



Market-Sizing and Tracking Revenue on a Whole Animal Basis for NC Local Meat Businesses :

Part I: Jessica Moore, CEO of Philly CowShare, a successful local meat buying services that connects communities of small scale farmers with urban communities in the PA area, provides a calculated look into the demand for local pastured beef and pork in NC.



Answering Key Business Questions

The Business of “Niche Meat”

Jessica Moore



PHILLY
CowShare

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Business Questions

- Demand / Market Size
 - *How many customers can I sell products to?*
- Supply
 - *How many things can I sell?*
- Customer Profile
 - *What are my customers like?*
- Cost
 - *How much does it cost me to make the things I want to sell?*
- Pricing
 - *How much should I charge?*
- Overhead
 - *What do I need to run my business other than product?*

A Methodology for sizing a market:

1. Start with a known number
 - USDA sized the US Local Foods Market in a report to Congress in Jan 2015
 - Use NC population calculate NC market
2. Use public information to reason about your business
 - Consumer consumption habits for conventional proteins
 - Value of proteins in local food \$
 - Use Whole Foods pricing as a proxy for general retail prices

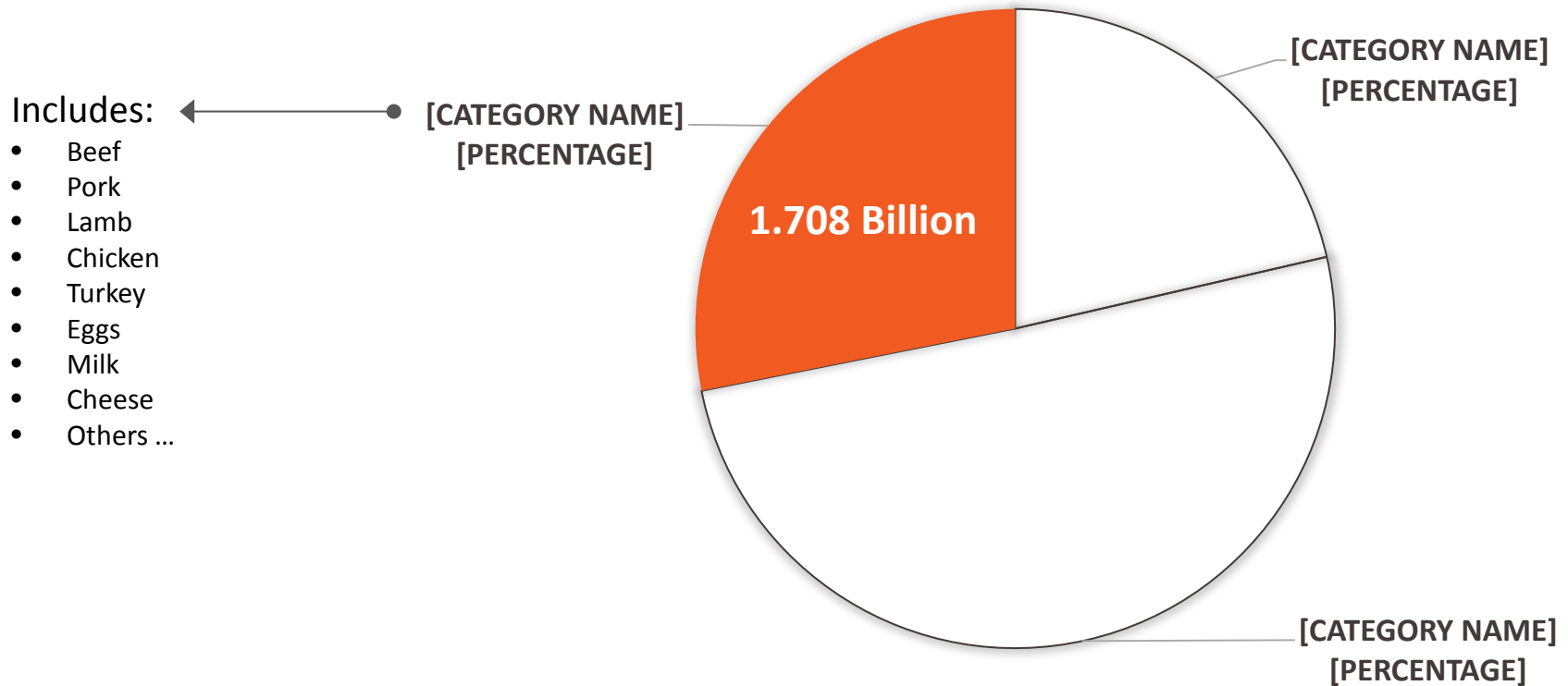
What is the maximum amount of revenue for my business?

How many customers can I sell products to?

ESTIMATE THE SIZE NC NICHE MEAT MARKET

USDA Value of Local Food Sales (i.e. Revenue)

