



AgManager
.info



**Hawaii Cattlemen's
Council, Inc.**

Beef Demand Insight

Glynn T. Tonsor

Dept. of Ag. Economics, Kansas State Univ.

gtonsor@ksu.edu @TonsorGlynn

Hawaii Cattlemen's Council Convention

Waikola Beach, Hawaii

November 16, 2018

What is Beef Demand?

So What is Beef Demand?

- *Beef Demand*
 - Is a schedule of beef quantities consumers would purchase over a range of prices
 - Refers to the “demand curve” economists speak of
- *Quantity of Beef Demanded*
 - Quantity of beef consumers will purchase at a given price
 - Refers to a point on the demand curve
 - Changes with available supply EVEN IF demand is unchanged

Beef Demand Kickoff Points

- *Critically Important, Yet Often Confused*
 - *Demand strength reflects consumer valuation of beef*
 - *underlies total \$ available for the industry*
 - ✓ *drives prices and profitability for all*

Beef Demand Kickoff Points

- *Critically Important, Yet Often Confused*
 - *Demand strength reflects consumer valuation of beef*
 - *underlies total \$ available for the industry*
 - ✓ *drives prices and profitability for all*
- *“To Fix It You Have to Understand It”*
 - *Wayne Purcell, 1998*
(<http://www.naiber.org/Publications/RILP/primer1.pdf>)

“To Fix It You Have to Understand It”

Wayne Purcell, 1998 (<http://www.naiber.org/Publications/RILP/primer1.pdf>)

- “Demand for beef this week has been fantastic. We have moved a near-record volume of boxes, but cutout values are down nearly \$3.00 per hundredweight for the week.”
 - *Example of common, market news or trade magazine quote*

“To Fix It You Have to Understand It”

Wayne Purcell, 1998 (<http://www.naiber.org/Publications/RILP/primer1.pdf>)

- “Demand for beef this week has been fantastic. We have moved a near-record volume of boxes, but cutout values are down nearly \$3.00 per hundredweight for the week.”
 - *Example of common, market news or trade magazine quote*
 - *Can be VERY misleading & reflects limited understanding of what demand vs. supply concepts are*
 - ***GT: Demand is NOT volume sold!!!***

“To Fix It You Have to Understand It”

Let me close by reviewing the important “rules” of this paper:

1. Per-capita consumption is not a measure of demand.
2. Talking about “strong demand” when increased quantities are being taken at sharply lower prices is wrong and misleading.
3. If demand is constant, the only way an increased per-capita supply will be taken by consumers is at lower prices.
4. You cannot use high beef prices as a reason for weak beef demand since price is part of the demand schedule.
5. If demand is decreasing, the only way to avoid losing market share is to reduce costs enough to keep the business viable.
6. A prolonged period of decreasing demand for beef will eventually exceed even the most efficient producer’s ability to cut costs.
7. Significant changes in pork and chicken prices can and will shift beef demand from year to year and within the year.
8. Changes in consumers’ incomes are usually positive for beef demand, but rising incomes during the 1980s and 1990s have not offset other problems.
9. The facts support a conclusion that, since 1979-80, consumers’ preferences have turned away from beef as their needs and lifestyles have changed.
10. If these pervasive problems are not fixed and the negative trend in beef demand isn’t at least stopped, the beef sector will lose market share and will trend toward a smaller industry for the foreseeable future.
11. It is time to do something, time to understand, time to get the product offering moved toward what the modern consumer wants and is willing to pay for.

Per Capita Consumption is NOT Demand

- Per capita consumption =
 - $(\text{Domestic Production} + \text{Imports} - \text{Exports} + \text{Cold Storage Adjustments}) / \text{Population}$
 - All quantity values; no prices in derivation!

Example to Ponder

- When shopping for blue jeans and you observe a buy-one-get-one free sale, do you ever buy more than just one pair?

Example to Ponder

- When shopping for blue jeans and you observe a buy-one-get-one free sale, do you ever buy more than just one pair?
 - The money in your wallet, the physical characteristics of the jeans, etc. did not change
 - Yet, your “per capita consumption” of jeans increased if you bought 2 rather than 1 pair...
 - EXAMPLE OF DEMAND NOT CHANGING
 - *You bought more solely because of lower prices*



MARKETING > OUTLOOK

What's The Similarity Between Blue Jeans and Beef Demand?

Beef consumption and beef demand isn't the same thing. Here's an explanation.

Burt Rutherford | Sep 19, 2013

<http://www.beefmagazine.com/beef-demand/what-s-similarity-between-blue-jeans-and-beef-demand>

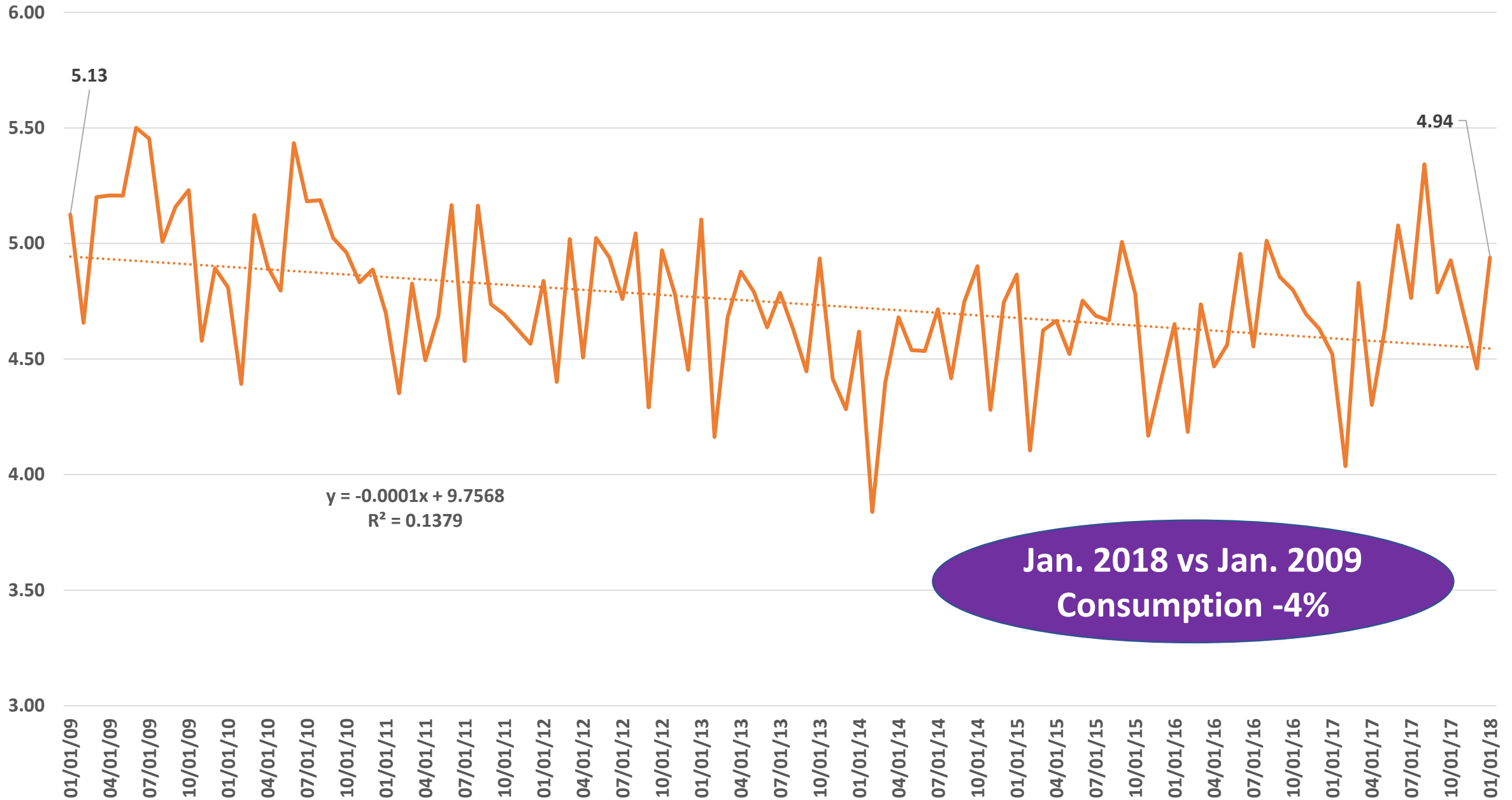
Demand is **NOT** Per Capita Consumption

