog 105 lbs for $450 or $4.29/lb?

Image:Screenshot 2022 03 14 125920 (1)	▼ Yes (1) ... No (2)

Page Break

hoghalfp5.48 Would you be willing to purchase 1/2 hog 105 lbs for $575 or $5.48/lb?

Image:Screenshot 2022 03 14 125920 (1)	▼ Yes (1) ... No (2)

Page Break

hoghalfp5.95 Would you be willing to purchase 1/2 hog 105 lbs for $625 or $5.95/lb?

Image:Screenshot 2022 03 14 125920 (1)	▼ Yes (1) ... No (2)

Page Break

hogwholep3.45 Would you be willing to purchase a whole hog 210 lbs for $725 or $3.45/lb?

Image:Screenshot 2022 03 14 125920 (1)	▼ Yes (1) ... No (2)

Page Break

hogwholep4.05 Would you be willing to purchase a whole hog 210 lbs for $850 or $4.05/lb?

Image:Screenshot 2022 03 14 125920 (1)	▼ Yes (1) ... No (2)

Page Break

hogwholep4.64 Would you be willing to purchase a whole hog 210 lbs for $975 or $4.64/lb?

Image:Screenshot 2022 03 14 125920 (1)	▼ Yes (1) ... No (2)

End of Block: Hog

Start of Block: Pork

loing10p4l30p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $4.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p4l30p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $4.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p4l30p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $4.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p5l30p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $5.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p5l30p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $5.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p5l30p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $5.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p3l30p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $3.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p3l30p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $3.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p3l30p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10lbs package Pork Loin from a National/Regional Grocery Store at $3.00/lb (1)	Two, 15 lbs packages or 30lbs Pork Loin from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p4l15p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $4.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p4l15p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $4.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p4l15p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $4.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p5l15p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $5.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p5l15p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $5.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p5l15p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $5.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p3l15p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $3.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p3l15p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $3.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

loing10p3l15p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lbs package Pork Loin from a National/Regional Grocery Store at $3.00/lb (1)	15 lbs package Pork Loin from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p7l2p8.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $7.00/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $8.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p7l2p11 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $7.00/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $11.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p7l2p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $7.00/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p8.75l2p8.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $8.75/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $8.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p8.75l2p11 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $8.75/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $11.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p8.75l2p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $8.75/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p5.25l2p8.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $5.25/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $8.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p5.25l2p11 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $5.25/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $11.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacong1p5.25l2p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from National/Regional Grocery Store at $5.25/lb (1)	Two, 1 lbs packages or 2lbs Bacon from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp7lp8.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $7.00/lb (1)	1 lb package of Bacon from Local Butcher at $8.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp7lp11 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $7.00/lb (1)	1 lb package of Bacon from Local Butcher at $11.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp7lp6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $7.00/lb (1)	1 lb package of Bacon from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp8.75lp8.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $8.75/lb (1)	1 lb package of Bacon from Local Butcher at $8.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp8.75lp11 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $8.75/lb (1)	1 lb package of Bacon from Local Butcher at $11.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp8.75lp6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $8.75/lb (1)	1 lb package of Bacon from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp5.25lp8.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $5.25/lb (1)	1 lb package of Bacon from Local Butcher at $8.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp5.25lp11 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $5.25/lb (1)	1 lb package of Bacon from Local Butcher at $11.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

bacongp5.25lp6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	1 lb package of Bacon from a National/Regional Grocery Store at $5.25/lb (1)	1 lb package of Bacon from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p5.25l20p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $5.25/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p5.25l20p8.2 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $5.25/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $8.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p5.25l20p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $5.25/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p6.5l20p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $6.50/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p6.5l20p8.2 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $6.50/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $8.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p6.5l20p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $6.50/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p4l20p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $4.00/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p4l20p8.2 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $4.00/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $8.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p4l20p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from a National/Regional Grocery Store at $4.00/lb (1)	Two, 10 lbs Hams or 20lbs from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p5.25l10p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $5.25/lb (1)	10 lbs Ham from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p5.25l10p8.2 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $5.25/lb (1)	10 lbs Ham from Local Butcher at $8.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p5.25l10p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $5.25/lb (1)	10 lbs Ham from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p6.5l10p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $6.50/lb (1)	10 lbs Ham from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p6.5l10p8.2 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $6.50/lb (1)	10 lbs Ham from Local Butcher at $8.20/lb (2)	None (3)
Number Purchased (1)			

