Prospects for Food Commodity Prices

by
Sally Thompson
(with assistance from Ron Trostle)

Power Point Presentation for the
International Agricultural Trade Research Consortium
Analytic Symposium
"Confronting Food Price Inflation:
Implications for Agricultural Trade and Policies"

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(with much assistance from Ron Trostle)
Economic Research Service
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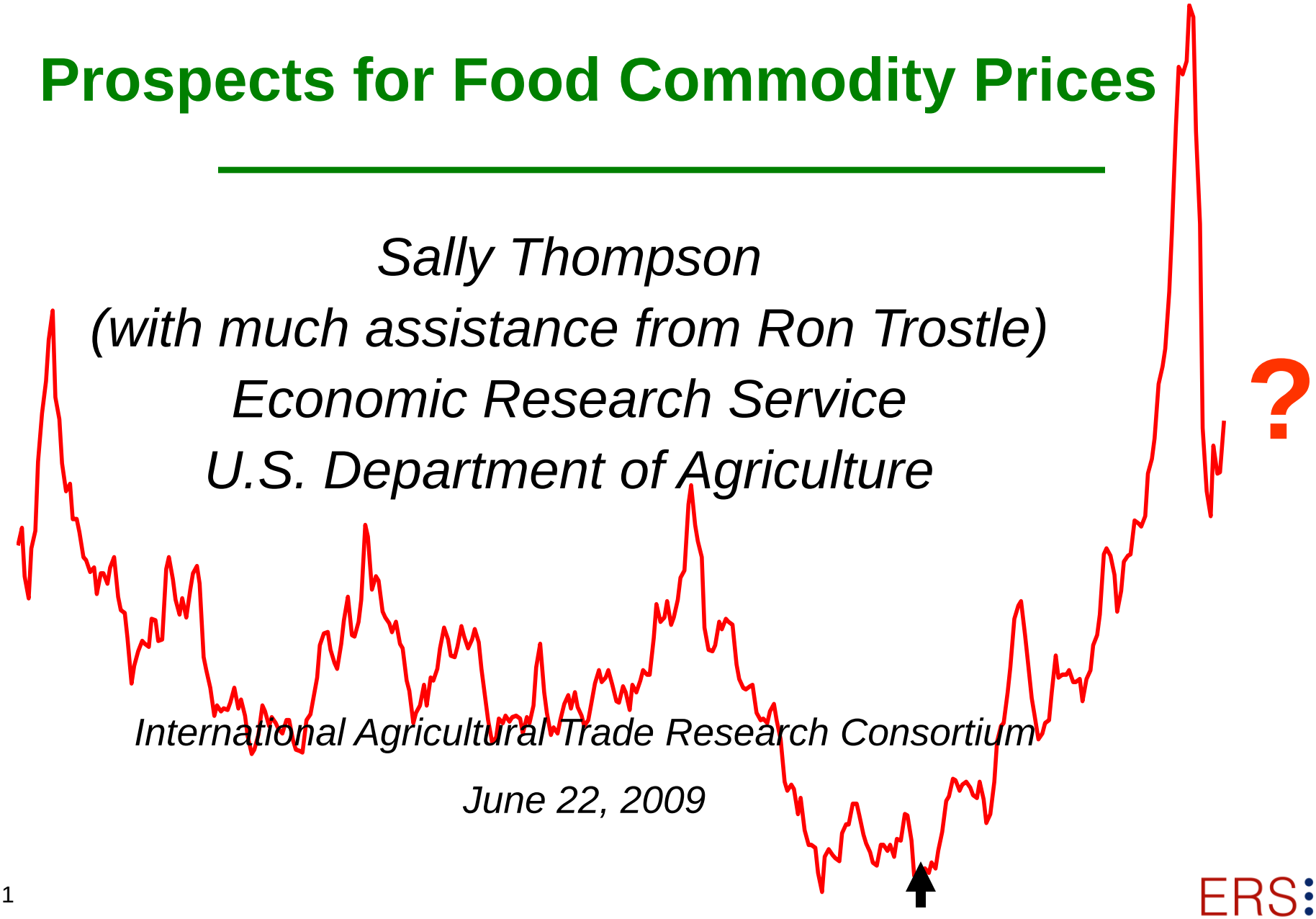

International Agricultural Trade Research Consortium

June 22, 2009

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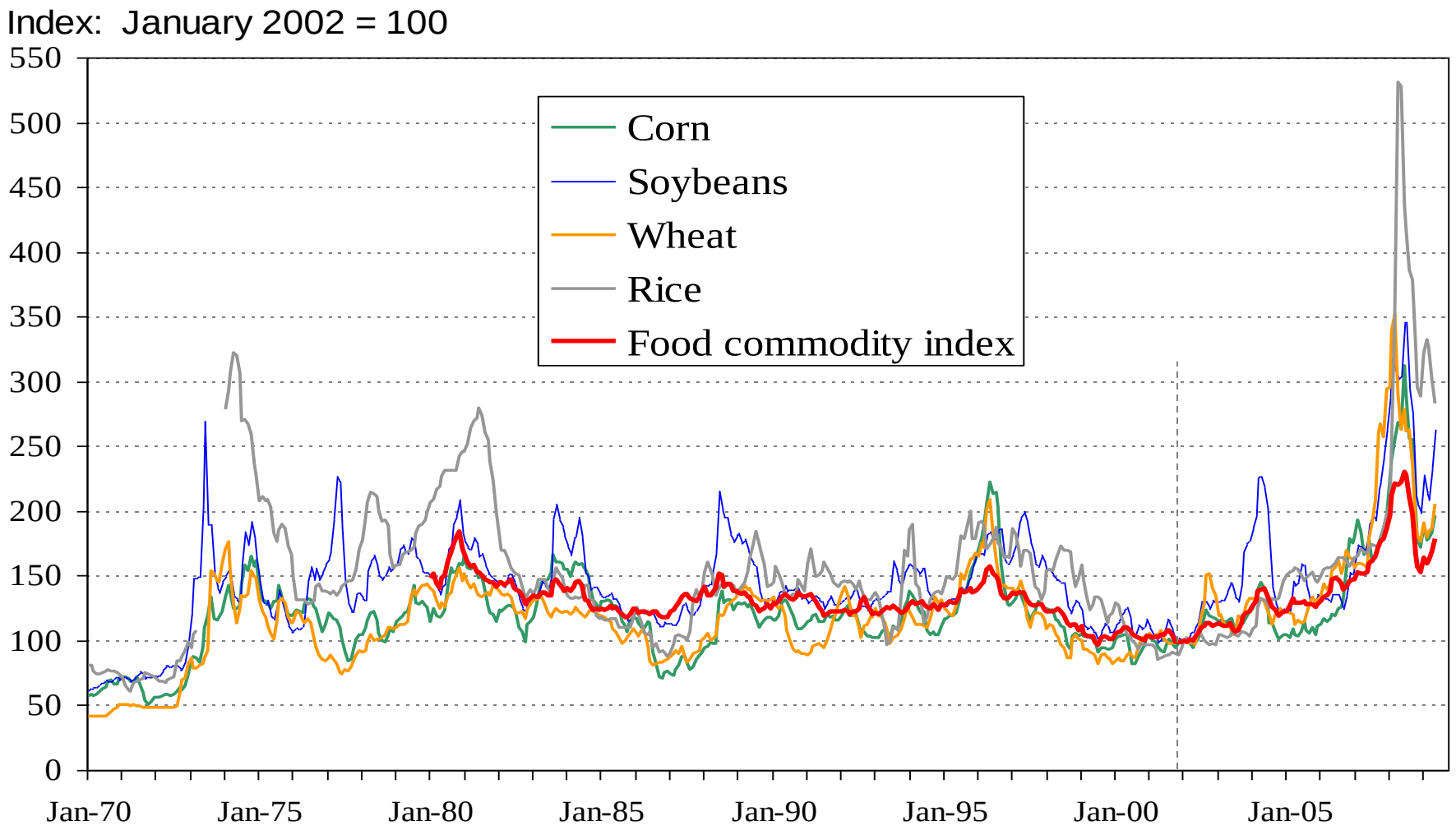
Spikes in food commodity prices:
Will this time be any different?