2013 Beef Demand Determinants Study



[http://www.beefboard.org/evaluation/
130612demanddeterminantstudy.asp](http://www.beefboard.org/evaluation/130612demanddeterminantstudy.asp)

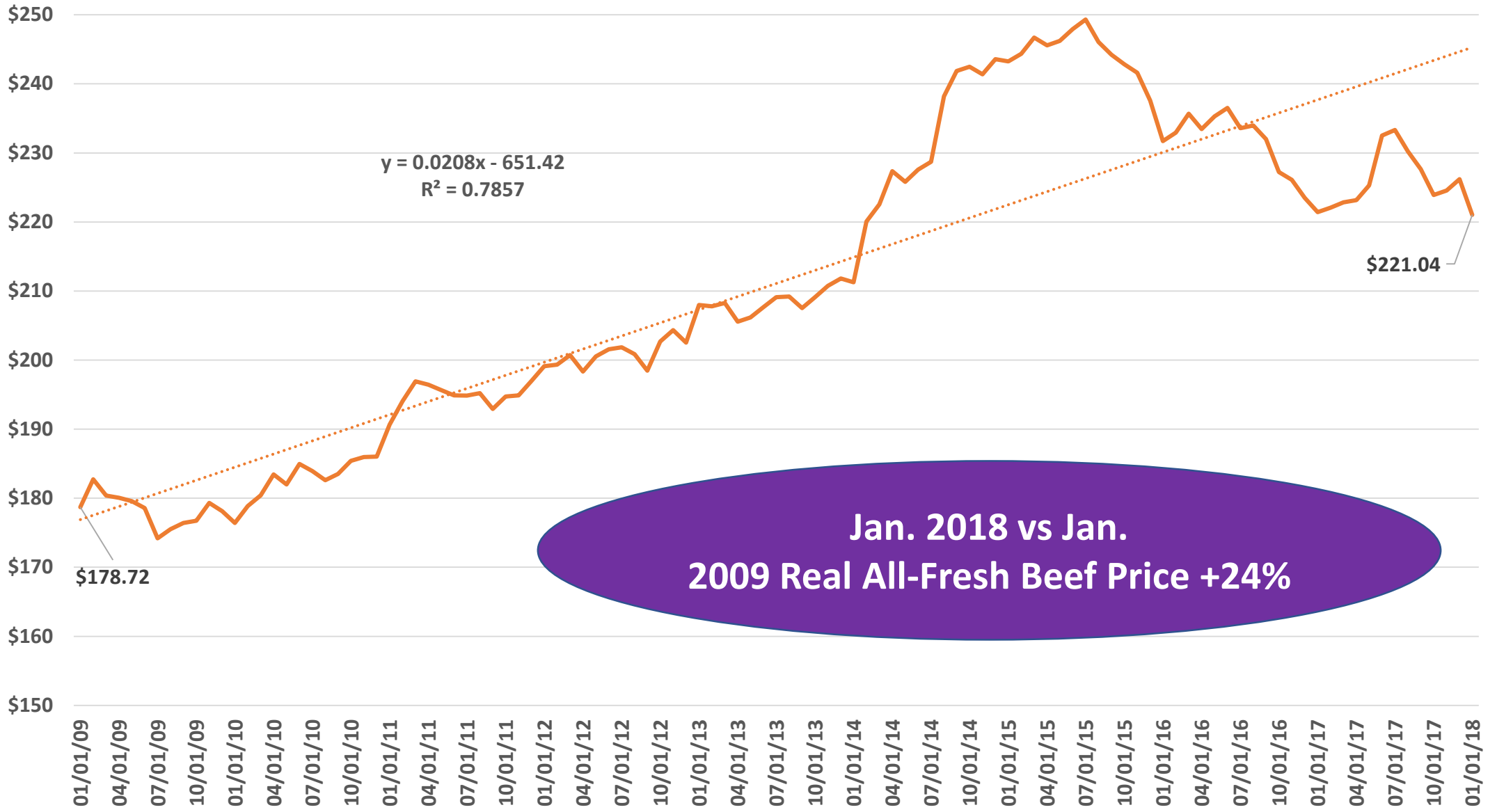
Per Capita Disappearance, Jan. 2009 - Jan. 2018



$y = -0.0001x + 9.7568$
 $R^2 = 0.1379$

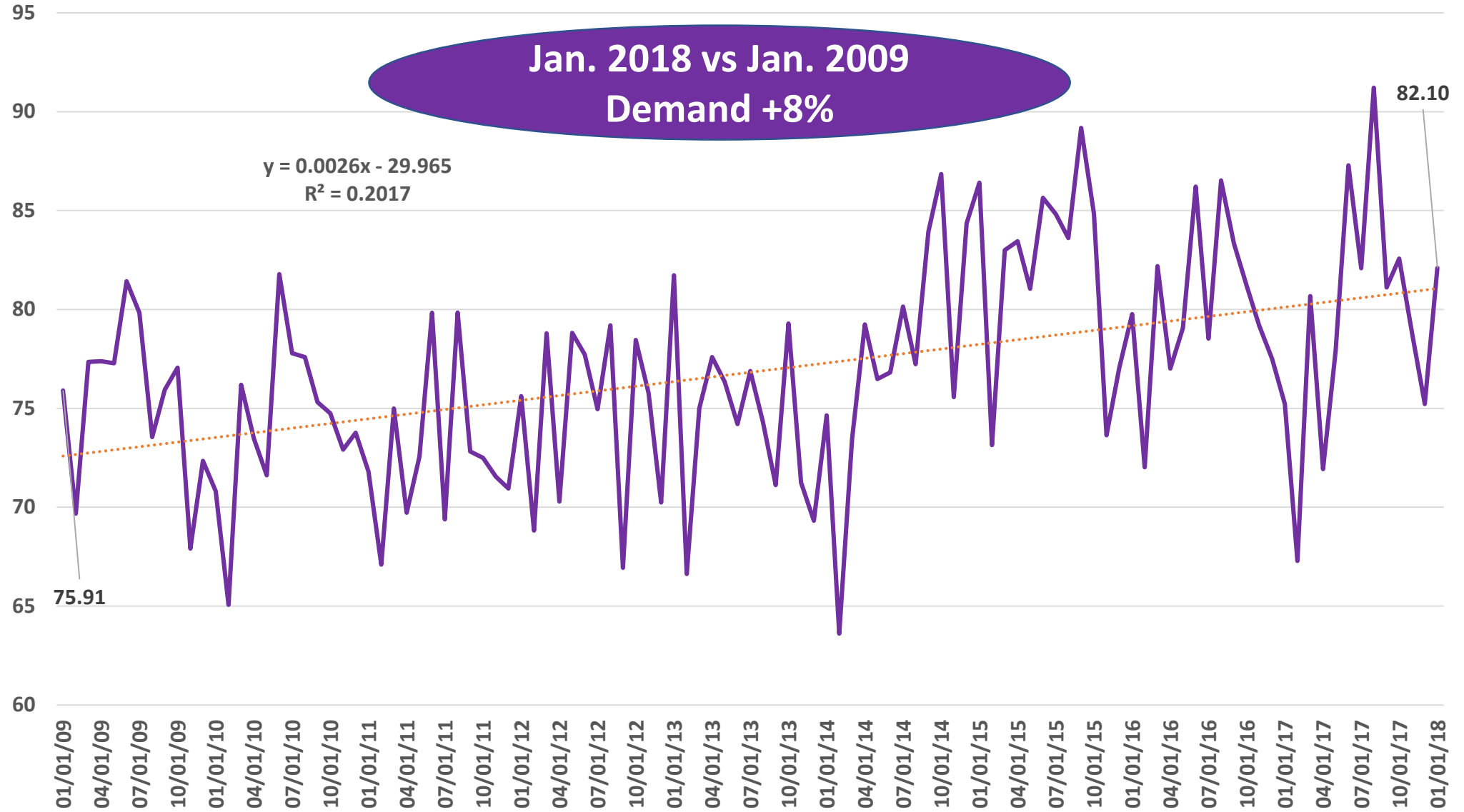
**Jan. 2018 vs Jan. 2009
Consumption -4%**