Hamg10p6.5l10p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $6.50/lb (1)	10 lbs Ham from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Hamg10p4l10p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $4.00/lb (1)	10 lbs Ham from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p4l10p8.2 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $4.00/lb (1)	10 lbs Ham from Local Butcher at $8.20/lb (2)	None (3)
Number Purchased (1)			

Page Break

Hamg10p4l10p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	10 lb Ham from National/Regional Grocery Store at $4.00/lb (1)	10 lbs Ham from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

End of Block: Pork

Start of Block: Chicken Whole

Chickenp2.86 Would you be willing to purchase a whole chicken 3.5 lbs for $10 or $2.86/lb?

Image:Screenshot 2022 03 14 125936 (1)	▼ Yes (1) ... No (2)

Page Break

Chickenp4.29 Would you be willing to purchase a whole chicken 3.5 lbs for $15 or $4.29/lb?

Image:Screenshot 2022 03 14 125936 (1)	▼ Yes (1) ... No (2)

Page Break

Chickenp5.71 Would you be willing to purchase a whole chicken 3.5 lbs for $20 or $5.71/lb?

Image:Screenshot 2022 03 14 125936 (1)	▼ Yes (1) ... No (2)

End of Block: Chicken Whole

Start of Block: Chicken

cbg2p3.8l5p4.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $3.80/lb (1)	5 lbs package Chicken Breast from Local Butcher at $4.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p3.8l5p6 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $3.80/lb (1)	5 lbs package Chicken Breast from Local Butcher at $6.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p3.8l5p4.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $3.80/lb (1)	5 lbs package Chicken Breast from Local Butcher at $4.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p4.75l5p4.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $4.75/lb (1)	5 lbs package Chicken Breast from Local Butcher at $4.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p4.75l5p6 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $4.75/lb (1)	5 lbs package Chicken Breast from Local Butcher at $6.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p4.75l5p3.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $4.75/lb (1)	5 lbs package Chicken Breast from Local Butcher at $3.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p2.85l5p4.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $2.85/lb (1)	5 lbs package Chicken Breast from Local Butcher at $4.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p2.85l5p6 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $2.85/lb (1)	5 lbs package Chicken Breast from Local Butcher at $6.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p2.85l5p3.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $2.85/lb (1)	5 lbs package Chicken Breast from Local Butcher at $3.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p3.8l2p4.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $3.80/lb (1)	2 lbs package Chicken Breast from Local Butcher at $4.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p3.8l2p6 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $3.80/lb (1)	2 lbs package Chicken Breast from Local Butcher at $6.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p3.8l2p3.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $3.80/lb (1)	2 lbs package Chicken Breast from Local Butcher at $3.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p4.75l2p4.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $4.75/lb (1)	2 lbs package Chicken Breast from Local Butcher at $4.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p4.75l2p6 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $4.75/lb (1)	2 lbs package Chicken Breast from Local Butcher at $6.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p4.75l2p3.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $4.75/lb (1)	2 lbs package Chicken Breast from Local Butcher at $3.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p2.85l2p4.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $2.85/lb (1)	2 lbs package Chicken Breast from Local Butcher at $4.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p2.85l2p6 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $2.85/lb (1)	2 lbs package Chicken Breast from Local Butcher at $6.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

