

Outlook for U.S. Retail Food Prices and Inflation in 2010

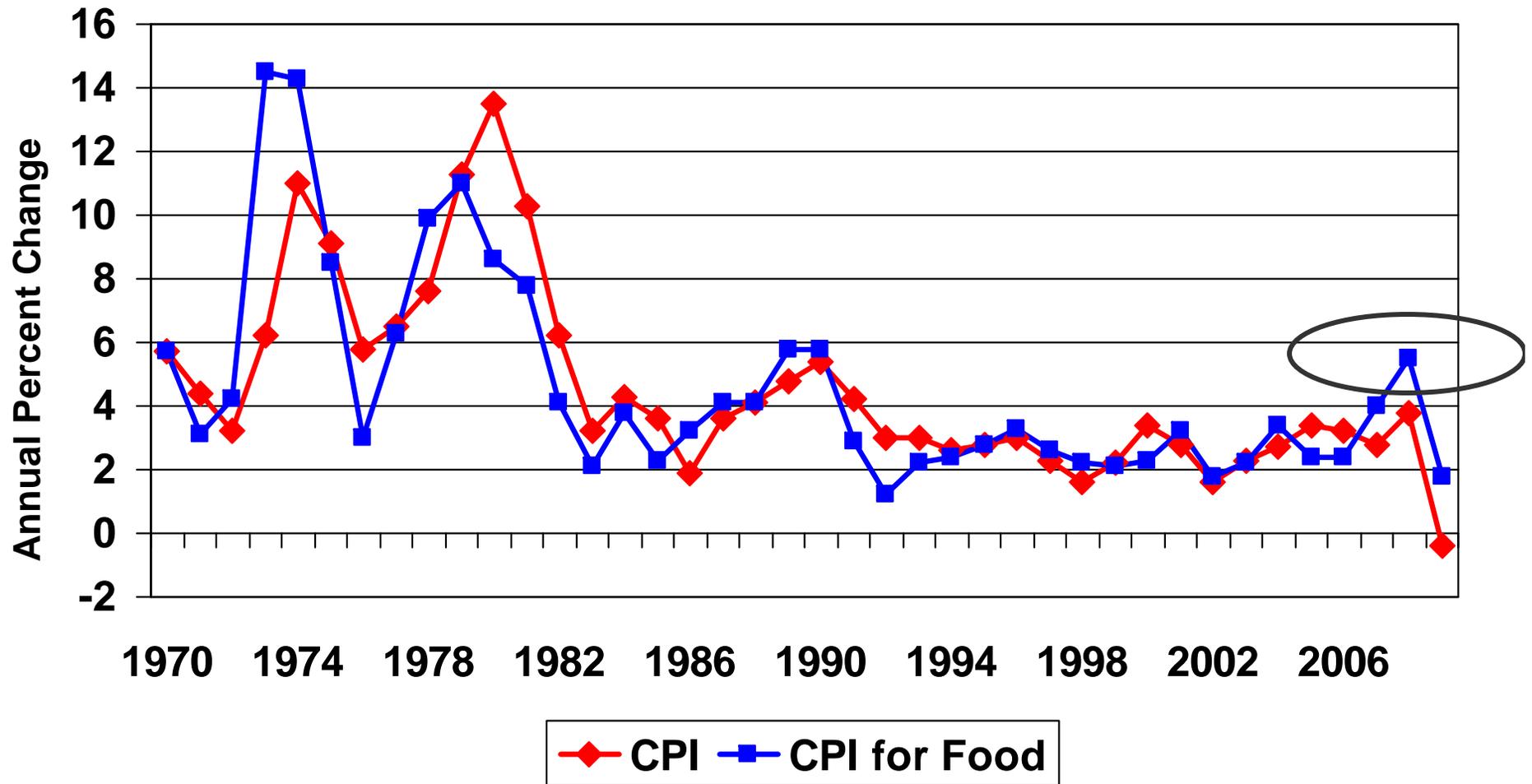
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ERS-USDA

**Presented at the 2010 Agricultural Outlook Forum
*Sustainable Agriculture: The Key to Health & Prosperity***

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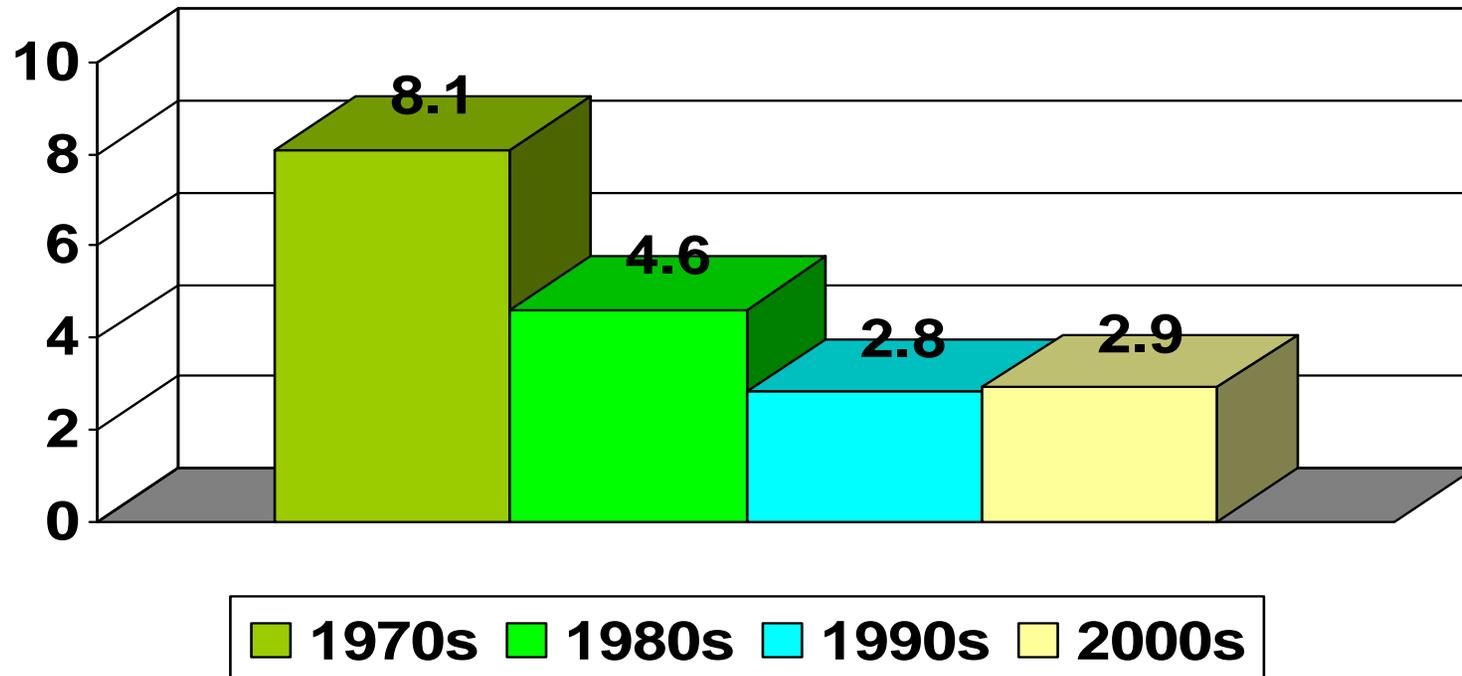
CPI vs. CPI for Food 1970-2009



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Long Term Food Price Inflation Trends

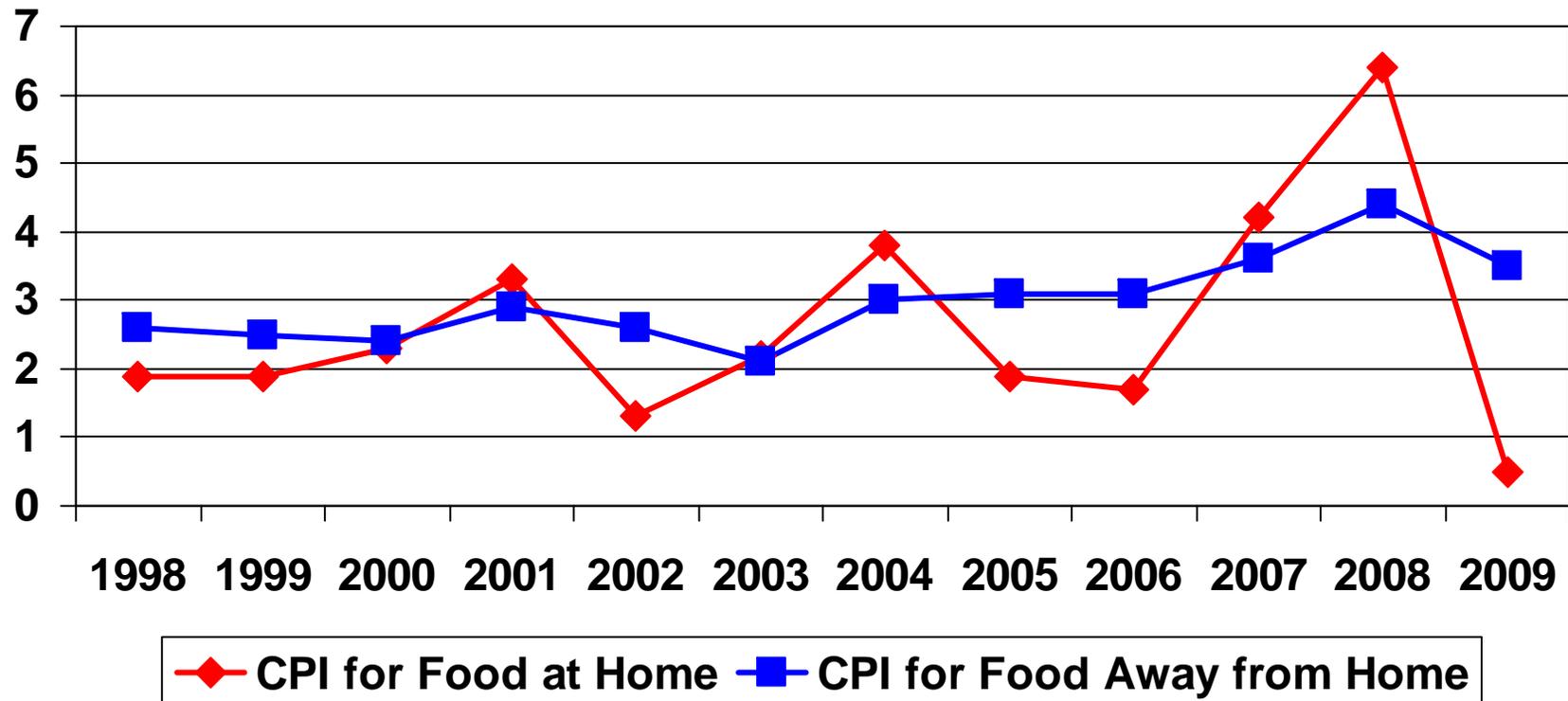
Average Annual Percent Change in Food Price Inflation by Decade