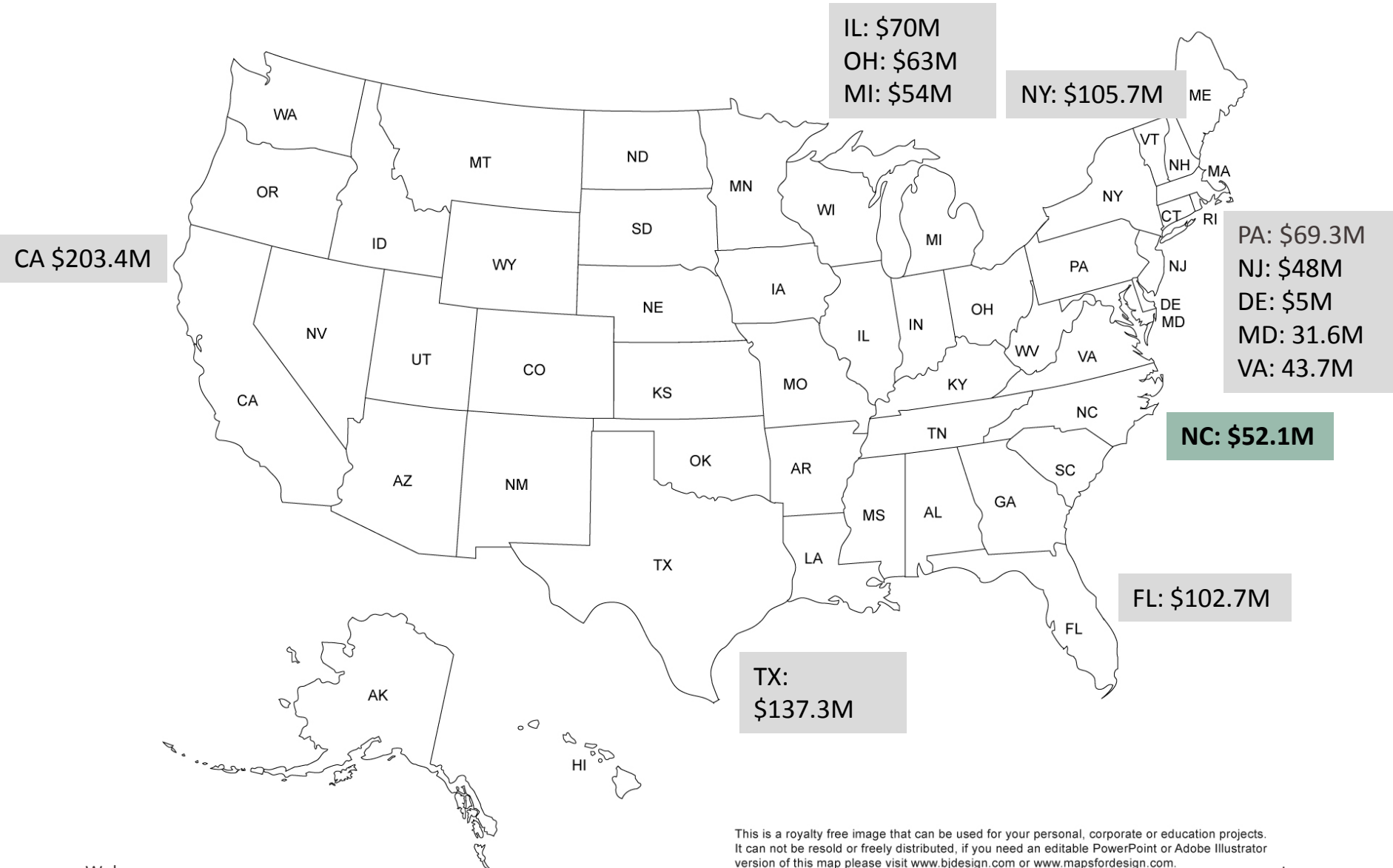
TOTAL SALES: 6.1 BILLION



Source: Trends in US Local and Regional Food Systems, a report to Congress by the USDA Jan 2015

\$1.708 B Livestock and Livestock Products

Even distribution based on population size of US in 2013



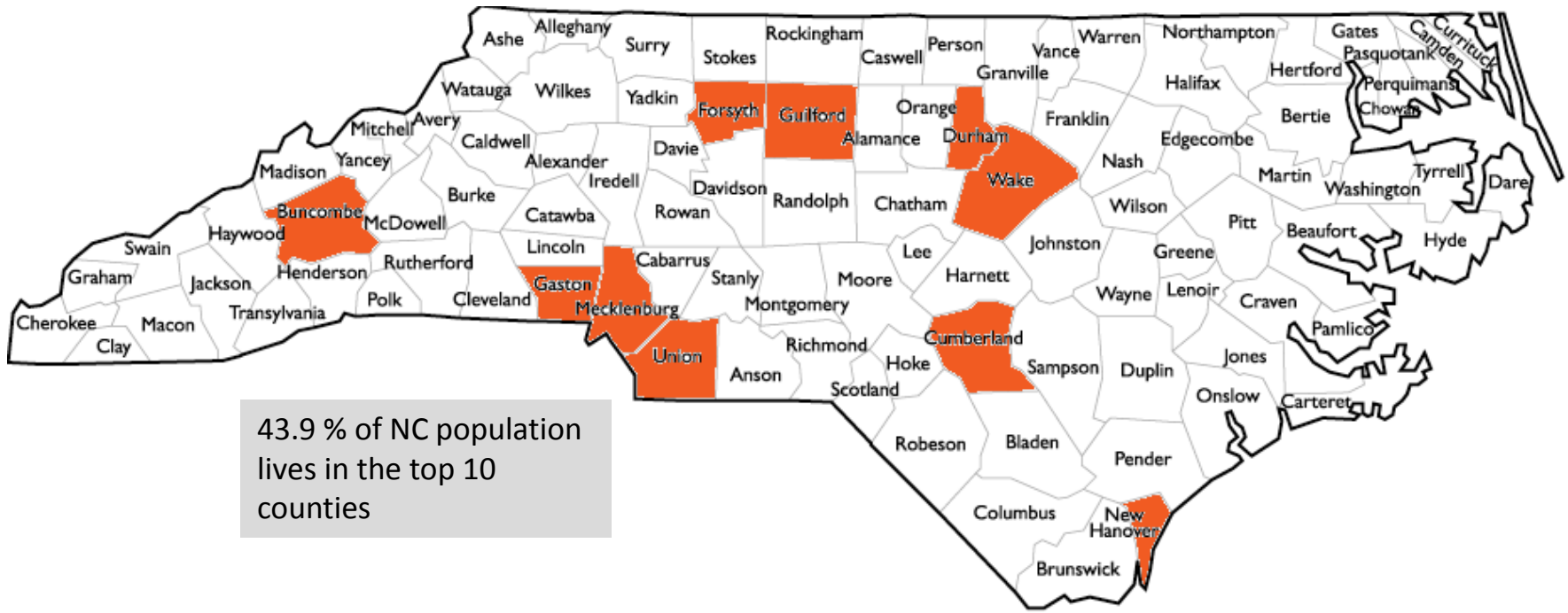
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Total Market for NC is \$52.1M

Market for Top 10 Counties is \$23.1M

USDA Market Value by Population NC Top 10 Counties (in millions)