cbg2p2.85l2p3.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Breast from a National/Regional Grocery Store at $2.85/lb (1)	2 lbs package Chicken Breast from Local Butcher at $3.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p4l5p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $4.00/lb (1)	5 lb package Chicken Thigh from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p4l5p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $4.00/lb (1)	5 lb package Chicken Thigh from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p4l5p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $4.00/lb (1)	5 lb package Chicken Thigh from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p5l5p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs Chicken Thigh from a National/Regional Grocery Store at $5.00/lb (1)	5 lb package Chicken Thigh from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p5l5p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs Chicken Thigh from a National/Regional Grocery Store at $5.00/lb (1)	5 lb package Chicken Thigh from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p5l5p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $5.00/lb (1)	5 lb package Chicken Thigh from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p3l5p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs Chicken Thigh from a National/Regional Grocery Store at $3.00/lb (1)	5 lb packages Chicken Thigh from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p3l5p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs Chicken Thigh from a National/Regional Grocery Store at $3.00/lb (1)	5 lb packages Chicken Thigh from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p3l5p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs Chicken Thigh from a National/Regional Grocery Store at $3.00/lb (1)	5 lb packages Chicken Thigh from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p4l3p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $4.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p4l3p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $4.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p4l3p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $4.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p5l3p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $5.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p5l3p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $5.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p5l3p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $5.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p3l3p5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $3.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $5.00/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p3l3p6.25 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $3.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $6.25/lb (2)	None (3)
Number Purchased (1)			

Page Break

CTg3p3l3p3.75 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	3 lbs package Chicken Thigh from a National/Regional Grocery Store at $3.00/lb (1)	3 lb package Chicken Thigh from Local Butcher at $3.75/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p4L4p4.9 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $4.00/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $4.90/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p4L4p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $4.00/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p4L4p8.1 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $4.00/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $8.10/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L4p4.9 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $4.90/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L4p8.1 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $8.10/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L4p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p6.5L4p4.9 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $6.50/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $4.90/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p6.5L4p8.1 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $6.50/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $8.10/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p6.5L4p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $6.50/lb (1)	Two, 2 lb packages or 4lbs Chicken Thigh from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L2p4.9 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $4.90/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L2p8.1 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $8.10/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L2p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p3.9L2p8.1 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $3.90/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $8.10/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p3.9L2p4.9 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $3.90/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $4.90/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p3.9L2p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $3.90/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $6.50lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L2p4.9 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $4.90/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L2p8.1 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $8.10/lb (2)	None (3)
Number Purchased (1)			

Page Break

CWG2p5.2L2p6.5 How many of each package would you be willing to purchase at these prices? (Please enter the number of each type of package would you want to purchase or mark none.)

	2 lbs package Chicken Wings from a National/Regional Grocery Store at $5.20/lb (1)	2 lb packages Chicken Thigh from Local Butcher at $6.50/lb (2)	None (3)
Number Purchased (1)			

Page Break

End of Block: Chicken

Start of Block: Lamb

Lambhalfp15.5 Would you be willing to purchase 1/2 a lamb 24.2 lbs for $375 or $15.50/lb?

Image:Screenshot 2022 03 14 125953 (1)	▼ Yes (1) ... No (2)

Page Break

Lambhalfp14.5 Would you be willing to purchase 1/2 a lamb 24.2 lbs for $350 or $14.50/lb?

Image:Screenshot 2022 03 14 125953 (1)	▼ Yes (1) ... No (2)

Page Break

Lambhalfp16.5 Would you be willing to purchase 1/2 a lamb 24.2 lbs for $400 or $16.50/lb? (Please drag and drop your answer into the box.)

Image:Screenshot 2022 03 14 125953 (1)	▼ Yes (1) ... No (2)

Page Break

Lambp15.5 Would you be willing to purchase a whole lamb 48.4 lbs for $750 or $15.50/lb?