Source: International Monetary Fund: International Financial Statistics

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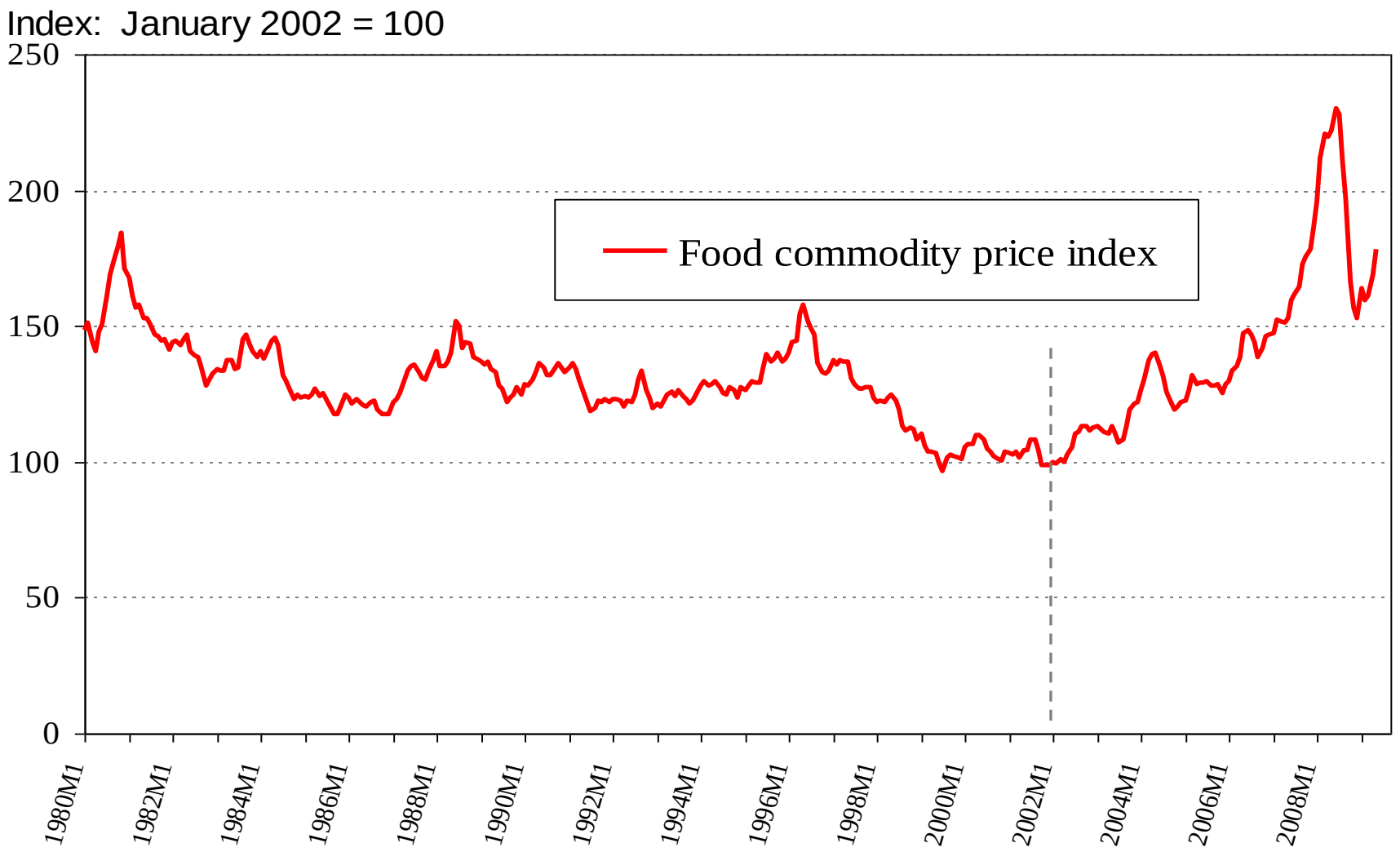
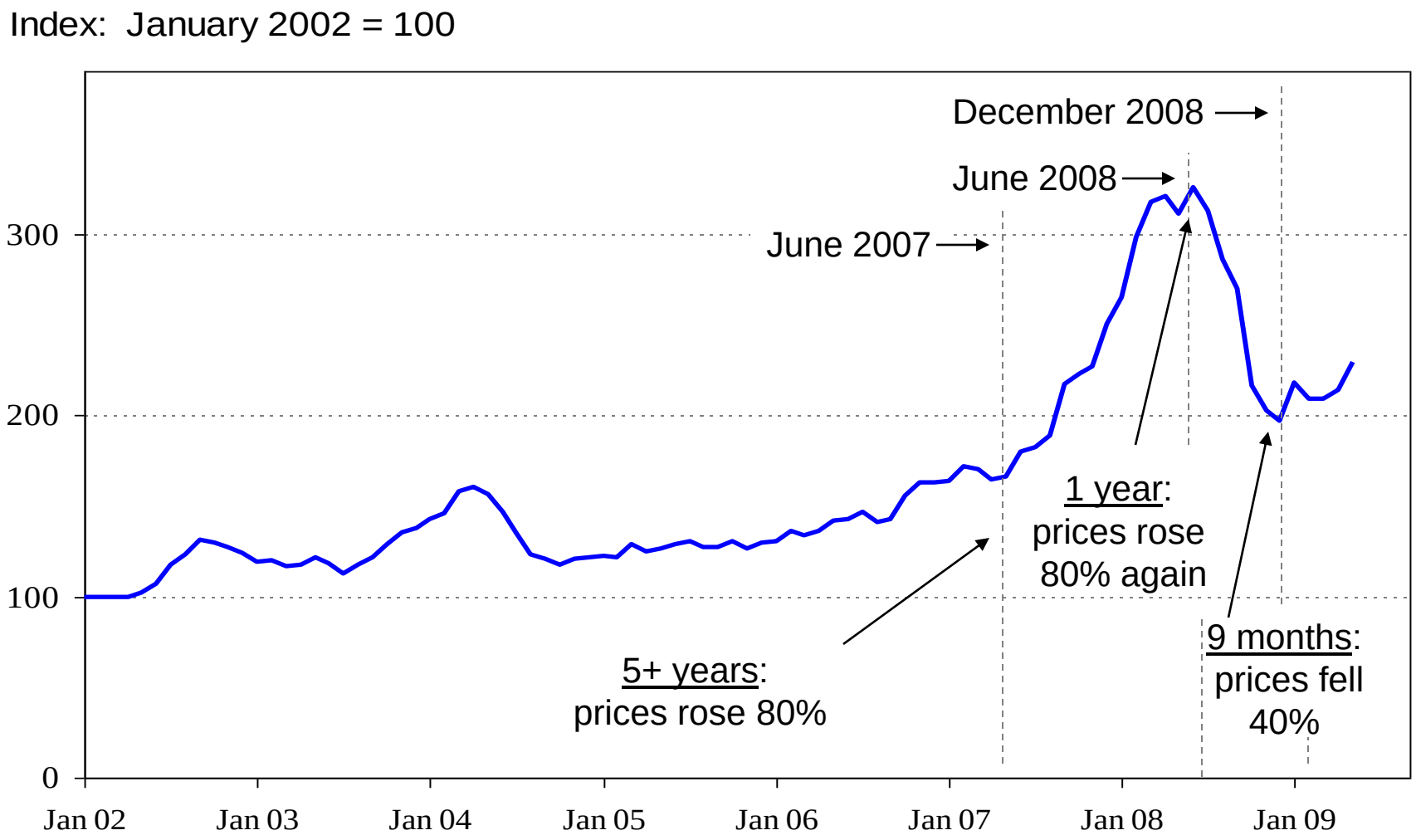
Food commodity prices since January 2002: Up 130 %, then down 1/3



Source: International Monetary Fund: International Financial Statistics

Nominal Crop Price Index

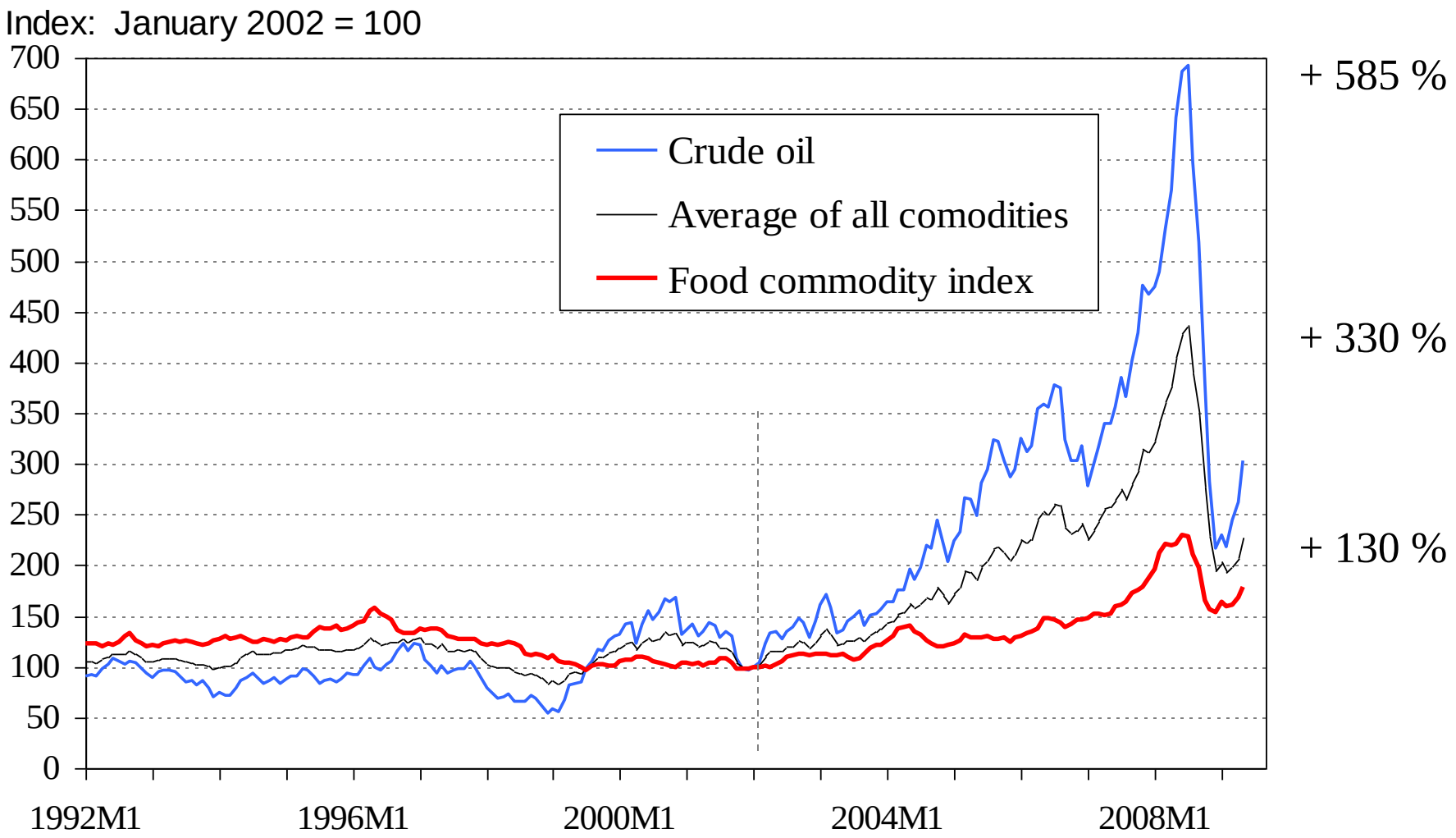
Weighted average of 4 crops (wheat, soybeans, corn & rice) 1/



1/ IMF monthly prices weighted by world exports.