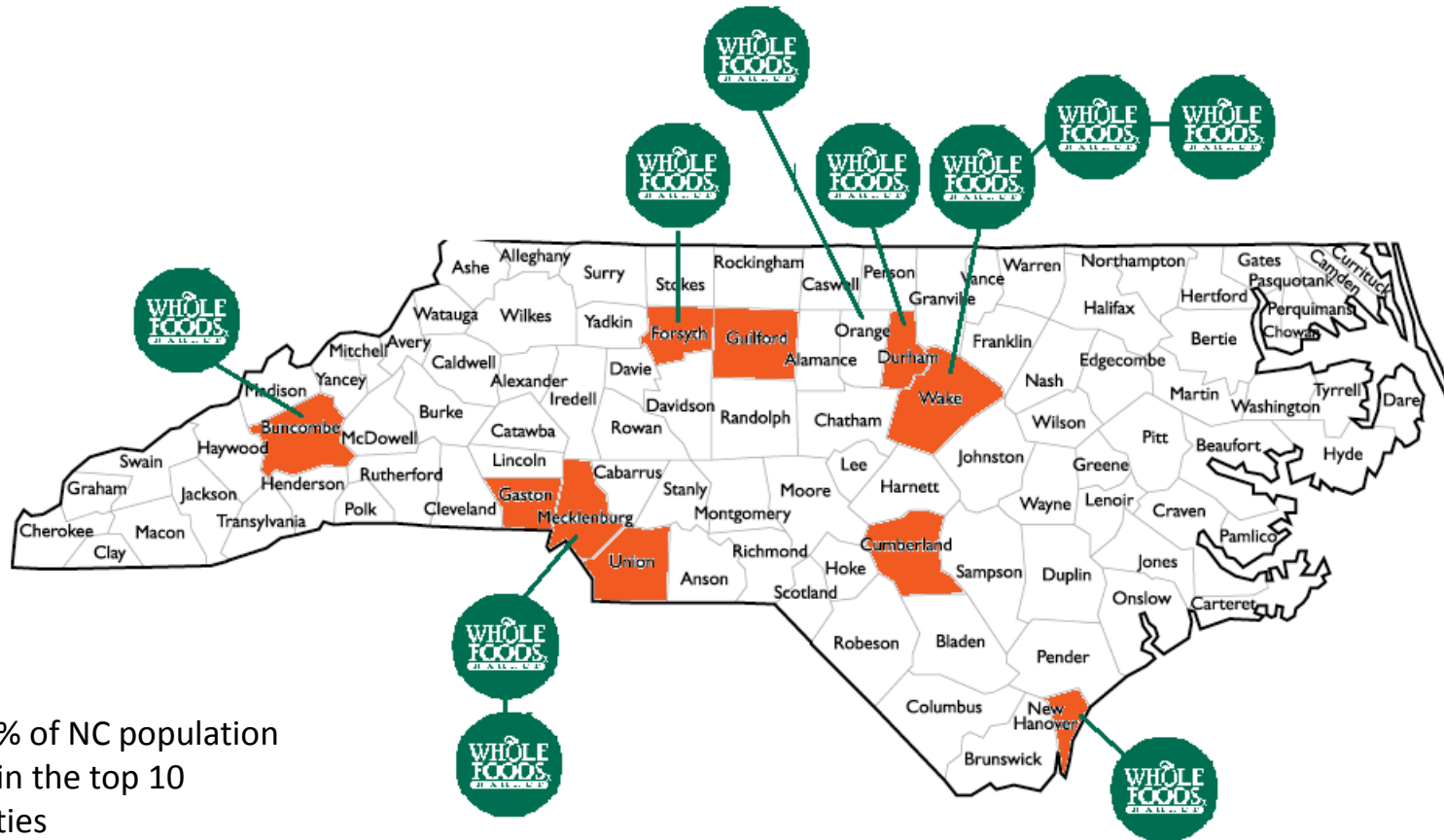
Mecklenburg	Wake	Guilford	Forsyth	Cumberland	Durham	Buncombe	New Hanover	Union	Gaston	Total
5.29	5.15	2.71	1.92	1.77	1.53	1.33	1.14	1.13	1.12	23.08



9 / 10 Whole Foods stores are located in the top markets.

USDA Market Value by Population NC Top 10 Counties (in millions)

Mecklenburg	Wake	Guilford	Forsyth	Cumberland	Durham	Buncombe	New Hanover	Union	Gaston	Total
5.29	5.15	2.71	1.92	1.77	1.53	1.33	1.14	1.13	1.12	23.08



43.9 % of NC population lives in the top 10 counties

What is the market value per protein?

(Use conventional consumption data)

<i>Livestock Products in National Survey</i>	<i>Per Capita Consumption, US Average</i>	<i>% of Total Consumption</i>
Beef, Pounds	64.4	25%
Pork, Pounds	47.7	19%
Lamb, Pounds	1.4	1%
Chicken, Pounds	52.9	21%
Turkey, Pounds	13.6	5%
Eggs, Dozen	20.8	8%
Milk, Gallon	22.6	9%
Cheese, Pound	29.8	12%
Total Units Consumed Annually	253.23	100%

Source: Profiling Food Consumption in America, Chapter 2, Agricultural Fact Book <http://www.usda.gov/factbook/chapter2.pdf>

Market Value per Product

Math:

Market Value (e.g. \$52.1M) * % of Total Consumption per Product = Market Value per Product

<i>Livestock Products in National Survey</i>	<i>Per Capita Consumption, US Average</i>	<i>% of Total Consumption</i>	<i>NC Market (in millions)</i>	<i>Top 10 Counties (in millions)</i>
Beef, Pounds	64.4	25%	\$ 13.38	\$ 5.87
Pork, Pounds	47.7	19%	\$ 9.91	\$ 4.35
Lamb, Pounds	1.4	1%	\$ 0.29	\$ 0.13
Chicken, Pounds	52.9	21%	\$ 10.99	\$ 4.82
Turkey, Pounds	13.6	5%	\$ 2.83	\$ 1.24
Eggs, Dozen	20.8	8%	\$ 4.33	\$ 1.90
Milk, Gallon	22.6	9%	\$ 4.70	\$ 2.06
Cheese, Pound	29.8	12%	\$ 6.19	\$ 2.72
Total Units Consumed Annually	253.23	100%	\$ 52.61	\$ 23.08

Source: Profiling Food Consumption in America, Chapter 2, Agricultural Fact Book <http://www.usda.gov/factbook/chapter2.pdf>

How much supply is needed for the market?

