

Measuring Beef Demand

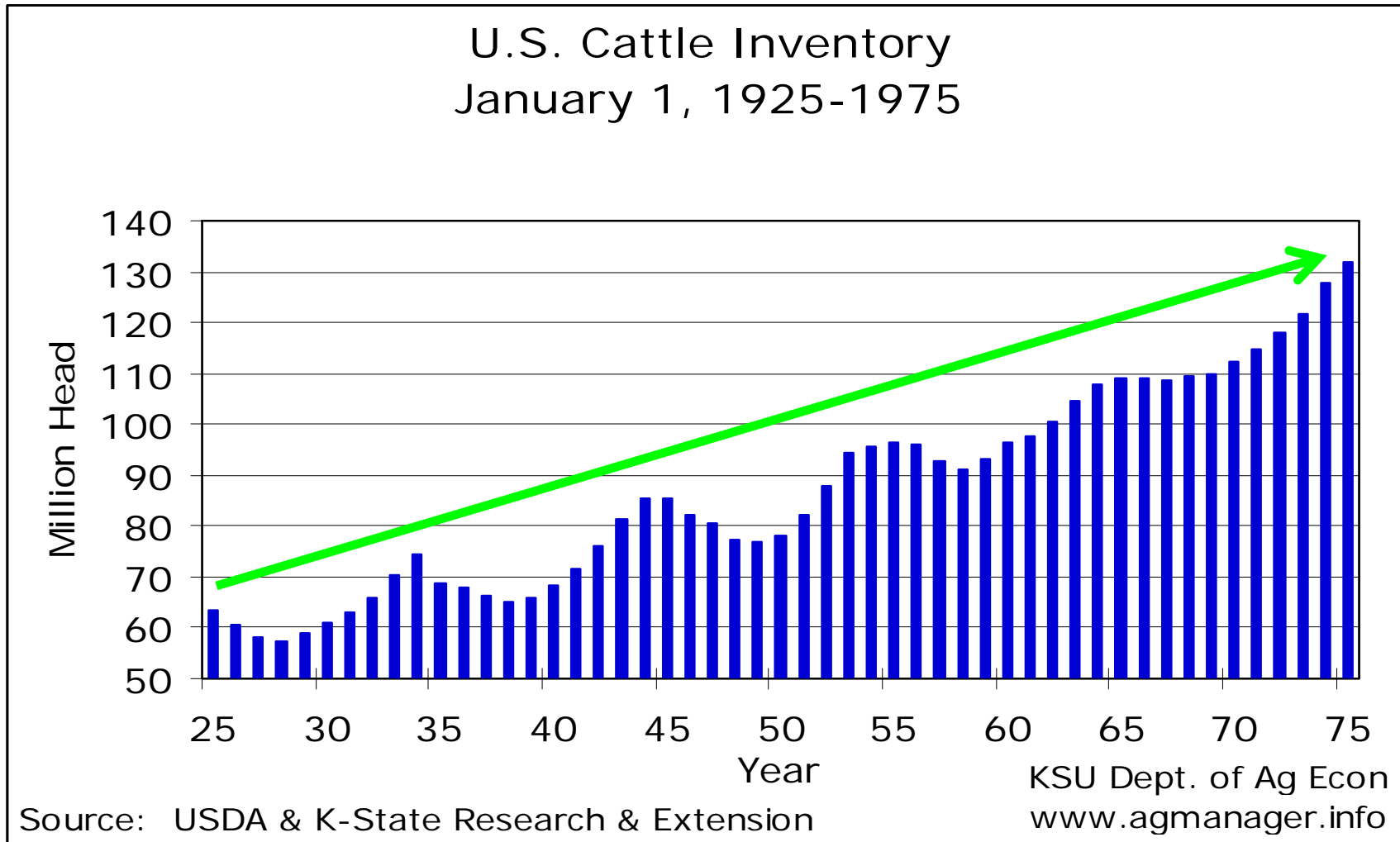
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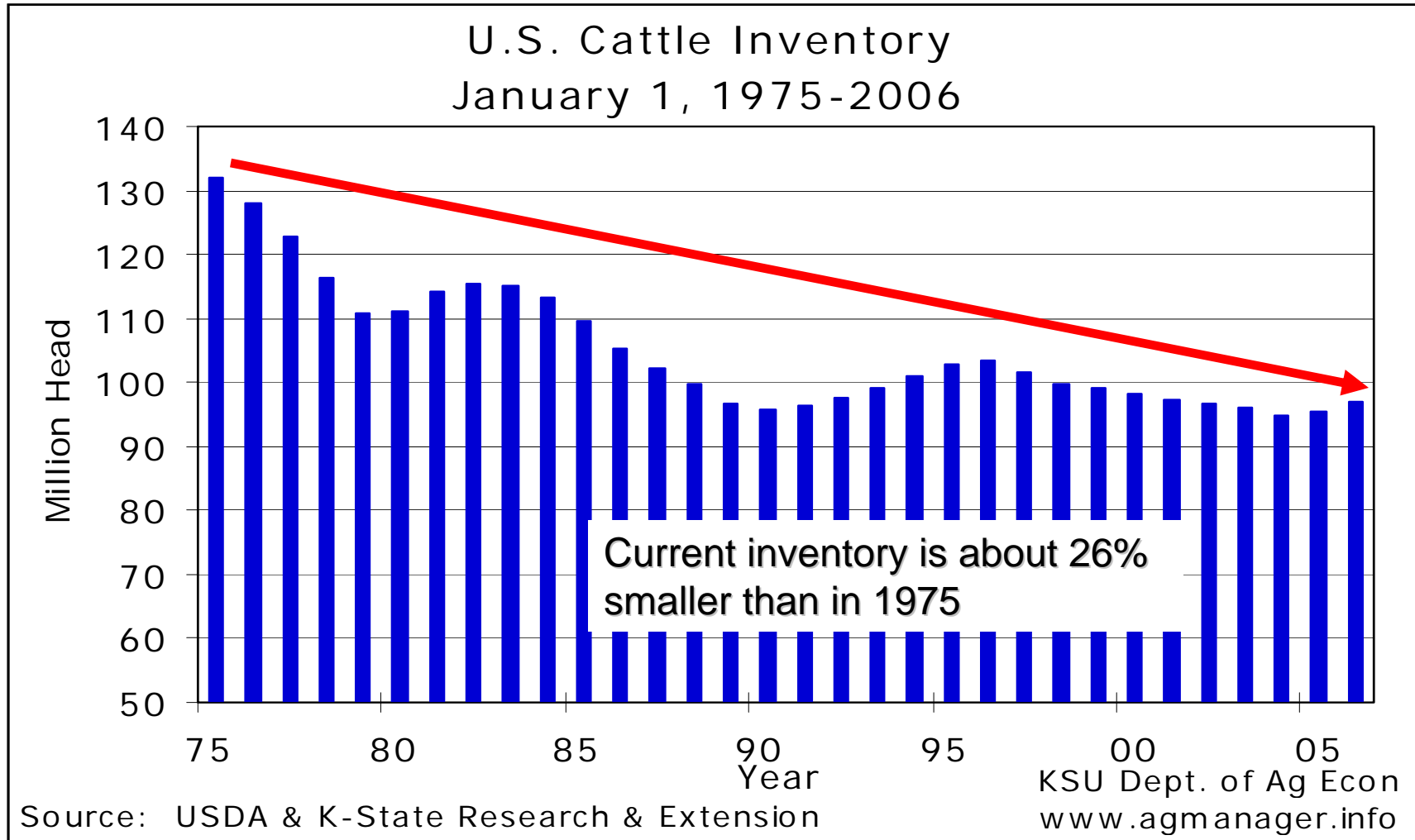
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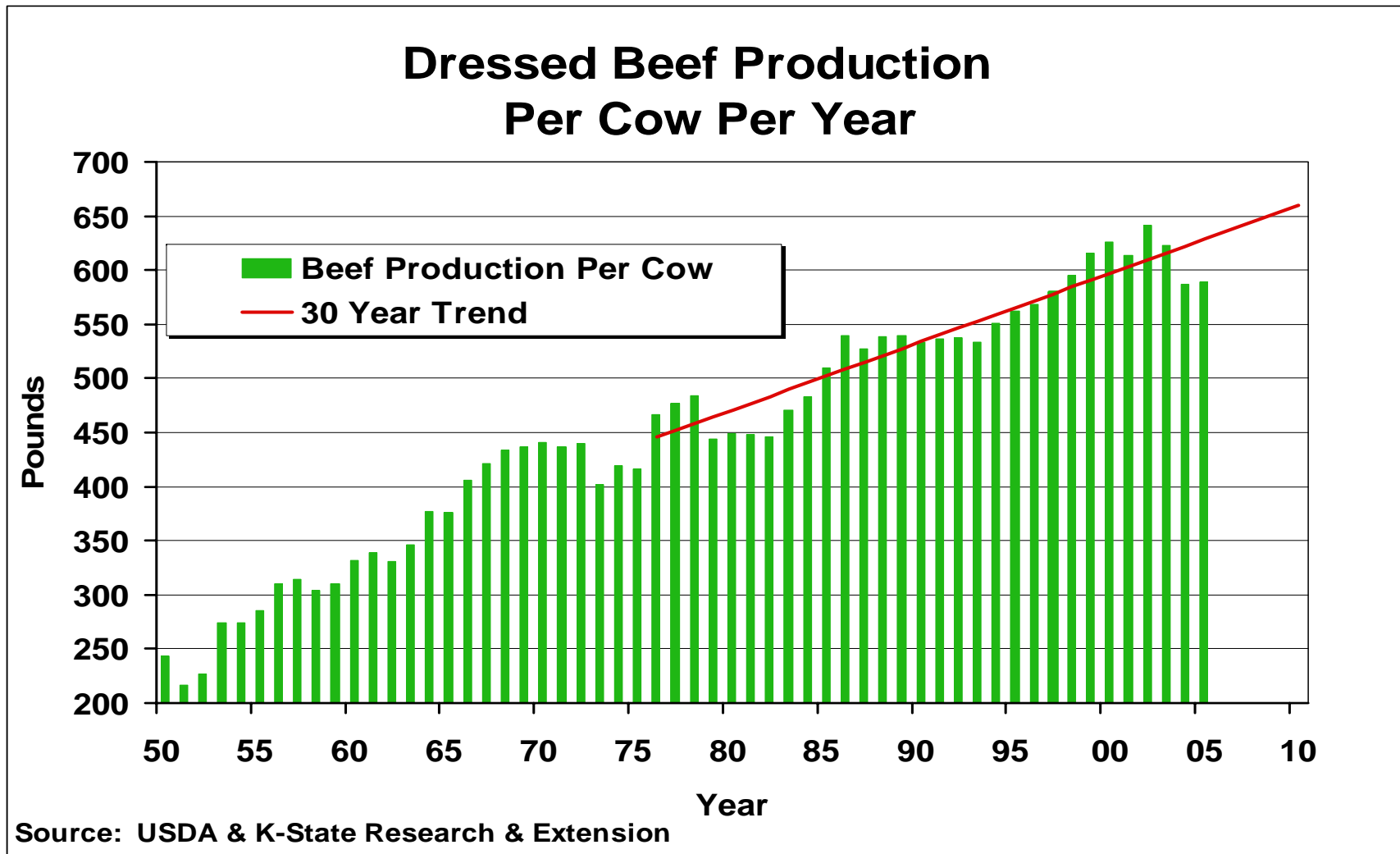
A Picture of A Healthy Industry