Real All-Fresh Price (\$/cwt), Jan. 2009 - Jan. 2018

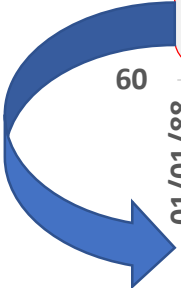
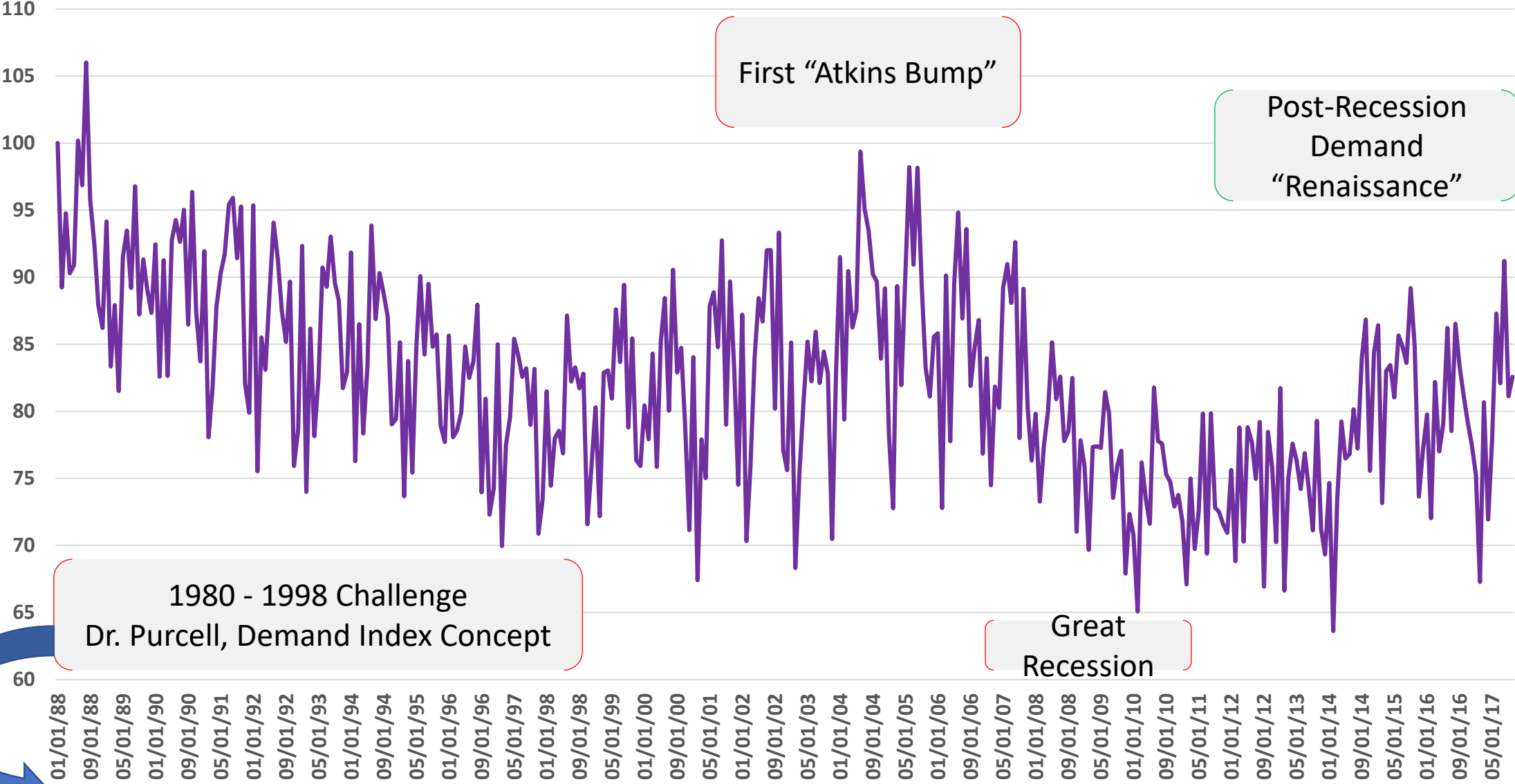


**Jan. 2018 vs Jan.
2009 Real All-Fresh Beef Price +24%**

All-Fresh Beef Demand Index
(Jan. 1988=100, Quantity-Based), Jan. 2009 - Jan. 2018



All-Fresh Beef Demand Index
(Jan. 1988=100, Quantity-Based), Jan. 1988 - Jan. 2018