Source of data for nominal prices and weights: International Monetary Fund

Prices of many commodities rose even more



Source: International Monetary Fund: International Financial Statistics

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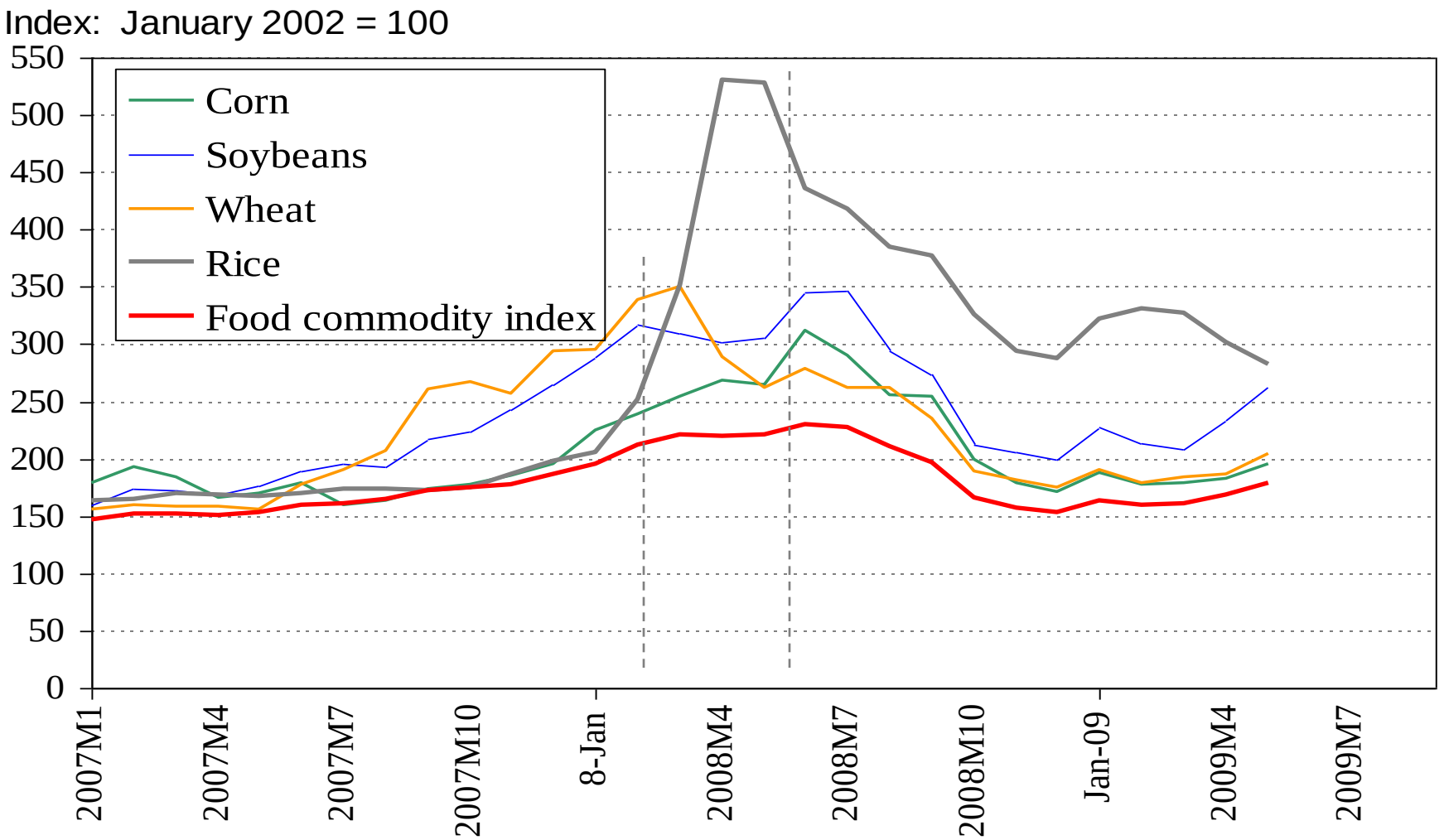
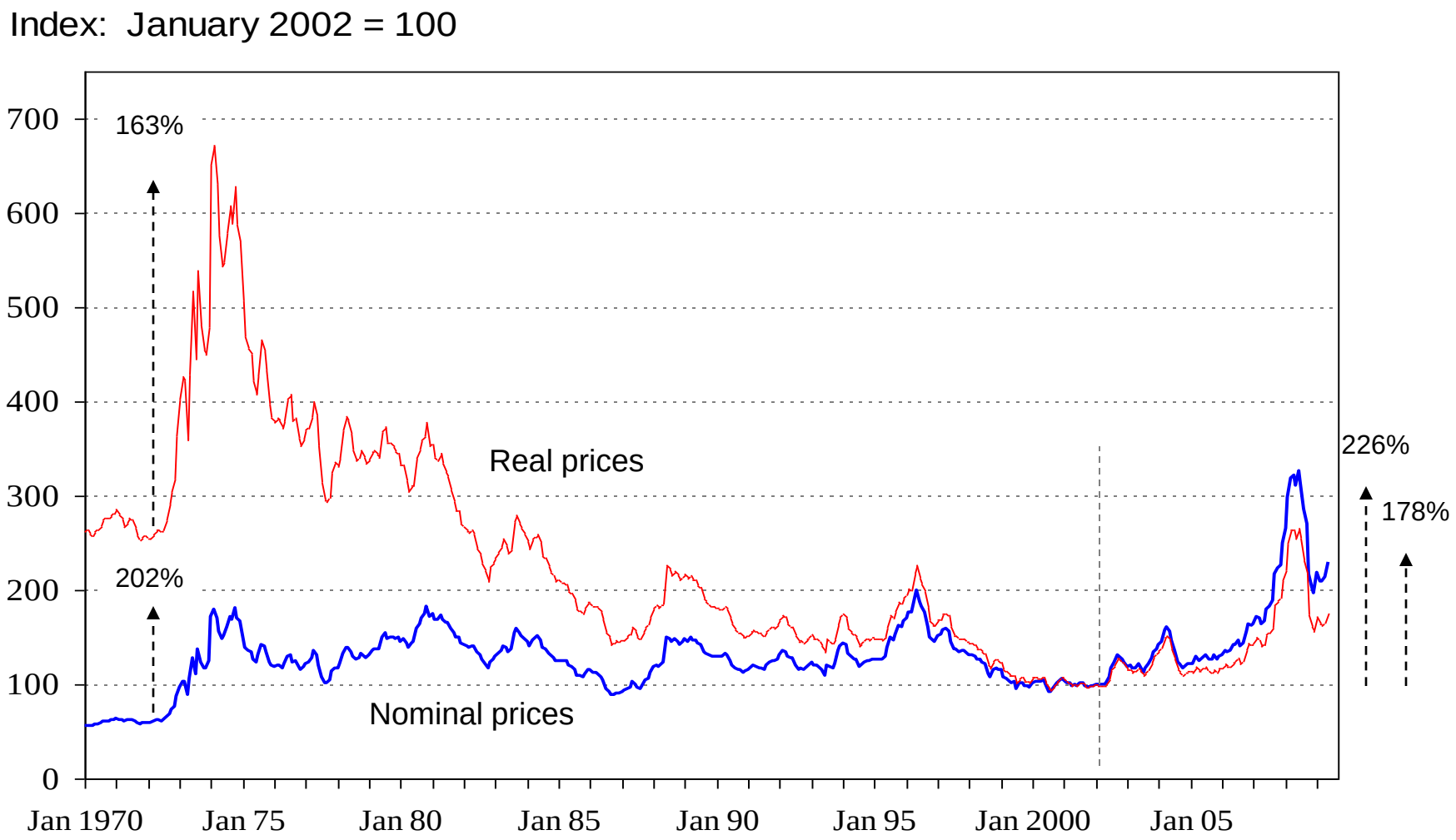
Food commodity prices:
Indices for selected crops and total food