Image:Screenshot 2022 03 14 125953 (1)	▼ Yes (1) ... No (2)

Page Break

Lambp16 Would you be willing to purchase a whole lamb 48.4 lbs for $775 or $16.00/lb? (Please drag and drop your answer into the box.)

Image:Screenshot 2022 03 14 125953 (1)	▼ Yes (1) ... No (2)

Page Break

Lambp16.5 Would you be willing to purchase a whole lamb 48.4 lbs for $800 or $16.50/lb? (Please drag and drop your answer into the box.)

Image:Screenshot 2022 03 14 125953 (1)	▼ Yes (1) ... No (2)

End of Block: Lamb

Start of Block: SocioEcon

QaboutYou As the survey nears completion, we now will ask some standard questions about you. These questions will be used to assure our study is representative of the U.S. population.

Page Break

Gender What do you identify as?

- ○ Male (1)
- ○ Female (3)
- ○ Transgender (4)
- ○ Prefer Not to Answer (5)

Page Break

MaritalStatus What is your current marital status?

▼ Single, Never Married (1) ... Prefer not to answer (6)

Page Break

Trap Please answer Blue to this question

- Blue (1)
- Green (2)
- Red (3)
- Yellow (4)

Page Break

HHsize How many people, including yourself, live in your household currently?

▼ 1 (1) ... Prefer not to answer (6)

Page Break

KidsU12 Are there children under the age of 12 currently living in your household?

- ○ Yes (1)
- ○ No (2)

Page Break

State In which state do you currently reside?

▼ Alabama (1) ... I do not reside in the United States (53)

Page Break

EDU What is the highest level of education you have completed?

▼ Less than High School (1) ... Prefer not to answer (8)

Page Break

HHincome What is your approximate annual household income before taxes?

▼ Less than $20,000 (1) ... $200,000 or greater (11)

Page Break

WkAtHomeExp What has been your (or your household's) usual WEEKLY expense for food bought during grocery shopping (consider both in-person and online)?

- ○ less than $20 (1)
- ○ $20 - $39 (2)
- ○ $40 - $59 (3)
- ○ $60 - $79 (4)
- ○ $80 - $99 (5)
- ○ $100 - $119 (6)
- ○ $120 - $139 (7)
- ○ $140 - $159 (8)
- ○ $160 - $179 (9)
- ○ $180 - $199 (10)
- ○ $200 or more (11)

Page Break

Page Break

HispLatSpanish Are you of Hispanic, Latino, or Spanish origin?

▼ No, not of Hispanic, Latino, or Spanish origin (1) ... Yes, another Hispanic, Latino, or Spanish origin (5)

Skip To: Last_Truth If HispLatSpanish = Yes, Mexican, Mexican Am., Chicano

Skip To: Last_Truth If HispLatSpanish = Yes, Puerto Rican

Skip To: Last_Truth If HispLatSpanish = Yes, Cuban

Skip To: Last_Truth If HispLatSpanish = Yes, another Hispanic, Latino, or Spanish origin

Page Break

Race What is your race?

▼ White (1) ... Two or More Races (16)

Page Break

Last_Truth LAST QUESTION! Did you answer all the questions in this survey to the best of your ability?

It is VERY important that you answer this question truthfully, as your survey answers are taken seriously by scientists and policy-makers.

- ○ Yes (1)
- ○ No, I rushed through the survey at times (2)
- ○ No, I was not fully paying attention at times (3)
- ○ No, for some other reason (4)

Page Break

End of Block: SocioEcon

Start of Block: END

END Thank you for your time!

If you would like to provide any additional comments about this survey or related topics please do so here.