A Shrinking Industry Responding to a Lack of Profitability

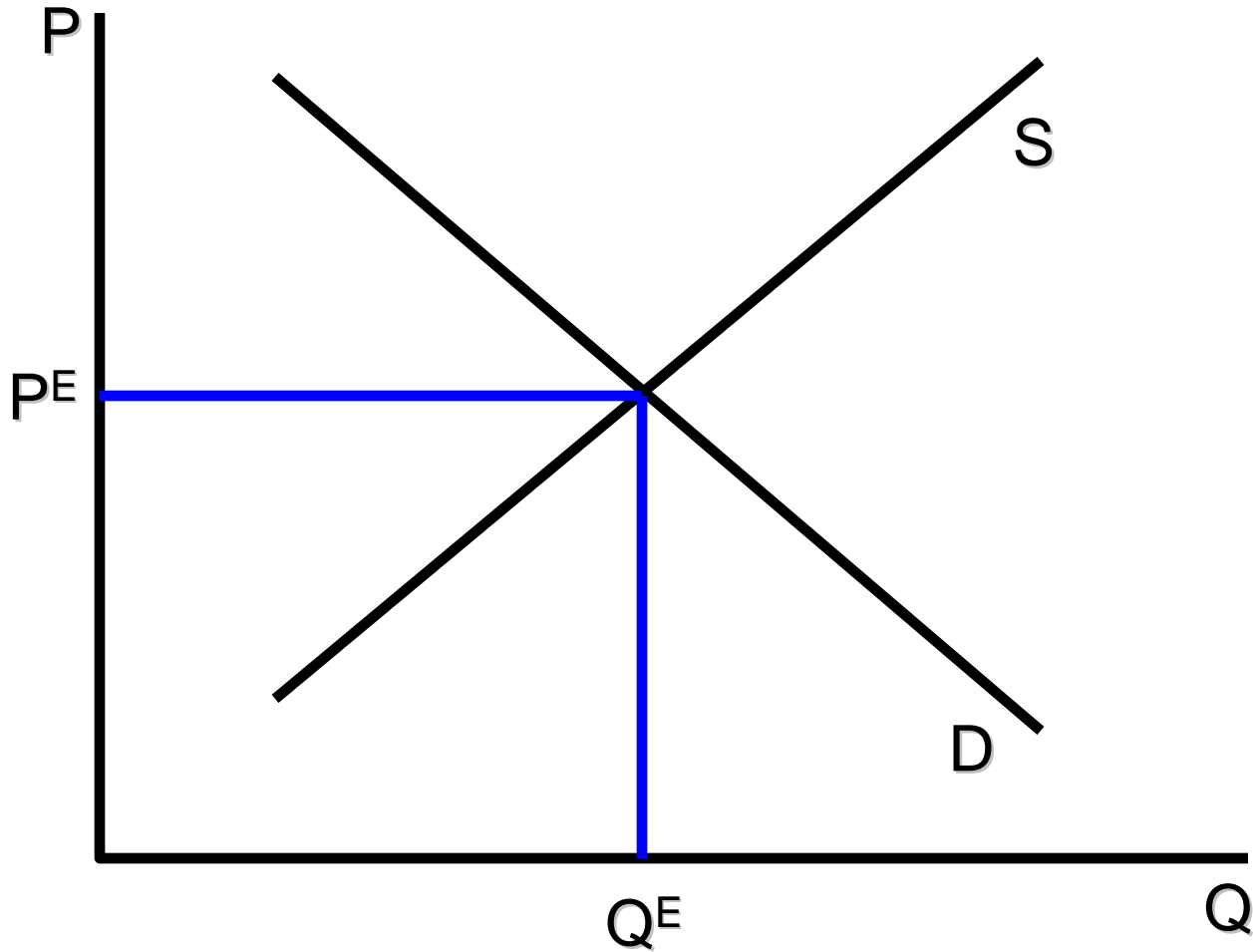


Rising Productivity Is Partially Responsible

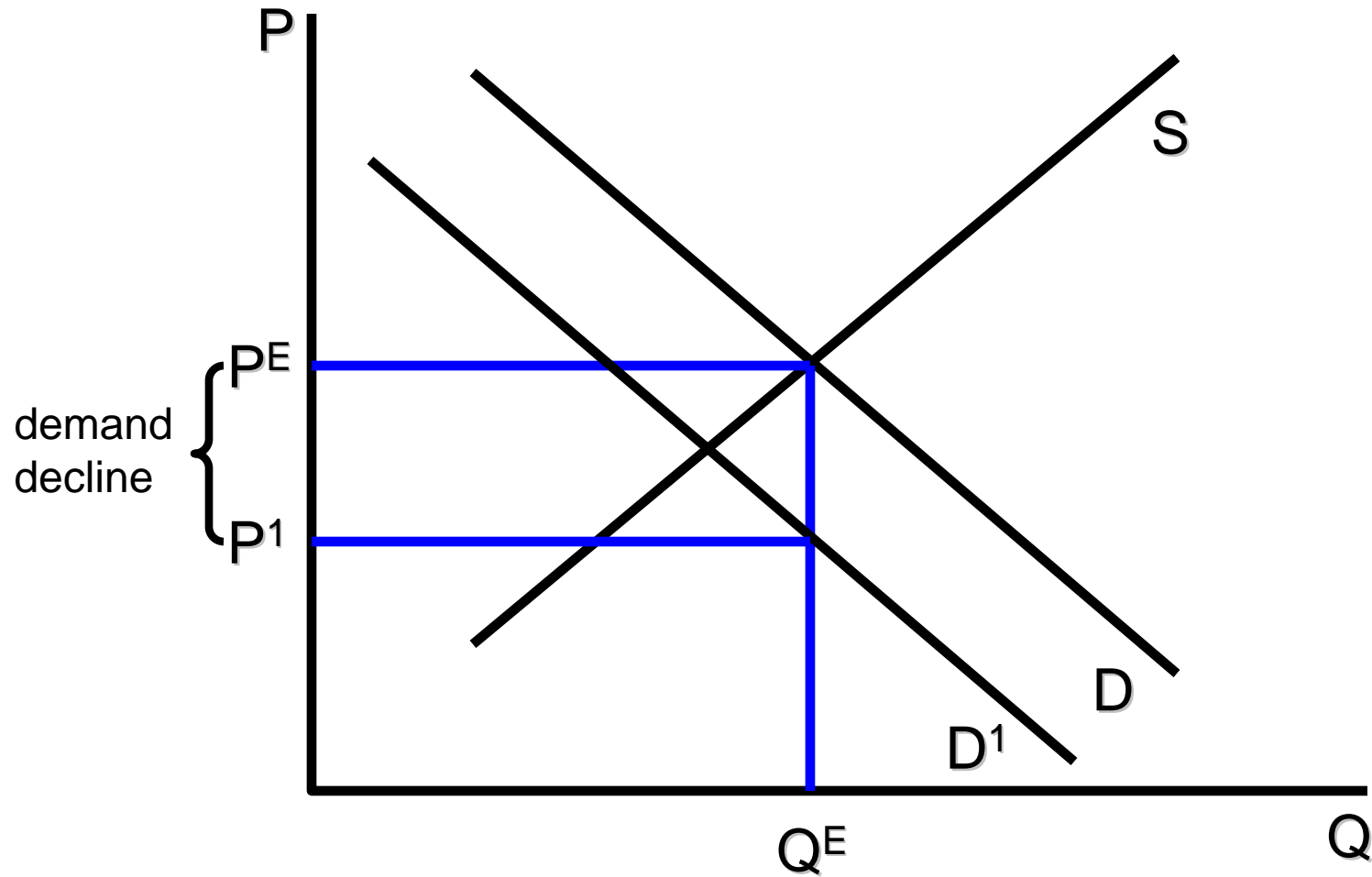


But Declining Consumer Demand for Beef
Was A Key Factor

Beef Market Equilibrium



Beef Market Equilibrium



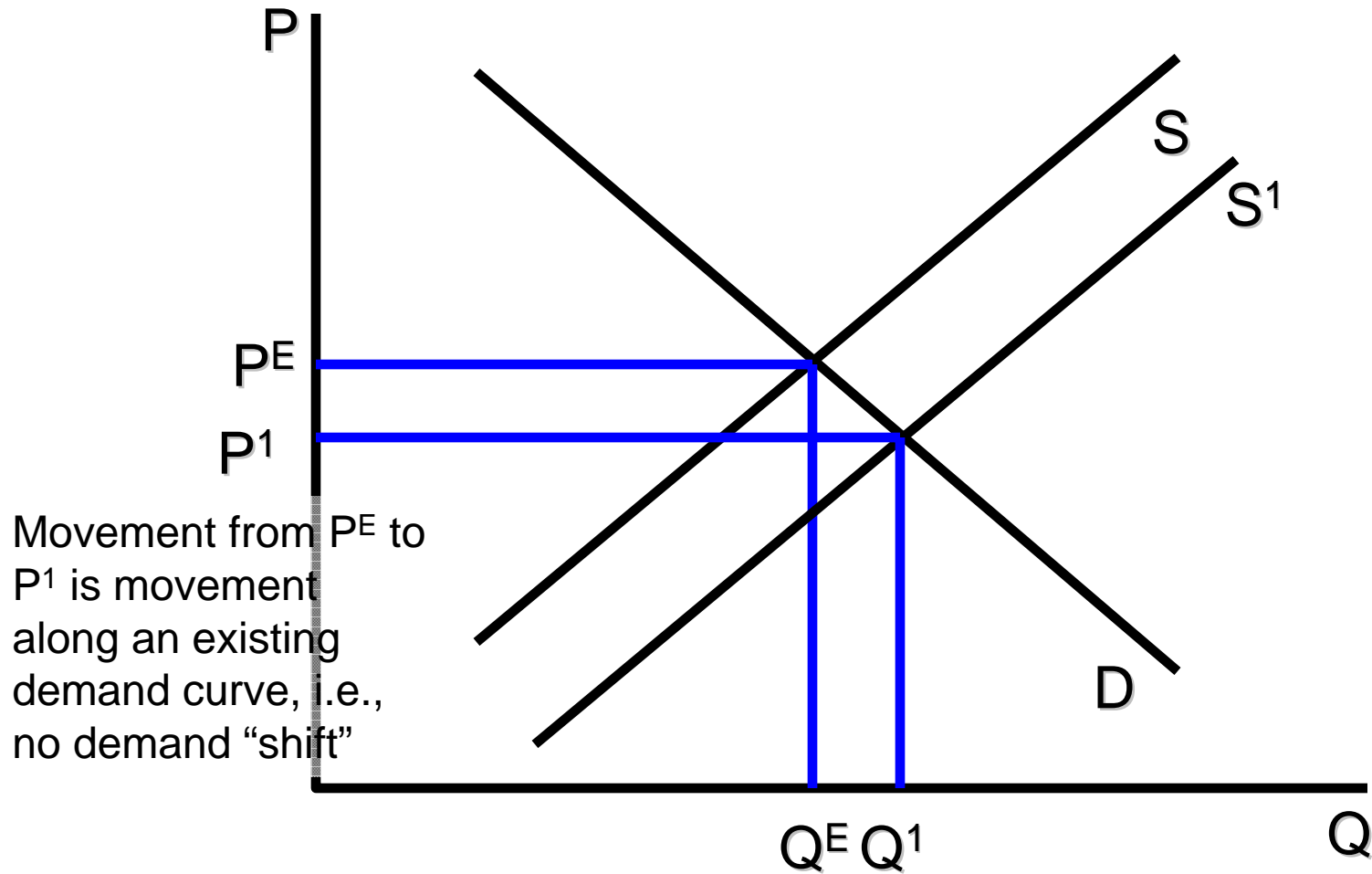
Goal of Beef Demand Index

- Provide a simple way of tracking demand changes
- Provide approximate measure of demand shift, compared to base year & recent years
 - 1980 used as base year
 - Coincides with approximate start of demand decline

How Do We Compute Demand Index?

- Adjust all prices for inflation using an inflation index (Consumer Price Index)
- Need to differentiate between
 - movement along an existing demand curve &
 - shifts in demand
- Price changes attributable to changes quantity are simply movement along an existing demand curve

Beef Market Equilibrium