Source: International Monetary Fund: International Financial Statistics

Crop price increases: real vs. nominal

Weighted average of 4 crops (wheat, soybeans, corn & rice) 1/

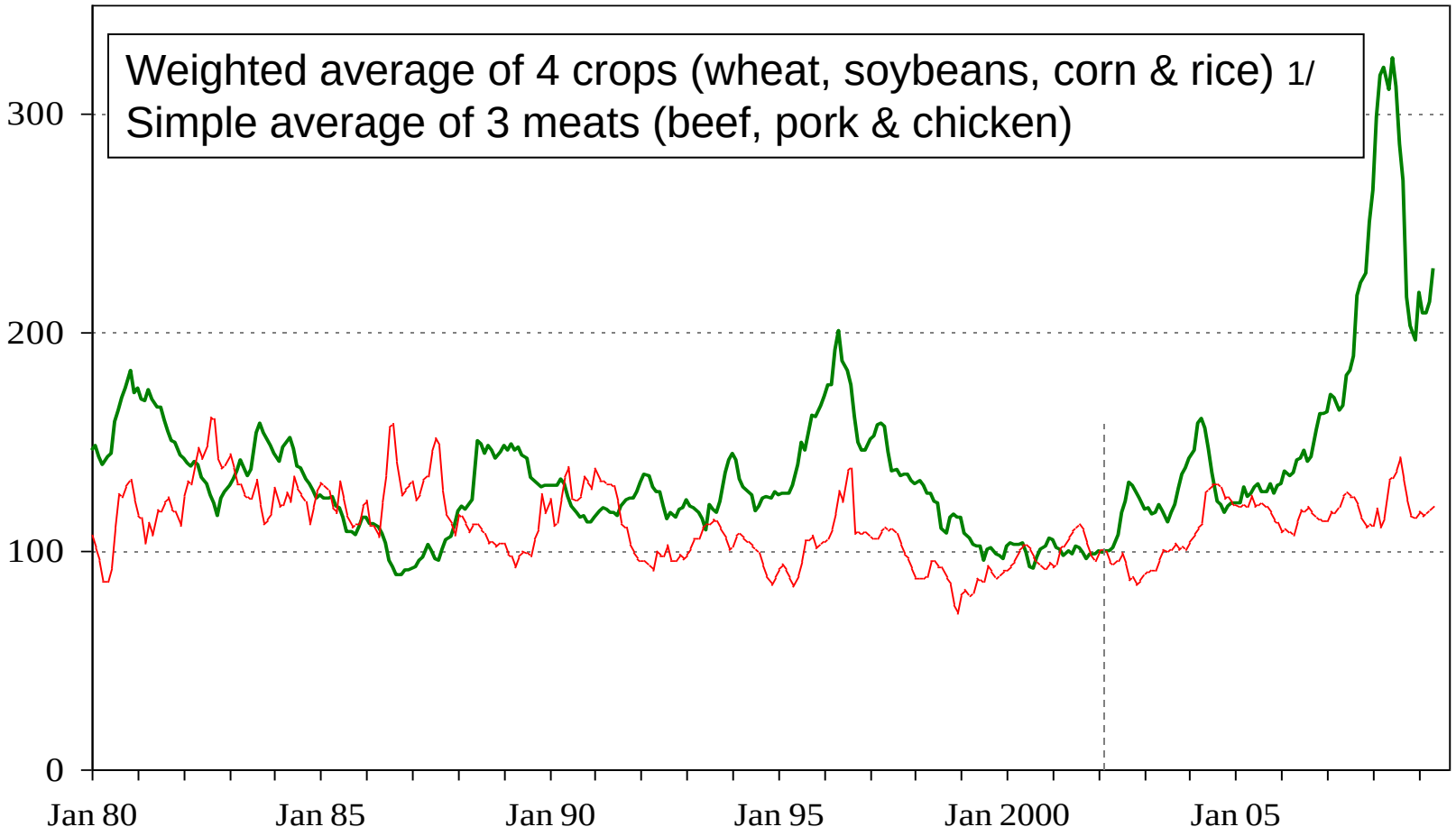


1/ IMF monthly prices weighted by world exports.

Source of data for nominal prices and weights: International Monetary Fund

Crop and meat prices (nominal)

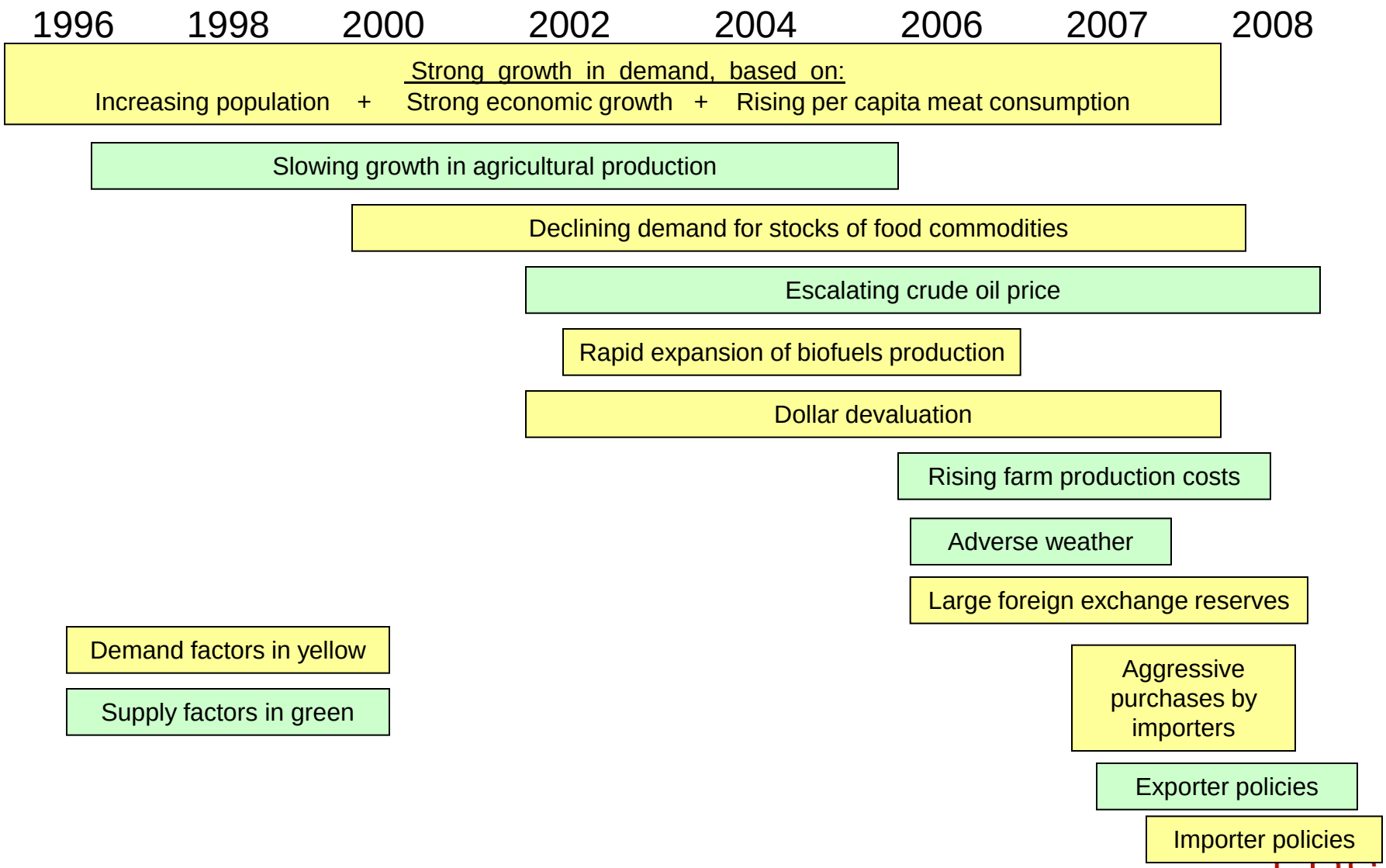
Index: January 2002 = 100



1/ IMF monthly prices weighted by world exports.

Source of data for nominal prices and weights: International Monetary Fund

Factors contributing to higher food commodity prices



Factors that may influence future ag prices

- Nearer Term
  - Economic slow down, & recovery
  - Cost of energy (& other non ag prices)
  - Costs of ag production
  - Stock levels (Supply & demand balances; stocking policies; self-sufficiency policies)
  - Policy changes by exporters & by importers
  - Exchange rates (Esp. for commodities denominated in dollars)
  - Weather
  - Import demand: Who will be the importers? (Role of foreign exchange reserves)

- Intermediate Term
  - Biofuels production (Role of policies and profitability)
  - Consumption patterns (Continued increase in per capita meat consumption?)