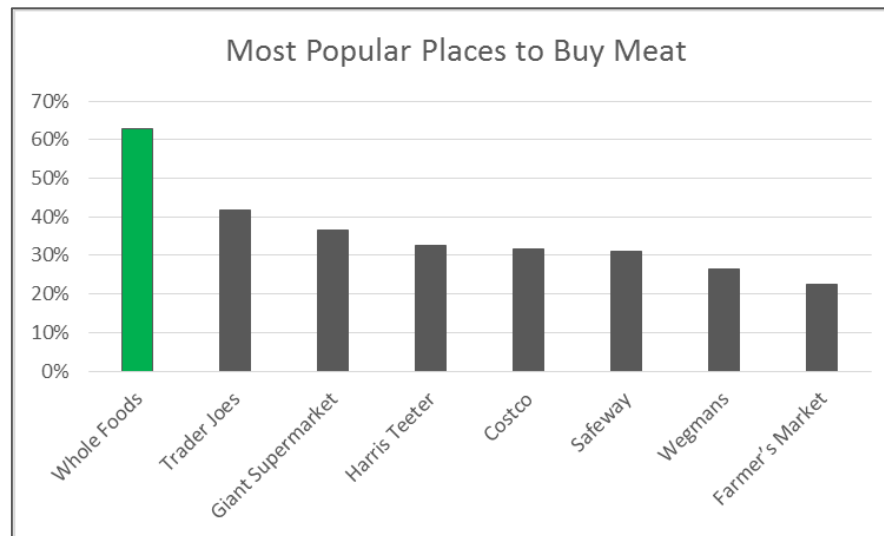
Math:

Step 1: Market Size per Product / **Avg. Carcass Retail Price** = Total units. Needed for Market Size.

Where do you buy your meat? (check all that apply)

Category	% of Total Respondents that Buy from at Least One Store in Category
Conventional Grocery	87%
Natural Grocery	67%
Online Farmers Market	1%
Online Retailers	1%
Neighborhood - Specialty Grocery	8%
Butcher Shop	15%
Direct Sources	23%

Source: Kitchen Table Consultants' consumer survey in 2015.



Product for Pricing	Whole Foods Prices per Unit	Standards
Ground beef (lb.)	\$ 8.99	step 4 80/20
Ground pork (lb.)	\$ 5.99	step 4
Ground lamb (lb.)	\$ 8.99	step 4
Whole chicken (lb.)	\$ 4.99	white oak step 5
Whole turkey (lb.)	\$ 4.40	step 1 - not local
Eggs (doz.)	\$ 5.99	free range, organic
Milk (gal.)	\$ 6.99	whole, organic valley
Cheddar (lb.)	\$ 11.98	organic valley

How much supply is needed for the market?

Math:

Step 1: Market Size per Product / Avg. Carcass Retail Price = Total # lbs. Needed for Market Size.

<i>Livestock Products in National Survey</i>	<i>NC Market (in millions)</i>	<i>Top 10 Counties (in millions)</i>	<i>Product for Pricing</i>	<i>WholeFoods Retail Unit Price</i>	<i>Total lbs. - NC Market (in millions)</i>	<i>Total lbs. - Top 10 Counties (in millions)</i>
Beef, Pounds	\$ 13.38	\$ 5.87	Ground beef (lb.)	\$ 8.99	1.49	0.65
Pork, Pounds	\$ 9.91	\$ 4.35	Ground pork (lb.)	\$ 5.99	1.65	0.73
Lamb, Pounds	\$ 0.29	\$ 0.13	Ground lamb (lb.)	\$ 8.99	0.03	0.01
Chicken, Pounds	\$ 10.99	\$ 4.82	Whole chicken (lb.)	\$ 4.99	2.20	0.97
Turkey, Pounds	\$ 2.83	\$ 1.24	Whole turkey (lb.)	\$ 4.40	0.64	0.28
Eggs, Dozen	\$ 4.33	\$ 1.90	Eggs (doz.)	\$ 5.99	0.72	0.32
Milk, Gallon	\$ 4.70	\$ 2.06	Milk (gal.)	\$ 6.99	0.67	0.29
Cheese, Pound	\$ 6.19	\$ 2.72	Cheddar (lb.)	\$ 11.98	0.52	0.23

Source: Profiling Food Consumption in America, Chapter 2, Agricultural Fact Book <http://www.usda.gov/factbook/chapter2.pdf>

Source: WholeFoods Retail Prices Oct. 3, 2015

How much supply is needed for the market?

Math:

Step 1: Market Size per Product / Avg. Carcass Retail Price = Total units. Needed for Market Size.

Step 2: Total units lbs. Needed for Market Size / **Sellable Wt. per Animal** = Total # Animals for Market Size

<i>Livestock Products in National Survey</i>	<i>Total lbs - NC Market (in millions)</i>	<i>Total lbs. - Top 10 Counties (in millions)</i>	<i>Hanging Wt (live for poultry)</i>	<i>Yield Assumptions (sellable / hang)</i>	<i>Sellable Wt. (unit) / Animal</i>	<i>NC Market (in animals)</i>	<i>Top 10 Counties (in animals)</i>
Beef, Pounds	1.49	0.65	650	55%	357.5	4163	1827
Pork, Pounds	1.65	0.73	250	65%	162.5	10181	4467
Lamb, Pounds	0.03	0.01	100	52%	52	623	273
Chicken, Pounds	2.20	0.97	6	75%	4.5	489430	214730
Turkey, Pounds	0.64	0.28	20	75%	15	42810	18783

NC Farmers need 1837 beef cattle that yield at least 55% and sell at a minimum average per lb. carcass price of \$8.99 to supply the top 10 counties. 2.28X more beef cattle are needed to supply the entire state.