How Do We Compute Demand Index?

- So we first compute an “expected” inflation adjusted beef price
- “Expected” beef price uses price in base year as starting point
 - Use a measure of how responsive beef prices are to changes in quantity to calculate “expected” price
 - Calculate expected price, if demand was held constant at base year’s level, based upon change in per capita beef quantity available since base year

Beef Demand Index & Price Responsiveness to Supply Shifts

- Price Flexibility provides a measure of percentage price change expected given a 1% supply change
- Price Flexibility used is -1.49
 - 1% per capita supply increase expected to yield 1.49% decline in inflation adjusted price
 - Actual index values dependent on choice of price flexibility, but pattern of demand largely unchanged (Marsh, 2003)

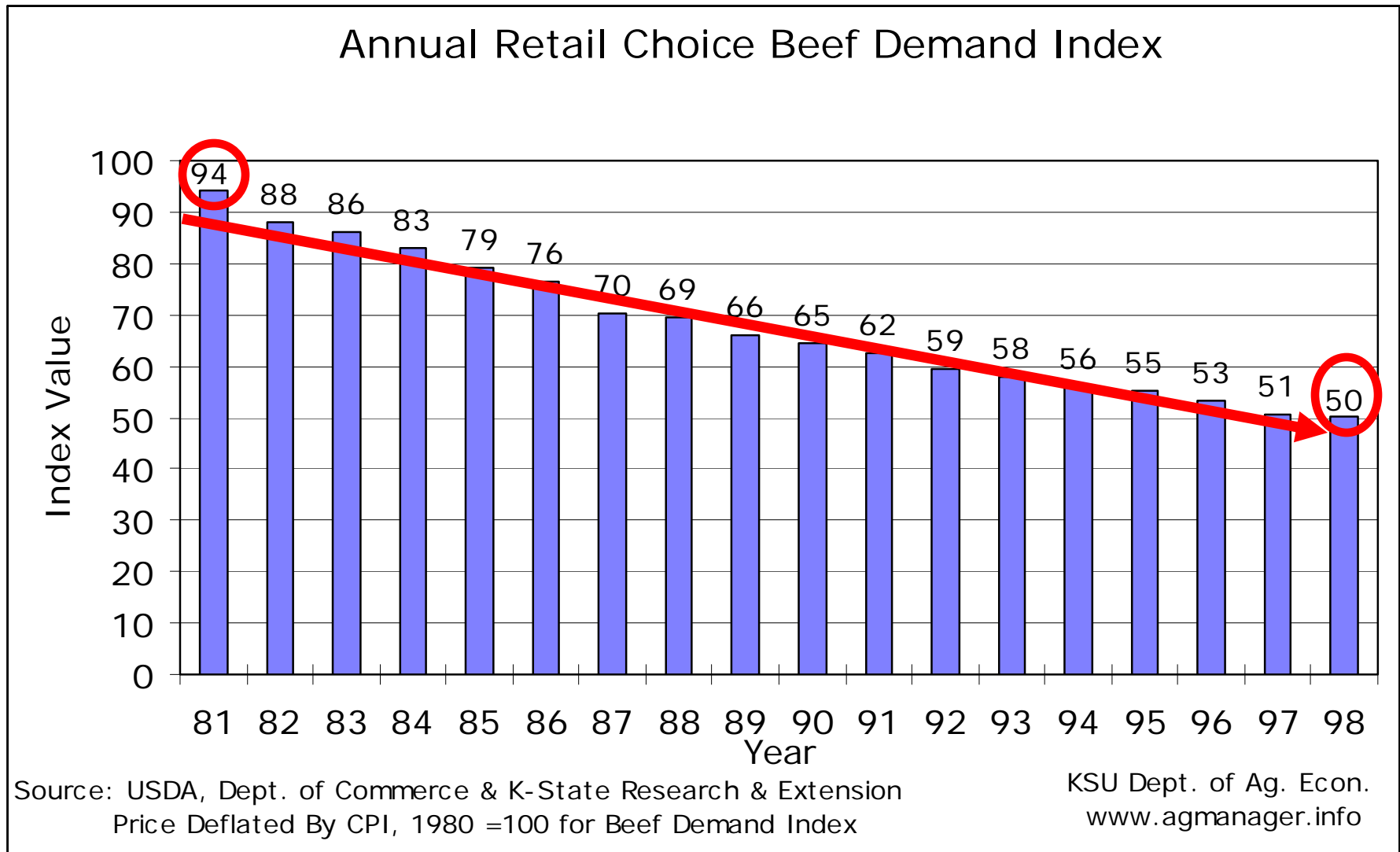
How Do We Compute Demand Index?