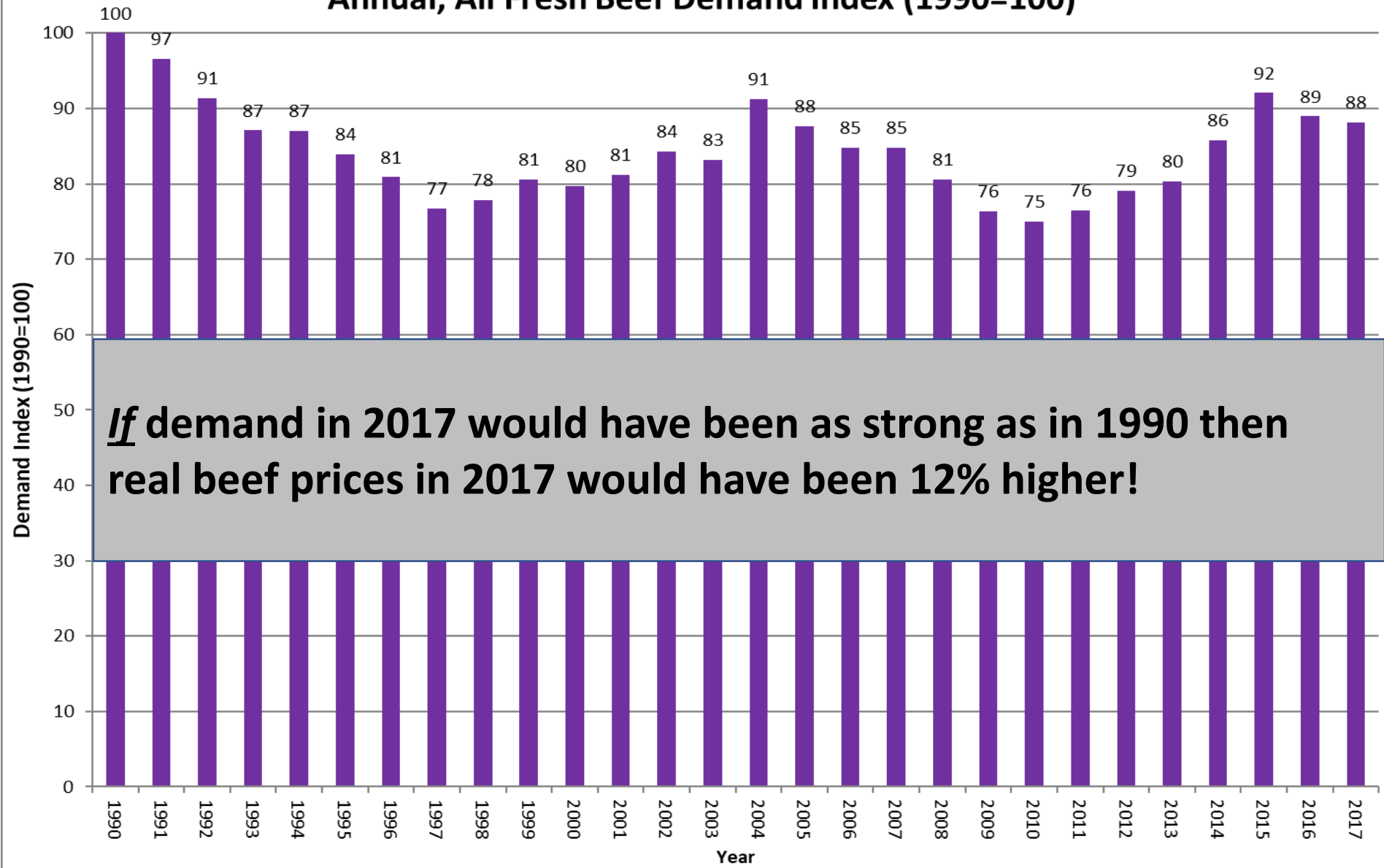
1980 - 1998 Challenge
Dr. Purcell, Demand Index Concept

First "Atkins Bump"

Post-Recession Demand
"Renaissance"

Great Recession

Annual, All Fresh Beef Demand Index (1990=100)



If demand in 2017 would have been as strong as in 1990 then real beef prices in 2017 would have been 12% higher!

Source: Glynn T. Tonsor, Kansas State University, Jan. 2018

<http://agmanager.info/livestock-meat/meat-demand>

Annual, All Fresh Beef Demand Index (1990=100)



Note 2014:
“Best Year Ever” for many producers,
occurred IN NO SMALL PART due to
strong demand growth!

Source: Glynn T. Tonsor, Kansas State University, Jan. 2018

<http://agmanager.info/livestock-meat/meat-demand>

How Does Domestic Demand Impact Me?

- 1% increase in domestic demand =
 - +2.30% live cattle
 - +3.50% feeder cattle prices (McKendree et al., 2018)

How Does Domestic Demand Impact Me?

- 1% increase in domestic demand =
 - +2.30% live cattle
 - +3.50% feeder cattle prices (McKendree et al., 2018)
- Q4.2017 Domestic Demand Index +2% (vs. Q4.2016)
 - Realized Prices:
 - \$118 (live) & \$157 (feeder)
 - Without domestic demand increase, would have been:
 - \$112.57 (live) & \$146.02 (feeder)
 - \$5.43/cwt & \$10.98/cwt price impacts

*What Impacts Beef
Demand?*

Assessing Beef Demand Determinants

Glynn T. Tonsor, Jayson L. Lusk, and Ted C. Schroeder

Joint Evaluation Advisory Committee Meeting

January 31, 2018



Funded by the Beef Checkoff.

Presentation at 2018 Cattle Industry Convention

Phoenix, AZ

Project Purpose

Main Goal

Provide a multi-faceted assessment of current factors impacting domestic beef demand.

Project Process

Process

- **Conducted 4 separate analyses** varying in time periods, levels of product aggregation, and socio-economic factors considered:
 1. **Aggregate Demand Elasticities Update**
 2. **Media and Medical Journal Information Effects**
 3. **Food Demand Survey Insights**
 4. **Consumer Beef Index Insights**

- **Summarize findings and provide main recommendations**

- **Widely disseminate results and implications**

1. Aggregate Demand Elasticities Update

Key Findings:

Insights across time periods: “Beef demand is _____”

- ❑ ... becoming less sensitive to own-price changes,
- ❑ ... becoming more sensitive to consumer expenditures,
- ❑ ... comparatively insensitive to competing protein prices

1988-2017 Period

- ❑ 1% increase in beef price = 0.48% drop in beef consumption
- ❑ 1% increase in pork price = 0.09% increase in beef demand
- ❑ 1% increase in chicken price = 0.02% increase in beef demand
- ❑ 1% increase in total expend. = 0.80% increase in beef demand

2. Media and Medical Information Effects

- ❖ 12 keyword based Lexis-Nexis & Medline searches
 - ❖ Animal Welfare, Well-Being, Care
 - ❖ Atkins, High Protein, Low Carbohydrate
 - ❖ Cancer
 - ❖ Climate, Environment
 - ❖ Convenience
 - ❖ Fat
 - ❖ Fat, Cholesterol, Heart Disease, Arteriosclerosis
 - ❖ Safety
 - ❖ Sustainability
 - ❖ Taste, Tender, Flavor
 - ❖ Vegan, Vegetarian, Meatless
 - ❖ Zinc, Iron, Protein