Source: Philly CowShare Average Carcass Yield

* PCS does not have yield model for eggs, milk and cheese

Web: www.phillycowshare.com

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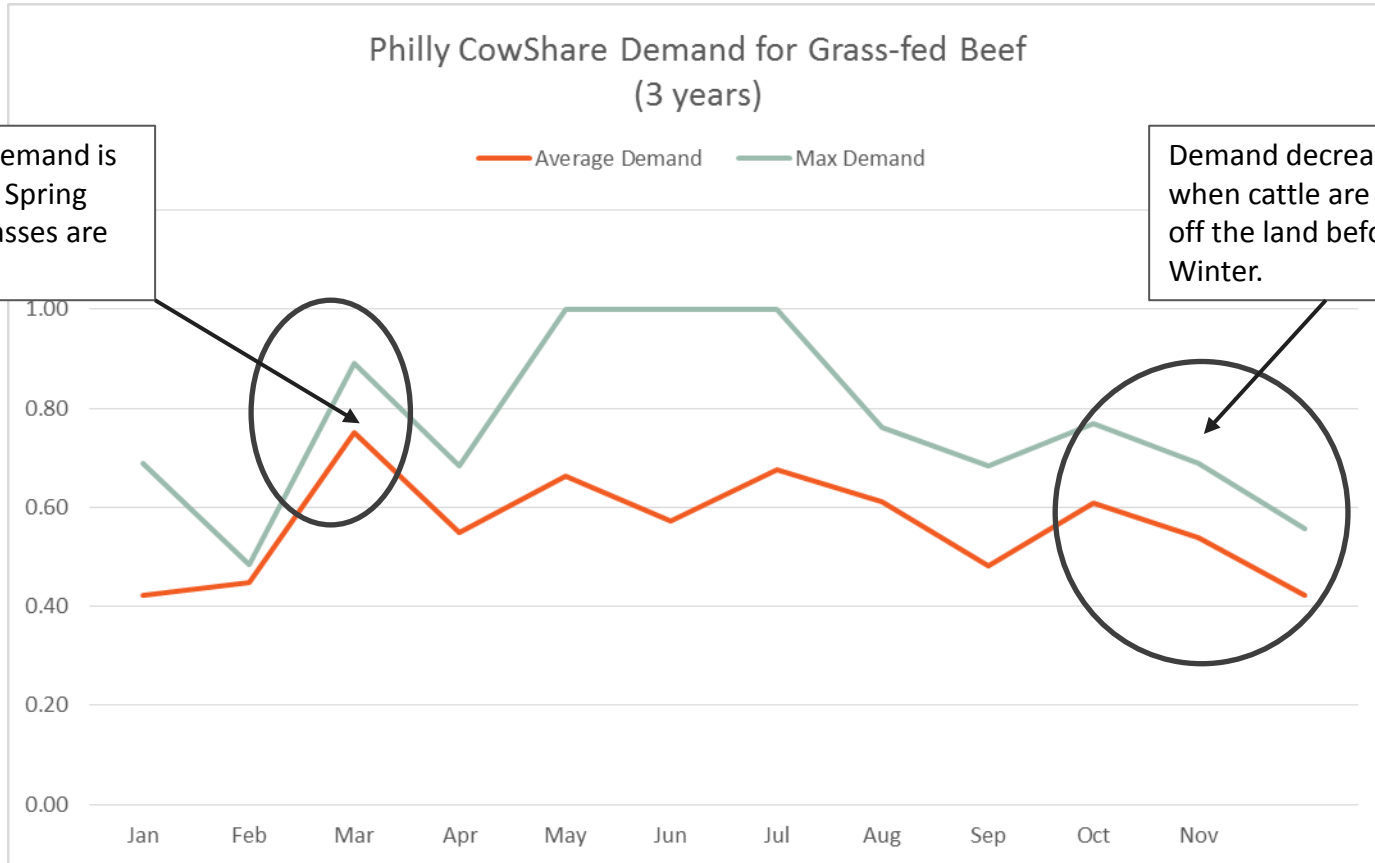
When do customers buy meat from farmers?

Philly CowShare Demand for Grass-fed Beef
(3 years)

Average Demand Max Demand

On average, demand is highest in the Spring before the grasses are fully grown.

Demand decreases when cattle are coming off the land before Winter.



Business model must account for aligning the supply and the demand.

PCS Strategies

Frozen, not fresh

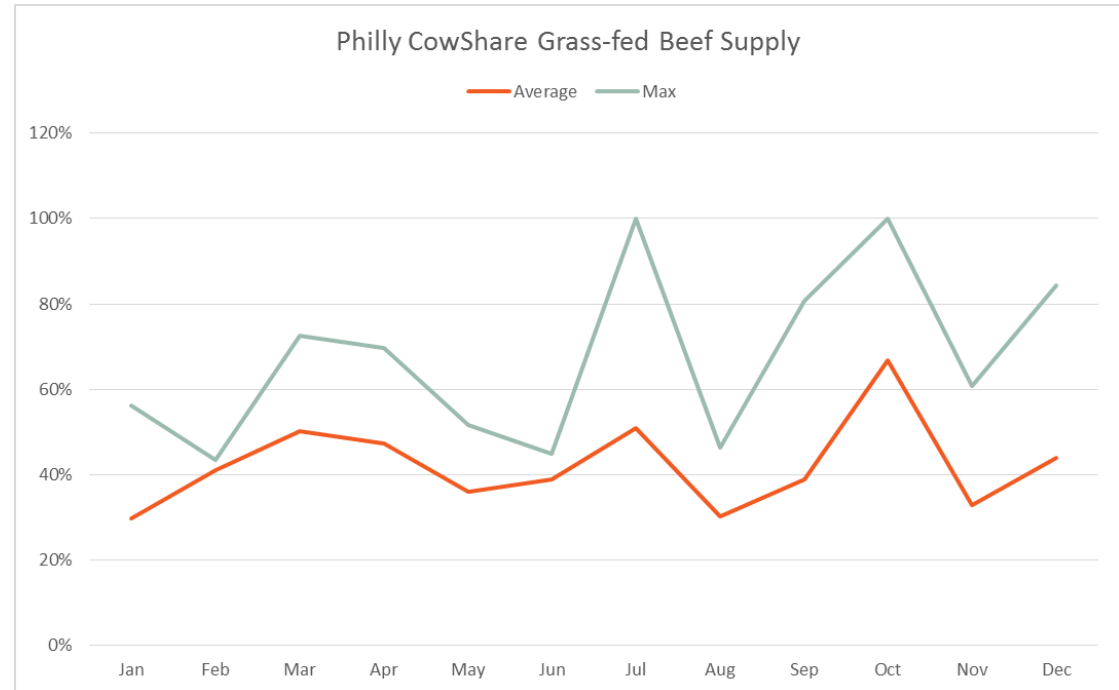
- < \$15 / month to store an animal's worth of meat in commercial freezer vs. monthly cost of feeding and caring for an animal.