Beef Demand Index equals

$$\frac{\text{Actual inflation adjusted retail beef price}}{\text{Expected inflation adjusted retail beef price}} \times 100$$

The Index Documents Demand Decline

Beef Demand 1980-1998



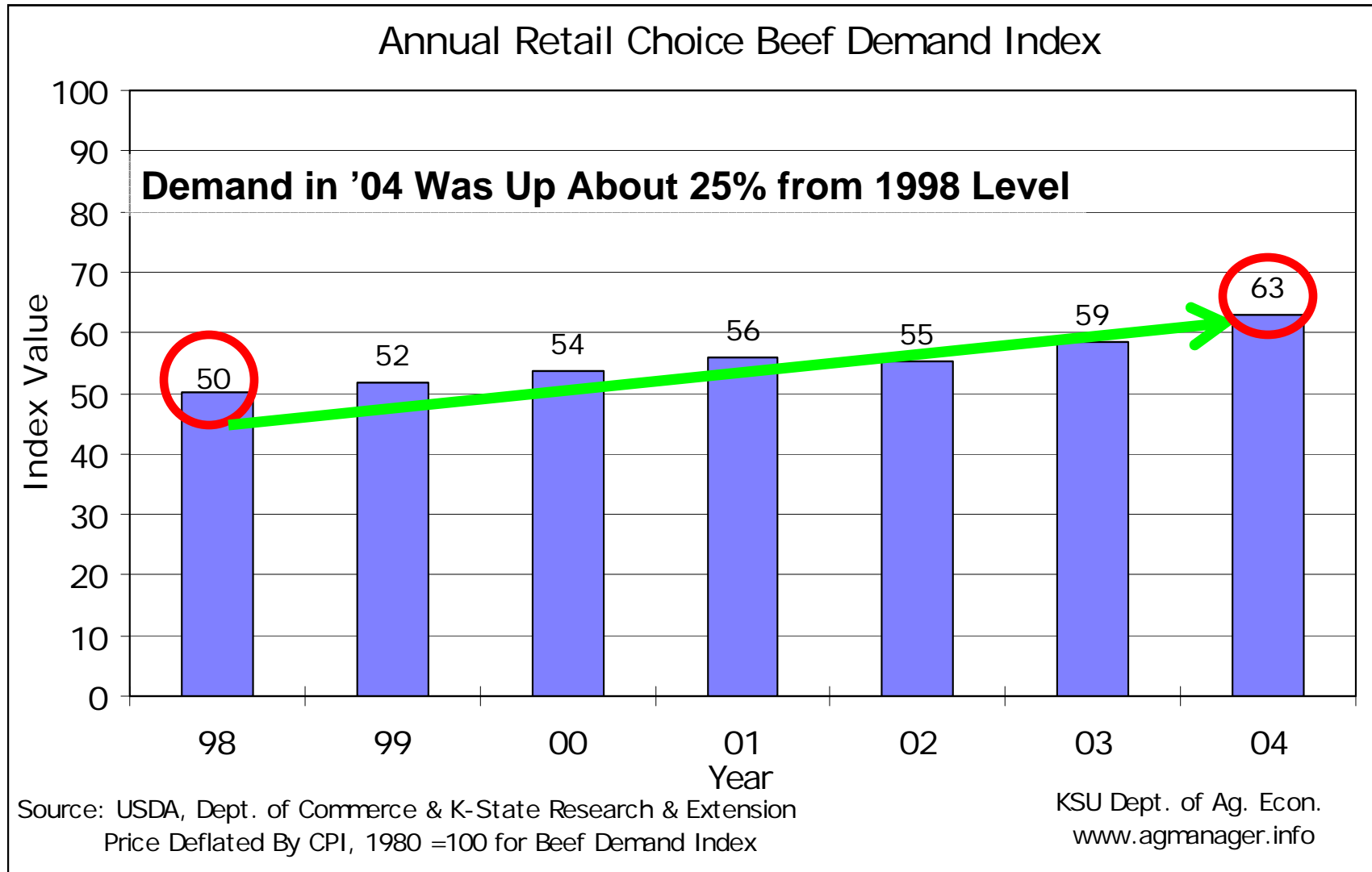
Beef Demand Decline Was Devastating

- What's the linkage between retail beef demand & cattle producers?
 - Retailers demand for wholesale beef is derived from demand for retail beef products
 - Packer demand for fed cattle is derived from demand for wholesale beef products
 - Feedlot demand for calves & feeder cattle is derived from demand for fed cattle

Beef Demand Decline Was Devastating

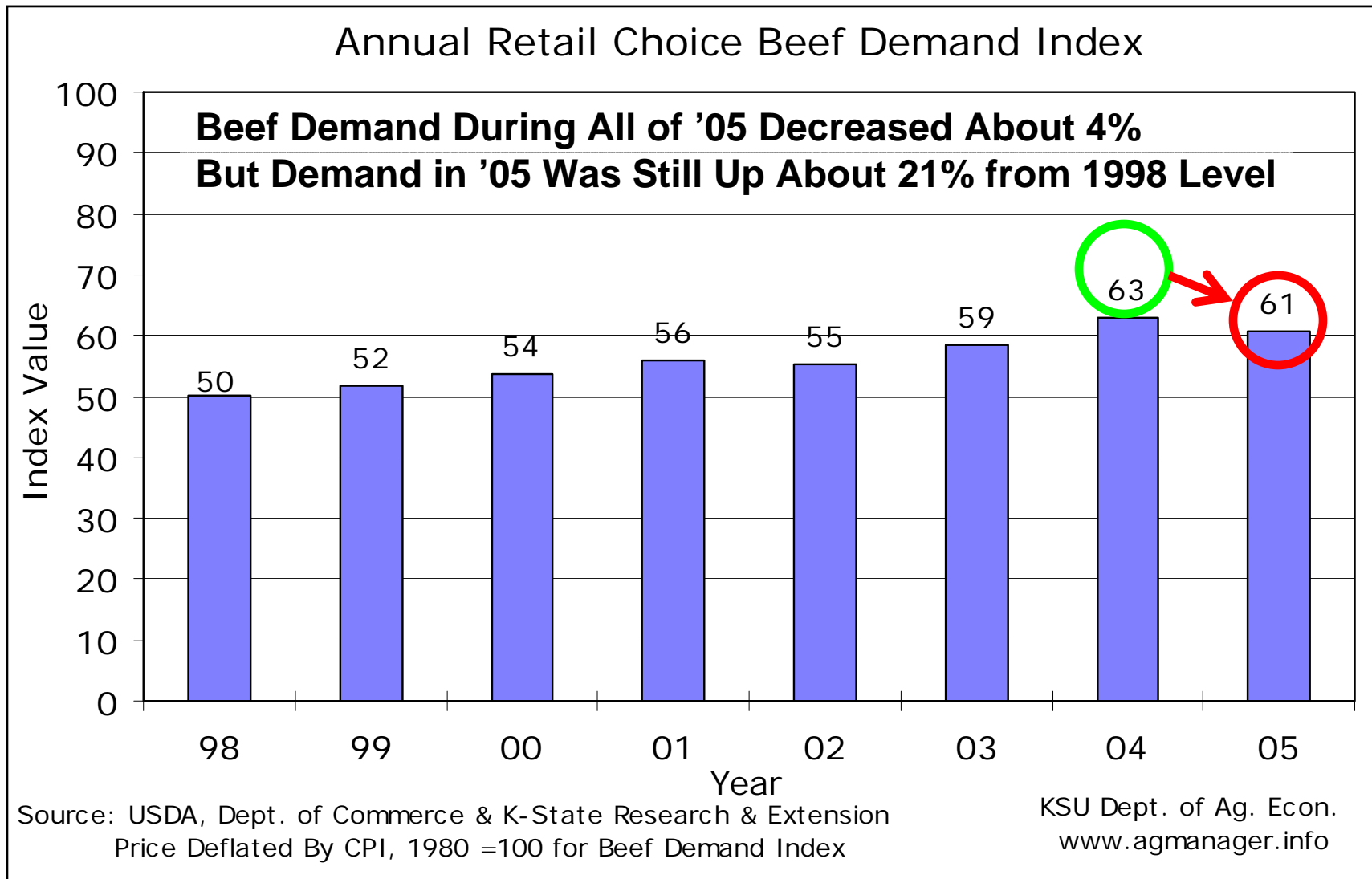
- Who bore brunt of long-term beef demand decline?
 - Feedlots & beef processors?
 - No, margin operators adjusted to demand reductions
 - Answer: Cow-calf producers
 - How?
 - Lower returns for cow-calf producers
 - Labor
 - Land
 - Other capital
 - Why?
 - Industry size decisions are made by cow-calf producers