_____

End of Block: END

Figure A.33 Processor Survey

Processor Survey Release

Survey Flow

Standard: Block 20 (1 Question)
Block: Default Question Block (5 Questions)

Branch: New Branch
If
If Which services do you provide? Slaughter only Is Selected
And Which services do you provide? Processing only Is Not Selected
And Which services do you provide? Both slaughter and process Is Not Selected

EmbeddedData
Group = Slaughter

Branch: New Branch
If
If Which services do you provide? Processing only Is Selected
And Which services do you provide? Slaughter only Is Not Selected
And Which services do you provide? Both slaughter and process Is Not Selected

EmbeddedData
Group = Processing

Branch: New Branch
If
If Which services do you provide? Both slaughter and process Is Selected

EmbeddedData
Group = Both

Branch: New Branch
If
If Group Is Equal to Slaughter

Standard: Slaughter (1 Question)

Branch: New Branch
If
If Group Is Equal to Processing

Standard: Process (1 Question)

Branch: New Branch
If
If Group Is Equal to Both

Standard: Slaughter (1 Question)
Standard: Process (1 Question)

Standard: Expansion (2 Questions)

Branch: New Branch
If
If Do you consider the following barriers to these goals? (Check all that apply) Financing Is Selected

Standard: Interest Rata (3 Questions)
Standard: Cost Share (3 Questions)
Standard: Finance Question (1 Question)

Branch: New Branch
If
If Do you consider the following barriers to these goals? (Check all that apply) Labor Availability Is Selected

Standard: Labor (1 Question)
Standard: Labor openend (1 Question)

Branch: New Branch
If
If Do you consider the following barriers to these goals? (Check all that apply) Physical Footprint of current building and available land Is Selected

Standard: Foot print (1 Question)
Standard: Foot openend (1 Question)

Standard: Arms (4 Questions)
Standard: Customer (1 Question)
Standard: State (1 Question)
Standard: Block 9 (1 Question)

Branch: New Branch
If
If What species do you slaughter? (Check all that apply) Cattle Is Selected
Or What species do you process? (Check all that apply) Cattle Is Selected

Standard: cattle (5 Questions)

Branch: New Branch
If
If What species do you slaughter? (Check all that apply) Hogs Is Selected
Or What species do you process? (Check all that apply) Hogs Is Selected

Standard: hog (5 Questions)

Branch: New Branch

If

If What species do you slaughter? (Check all that apply) Chickens Is Selected

Or What species do you process? (Check all that apply) Chickens Is Selected

Standard: chicken (4 Questions)

Branch: New Branch

If

If What species do you slaughter? (Check all that apply) Lamb Is Selected

Or What species do you process? (Check all that apply) Lamb Is Selected

Standard: lamb (2 Questions)

Standard: Block 14 (1 Question)

Page Break

Start of Block: Block 20

Intro The following survey is designed to gather information from U.S. meat processing plants. The survey is primarily focused on understanding processors' expansion needs and understanding their cost structure. It will take you approximately 10 minutes to complete. Your answers will be used to understand industry needs, inform support for the industry and direct further research. Your participation in this survey is entirely voluntary. As such you may decline to answer any question and can end your participation at any time. There are no negative consequences for not answering questions or ending participation, and there are no known risks to participation. Your privacy is important to us and as such each of your responses will be kept strictly confidential. Some generic demographic questions about your processing facility are included to assess if our sample is representative of U.S. meat processing industry and will remain strictly confidential. Researchers will not have access to your name or the name of your organization. At no point will a file be created with your name or the name of your organization linked with your responses. The data will be stored by the principal investigator with no intention of destroying the data. Contacts: If you have any questions or concerns about this project, please contact Dr. Glynn Tonsor, (785) 532-1518, gtonsor@ksu.edu. If you have questions about your rights as a research volunteer, you may contact Dr. Lisa Rubin, IRB Chair, 785-532-3224 or rubin@ksu.edu. Continuing with this survey means you are voluntarily agreeing to participate in this research study. We want to remind you that you can decline to answer any question or end your participation at any point and that we appreciate your participation in this important project.

End of Block: Block 20

Start of Block: Default Question Block

Processinglvl What level of external inspection does your facility operate under?