Selling in bulk, not pieces

- Customer pays of inventory at a discount per lb. price.

Multiple sales channels

- Retail and wholesale sales channels work together and in rhythm with the farms.



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What else did we learn about the urban & suburban customer?

CUSTOMER SURVEY RESULTS



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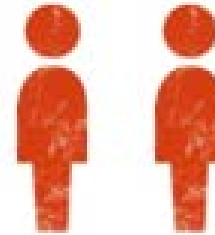
Survey Demographics

- Conducted in Sept. 2015
- 3500 survey links sent
- 46.4% response rate
- 53% live in urban area & 45% live in suburban area in the Northeast
- 85% are college educated
- Average household income is \$140K+
- 5% vegetarian / vegan

30% - 1 adult

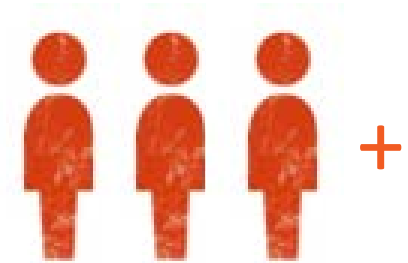


59% - 2 adults

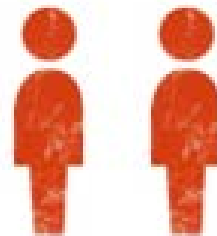


75% of households are families with no child-sized eaters.

25% of households have at least 1 child-sized eater.



11% of households are families with 3 or more adult-sized eaters.