Index Also Documents Demand Increase 1998-2004



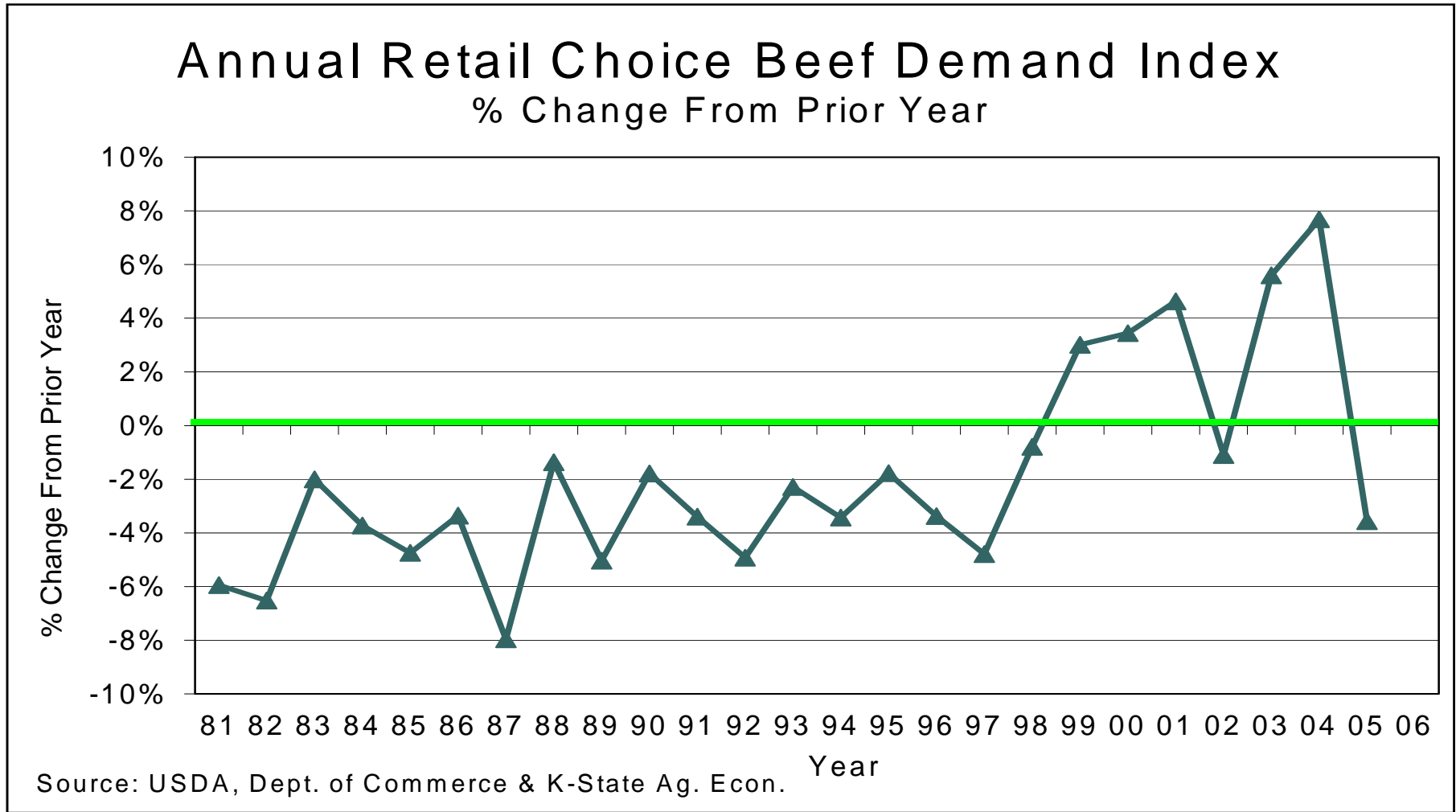
What Happened in 2005?