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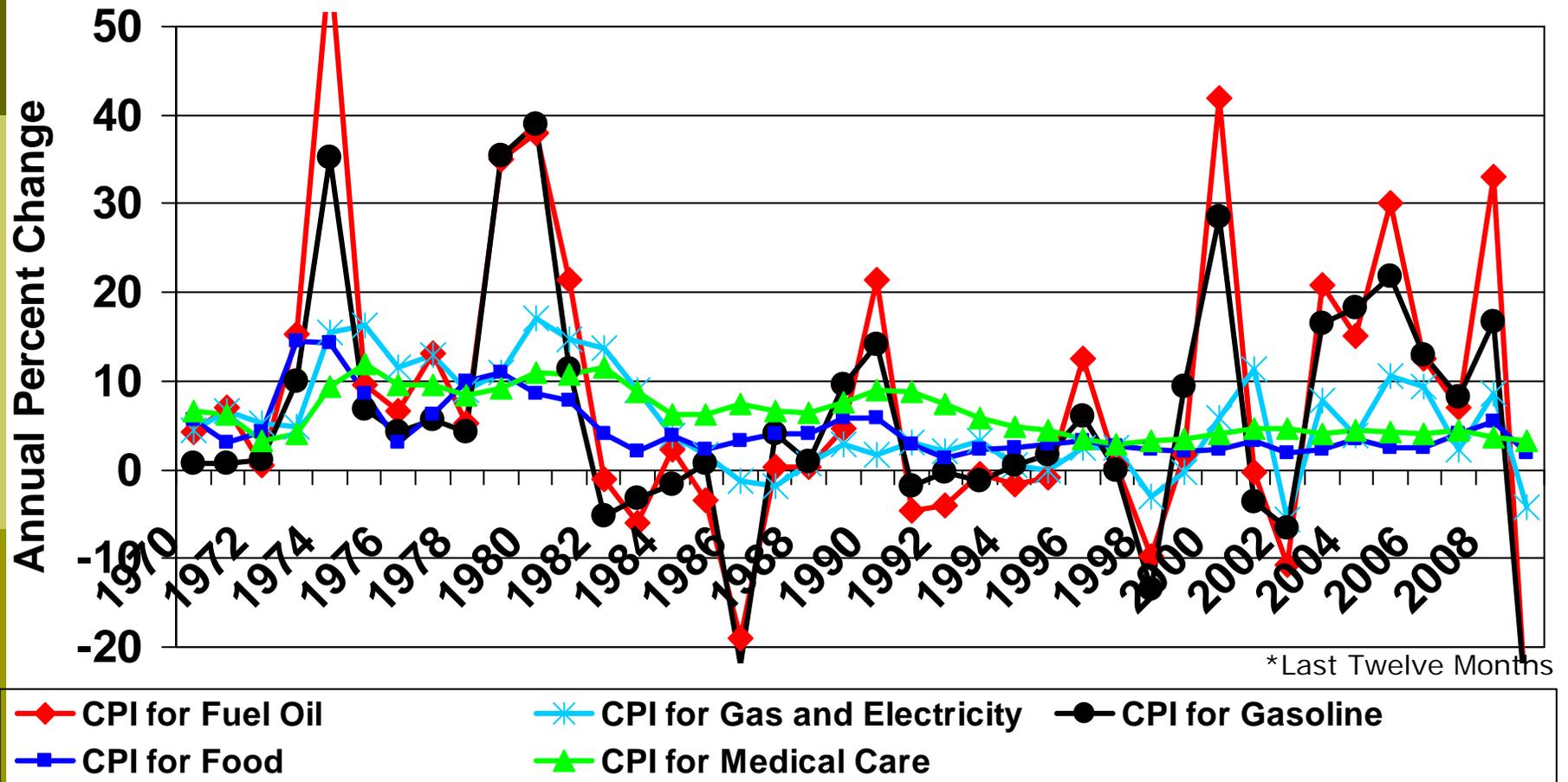
Food at Home vs. Food Away from Home, 1999-2009

Annual Percent Change



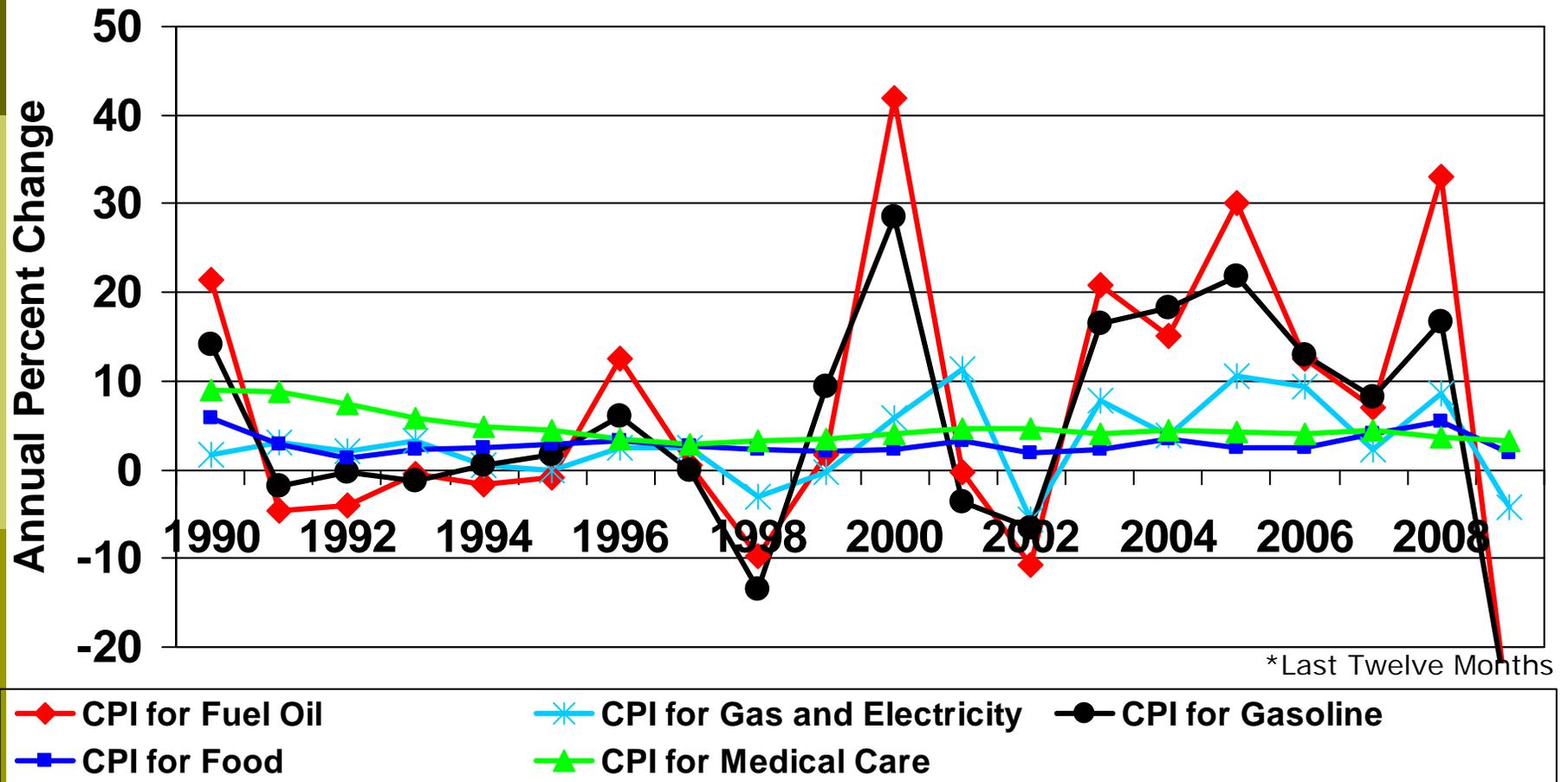
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Food vs. Energy, 1970-2009