- ❖ Regression based assessment of impacts on beef demand

2. Media and Medical Information Effects

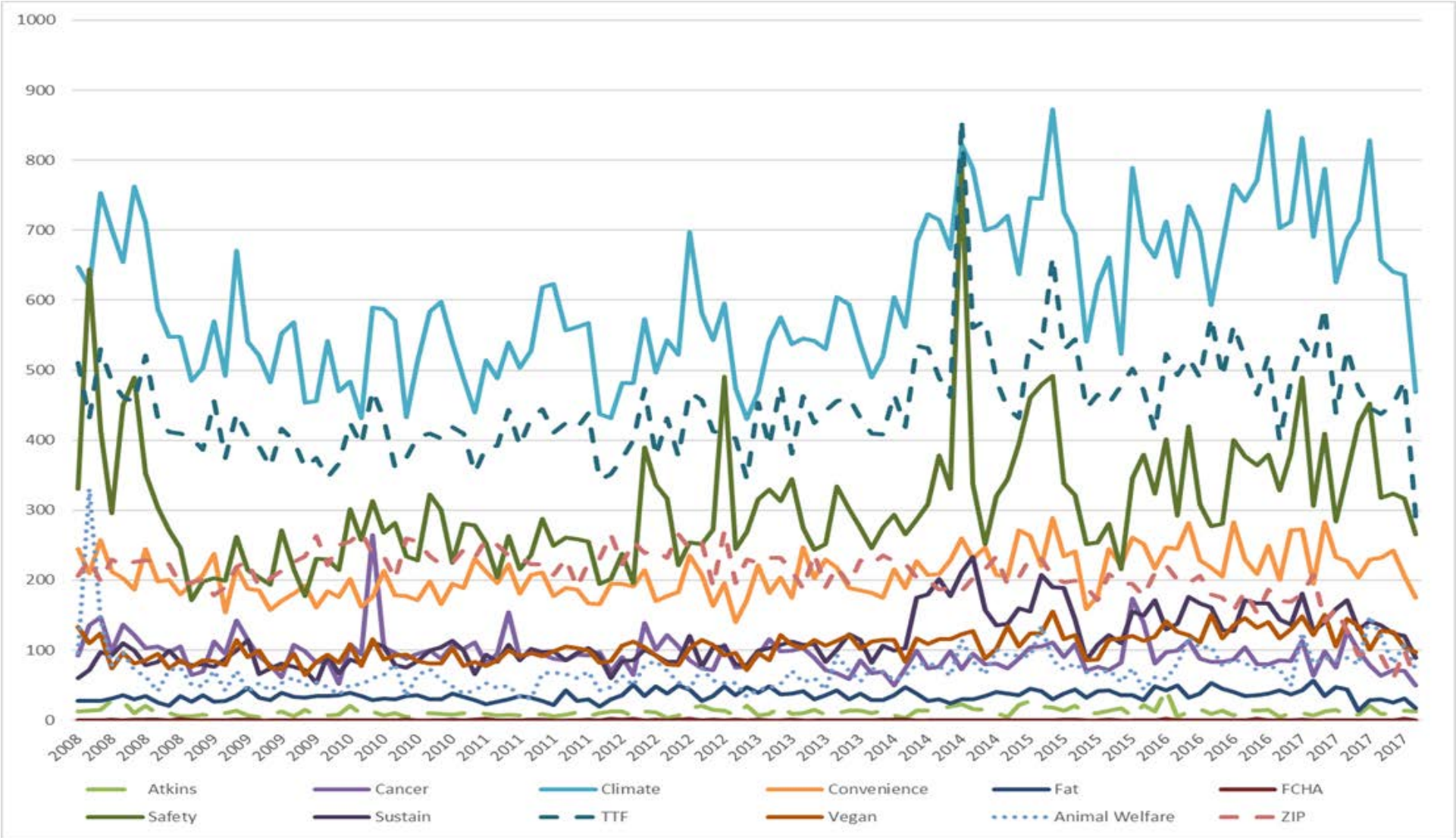
Table 3.1. Definition of Media and Medical Information Counts

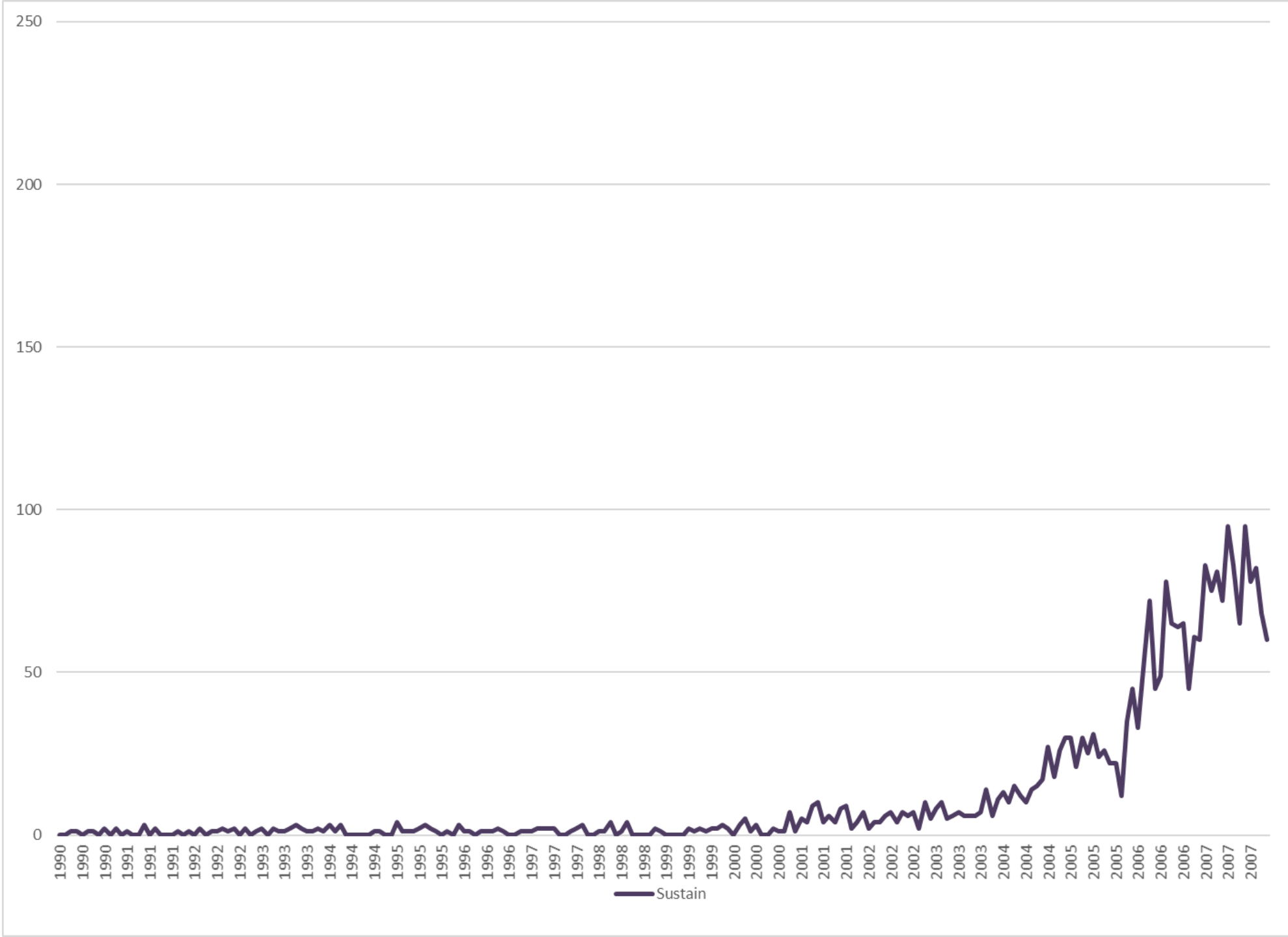
Abbreviated Name	Expanded Name	Keywords
<i>Animal Welfare</i>	<i>Animal Welfare, Well-Being, Care</i>	<i>((animal welfare) or (animal well-being) or (animal friendly) or (animal care) or (animal handling) or (animal transportation))</i>
<i>Atkins</i>	<i>Atkins, High Protein, Low Carbohydrate</i>	<i>(Atkins or high protein or low carbohydrate)</i>
<i>Cancer</i>	<i>Cancer</i>	<i>(cancer)</i>
<i>Climate</i>	<i>Climate, Environment</i>	<i>(climate change or greenhouse gas or global warming or water or environment)</i>
<i>Convenience</i>	<i>Convenience</i>	<i>(preparation or prepare or cook or bake or grill) and (ease or easy or short or quick or fast)</i>
<i>Fat</i>	<i>Fat</i>	<i>(fat)</i>
<i>FCHA</i>	<i>Fat, Cholesterol, Heart Disease, Arteriosclerosis</i>	<i>(fat or cholesterol) and (heart disease or arteriosclerosis)</i>
<i>Safety</i>	<i>Safety</i>	<i>(safety or recall)</i>
<i>Sustain</i>	<i>Sustainability</i>	<i>(sustainable or sustainability or sustain)</i>
<i>TTF</i>	<i>Taste, Tender, Flavor</i>	<i>(taste or tasty or tender or juicy or flavor or savor)</i>
<i>Vegan</i>	<i>Vegan, Vegetarian, Meatless</i>	<i>(vegan or vegetarian or meatless)</i>
<i>ZIP</i>	<i>Zinc, Iron, Protein</i>	<i>(zinc or iron or protein)</i>