1998-2005

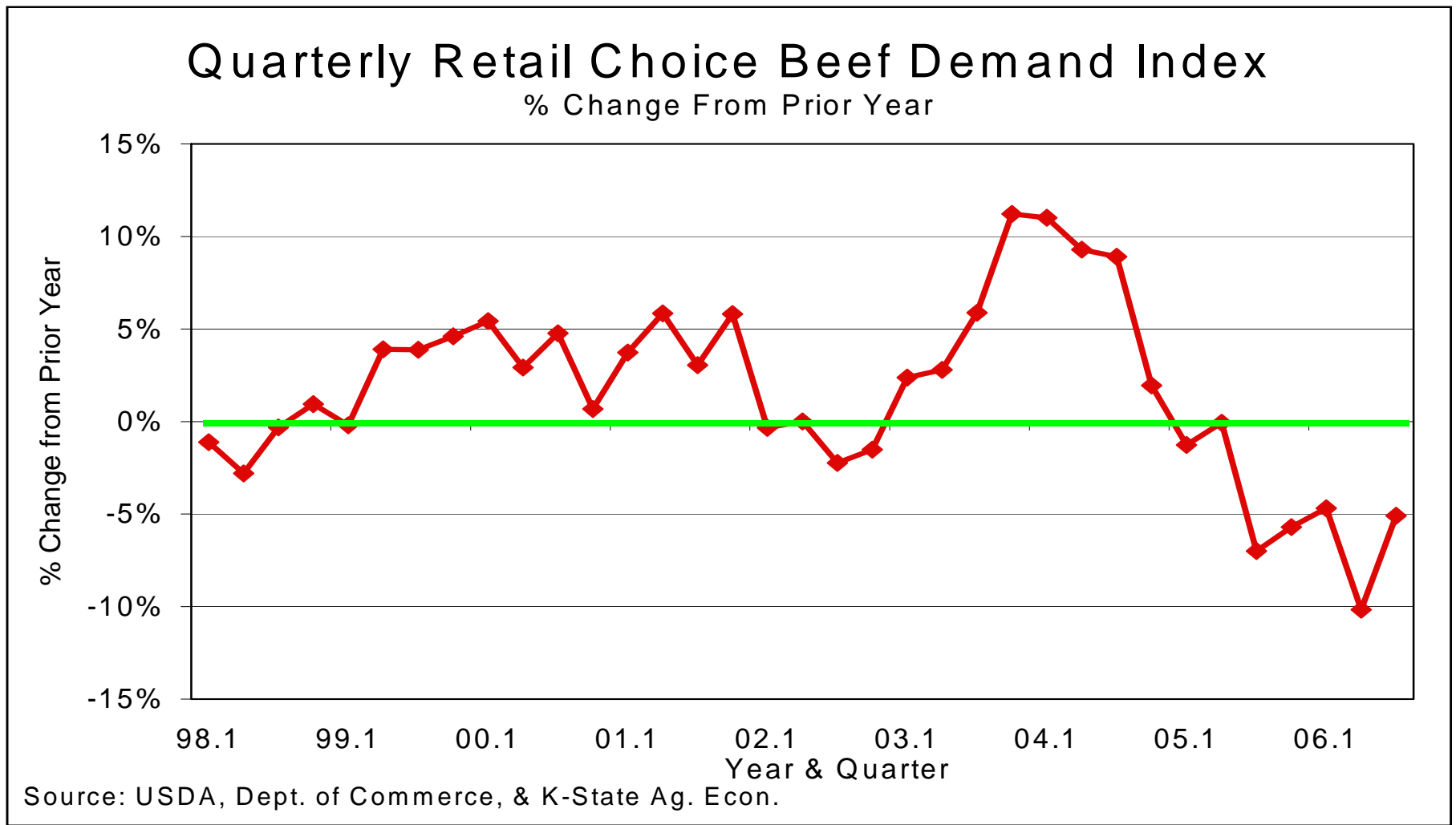


Demand Improved Steadily from '98 through '04

Downward Blip in '02 Following 9/11



Downturn Got Underway in mid-2005



Beef Demand Shifters

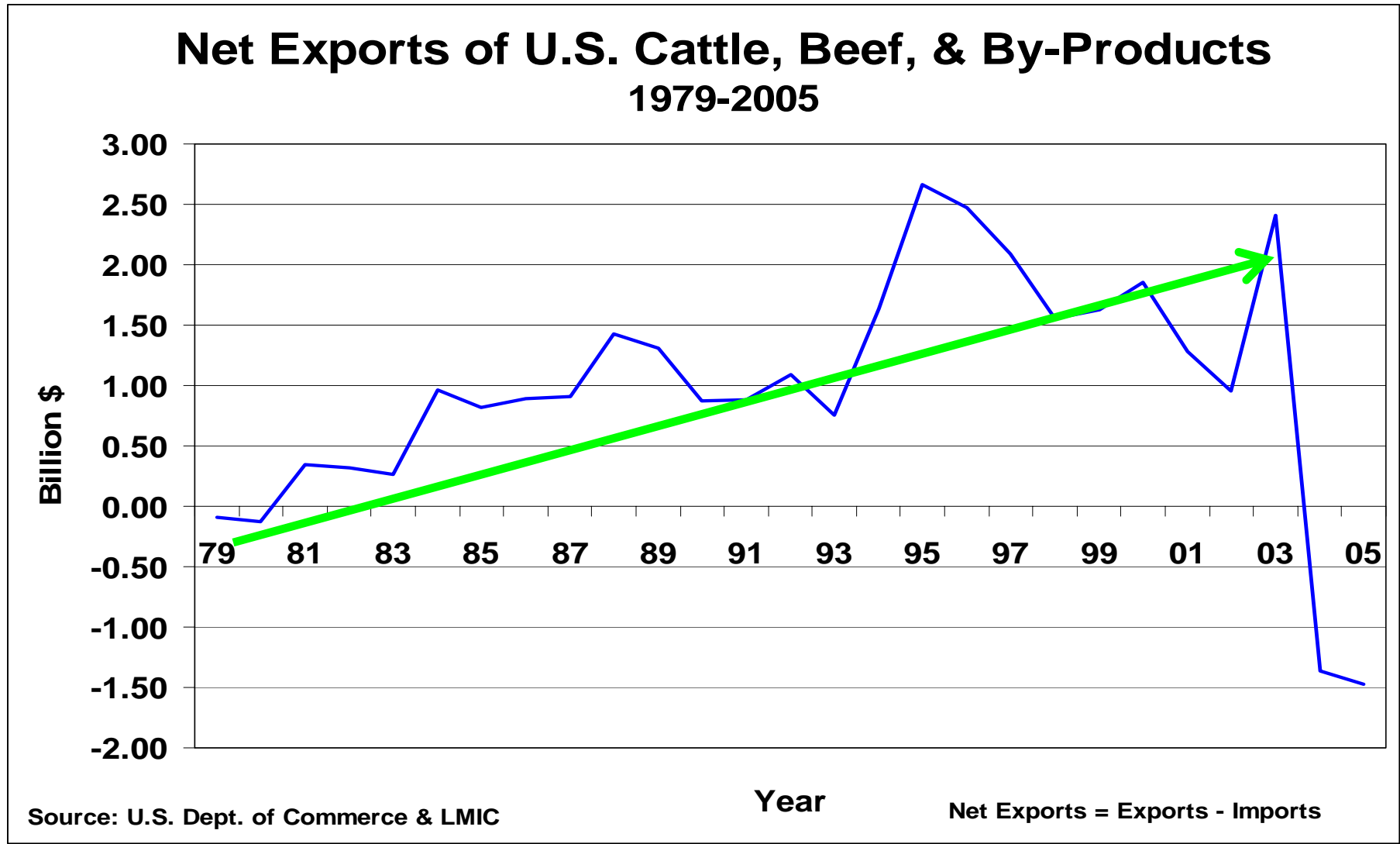
What's been taking place recently?

Demand index does not indicate why shifts occur

- Possible reasons for recent downturn
 - Low carb diet effect has worn off
 - Larger chicken supplies
 - Consumer's disposable income growth slowing
- Expect more domestic demand weakness
- How do we turn this around?

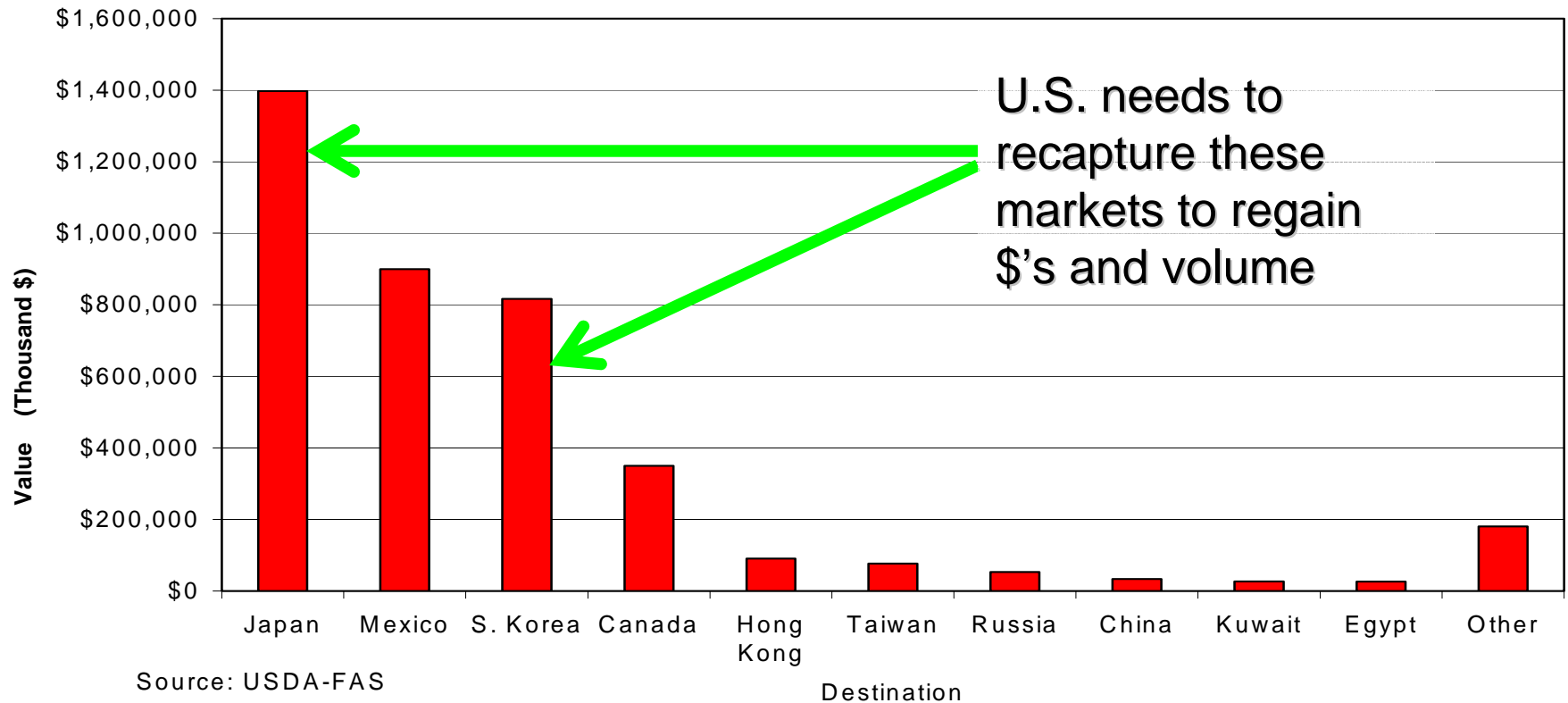
What About The Impact of International Trade?