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Food vs. Energy, 1990-2009

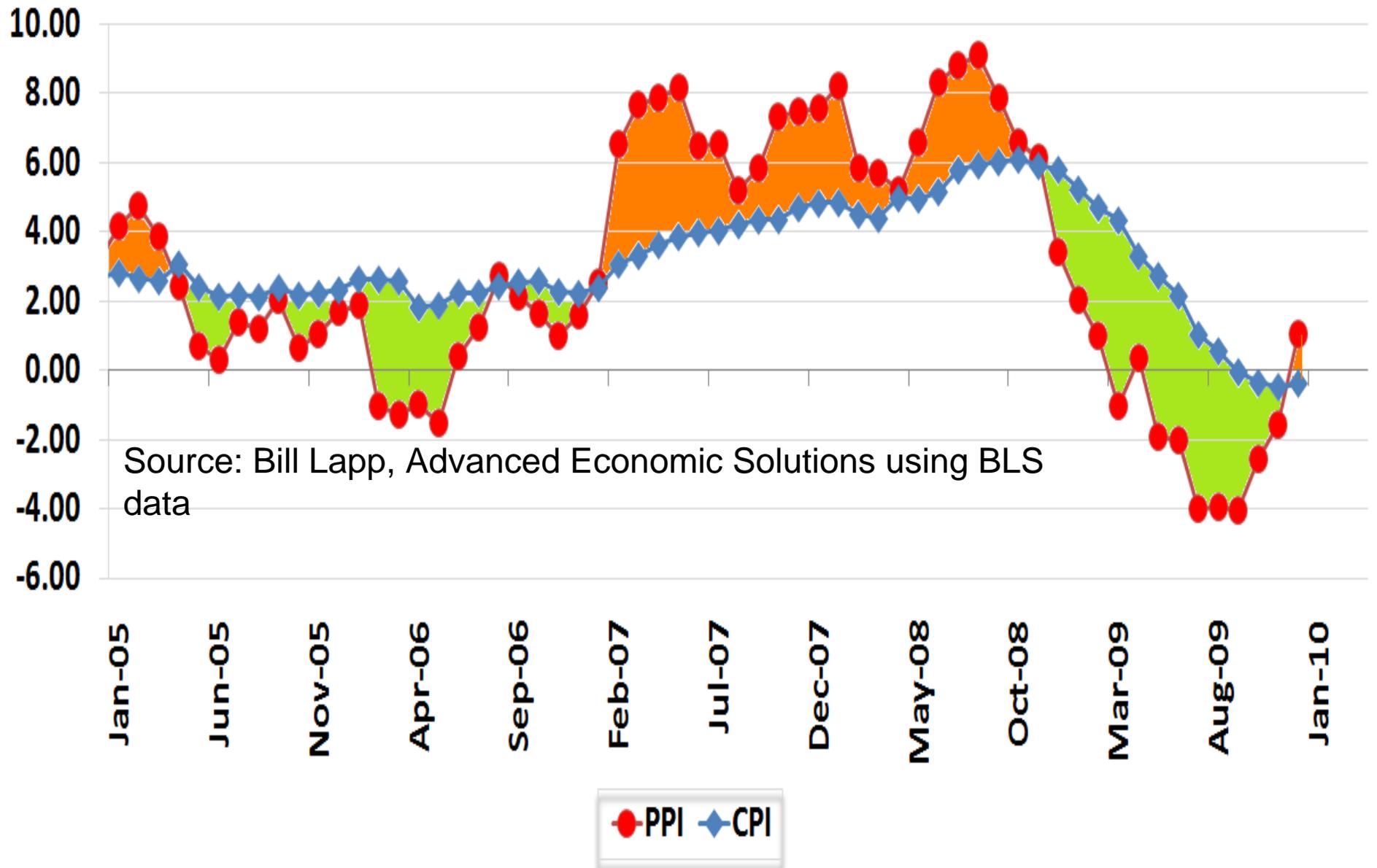


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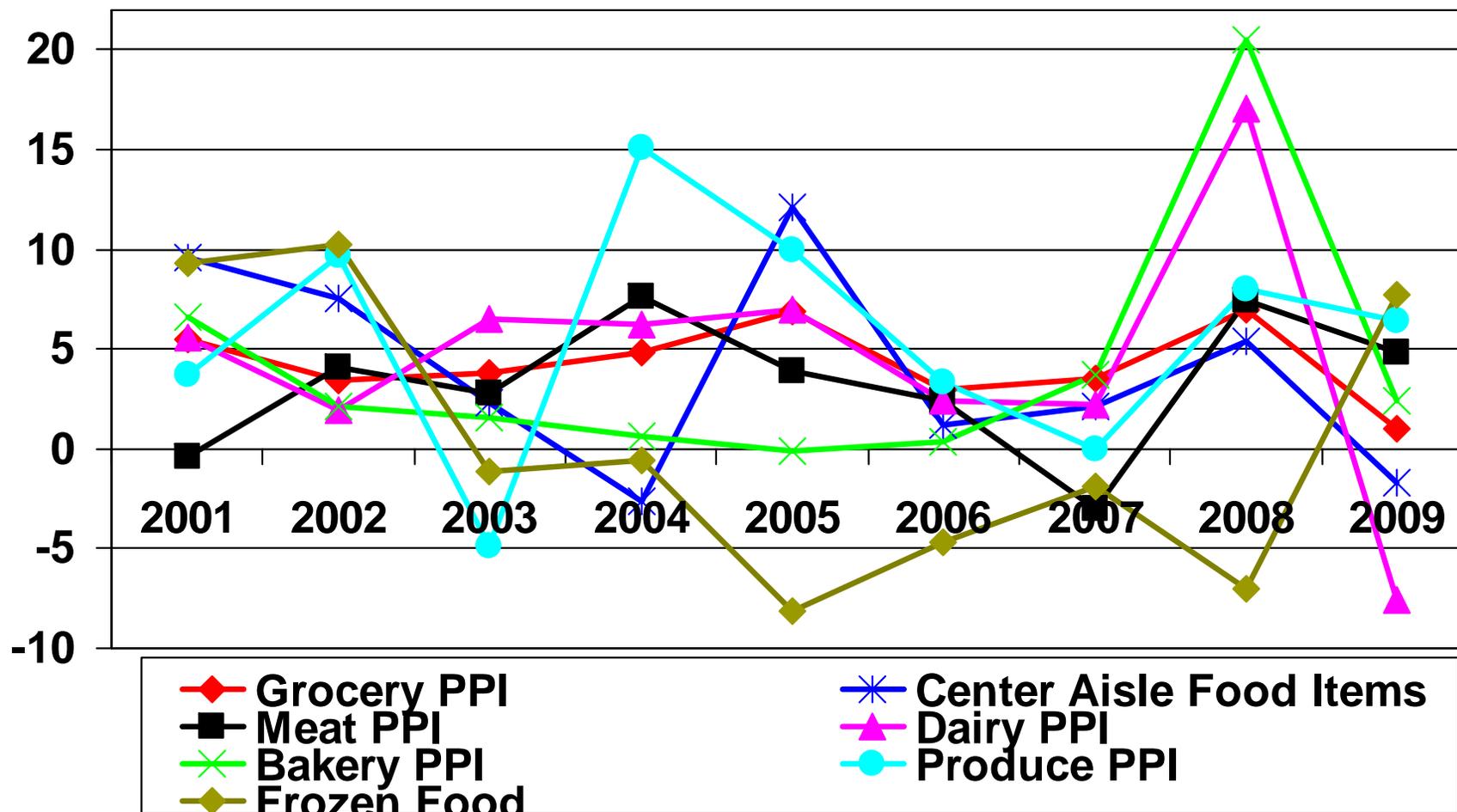
Sources of Retail Price Changes

- Changes in Costs
 - Cost of Goods Sold
 - Operating Costs
- Changes in Retail Market Competition
 - Number of retailers in a market
 - Type of retailers
 - Specialization
 - Differentiation
- Changes in Consumer Demand

PPI-Food vs. CPI-Food Year to Year % Change

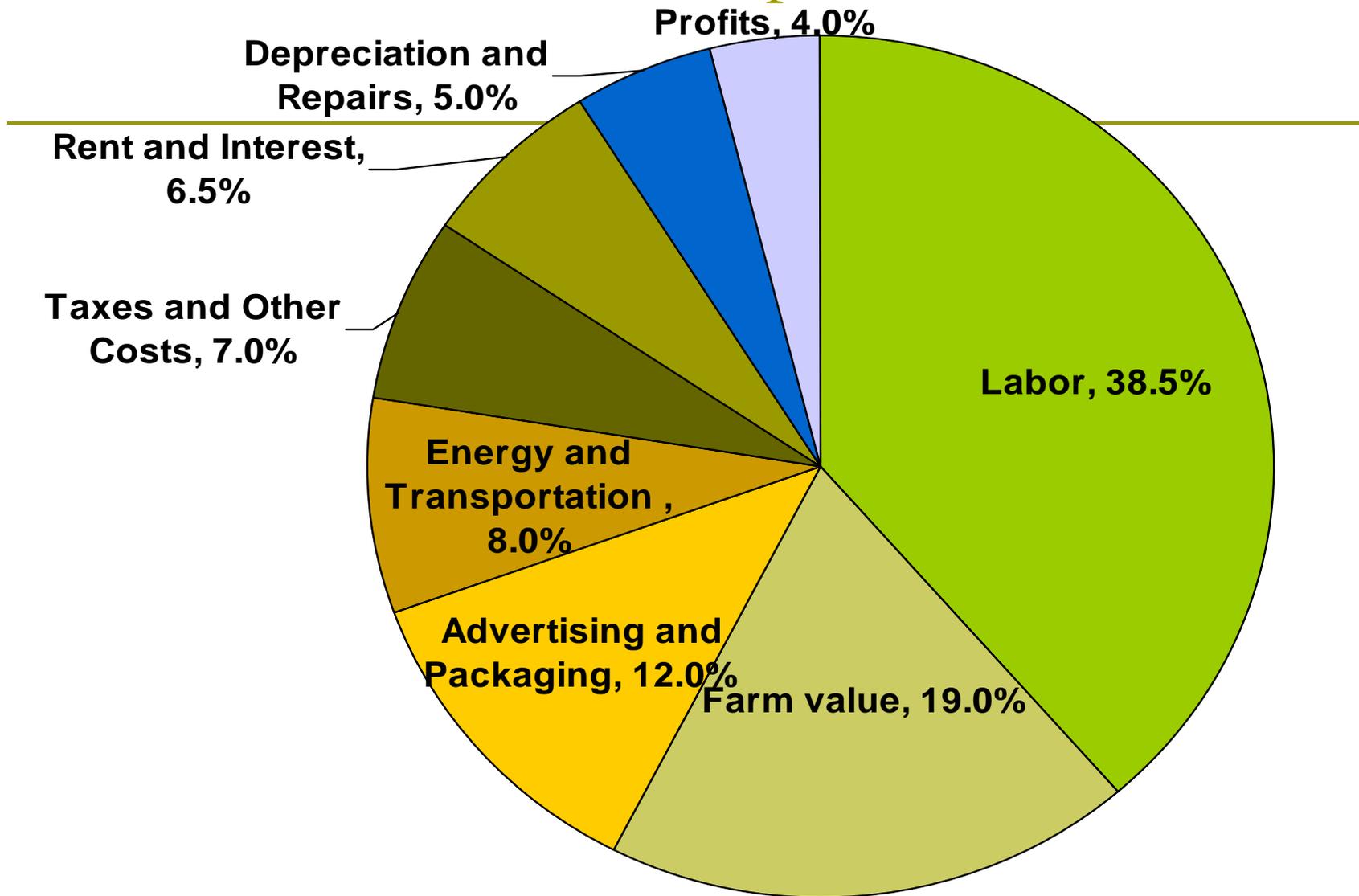


PPI for Retail Grocery Department Margins



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Where a Consumer Dollar Spent on Food Goes

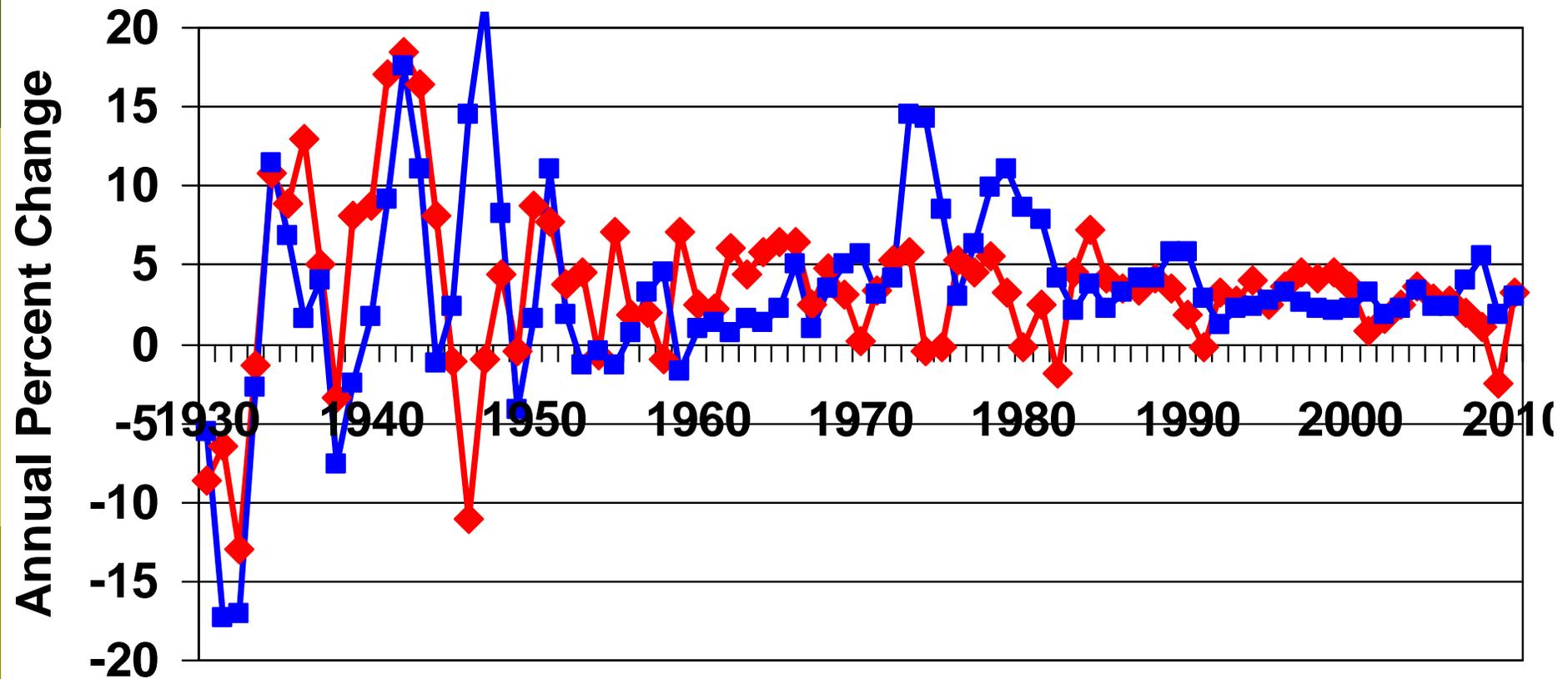


Source: Economic Research Service Calculations
using 2006 Data
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Trends in Retail Food Markets