- ○ USDA Inspected (1)
- ○ State Inspected (2)
- ○ Other (3) _____

Page Break

Certification Do you have any additional certification?

- ☐ Kosher (1)
- ☐ Halal (2)
- ☐ Organic (3)
- ☐ Other (4) _____
- ☐ None (5)

Page Break

Busformat What is your business organization?

- ○ LLC (1)
- ○ Sole Proprietorship (2)
- ○ Partnership (3)
- ○ Corporation (4)

Page Break

Process&slaughter Which services do you provide?

- ○ Slaughter only (1)
- ○ Processing only (2)
- ○ Both slaughter and process (3)

Page Break

Origin What is the origin of the animals you slaughter?

- ○ All in-state (1)
- ○ Not all in-state (2)

End of Block: Default Question Block

Start of Block: Slaughter

Speciesslughter What species do you slaughter? (Check all that apply)

- ☐ Cattle (1)
- ☐ Hogs (2)
- ☐ Chickens (3)
- ☐ Lamb (4)
- ☐ Goats (5)
- ☐ Turkey (6)
- ☐ Game Animal (7)
- ☐ Other (8)
- ☐ NA (9)

End of Block: Slaughter

Start of Block: Process

Speciesprocess What species do you process? (Check all that apply)

- [ ] Cattle (1)
- [ ] Hogs (2)
- [ ] Chickens (3)
- [ ] Lamb (4)
- [ ] Goats (5)
- [ ] Turkey (6)
- [ ] Game Animal (7)
- [ ] Other (8)
- [ ] NA (9)

End of Block: Process

Start of Block: Expansion

Expansion Are you considering any of the following? (Check all that apply)

- ☐ Expand Processing Facilities (1)
- ☐ Add Slaughter Facilities (6)
- ☐ Expand Slaughter Facilities (5)
- ☐ Add Processing Facilities (7)
- ☐ Modernizing Existing Facilities (2)
- ☐ Expanding Storage (3)
- ☐ Other (4) _____
- ☐ None (8)

Page Break

Goal Do you consider the following barriers to these goals? (Check all that apply)

- ☐ Physical Footprint of current building and available land (1)
- ☐ Financing (2)
- ☐ Labor Availability (3)
- ☐ Other (4) _____

End of Block: Expansion

Start of Block: Interest Rata

IR9 If you could secure funding for your project with 9% interest, would you start your project?

- ○ Yes (1)
- ○ No (2)

Page Break

IR5 If you could secure funding for your project with 5% interest, would you start your project?

- ○ Yes (1)
- ○ No (2)

Page Break

IR1 If you could secure funding for your project with 1% interest, would you start your project?

- ○ Yes (1)
- ○ No (2)

End of Block: Interest Rata

Start of Block: Cost Share

CS30 If you were offered 30% cost sharing for your project, would you start it?

- ○ Yes (1)
- ○ No (2)

Page Break

CS20 If you were offered 20% cost sharing for your project, would you start it?

- ○ Yes (1)
- ○ No (2)

Page Break

CS10 If you were offered 10% cost sharing for your project, would you start it?

- ○ Yes (1)
- ○ No (2)

End of Block: Cost Share

Start of Block: Finance Question

Finance Openend Other than acquiring credit is there another financial issue you are dealing with?

_____

End of Block: Finance Question

Start of Block: Labor

Labor Issues What do you consider the biggest issue for labor?

- ○ Cost of Labor (1)
- ○ Availability of Labor (2)
- ○ Training Cost (4)
- ○ Other (3) _____

End of Block: Labor

Start of Block: Labor openend

Laborend What would be something that would help relieve your labor issues?

_____

End of Block: Labor openend

Start of Block: Foot print

footissue Your footprint issues are they related to?

- ○ Land at your location for additions to current facility (1)
- ○ Space in your factory for more processing capacity (2)
- ○ Other (3) _____

End of Block: Foot print

Start of Block: Foot openend

Footprint open How much more space would you need to increase your processing capacity?