- Longer Term
  - Technology advancements
    - Continued slowing of growth in productivity? R&D investments. Acceptance of GMO products.
  - Natural resource constraints
    - Land: Ability to expand cultivated area; productive capacity of new land
    - Water: Fertilizer (ability to continue rate of growth in irrigated areas
  - Climate change and related legislation—e.g. Waxman-Markey
    - Impact of temperature, precip, and growing season changes on cropping patterns & productivity.
  - Potential revisions to projected population growth

Factors contributing to changes in food commodity prices

Temporary factors:

- Adverse weather
- Trade policies by exporters and importers
- Aggressive buying by importers

Continuing upward pressure on prices

Demand factors:

- Economic growth in many developing countries
- Population growth in developing countries
- Increasing per capita meat consumption
- Continued biofuels production

Supply factors:

- Energy prices
- Ag production costs
- Slowing growth in total crop production

Uncertain future impact:

- Value of dollar
- Role of large foreign exchange reserves

Supply factors

Demand factors

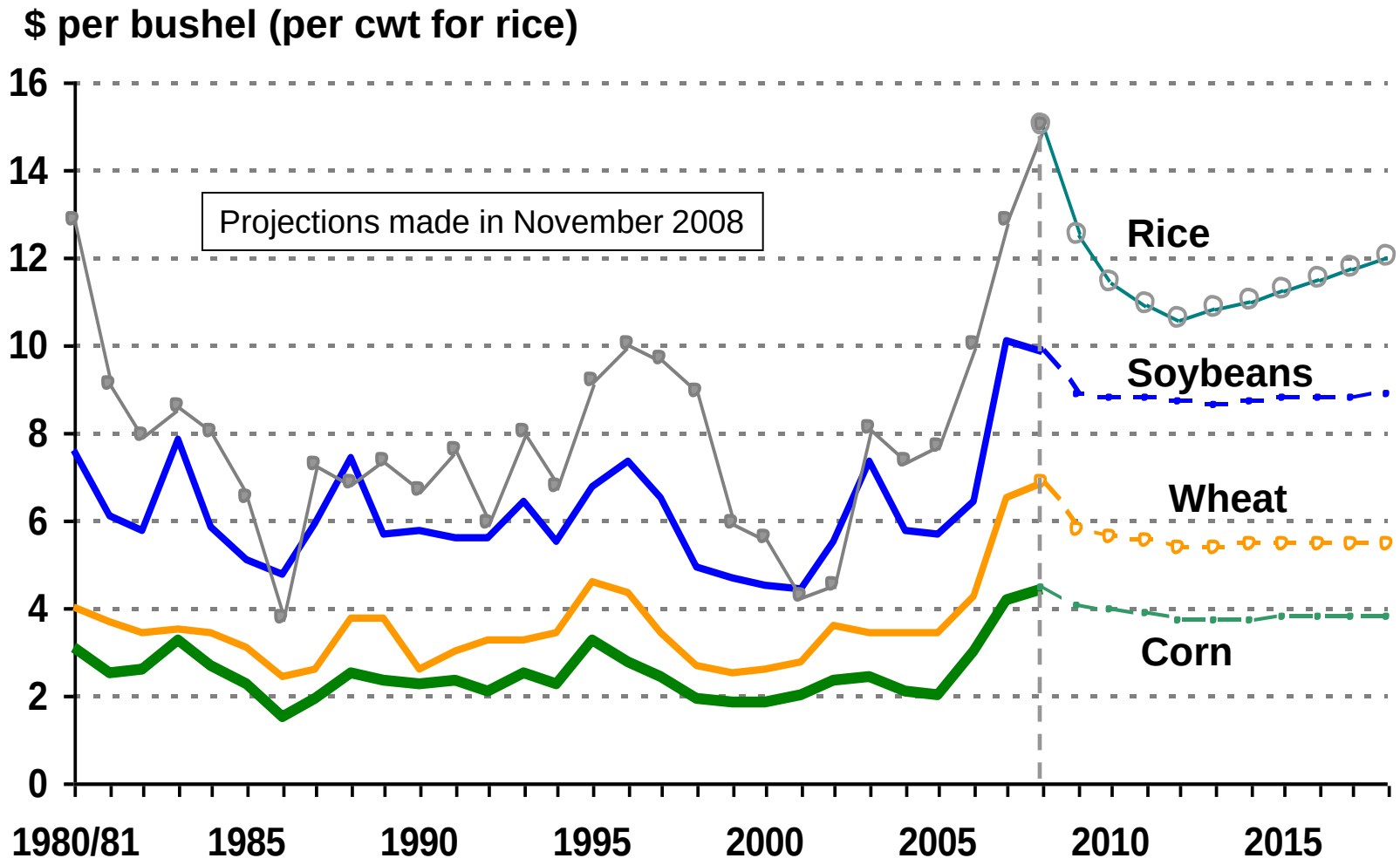
USDA Baseline

- 10-year projection of major commodities
  - Supply, demand, trade, and prices.
  - Based on November 2008 market conditions. Released Feb 2009
- Assumes **continuation of current U.S. law and**
  - continuation of existing international trade agreements
  - normal weather
- Applications of long run agricultural projections
  - **Budget estimates (FSA), Baseline reports (ERS), Special requests, research**

- Linked Country Model (“Linker”)
  - **Annual model - dynamic partial equilibrium, 40 countries/regions, Linked with FAPSIM as U.S. model, 24 commodity markets**
  Solves for prices and trade that clear world and country commodity markets
  Equilibrates: (Supply = Demand) and (Imports = Exports)

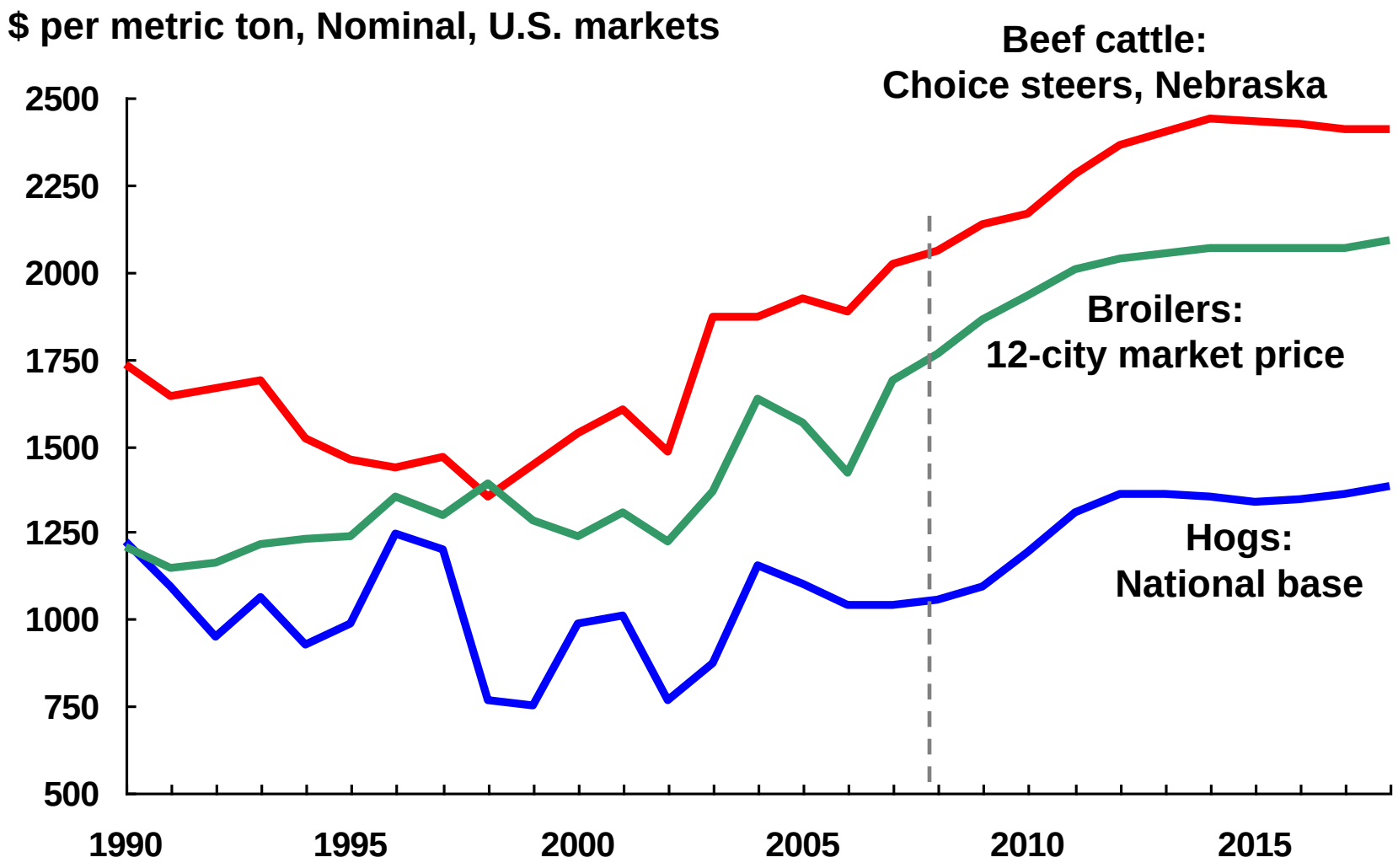
U.S. commodity prices: soybeans, wheat, corn & rice