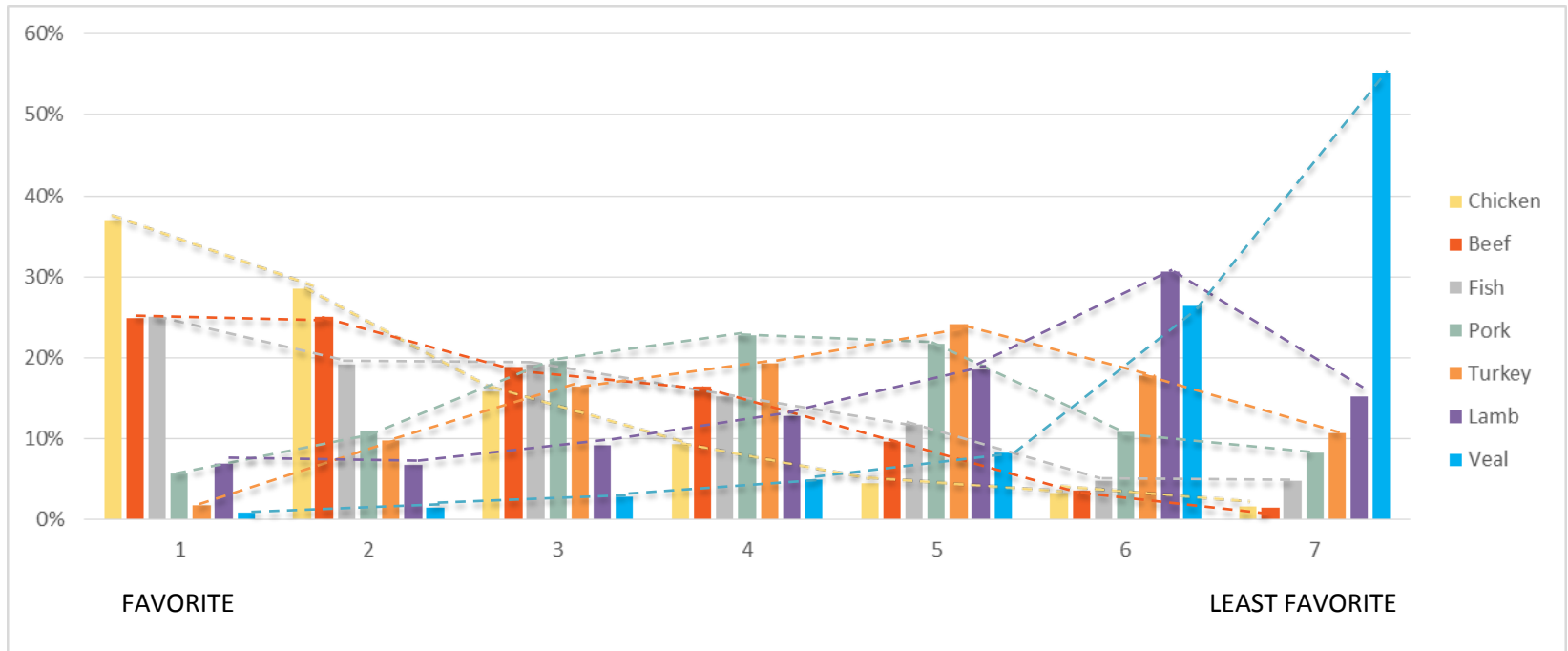


46% - 1 child-sized eater

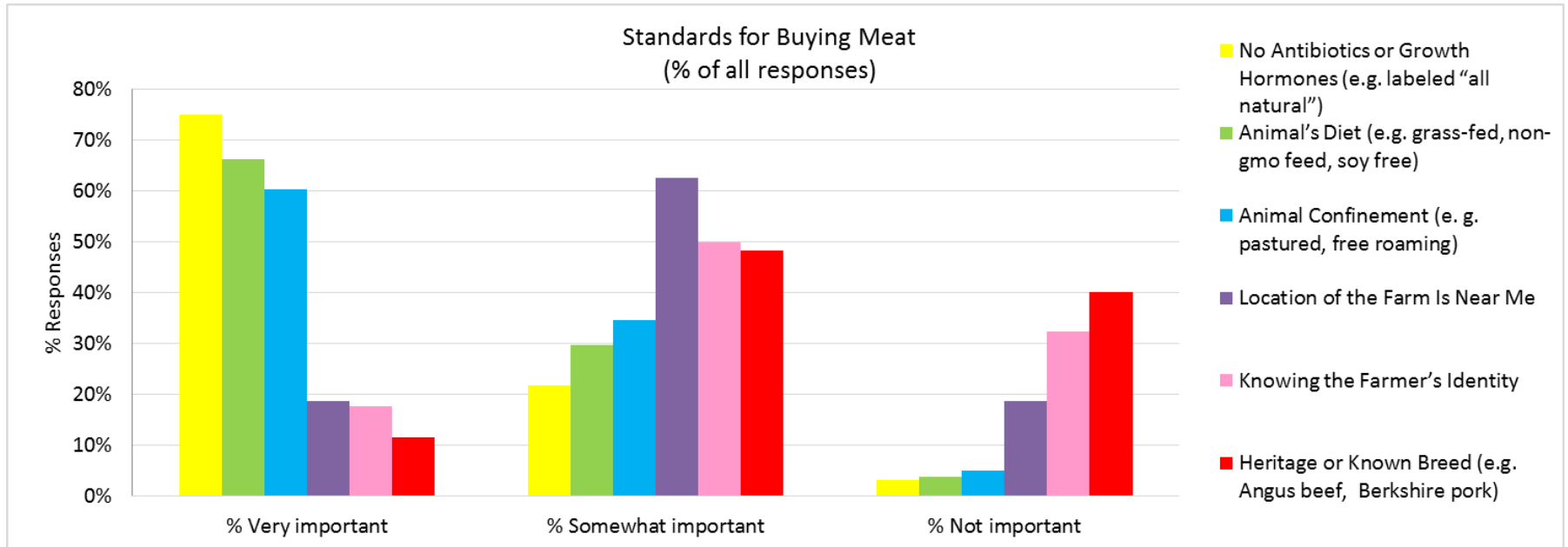


41% - 2 child-sized eaters

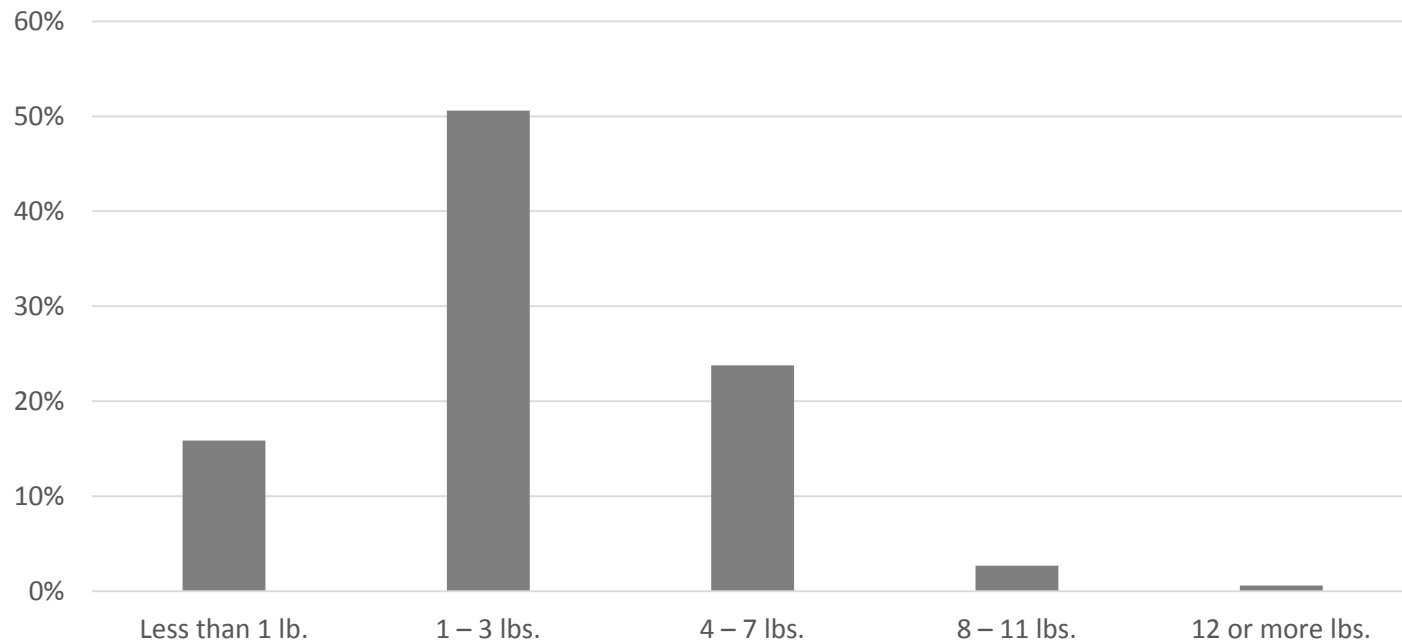
Rank the types of meat from favorite (1) to least favorite (7)