Note: Each search was conducted with keywords also including "and (beef or cattle)" to derive measures specific to the beef-cattle industry.

2. Media and Medical Information Effects

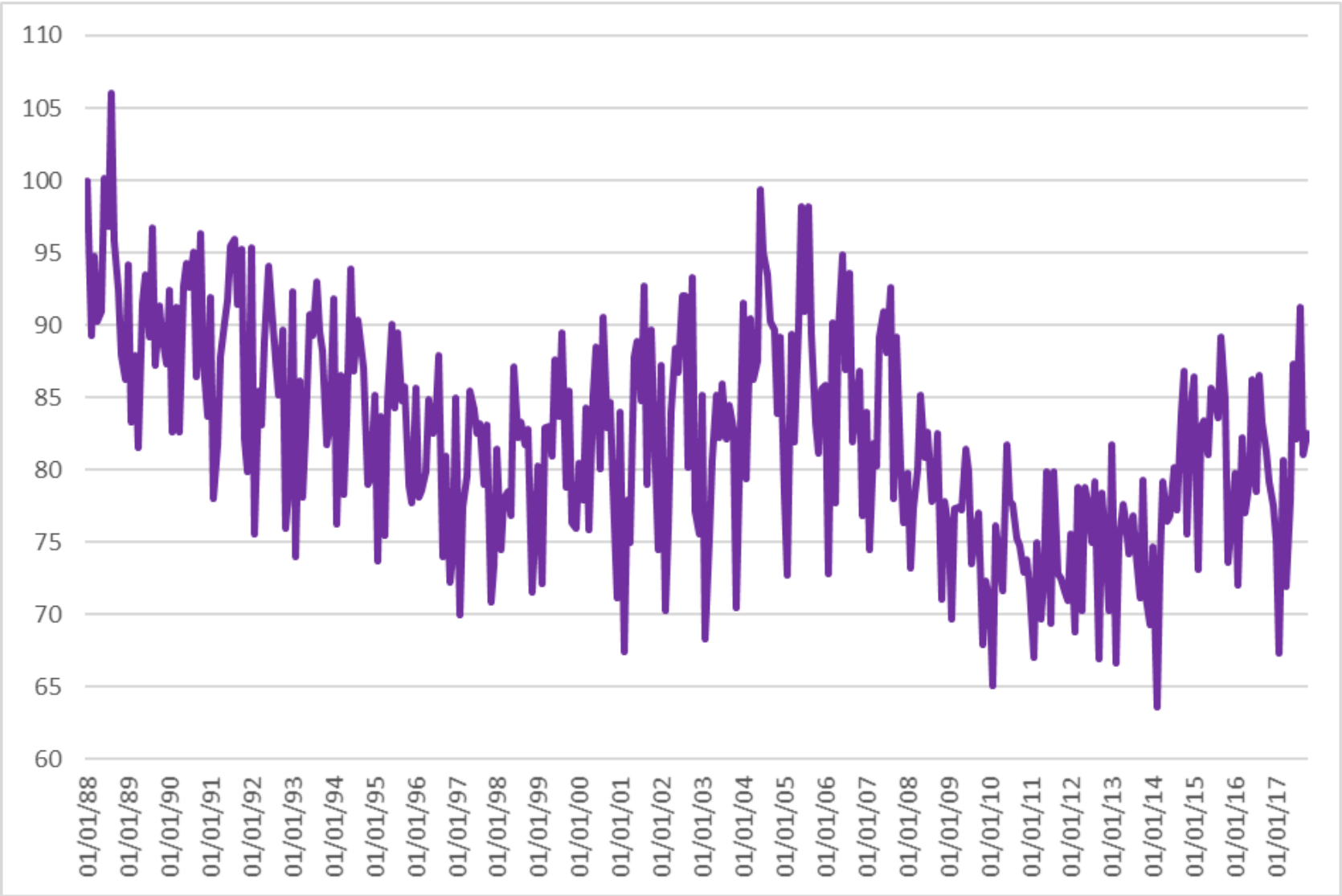
Figure 3.3. Beef Industry, Monthly Media and Medical Counts: Jan. 2008 – Nov. 2017





2. Media and Medical Information Effects

Figure 3.4. Monthly Beef Demand Index, Jan. 1988 – Oct. 2017.



2. Media and Medical Information Effects

Key Findings: 2008-2017 Period

Demand Catalysts: 1% Increase in Coverage:

- Atkins = +0.014% in beef demand
- Cancer = +0.197% in beef demand
- Fat = +0.031% in beef demand
- Sustain = +0.058% in beef demand
- Taste, Tender, Flavor = +0.479% in beef demand
- Welfare = +0.098% in beef demand

**Doubling of “Sustain”
Media Coverage =
+5.8% Beef Demand**

Demand Detriments: 1% Increase in Coverage:

- Climate = -0.209% in beef demand
- Convenience = -0.054% in beef demand
- Safety = -0.072% in beef demand
- Vegan = -0.240% in beef demand
- Zinc, Iron, Protein = -0.198% in beef demand

2. Media and Medical Information Effects

2008-2017 Differences from 1990-2007:

- Atkins positive effect reduced
- Fat (Sustainability) effects were negative (not sig), now positive
- 6 “new topics” now significant
- Seasonality effects reduced

3. Food Demand Survey (FooDS) Insights

- ❖ June 2013 – May 2017, 48,358 individual survey responses
- ❖ Each survey involved 9 choices with varying prices:

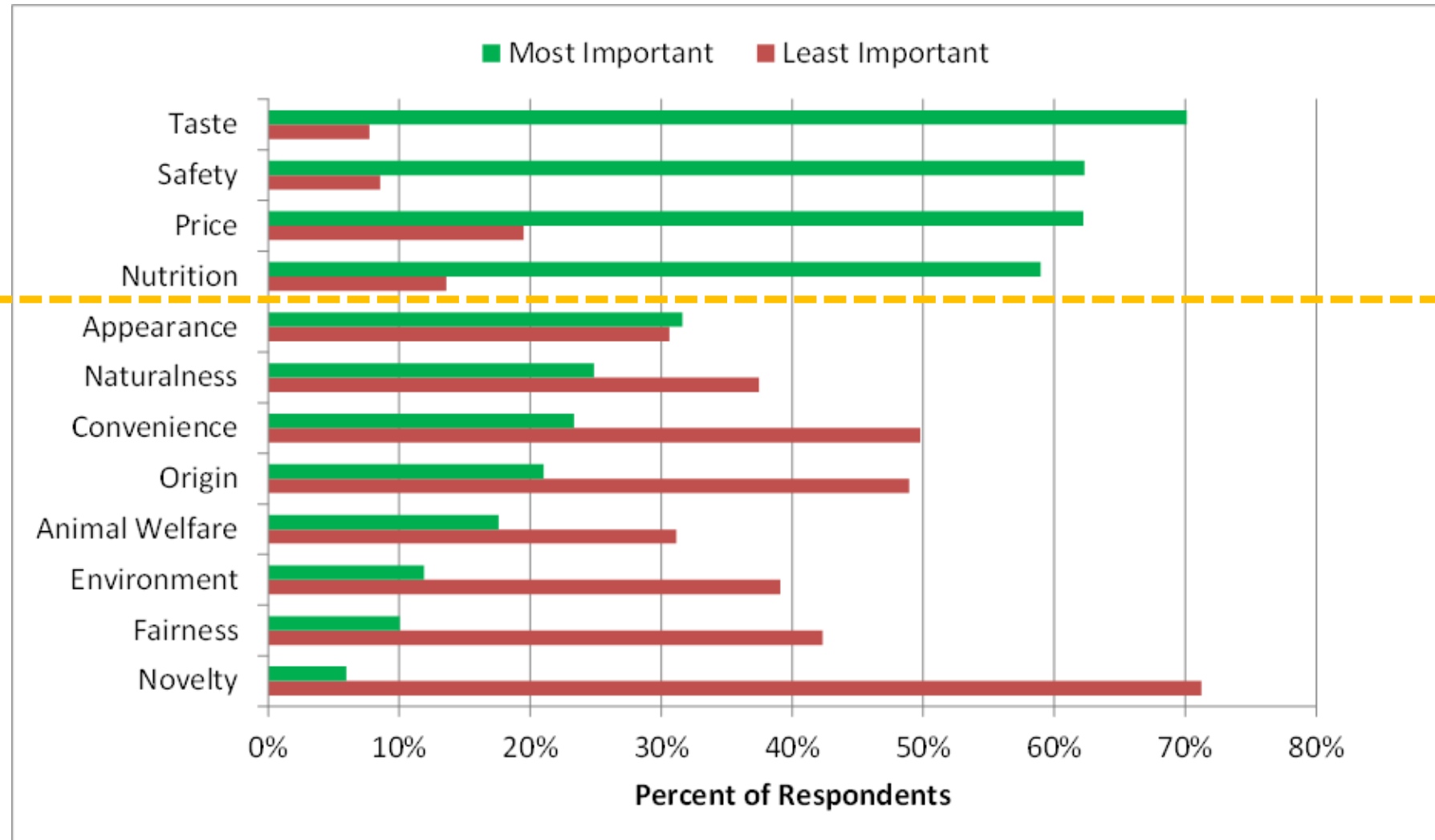
Which of the following would you purchase?

	Hamburger \$2.00/lb	Beef Steak \$6.50/lb	Pork Chop \$3.75/lb	Deli Ham \$2.65/lb	Chicken Breast \$3.25/lb	Chicken Wing \$1.75/lb	Beans and Rice \$0.50/lb	Tomato-Pasta \$2.50/lb	If these were the only options, I would buy something else.
I would choose...	 <input type="radio"/>	 <input type="radio"/>	 <input type="radio"/>	 <input type="radio"/>	 <input type="radio"/>	 <input type="radio"/>	 <input type="radio"/>	 <input type="radio"/>	<input type="radio"/>

- ❖ We identify number of ground beef & beef steak choices
- ❖ Examine impact of Food Values and Socio-Economic traits

3. Food Demand Survey (FooDS) Insights

Food Values, Most and Least Important when purchasing food



3. Food Demand Survey (FooDS) Insights

Key Findings: Steak Demand

- ❖ Higher (+)

- ❖ Observables

- ❖ Higher Incomes, Older Respondent, Larger Households, College, Hispanic, Midwest, Politically Conservative,

- ❖ Food Values

- ❖ Taste, Convenience, Novelty, Origin, Appearance

- ❖ Lower (-)

- ❖ Observables

- ❖ White, Females

- ❖ Food Values

- ❖ Naturalness, Price, Nutrition, Environment, Animal Welfare

3. Food Demand Survey (FooDS) Insights

Key Findings: Ground Demand (*BOLD denotes change from Steak Demand*)

- ❖ Higher (+)

- ❖ Observables

- ❖ **Lower Incomes**, Older Respondent, Larger Households, College, **White**, Black, Midwest, Politically Conservative,

- ❖ Food Values

- ❖ **Price**, Taste, Safety, Convenience, Novelty, Appearance

- ❖ Lower (-)

- ❖ Observables

- ❖ **Hispanic**, Females

- ❖ Food Values

- ❖ **Naturalness**, Nutrition, Environment, Animal Welfare

4. Consumer Beef Index (CBI) Insights

- ❖ Collaborated with NCBA to add new demand questions
- ❖ Estimate WTP for boneless Ribeye steak & 80% lean ground beef
- ❖ February (Mar. 9-21) and July (Aug. 9-17) survey waves

4. Consumer Beef Index (CBI) Insights

- ❖ Collaborated with NCBA to add new demand questions
- ❖ Estimate WTP for boneless Ribeye steak & 80% lean ground beef
- ❖ February (Mar. 9-21) and July (Aug. 9-17) survey waves

Key Findings:

- ❑ Mean ground beef WTP of \$3.95/lb (Mar.) and \$3.97/lb (Aug.)
- ❑ Mean Ribeye steak WTP of \$9.88/lb (Mar.) and \$9.68/lb (Aug.)

- ❑ **Ground Beef Demand:**
 - ❑ Higher for African-Americans, homes with kids, those consuming beef at least 1x week
 - ❑ Lower in Midwest
- ❑ **Steak Demand:**
 - ❑ Higher for those working full-time, higher incomes, Hispanics, those consuming beef at least 1x week
 - ❑ Lower for older respondents

Main Unifying Themes / Recommendations

- ❑ Meat prices have become less important while consumer income has become more important**
 - Elevates importance of beef quality focus**
- ❑ Beef demand has increased or been stable over the past 5 years depending on measurement approach**
 - Good news given volume of “negative media”**
- ❑ Different methods offer unique insights into beef demand consistent with realities of available data**
 - Encourage use of multiple information sources**

Main Unifying Themes / Recommendations

- ❑ “Hot topics” change notably over time**
 - Impact on beef demand can substantially change**
 - Don’t over-react at expense of loyal beef customers**

- ❑ Several drivers of steak and ground beef demand differ**
 - Target marketing by beef product type and household type is encouraged**

- ❑ Examples of demand concepts being confused continue to exist**
 - Ongoing support of education on demand concepts and economic value to producers is encouraged**

Assessing Beef Demand Determinants

Glynn T. Tonsor, Jayson L. Lusk, and Ted C. Schroeder

Joint Evaluation Advisory Committee Meeting

January 31, 2018



Funded by the Beef Checkoff.