History, current year, & projections



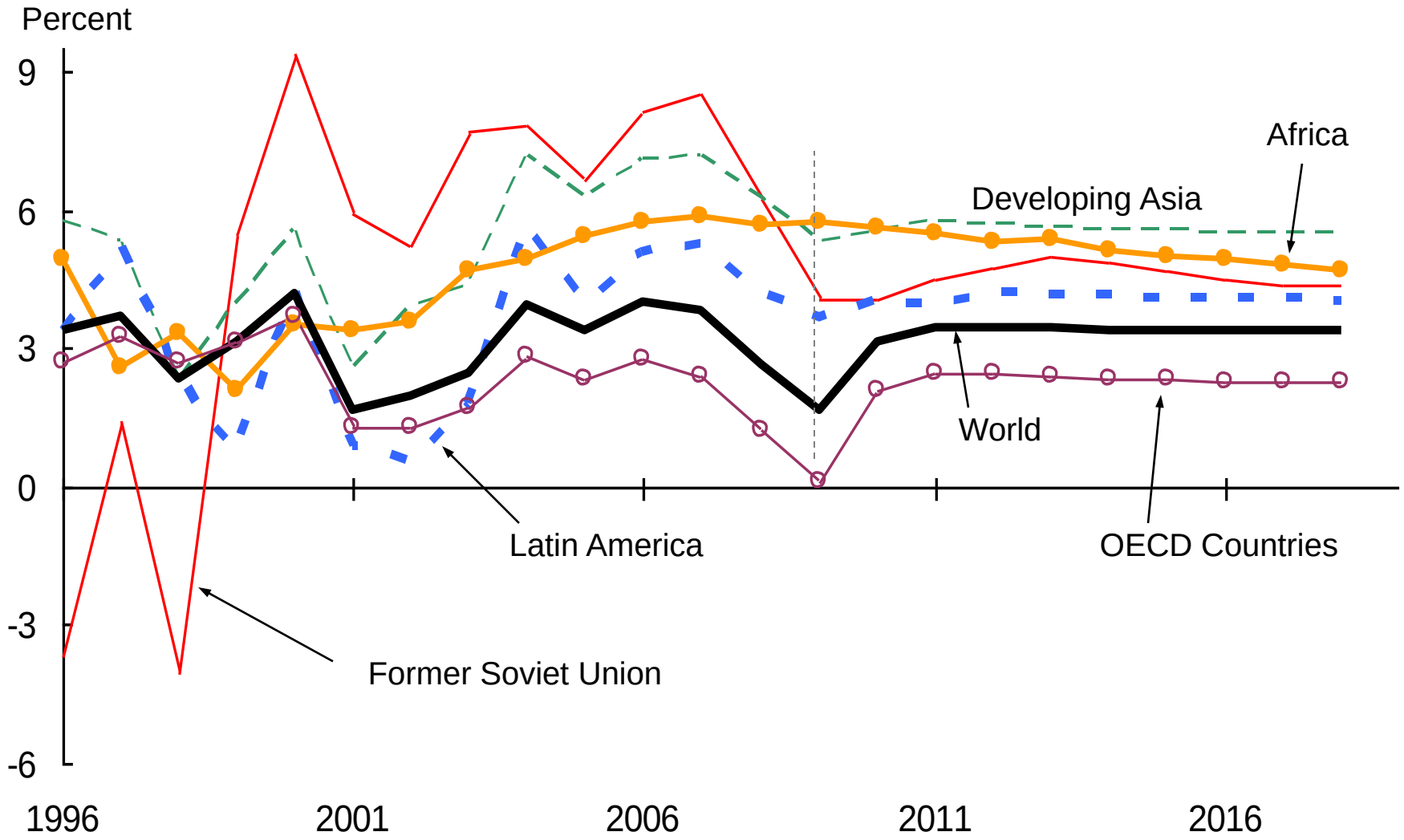
Source: *USDA Agricultural Baseline Projections to 2018*, February 2009.

Livestock Prices



Source: USDA Agricultural Projections to 2018, February 2009

GDP growth slows in 2008 & 2009 1/



1/ Projections based on assumptions made in October, 2008

Source: *USDA Agricultural Projections to 2018*, February 2009. USDA, Economic Research Service.

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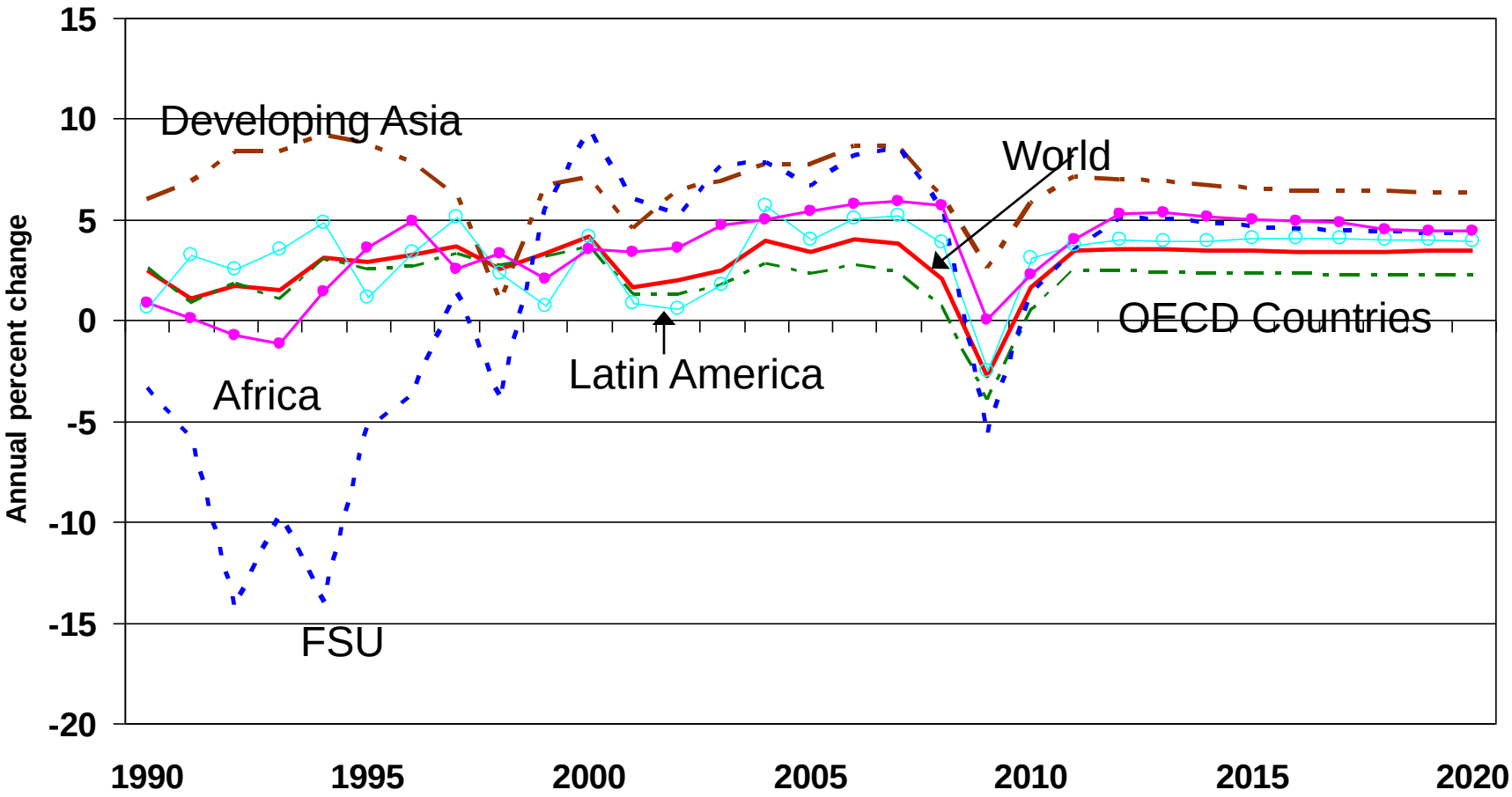
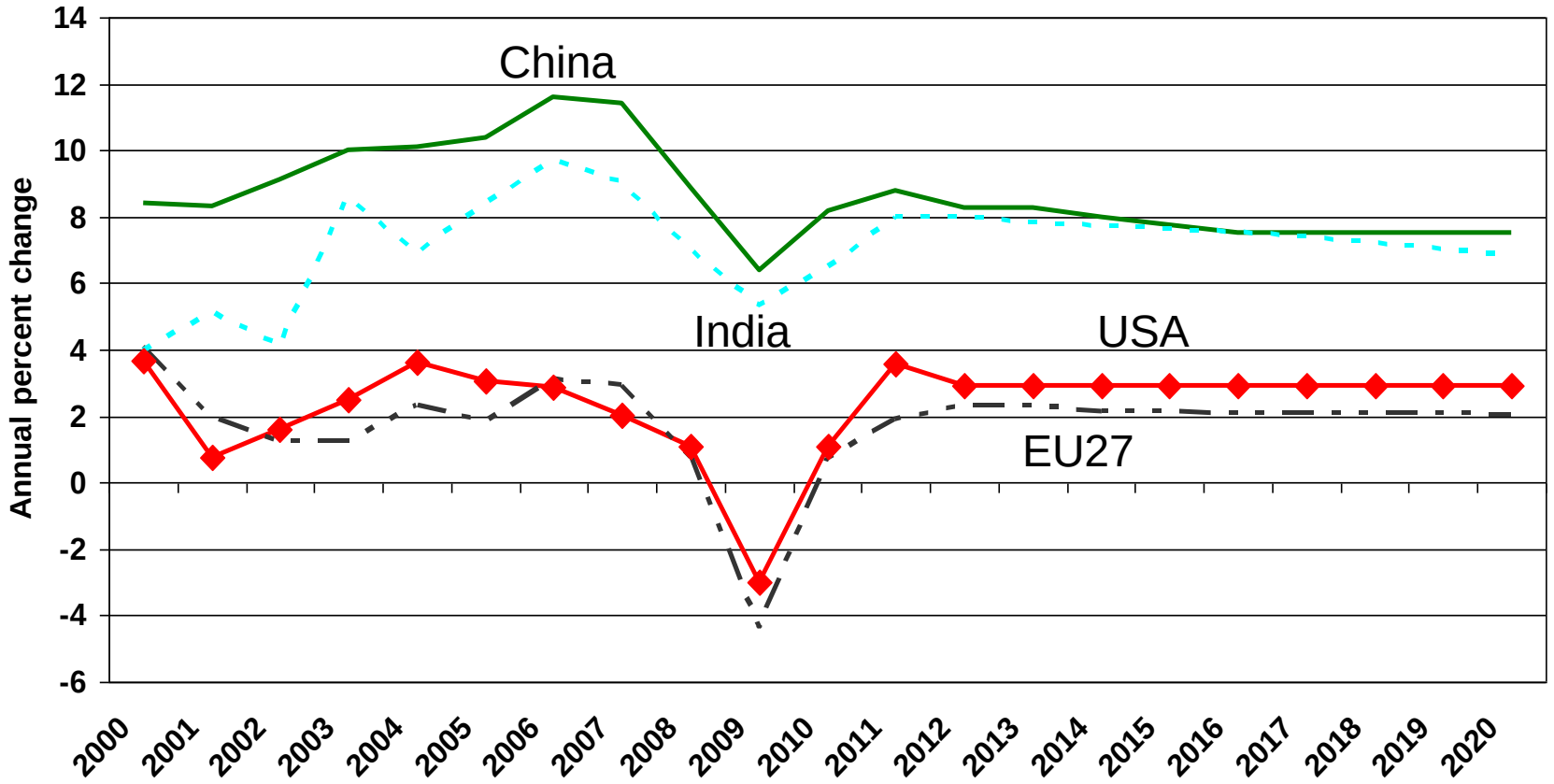
GDP growth down in 2008-10[1/]