U.S. Was A Net Exporter From 1981-2003

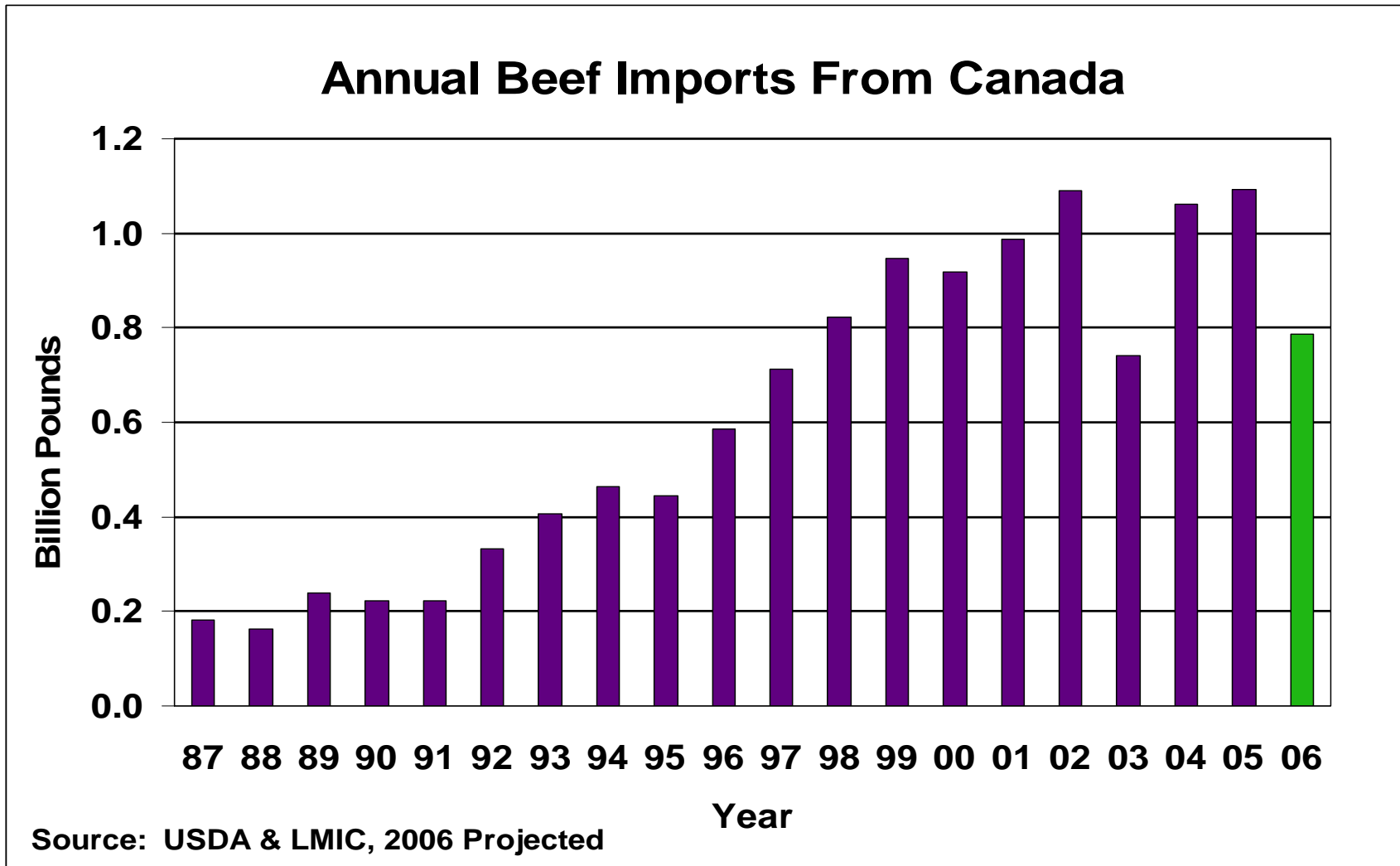


Top 5 Importers Accounted for 91% of U.S. Exports

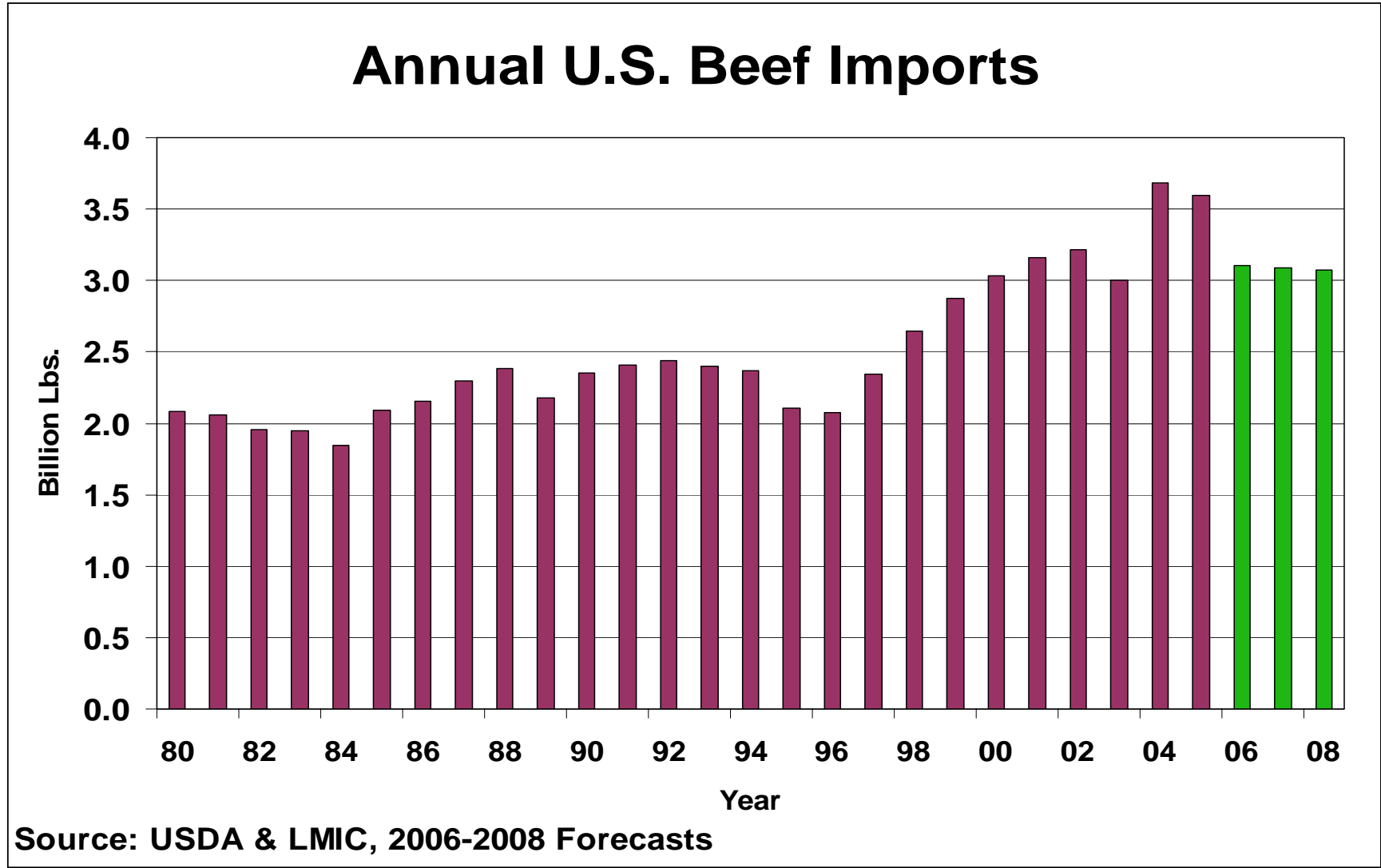
Top 10 Importers of U.S. Beef
Ranked by Value of Imports in 2003
Other Category Consists of All Other Destinations