- Impact of the Recession and Recovery
- Volatility in food commodity markets
- Transportation and energy costs
- Competition from a variety of formats
 - Supercenter/Warehouse Club/Dollar/Limited Assortment/Upscale/Gourmet
- Food Safety
- Location and size of store
- Local/Natural/Organic /Fresh/NoTransFat/...

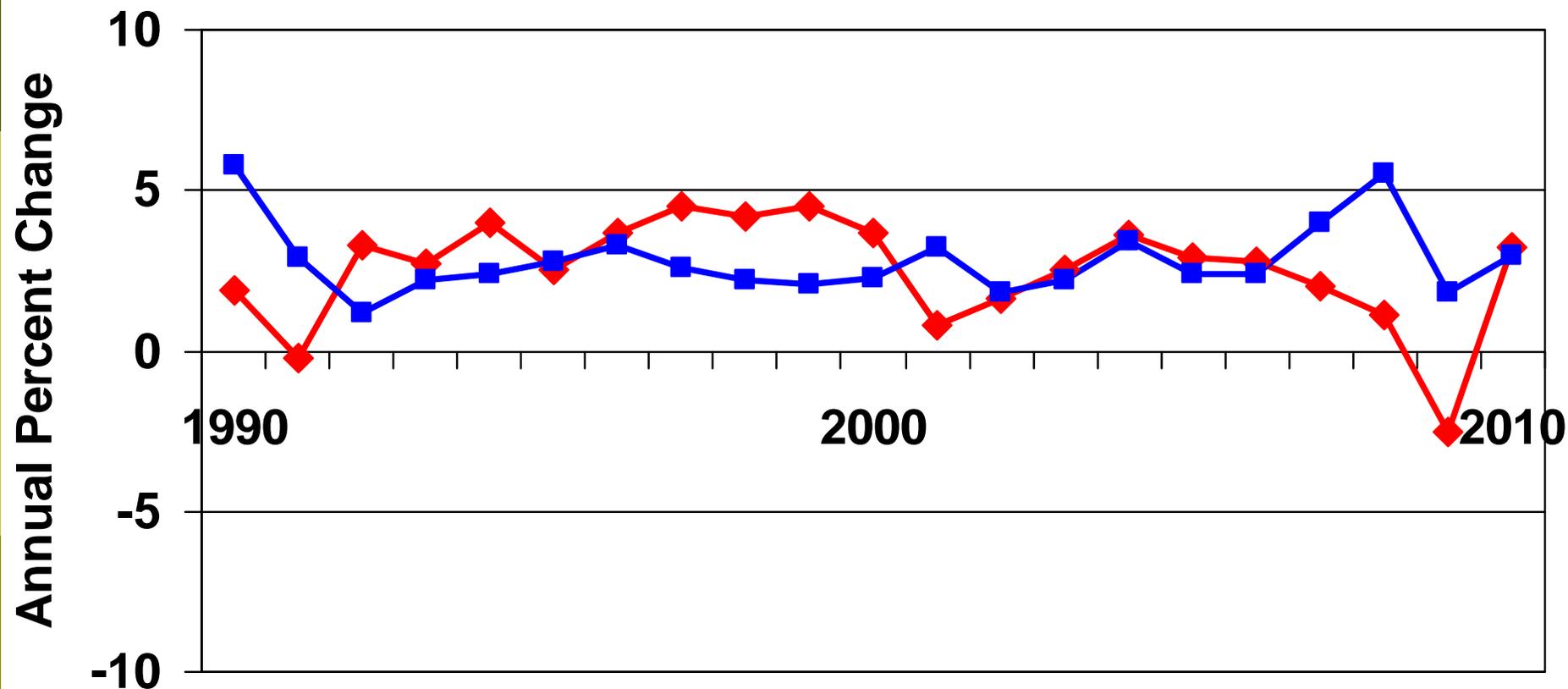
GDP Growth and Food Inflation, 1930-2010*



*2010 forecasts

◆ Real GDP Percent Change ■ Food CPI Percent Change

GDP Growth and Food Inflation, 1990-2010*



*2010 forecasts

◆ Real GDP Percent Change ■ Food CPI Percent Change

GDP Growth and Food Inflation Trends

□ Average Growth Rate (5)

- 1930-2009: GDP 3.4, Food CPI 3.4
 - 1930-1949: GDP 3.7, Food CPI 2.6
 - 1950-1969: GDP 4.3, Food CPI 2.0
 - 1970-1989: GDP 3.2, Food CPI 6.3
 - 1990-2009: GDP 2.5, Food CPI 2.8

GDP Growth and Food Inflation Lags

□ 1-Year Lag Correlation Patterns

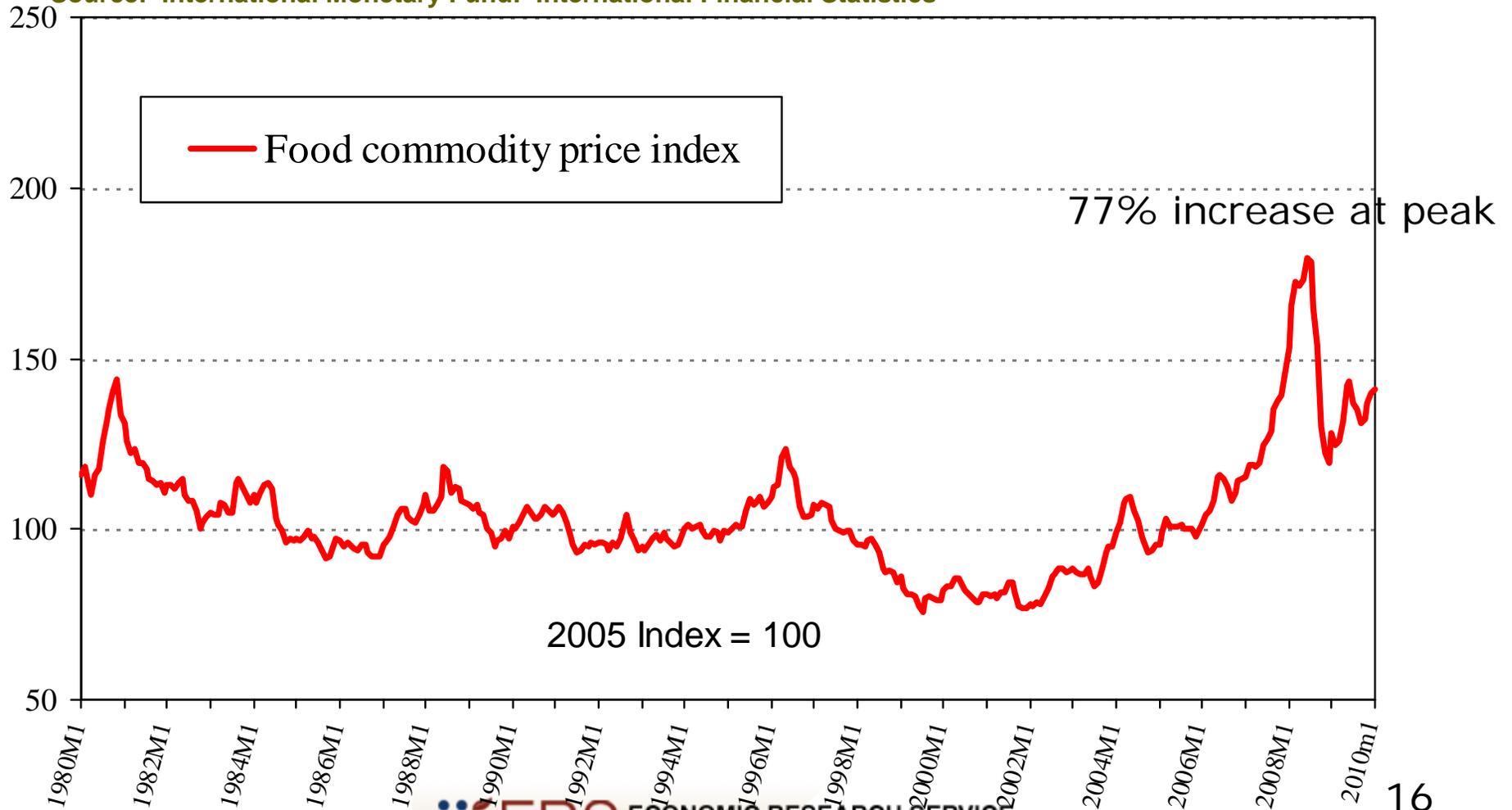
- 1930-2008: 0.26
 - 1930-1949: 0.27
 - 1950-1969: 0.41
 - 1970-1989: 0.35
 - 1990-2007: 0.08

□ 2-year Lag Correlation Patterns

- 1930-2008: 0.05
 - 1930-1949: 0.04
 - 1950-1969: 0.05
 - 1970-1989: 0.36
 - 1990-2006: 0.08

Food commodity prices down 22% from the 2008 peak, but still up 39% since January 2006