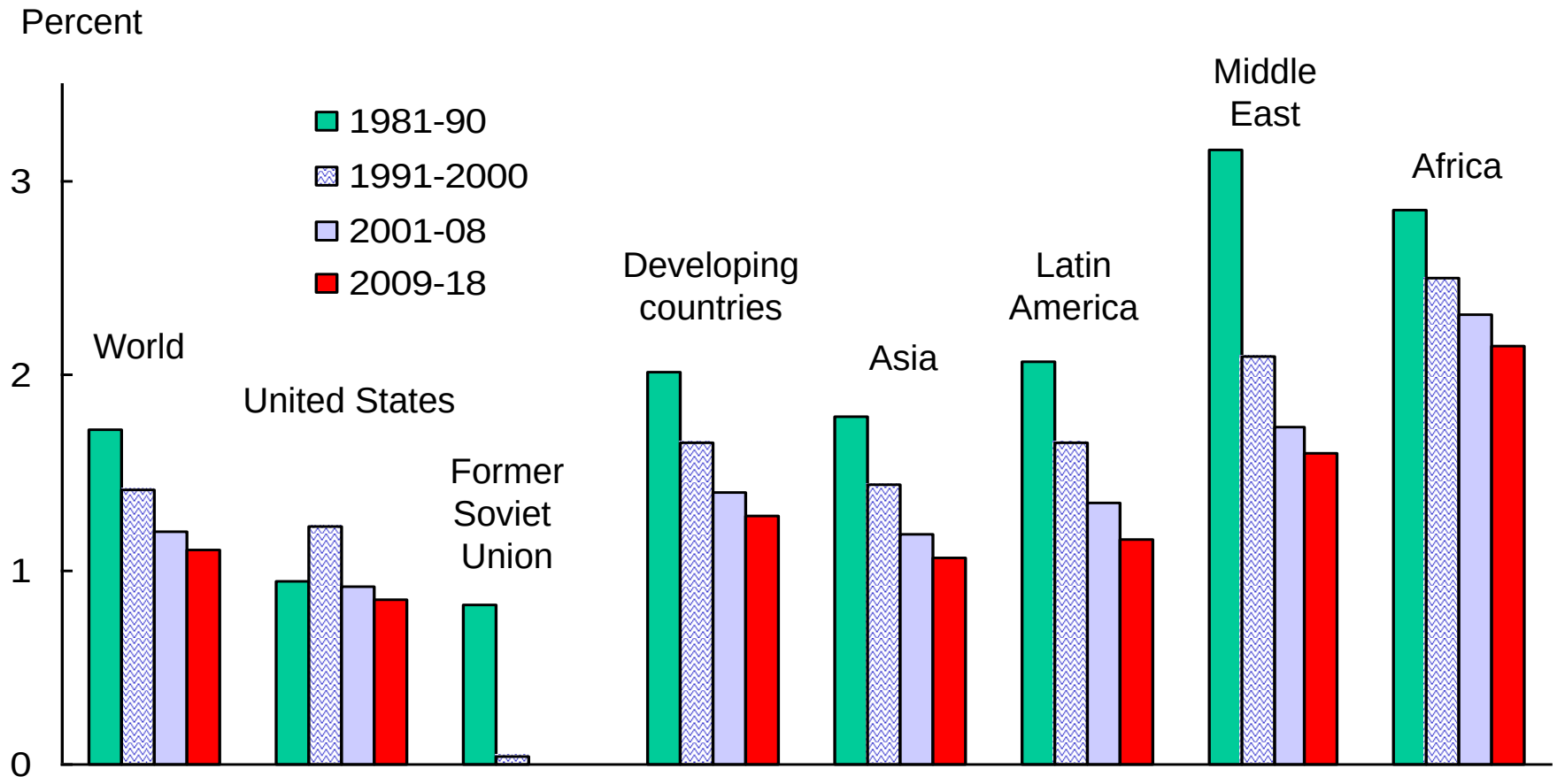
Source: ERS International Macroeconomic Data Set, 2009.
1/ Data for 2008 is preliminary while data for 2009 are estimates based on partial year.

GDP growth slows even in China and India



Source: ERS International Macroeconomic Data Set, 2009.

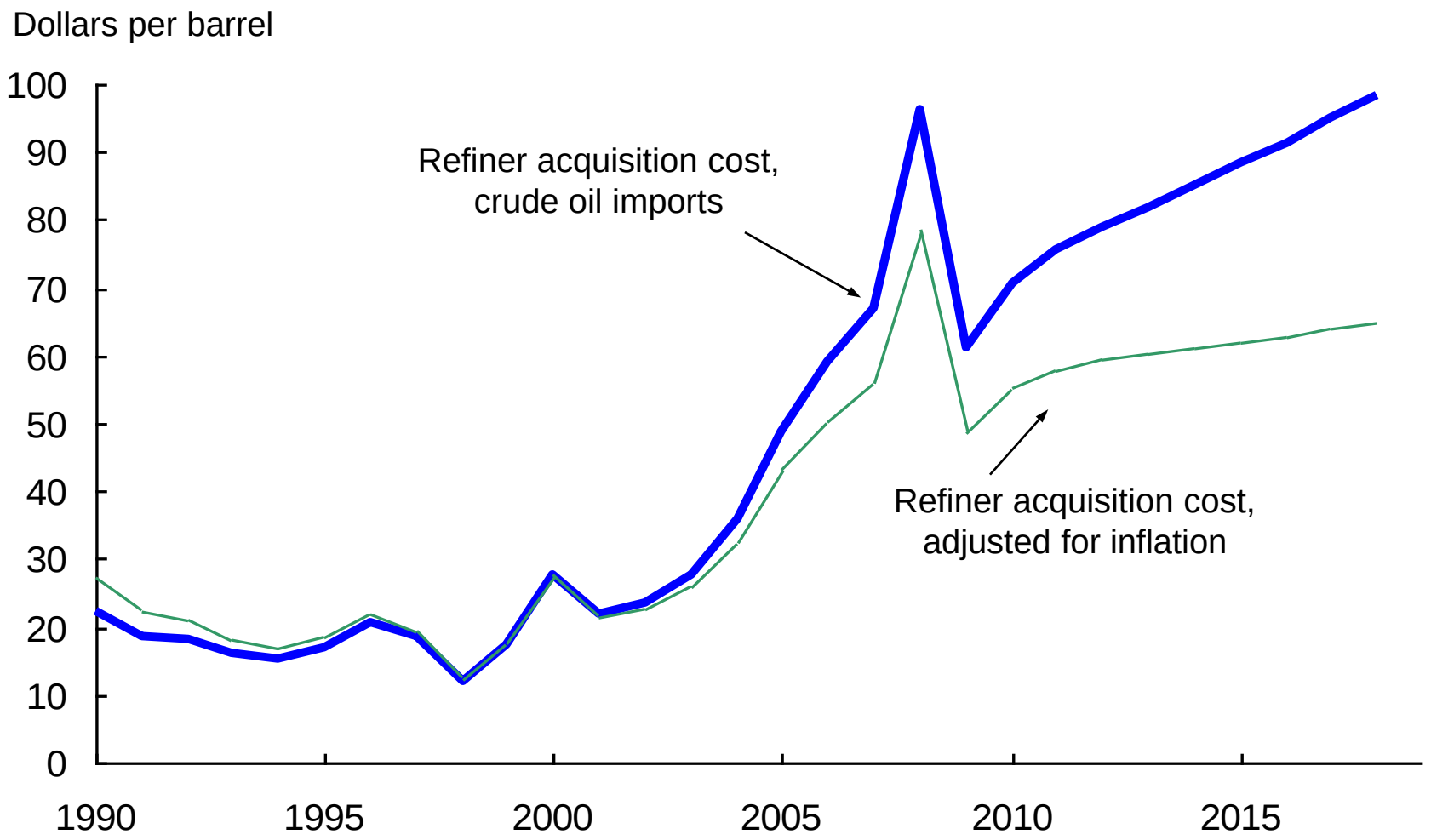
Population growth continues to slow



Source: U.S. Department of Commerce, U.S. Census Bureau and U.S. Department of Agriculture, Economic Research Service.