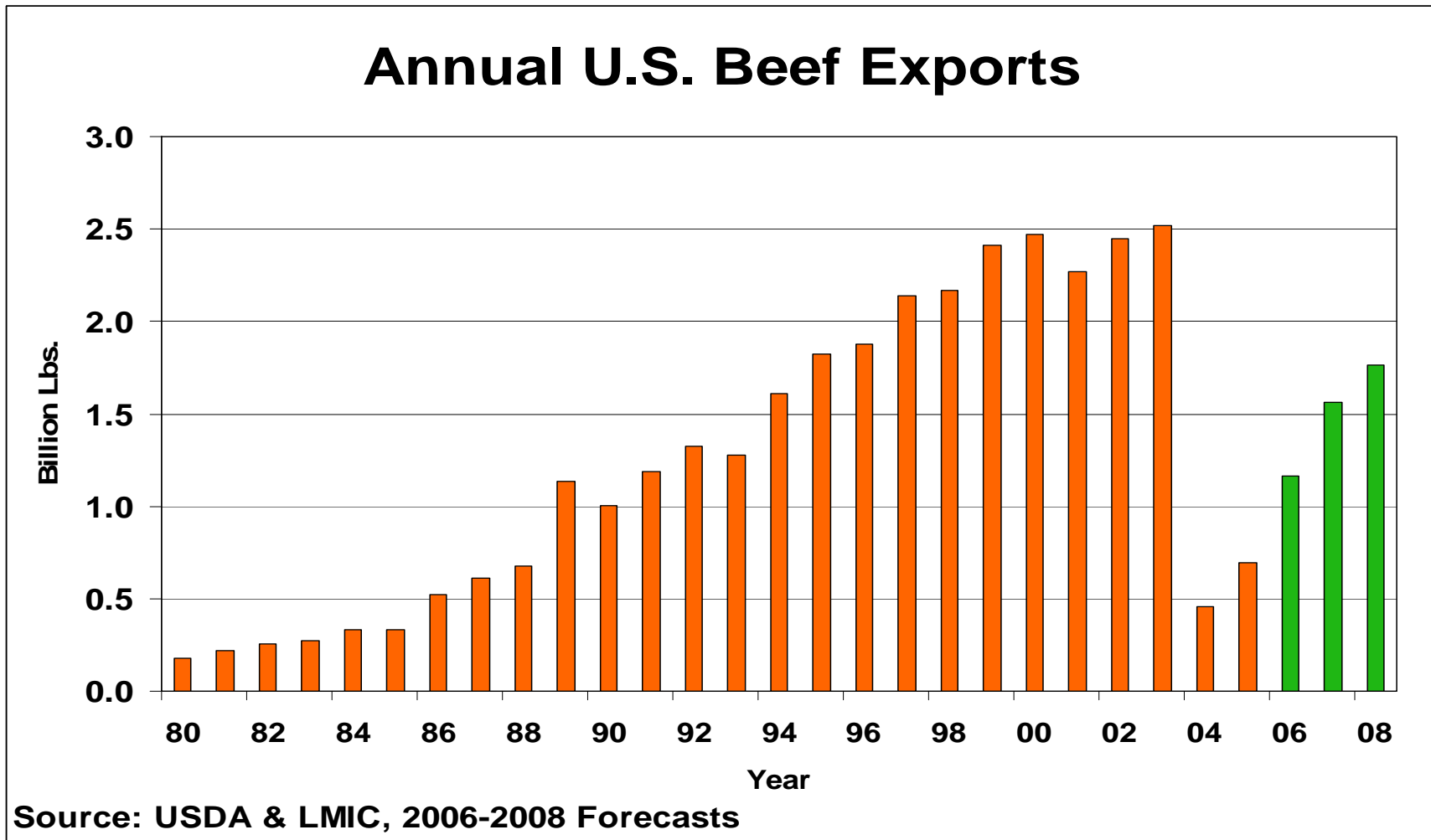
Beef Imports From Canada Decline



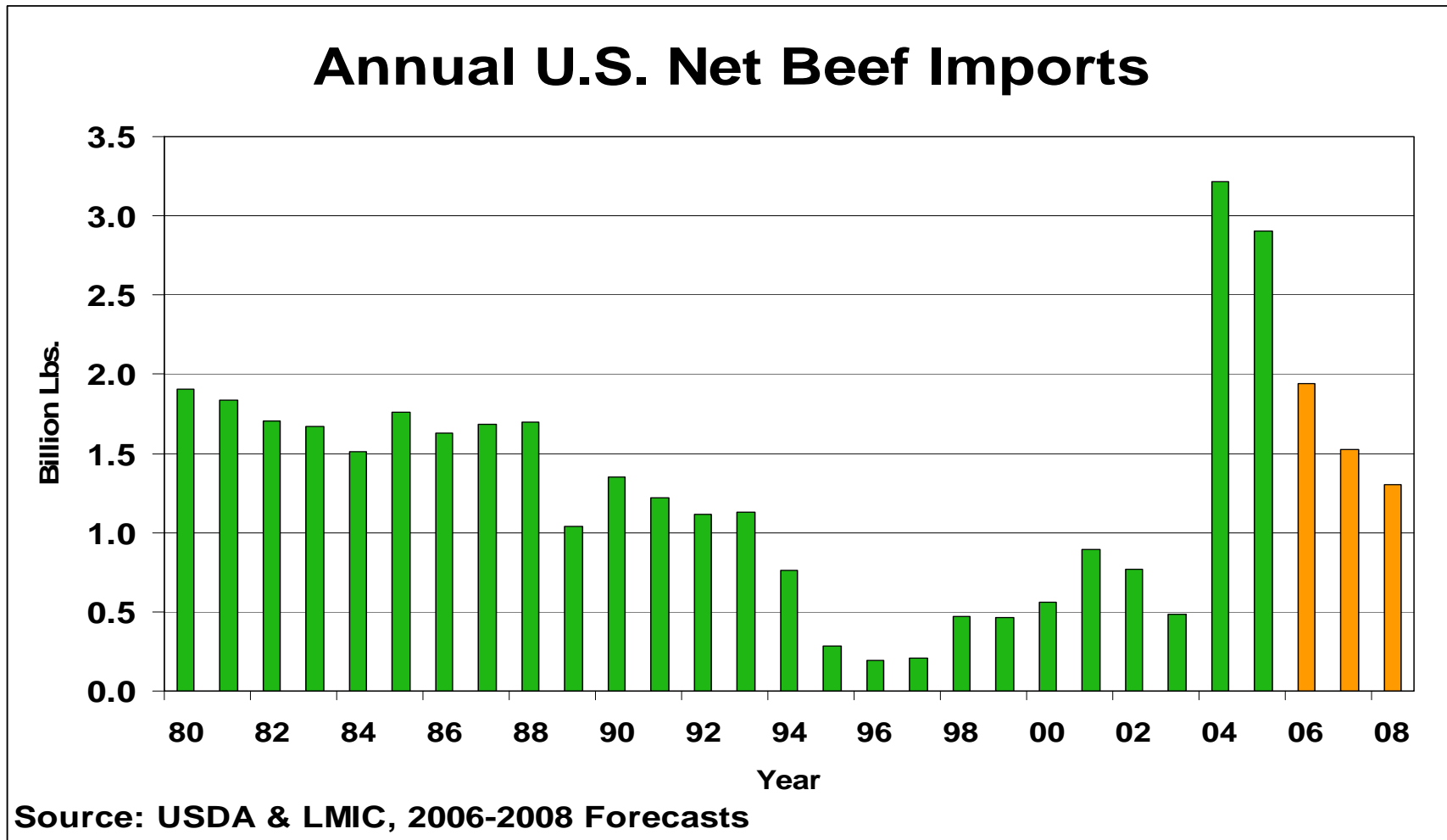
Result: U.S. Imports Falling Below 2005's



Long, Slow Road to Export Recovery



Export Recovery Means Net Beef Imports in 2007 Could Be 1/2 2004's



Are Retail Demand Changes Reflected At Farm Level?

- 1% increase in beef demand index increases
 - Slaughter cattle price by 0.49%
 - Slaughter cattle supply by 0.17%
 - Feeder cattle price by 0.12%
 - Feeder cattle supply by 0.34%

Source: Marsh, American Journal of Ag. Econ., 2003

Are Retail Demand Changes Reflected At Farm Level?

Beef Demand Increased about 6% from 1998 – 2000

- Boosted consumer spending on beef by \$2.16 billion
 - Estimated producer share about 42%
 - Estimated processor & retailer share about 58%

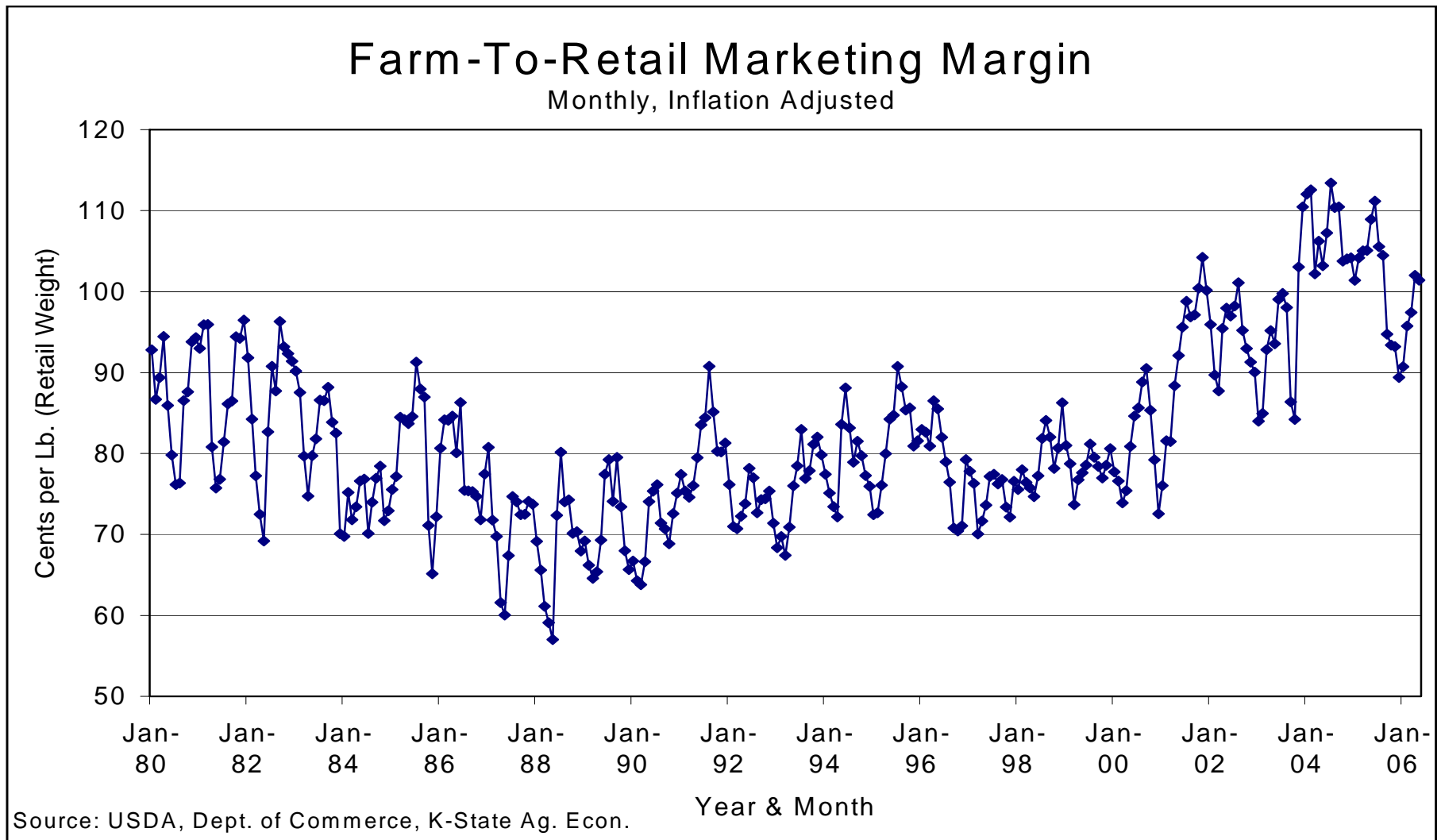
Source: Marsh, American Journal of Ag. Econ., 2003

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Do Farm Level Demand Changes Mirror Retail Demand Shifts?

- Spread between retail and farm level prices is variable
- Variability attributable to variety of factors
 - Volume
 - Capacity utilization

Margin Shifts Can Mask Impact of Retail Demand Shifts



Retail vs. Farm Level Demand Policy Implications

- Retail beef demand is primary demand
- Demand for fed & feeder cattle derived from retail beef demand
- Retail beef demand shifts are felt at farm level
- In short run other factors, primarily margin variation, can mask impact of retail beef demand shifts
- In long run, consumer demand is paramount

Index Concerns

- Quality of retail price data
 - Relying on Bureau of Labor Statistics prices
 - Prices are not volume weighted
 - Omits all of HRI trade

Improving The Index

Develop Index using scanner based retail price data

- Included in Mandatory Price Reporting legislation
- Scanner based prices are volume weighted
- Better measure of what consumers pay
- But we need
 - A longer data series
 - Research that documents price flexibility with new prices
- Still omits HRI trade
- Longer term is a step in the right direction

Is Another Demand Measure Needed?

- What's the objective?
 - Consumer initiative decisions should rely on consumer level demand information
- Demand measures at other marketing levels
 - Wholesale
 - Farm
- Will be driven in part by margin variation

Is Another Demand Measure Needed?

- Demand Indexes do not explain why demand shifted
 - Development of other demand measures will necessitate research/information regarding why demand measures differ
 - Differences will focus heavily on margin variation