Presentation at 2018 Cattle Industry Convention

Phoenix, AZ

*Where Do New,
Alternative, Plant-Based
Protein Items Fit?*

New, Alternative, Plant-Based Protein

Tonsor's two main points:

- World needs & wants more protein = new sources will continue to arise
 - ✓ There is “room” for BOTH conventional & new protein items
- MUCH MORE economic research is needed
 - ✓ Largely “working blind” currently

You are now logged in

Why people in rich countries are eating more vegan food

The further they go, the better



Print edition | Briefing

Oct 13th 2018 | WARSAW

You are now logged in

Why people in rich countries are eating more vegan food

The further they go, the better



Print edition | Briefing
Oct 13th 2018 | WARSAW

- **Article:** “60% of Poles (Poland residents) say they plan to cut back on meat this year.”

❑ **GT: Public often says they will change behavior more than actually occurs**

- “I Will Give You My Vote but Not My Money: Preferences for Public versus Private Action in Addressing Social Issues” AEPP, 2018 Norwood, Tonsor, & Lusk:

<https://academic.oup.com/aep/advance-article/doi/10.1093/aep/ppy002/4931105>

You are now logged in

Why people in rich countries are eating more vegan food

The further they go, the better



Print edition | Briefing
Oct 13th 2018 | WARSAW

- **Article:** “In America, Nielsen found in 2017 that 3% ... called themselves vegans and 6% vegetarians...”
 - **GT:** Estimates are consistent with work by Lusk & now ceased-FooDS effort (<http://jaysonlusk.com/blog/2014/9/30/who-are-the-vegetarians>)

You are now logged in

Why people in rich countries are eating more vegan food

The further they go, the better



Print edition | Briefing
Oct 13th 2018 | WARSAW

- **Article:** Confounds environmental impacts, animal welfare, and human health/nutrition in several ways
 - **GT:** Example of multiple social topics with mixed scientific evidence & wide social media “discussion” = leads to notable confusion & a high-cost to the industry if not being fully engaged...

You are now logged in

Why people in rich countries are eating more vegan food

The further they go, the better



Print edition | Briefing
Oct 13th 2018 | WARSAW

- **Article:** Overall implicitly points to likely decline in meat consumption
 - **GT: I disagree.** This is at odds with global meat demand growth & reflects in part article's omission of key role taste/flavor have in meat demand

New, Alternative, Plant-Based Protein

Key Economic Unknowns:

1. What demographics describe new product buyers?
2. What latent perceptions underlie purchase decision?
3. What proportion become repeated (vs. one-time novel) buyers?
4. How own- & cross-price sensitive are buyers?

Stated differently: *we need research based answers to understand current and future conventional meat substitution effects!*

*Where Can I Find More
Information on Beef
Demand?*

Livestock & Meat Marketing

[Home \(/\)](#) / [Livestock & Meat \(/livestock-meat\)](#) / [Meat Demand](#)

[Livestock & Meat \(/livestock-meat\)](#)

Meat Demand

Add to Favorites (<https://www.agmanager.info/flag/flag/favorites/11709?destination=node/11709&token=78f9d12b3b67c0e7707e215922c737f>)

Meat Demand

Title	Author	Date
Quarterly Choice Beef Demand Index (1990=100) (/livestock-meat/meat-demand/quarterly-choice-beef-demand-index-1990100)	Tonsor (/contributors/tonsor)	August 13, 2018
Quarterly All Fresh Beef Demand Index (1990=100) (/livestock-meat/meat-demand/quarterly-all-fresh-beef-demand-index-1990100)	Tonsor (/contributors/tonsor)	August 13, 2018

Search - beef demand

About 1,450 results (0.49 seconds)

New Beef Demand Indices

<https://www.beefboard.org/.../170221Beef-Demand-Landing-Page.asp>



Beef demand is critical to understand and monitor as it directly influences overall beef industry prosperity.

Assessing Beef Demand Determinants

https://www.beefboard.org/.../Assessing%20Beef%20Demand%20Determinants_FullReport.pdf



File Format: PDF/Adobe Acrobat

Jan 18, 2018 ... Assessing **Beef Demand** Determinants. Prepared for the Cattlemen's Beef Board. Glynn T. Tonsor, Kansas State University (gtonsor@ksu.edu).

New Study: Many Factors Impacting Domestic Beef Demand

<https://www.beefboard.org/.../180131Tonsor-beef-demand-print.asp>



Jan 31, 2018 ... **Beef demand** Beef quality, consumer incomes, attention to beef in health articles in medical journals and the general media, and shifts in race ...

<https://www.beefboard.org/news/180131Tonsor-beef-demand-print.asp>

Market Research to Build Beef Demand

<https://www.beefboard.org/.../150702-Market-Research-Landing-Page.asp>



Beef checkoff uses market-research efforts to guide investment of checkoff dollars into promotion and information programs to increase **beef demand**.

2013 Beef Demand Determinant Study

<https://www.beefboard.org/.../130612demanddeterminantstudy.asp>



Links to results of the 2013 **Beef Demand** Determinant Study commissioned by the Beef Checkoff Program.

beef demand in the Northeast region

<https://www.beefboard.org/.../NE%20Beef%20Demand%20Tonsor-2.20.17.pdf>

<https://www.beefboard.org/evaluation/180131beef-demand-determinant.asp>

<https://www.beefboard.org/producer/170221Beef-Demand-Landing-Page.asp>

<https://www.beefboard.org/search.asp?cof=FORID%3A11&cx=000951561340430319383%3Aosws6nacbuw&ie=UTF-8&q=beef+demand>

What Can I Do?

- Persistently work to understand what beef demand is and its role for the industry and you

What Can I Do?

- Persistently work to understand what beef demand is and its role for the industry and you
- Know your comparative advantage!!!
 - Also note role of production costs vs. your sales price
 - Maximized production is not always optimal!

What Can I Do?

- Persistently work to understand what beef demand is and its role for the industry and you
- Know your comparative advantage
- I encourage you to:
 - Recognize this “isn’t your father’s world” anymore and manage accordingly...
 - “Think globally, manage locally, and stay informed”

More information available at:



This presentation will be available in PDF format at:

<http://www.agmanager.info/contributors/tonson>

Glynn T. Tonsor

Professor

Dept. of Agricultural Economics

Kansas State University

Email: gtonson@ksu.edu

Twitter: @TonsorGlynn

Utilize a Wealth of Information Available at
AgManager.info

About AgManager.info

AgManager.info website is a comprehensive source of information, analysis, and decision-making tools for agricultural producers, agribusinesses, and others. The site serves as a clearinghouse for applied outreach information emanating from the Department of Agricultural Economics at Kansas State University. It was created by combining departmental and faculty sites as well as creating new features exclusive to the AgManager.info site. The goal of this coordination is to improve the organization of web-based material and allow greater access for agricultural producers and other clientele.



Receive Weekly Email Updates for
AgManager.Info:

<http://www.agmanager.info/about/contact-agmanagerinfo>



Creating and Assessing Candidate Food Service and Retail Beef Demand Indices

Glynn T. Tonsor & Ted C. Schroeder

Joint Evaluation Advisory Committee Meeting

February 1, 2017

Presentation at 2017 National Cattlemen's Beef Association Annual Meeting Nashville, TN



Assessing Beef Demand Determinants

Glynn T. Tonsor, Jayson L. Lusk, and Ted C. Schroeder

Joint Evaluation Advisory Committee Meeting

January 31, 2018



Funded by the Beef Checkoff.

Presentation at 2018 Cattle Industry Convention

Phoenix, AZ