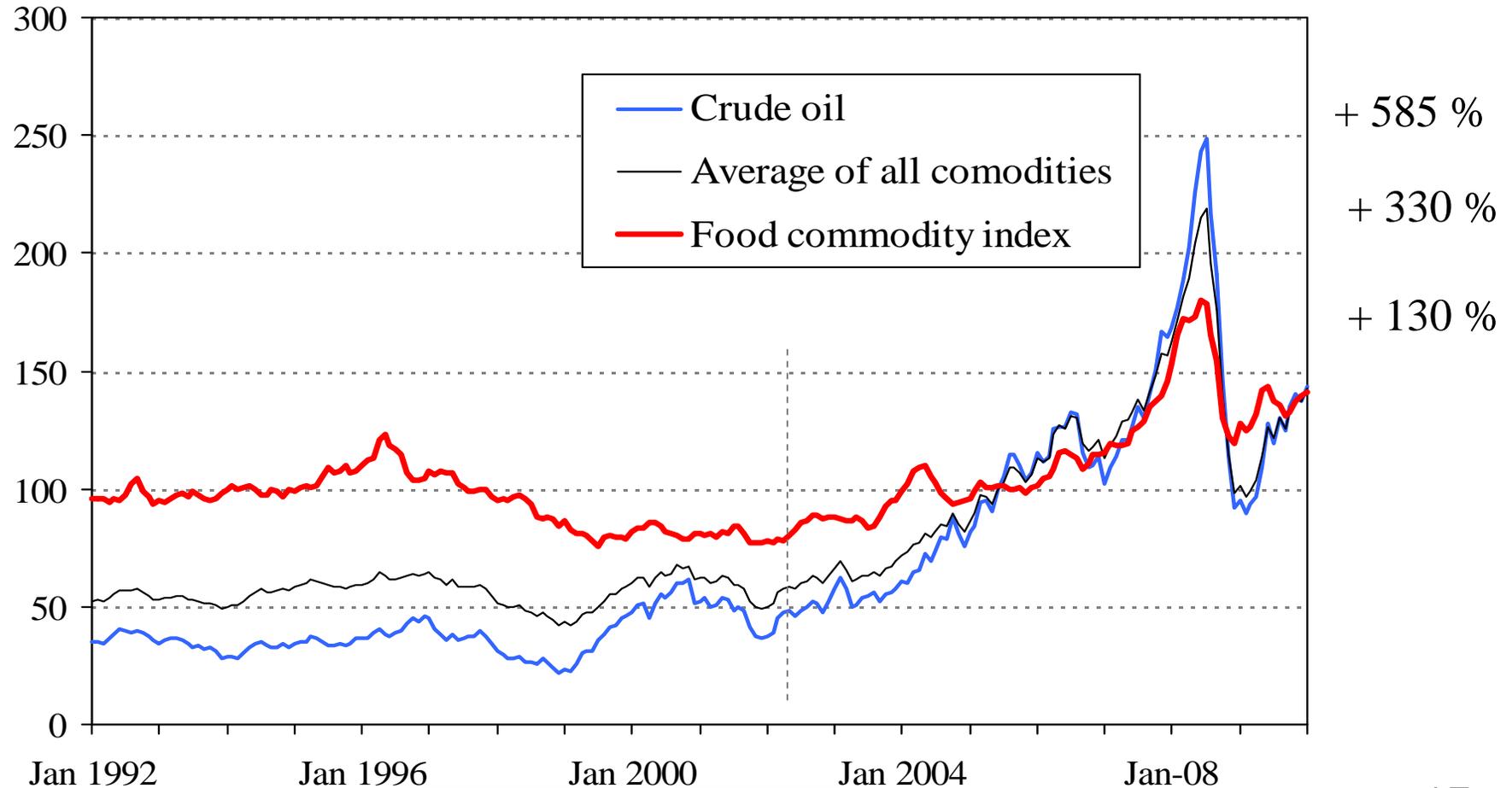
Source: International Monetary Fund: International Financial Statistics



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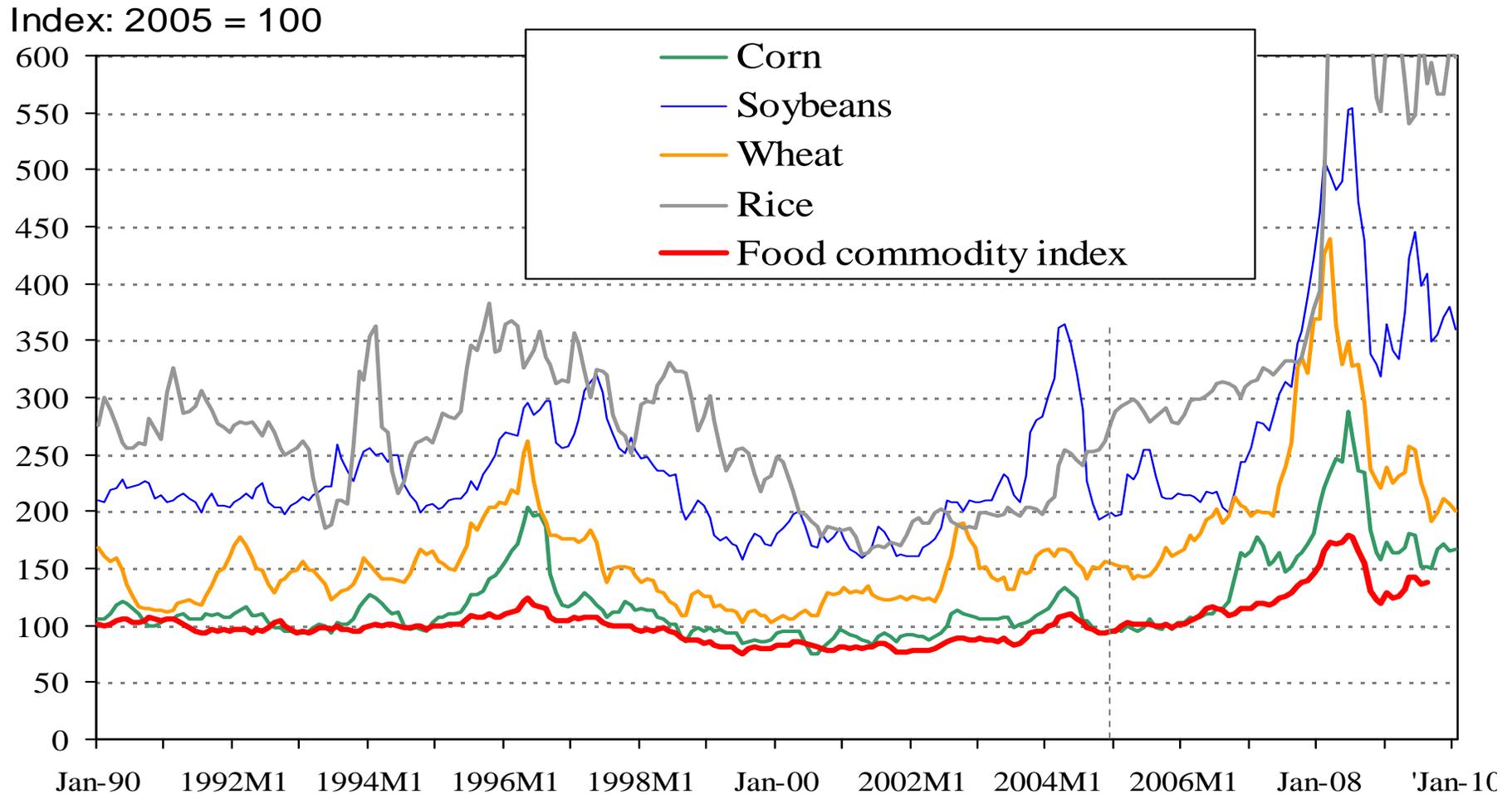
Prices of Many Commodities Rose Even More