_____

End of Block: Foot openend

Start of Block: Arms

Did apply Did you apply for any new loan or lines of credit in 2021/2022?

- ○ Yes (1)
- ○ No (2)

Skip To: Deniedorless If Did apply = Yes

Page Break

Display This Question:

If Did apply = No

Reasonnot What was the MAIN reason you did not apply for any new loans or line of credit?

- ○ Had sufficient funds without additional loans (1)
- ○ Expected to be unable to obtain new or additional credit (2)
- ○ High costs associated with loan applications (3)
- ○ Risk associated with additional debt (4)

Page Break

Display This Question:

If Did apply = Yes

Deniedorless Was a request for credit or loan application either turned down or were you not given as much credit as you applied for in 2021/2022?

- ○ Yes (1)
- ○ No (2)

Page Break

Display This Question:

If Did apply = Yes

SBA If you did receive a new loan or line of credit, was SBA guarantee used?

- ○ Yes (1)
- ○ No (2)

End of Block: Arms

Start of Block: Customer

Customer Question What is the breakdown of your customer base? (Values should sum to 100%)

_____ Consumers (1)

_____ Restaurants (2)

_____ Retail (3)

_____ Other (4)

End of Block: Customer

Start of Block: State

State What state is your primary operations located in?

▼ Alabama (1) ... I do not reside in the United States (53)

End of Block: State

Start of Block: Block 9

Sales What is your primary form of sales?

- ○ Cuts of Meats (1)
- ○ Portions of Animal (2)
- ○ Meat for additional processing (3)

End of Block: Block 9

Start of Block: cattle

VCC What is your variable cost of processing per head for cattle?

▼ Lower (1) ... Higher (7)

Page Break

PWC How many cattle do you process in a week?

_____

Page Break

Display This Question:

If Process&slaughter != Slaughter only

PLBGB Which range best represents the average price per pound you get for ground beef?

▼ Lower (1) ... Higher (10)

Page Break

Display This Question:

If Process&slaughter != Slaughter only

PLPS Which range best represents the average price per pound you get for steak?

▼ Lower (1) ... Higher (9)

Page Break

PLBSteer Which range best represents the average price per pound you get for half a steer?

▼ Lower (1) ... Higher (8)

End of Block: cattle

Start of Block: hog

VCH What is your variable cost of processing per head for hogs?

▼ Lower (1) ... Higher (7)

Page Break

PWH How many hogs do you process in a week?

_____

Page Break

Display This Question:

If Process&slaughter != Slaughter only

PLBL Which range best represents the average price per pound of pork loin?

▼ Lower (1) ... Higher (10)

Page Break

Display This Question:

If Process&slaughter != Slaughter only

PLBH Which range best represents the average price per pound of ham?

▼ Lower (1) ... Higher (11)

Page Break

PLBHog Which range best represents the average price per pound you get for half a hog?

▼ Lower (1) ... Higher (7)

End of Block: hog

Start of Block: chicken

VCC What is your variable cost of processing per head for chicken?

▼ Lower (1) ... Higher (8)

Page Break

PWC How many chickens do you process in a week?

_____

Page Break

Display This Question:

If Process&slaughter != Slaughter only

PLBB Which range best represents the average price per pound you get for chicken breast?

▼ Lower (1) ... Higher (9)

Page Break

Display This Question:

If Process&slaughter != Slaughter only

PLBT Which range best represents the average price per pound you get for chicken thigh?

▼ Lower (1) ... Higher (11)

End of Block: chicken

Start of Block: lamb

VCL What is your variable cost of processing per head for lamb?

▼ Lower (1) ... Higher (8)

Page Break

PWL How many lambs do you process in a week?

_____

End of Block: lamb

Start of Block: Block 14

END Thank you for your time!

If you would like to provide any additional comments about this survey or related topics please do so here.

_____

End of Block: Block 14