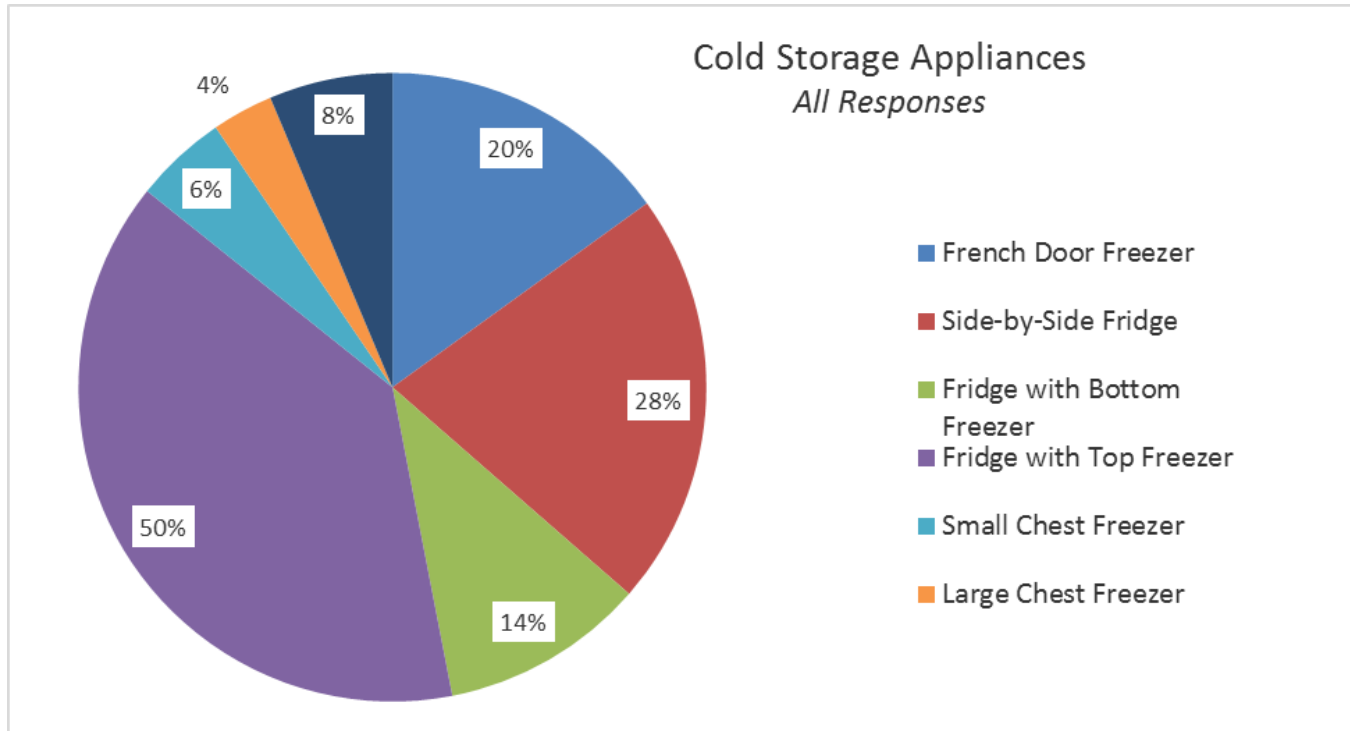
What standards are most important when purchasing meat?



How many pounds of meat do you buy a week?



How many refrigerators and freezers of each type are available to store food?



28% of households have more than one refrigeration appliance.

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Accurate data collection and analysis is a lens for understating your business.

A MATHEMATICAL PROOF: **DATA IS IMPORTANT**

Example: Farmer sells beef directly



Work	Breed Animals	Produce / Finish Animals	Process Animals	Make Products	Marketing	Sales	Cust. Service	Manage Home Delivery / Pick-up	Manage Inventory	Business Overhead
Who Pays	Farmer		Farmer pays Processor		Farmer					
P&L Category	Cost of Goods Sold (COGS)				Profit Margin					

Animal production and processing paid by sales price (direct cost).

Everything else (indirect cost) paid from 35% profit margin.

Variables	Values	Source
Food Business Retail Profit Margin	35%	Assumption
Avg. Cost of Animal on Hanging Weight (lb)	\$ 3.20	USDA AMS Grass-fed Report (Sept.)
Avg. HW (lbs)	568	PCS Average
Farm Revenue	\$ 1,817.60	
Kill and Fabrication Charge (lb) HW	\$ 0.91	NC Processors (.80 + \$60 kill)



Carcass Yield Impacts Profitability

Farmer assumes 60% cut yield, adds a 35% profit margin and quotes the price to the customer (**shown in green**).

			Actual			Projection					
Cut Yield	50%	52%	54%	56%	58%	60%	62%	64%	66%	68%	70%
Sellable Lbs.	284.00	295.36	306.72	318.08	329.44	340.80	352.16	363.52	374.88	386.24	397.60
Total COGS per Lb.	\$ 8.21	\$ 7.90	7.60	\$ 7.33	\$ 7.08	6.84	\$ 6.62	\$ 6.42	\$ 6.22	\$ 6.04	\$ 5.87
Avg. Price per lb.	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53	\$ 10.53
Actual Profit	\$ 2.32	\$ 2.63	\$ 2.92	\$ 3.20	\$ 3.45	\$ 3.68	\$ 3.91	\$ 4.11	\$ 4.31	\$ 4.49	\$ 4.66
Effective Profit Margin	22%	25%	28%	30%	33%	35%	37%	39%	41%	43%	44%

Cut yield is actually 54% which reduces the effective profit margin to 28% (**shown in red**).

	Quoted Price	Price Adjusted for Actual Cut Yield	Diff
Per lb price	\$ 10.53	\$ 11.70	
Total weight	306.72	306.72	
Invoice	3228.92	\$ 3,587.69	\$ (358.77)

Total loss is equivalent to **hiring a full-time worker** at \$15 / hr. for a farm with 100 cattle a year!

	Incremental Loss as Function of Herd Size							
# Cattle / Herd	10	15	20	30	40	50	75	100
P & (L)	\$ (3,588)	\$ (5,382)	\$ (7,175)	\$ (10,763)	\$ (14,351)	\$ (17,938)	\$ (26,908)	\$ (35,877)

Jessica Moore

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THANK YOU.