Index: 2005 = 100



Source: International Monetary Fund: International
Financial Statistics

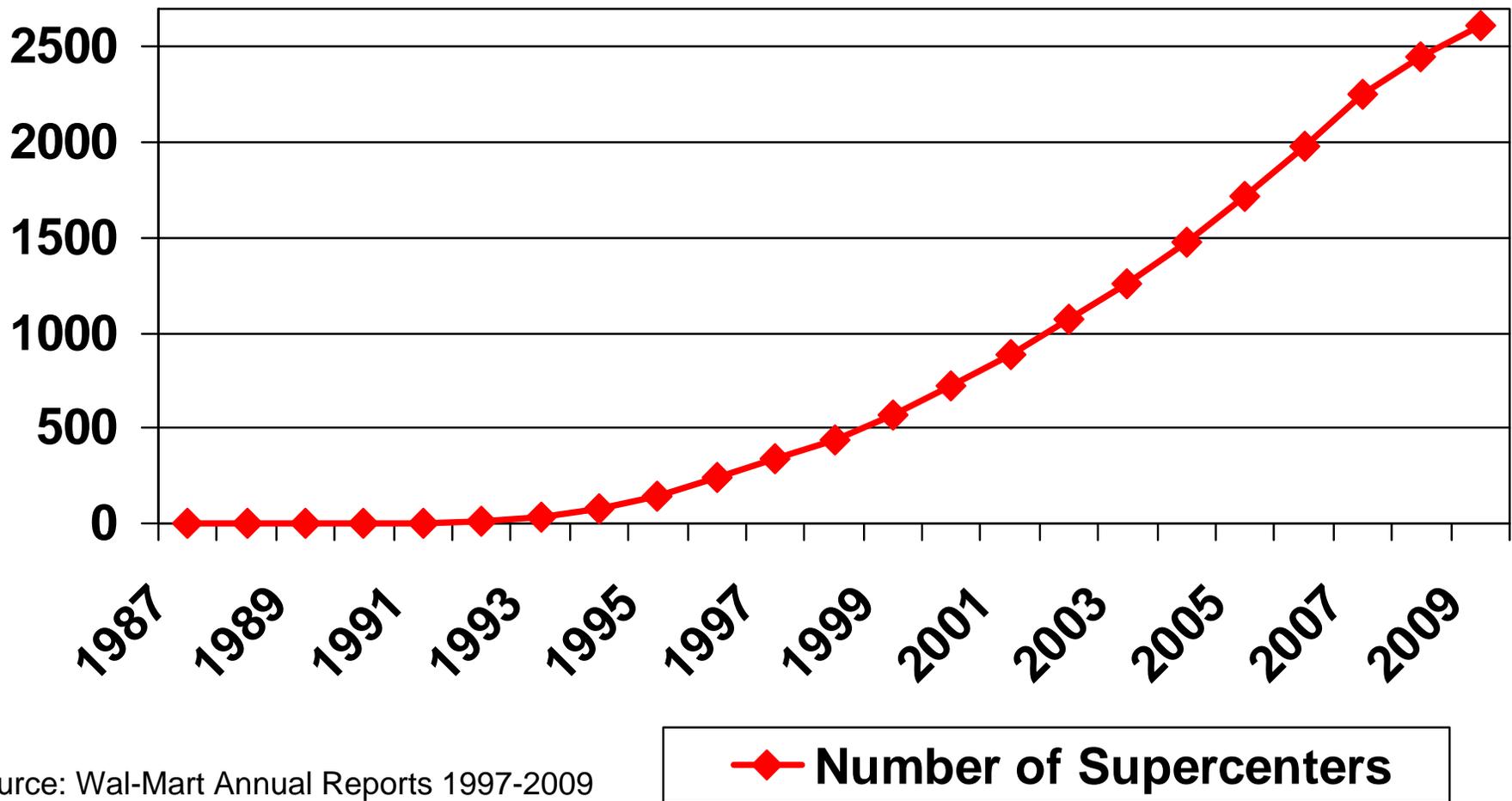
Volatility in food commodity prices



Source: International Monetary Fund: International Financial Statistics

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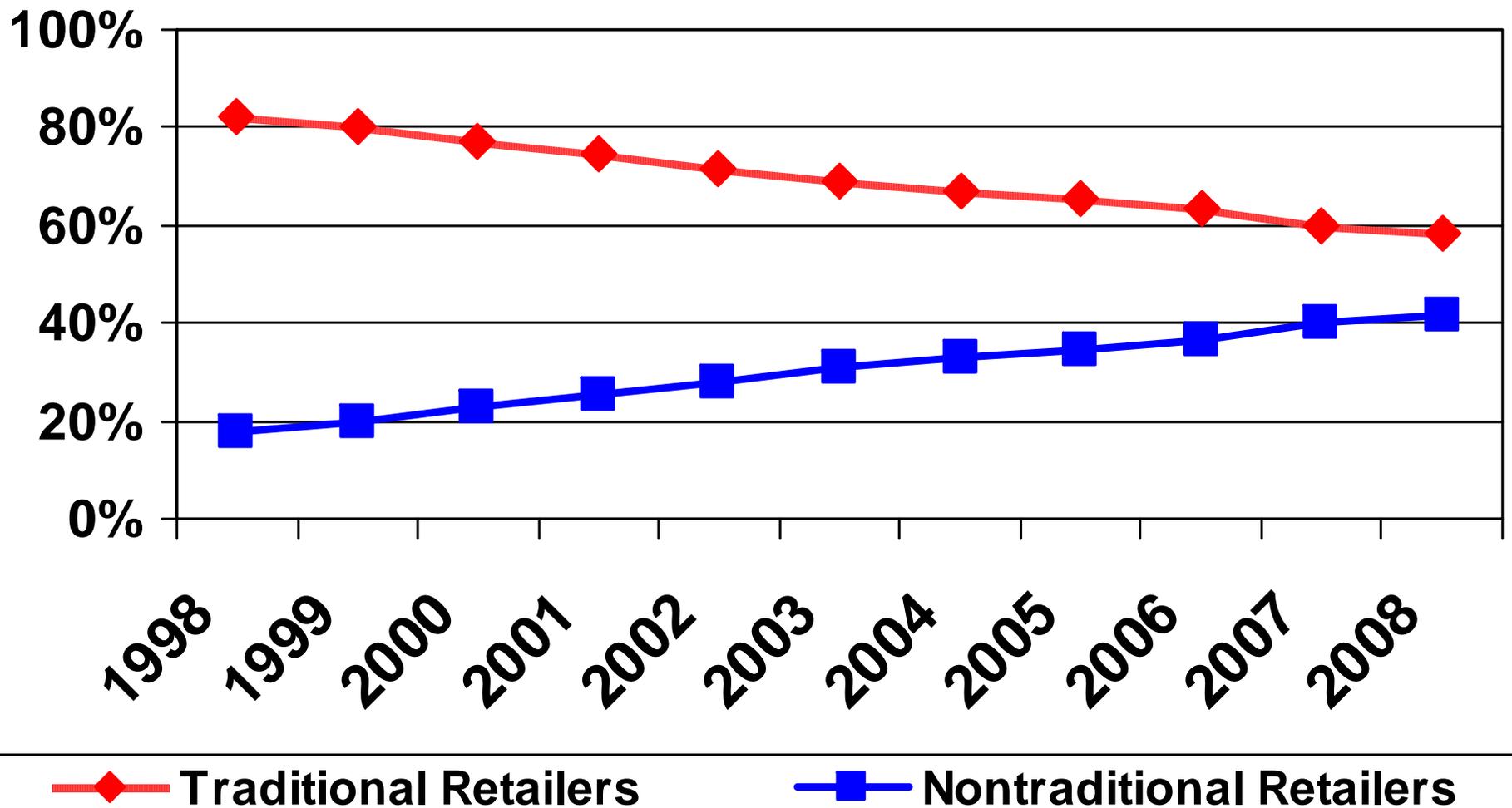
Wal-Mart Supercenter Store Count



Source: Wal-Mart Annual Reports 1997-2009

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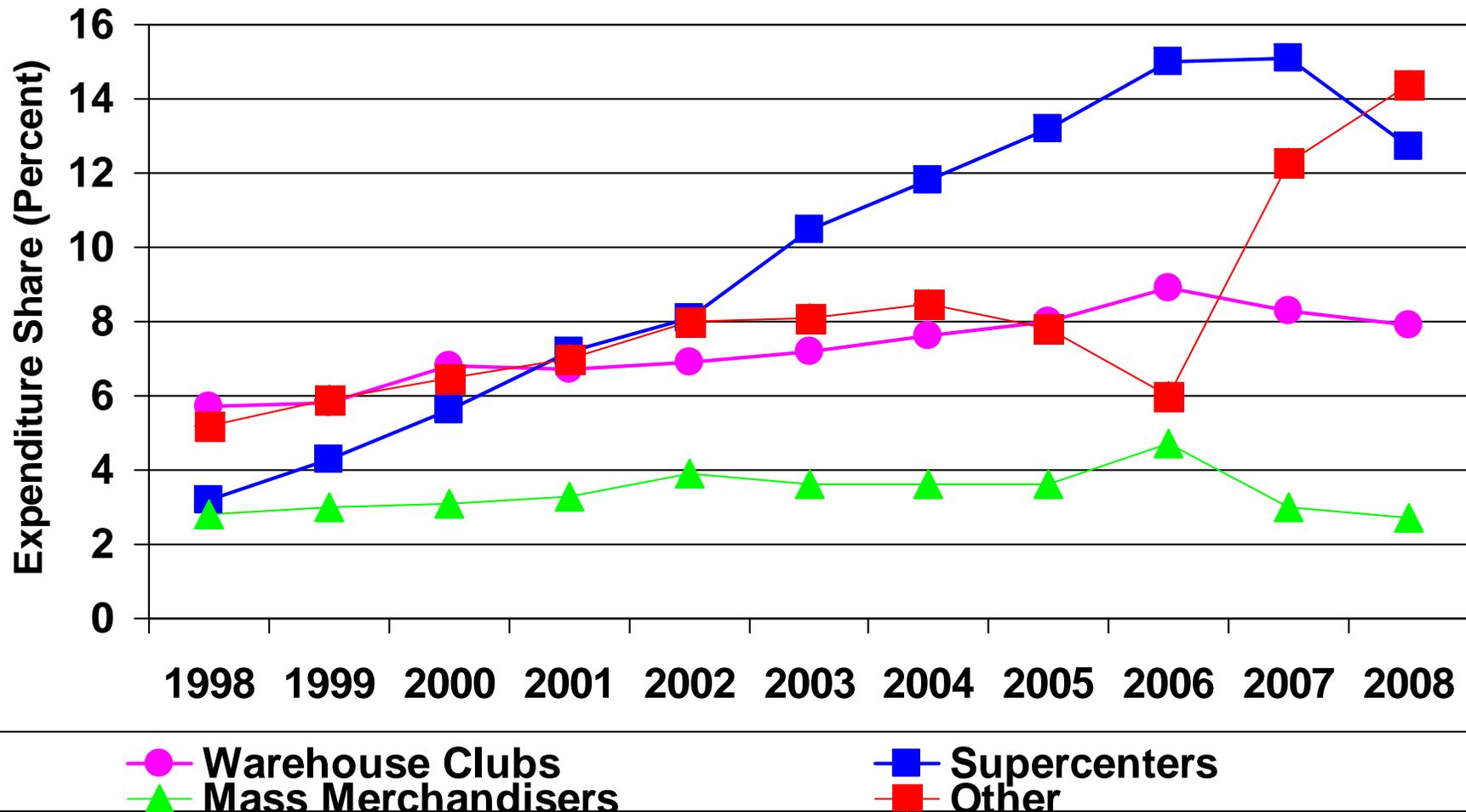
Expenditure Shares for Nontraditional Food Stores Continue to Rise



Source: ERS Calculations of ACNielsen Homescan Data

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Expenditure Shares for Nontraditional Formats 1998-2008



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Research Project: Pass-through of Commodity and Input Cost Changes to Retail Food Prices

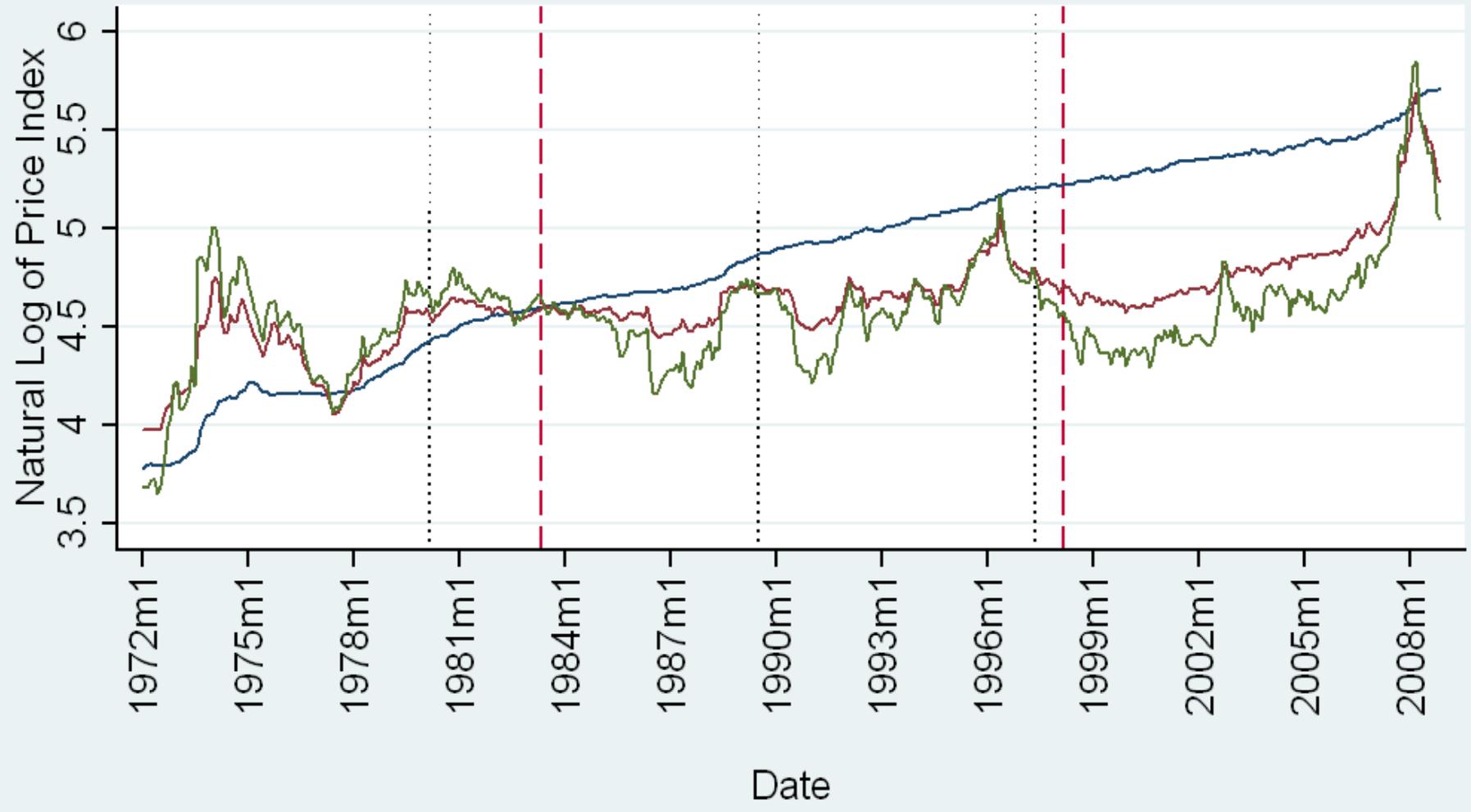
□ Objectives

- Model the magnitude of pass-through
 - Identify mitigating factors
 - Identify differences across food groups
- Estimate time to pass-through by food category

Data

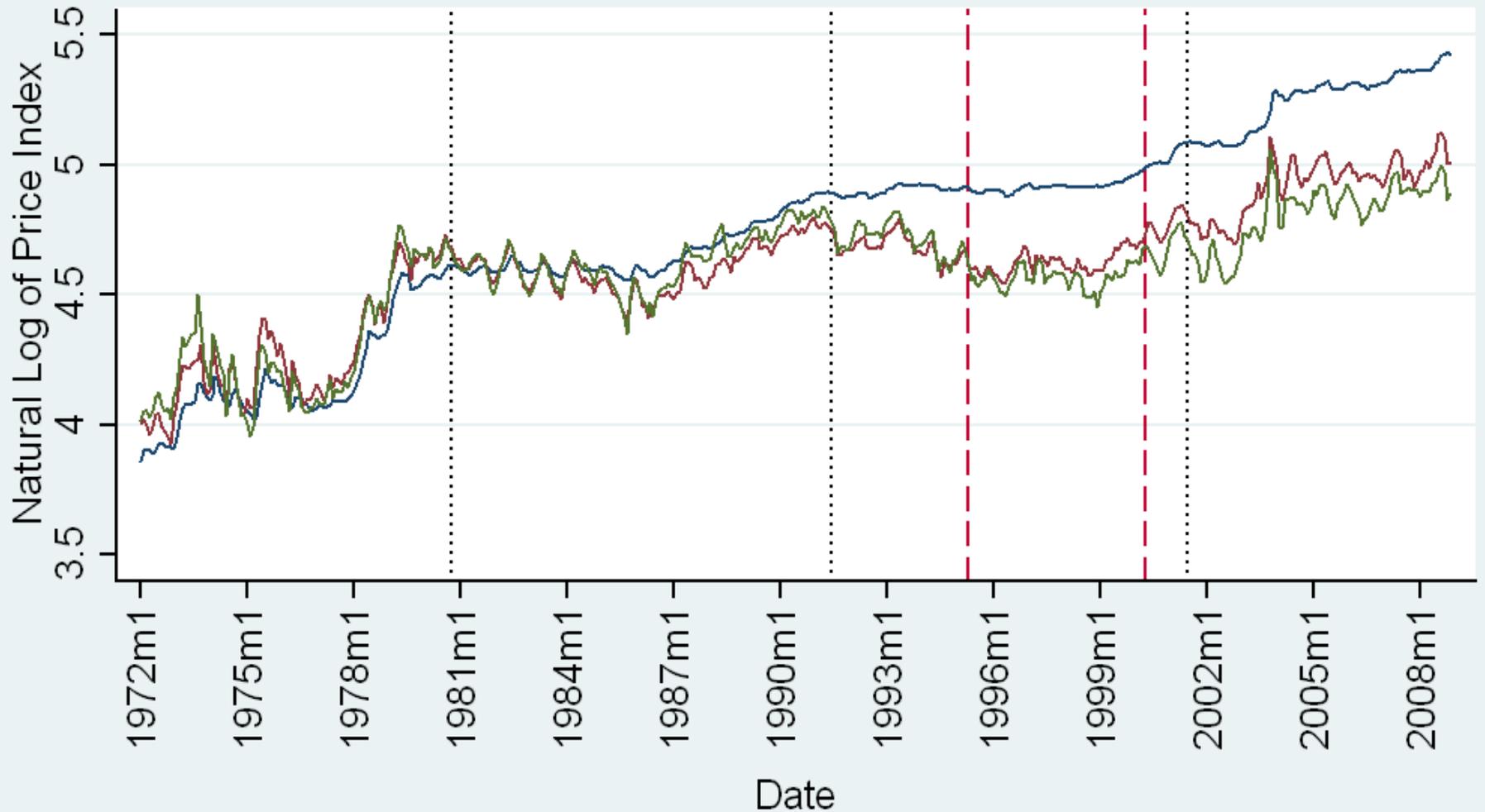
- Monthly Change in PPI and CPI for Ag, Energy and Food Items
 - Retail Foods
 - Related Farm and Wholesale PPIs
 - Crude Oil and Gasoline PPIs
- Grocery Store Wage Data (Current Employment Statistics)
- Time Period: 1972-2008

Bread Price Indices with Structural Break Points



Dotted line: wholesale-retail structural breaks Dashed line: farm-wholesale structural breaks

Beef Price Indices at Different Production Stages



Dotted line: wholesale-retail structural breaks Dashed line: farm-wholesale structural breaks

Preliminary Results for Pass-Through of Farm and Wholesale Prices to Retail Prices

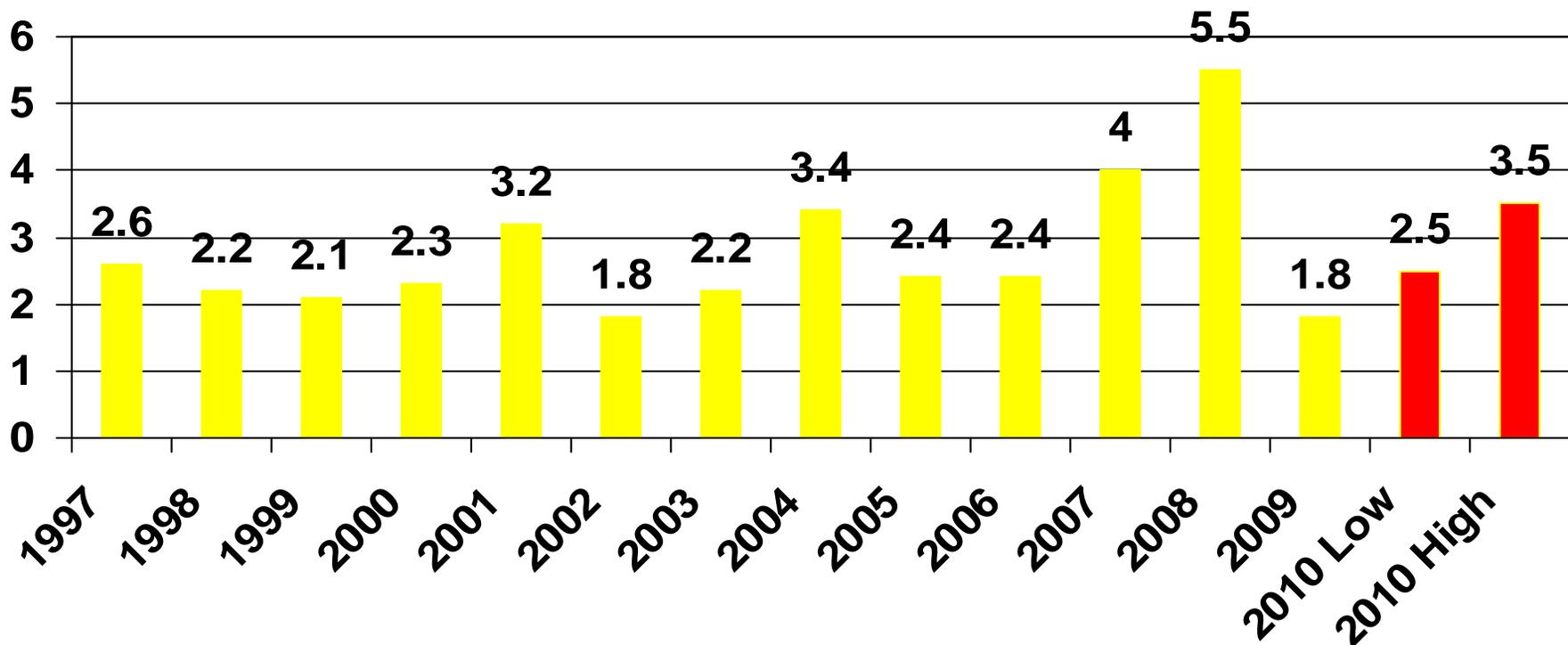
| | Single period pass-through | Cumulative 6-month pass-through | Time for majority of response to occur |
|---------------------|----------------------------|---------------------------------|--|
| Bread | | | |
| Farm to Wholesale | 11-12% | 28-29% | 1-2 months |
| Wholesale to Retail | 4-10% | 14-15% | 1-4 months |
| Beef | | | |
| Farm to Wholesale | 29-39% | 31-52% | 1 month |
| Wholesale to Retail | 6-27% | 33-46% | 1-2 months |

Other Pass-Through Findings

- ❑ Pass-through from farm to wholesale prices are generally symmetrical, both for short term and long term adjustments
- ❑ Retail responses to wholesale price changes appear to have asymmetrical tendencies (in terms of the timing and size of response)
- ❑ Price responses are stronger through the beef production chain than that of bread

Food inflation projected to accelerate in 2010, but close to historical average

Annual Percent Change in CPI for Food



Why?

- 2008
 - Higher commodity costs (corn, wheat, soybeans, etc.)
 - Higher energy and transportation costs
 - Increased U.S. exports due to weaker dollar/growing global demand
- 2009
 - Food commodity costs down from summer 2008 highs
 - Energy prices down
 - Domestic and global demand weakens
- 2010
 - Recovering domestic and global economy
 - Renewed energy and commodity price pressures

Percent Change in Food CPI (a)

| Items | 2007 | 2008 | 2009 | Forecast 2010 |
|-------------|------|------|------------|----------------------|
| All Food | 4.0 | 5.5 | 1.8 | 2.5 to 3.5 |
| FAFH | 3.6 | 4.4 | 3.5 | 2.5 to 3.5 |
| FAH | 4.2 | 6.4 | 0.5 | 2.5 to 3.5 |
| Beef | 4.4 | 4.5 | -1.0 | 1.0 to 2.0 |
| Pork | 2.0 | 2.3 | -2.0 | 1.0 to 2.0 |
| Other Meats | 2.3 | 3.1 | 2.3 | 2.5 to 3.5 |
| Poultry | 5.2 | 5.0 | 1.7 | 1.0 to 2.0 |

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Percent Change in Food CPI (b)

| Items | 2007 | 2008 | 2009 | Forecast 2010 |
|----------------|------|-------------|------------|----------------------|
| All Food | 4.0 | 5.5 | 1.8 | 2.5 to 3.5 |
| FAH | 4.2 | 6.4 | 0.5 | 2.5 to 3.5 |
| Fish | 4.6 | 6.0 | 3.6 | 3.5 to 4.5 |
| Dairy | 7.4 | 8.0 | -6.4 | 2.5 to 3.5 |
| Fats and Oils | 2.9 | 13.8 | 2.3 | 3.0 to 4.0 |
| Sugar + Sweets | 3.1 | 5.5 | 5.6 | 3.5 to 4.5 |
| Eggs | 29.2 | 14.0 | -14.7 | 2.0 to 3.0 |

Percent Change in Food CPI (c)

| Items | 2007 | 2008 | 2009 | Forecast 2010 |
|-------------------|------|-------------|-------------|--------------------------|
| All Food | 4.0 | 5.5 | 1.8 | 2.5 to 3.5 |
| FAH | 4.2 | 6.4 | 0.5 | 2.5 to 3.5 |
| Fresh Fruits | 4.5 | 4.8 | -6.1 | 3.0 to 4.0 |
| Fresh Vegetables | 3.2 | 5.6 | -3.4 | 3.0 to 4.0 |
| Processed F + V | 3.6 | 9.5 | 6.6 | 3.0 to 4.0 |
| Cereals + Bakery | 4.4 | 10.2 | 3.2 | 3.0 to 4.0 |
| Nonalcoholic Bev. | 4.1 | 4.3 | 1.9 | 2.5 to 3.5 |

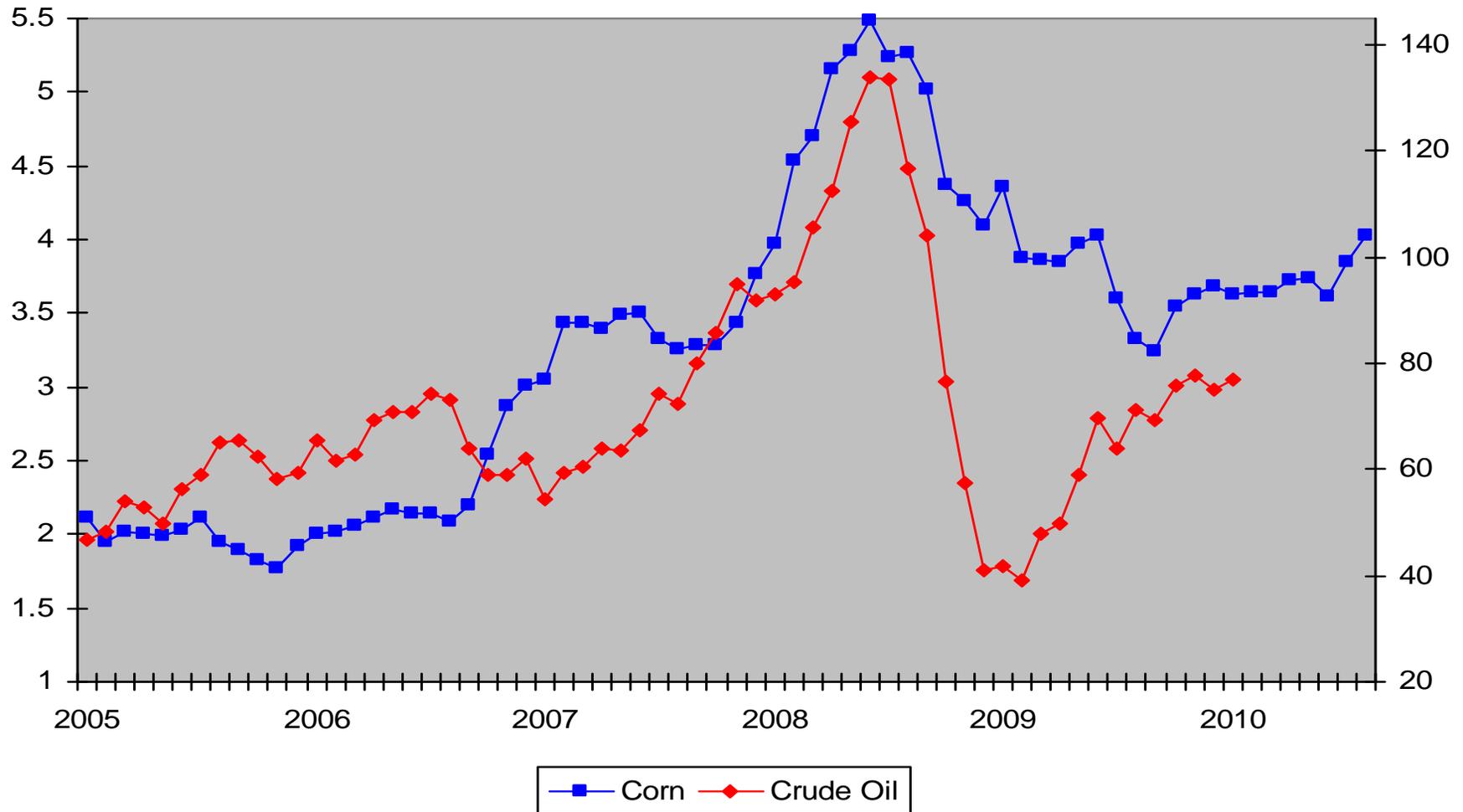
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Caveats

- Food commodity volatility
- Food ~ Energy Connection
- Global demand for U.S. exports
- Duration of recession
 - Consumer demand for food
 - Post-Recession Inflation?

Crude Oil and Corn Price Trends



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Data Resources for Food Price Trends

- ❑ ERS CPI Forecasts

<http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm>

- ❑ BLS Average Price Data

<http://data.bls.gov/PDQ/outside.jsp?survey=ap>

- ❑ AMS Fruit and Vegetable Report

<http://www.ams.usda.gov/mnreports/fvwretail.pdf>

- ❑ BLS CPI and PPI Data

<http://data.bls.gov/PDQ/outside.jsp?survey=cu>

<http://data.bls.gov/PDQ/outside.jsp?survey=wp>

<http://data.bls.gov/PDQ/outside.jsp?survey=pc>

- ❑ IMF World Commodity Prices

<http://www.imf.org/external/np/res/commod/index.asp>

Contact Information

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For more information, see

<http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/>

Motivation- an Egg Example

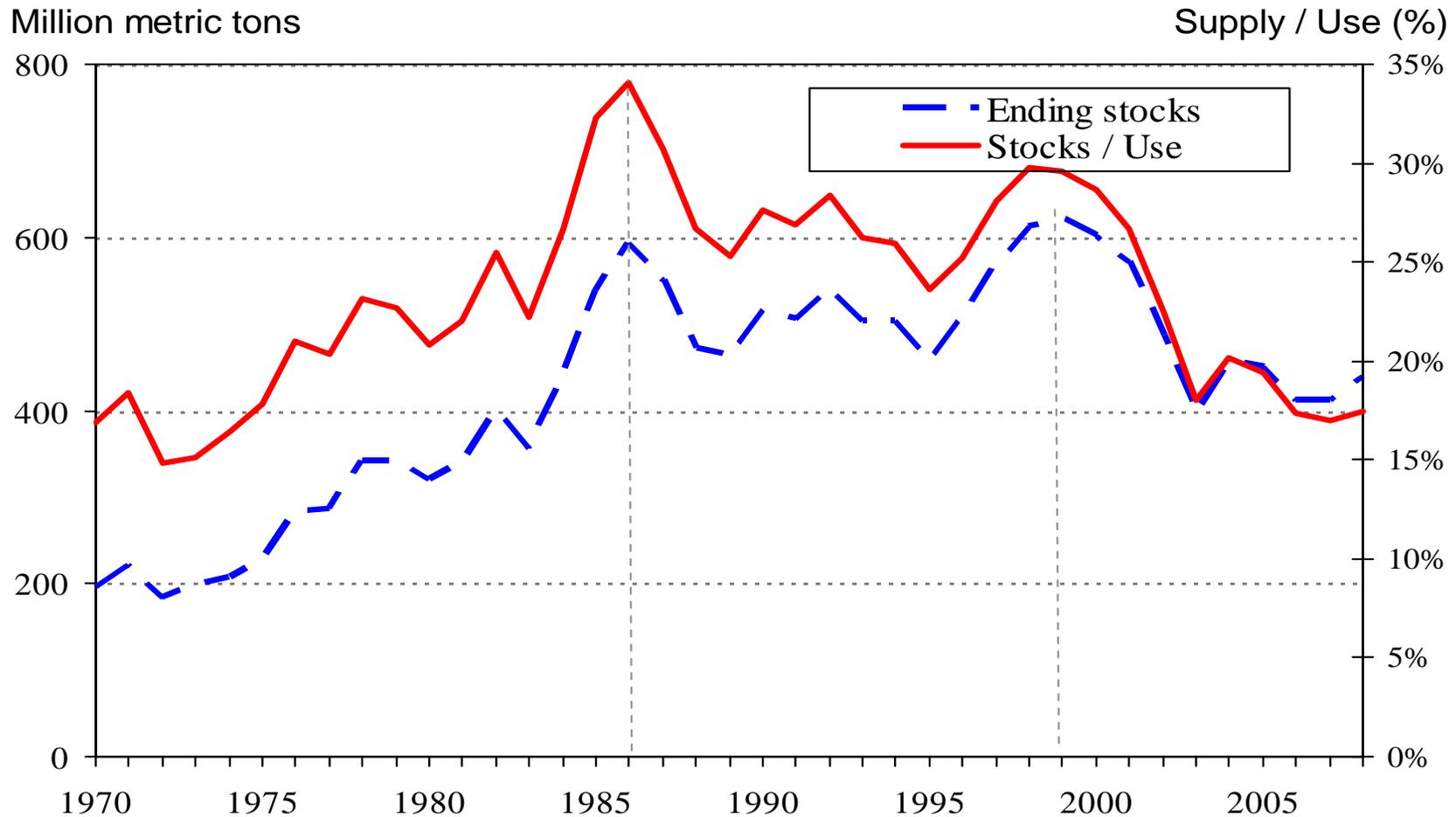


Sources: USDA, BLS

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Total world grain & oilseeds

Stocks and stocks-to-use ratio



Source: USDA PS&D Database

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Previous Research Results Summary

- ❑ Food and energy commodity price changes to farm and wholesale prices
 - Time: 2 to 9 months
 - Pass-through: 2 to 41 percent depending on the product in question.
- ❑ Farm and wholesale prices change to retail prices
 - Time: 1 to 6 months
 - Pass-through: 2 to 18 percent.
- ❑ Implies that commodity price changes take 4 to 27 months to pass through to retail prices and are passed through at rates ranging from less than one-half percent to nearly 7 percent.