USDA Agricultural Projections to 2018, February 2009. USDA, Economic Research Service.

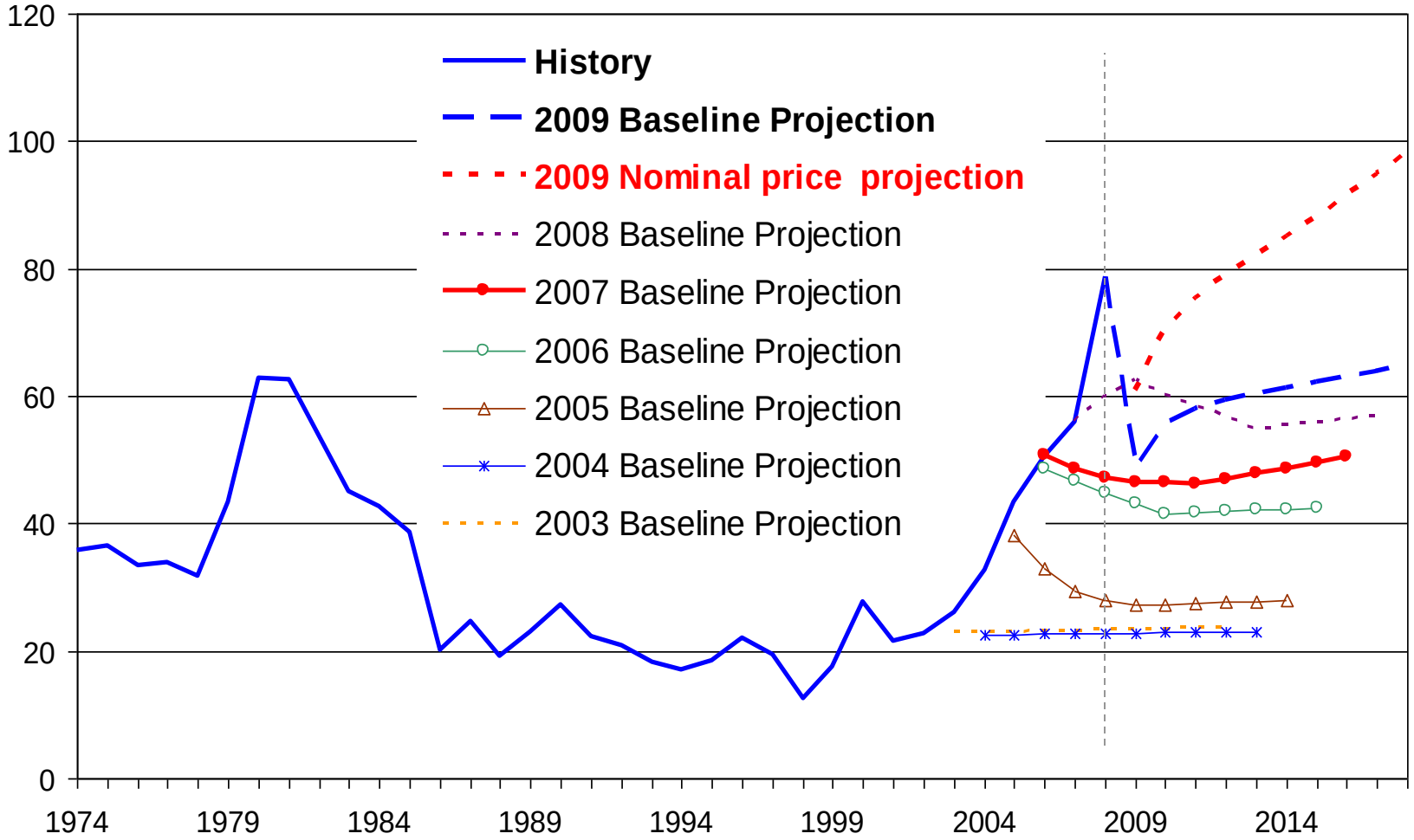
U.S. crude oil prices



Source: *USDA Agricultural Projections to 2018*, February 2009. USDA, Economic Research Service.

Oil price expectations have jumped considerably

Real 2000 $ per barrel. Refiner acquisition cost of imports



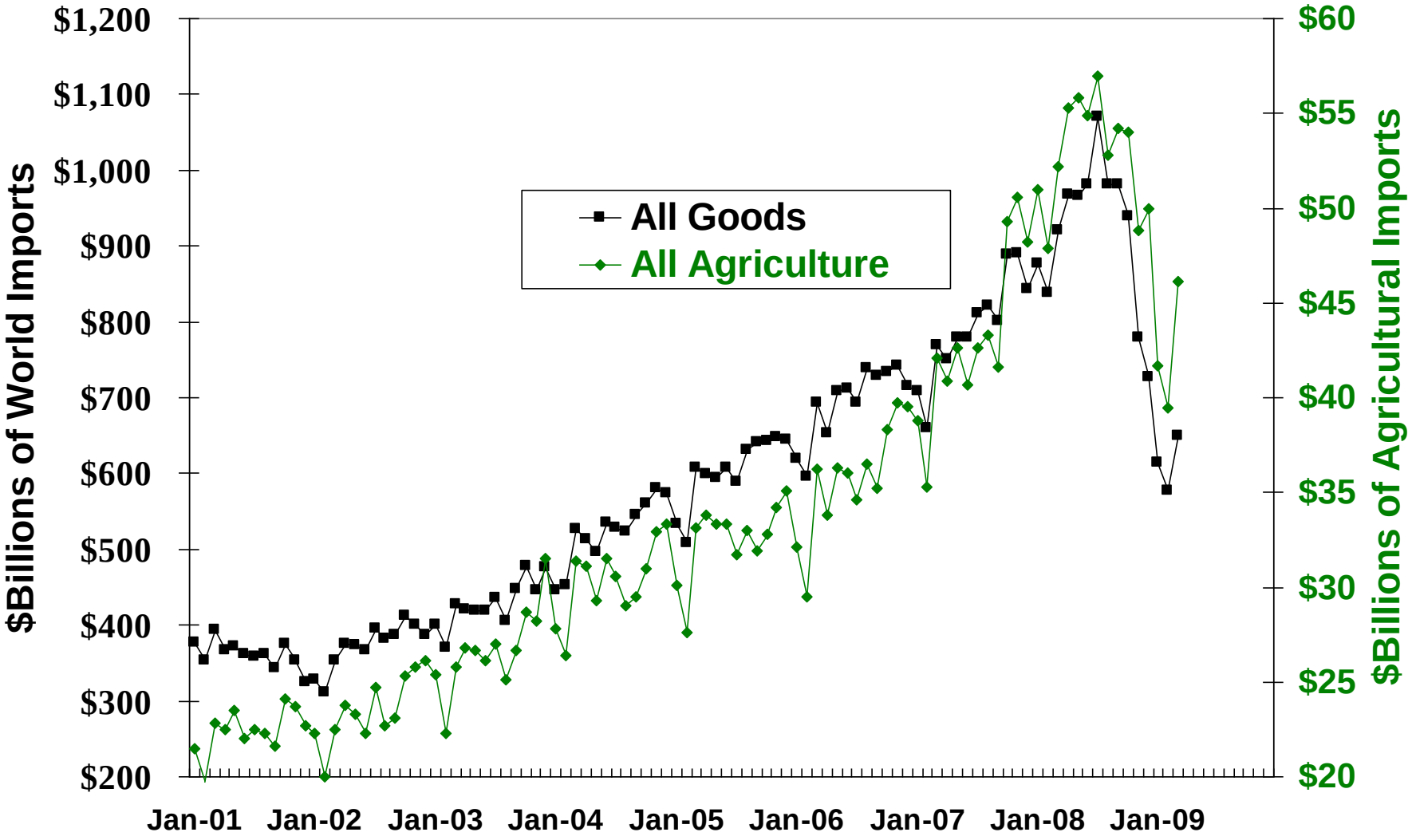
Source: USDA Agricultural Projections to 2018, February 2009; and previous reports

Percent change in value of ag trade during economic slowdown

Country/Region	Latest month of available data	Agricultural Trade Value	
		Fourth Quarter (Oct-Dec) 2007-2008	First Quarter (Jan-March) 2008-2009
Value of Exports			
China	March, 2009	-0.4 %	-17.3 %
Japan	February, 2009	-15.6 %	-53.7 %
USA	February, 2009	-5.5 %	-24.3 %
EU	January, 2009	-10.0 %	-33.7 %
Value of Imports			
South Korea	March, 2009	-3.3 %	-32.0 %
Mexico	January, 2009	-2.7 %	-26.4 %
USA	February, 2009	6.1 %	-11.7 %
EU	January, 2009	-11.8 %	-31.9 %

Source: World Trade Atlas, 2009

The Monthly Value of World Imports Rebounds in March After Plummeting in Response to the Global Financial Crisis



Source: Global Trade Atlas

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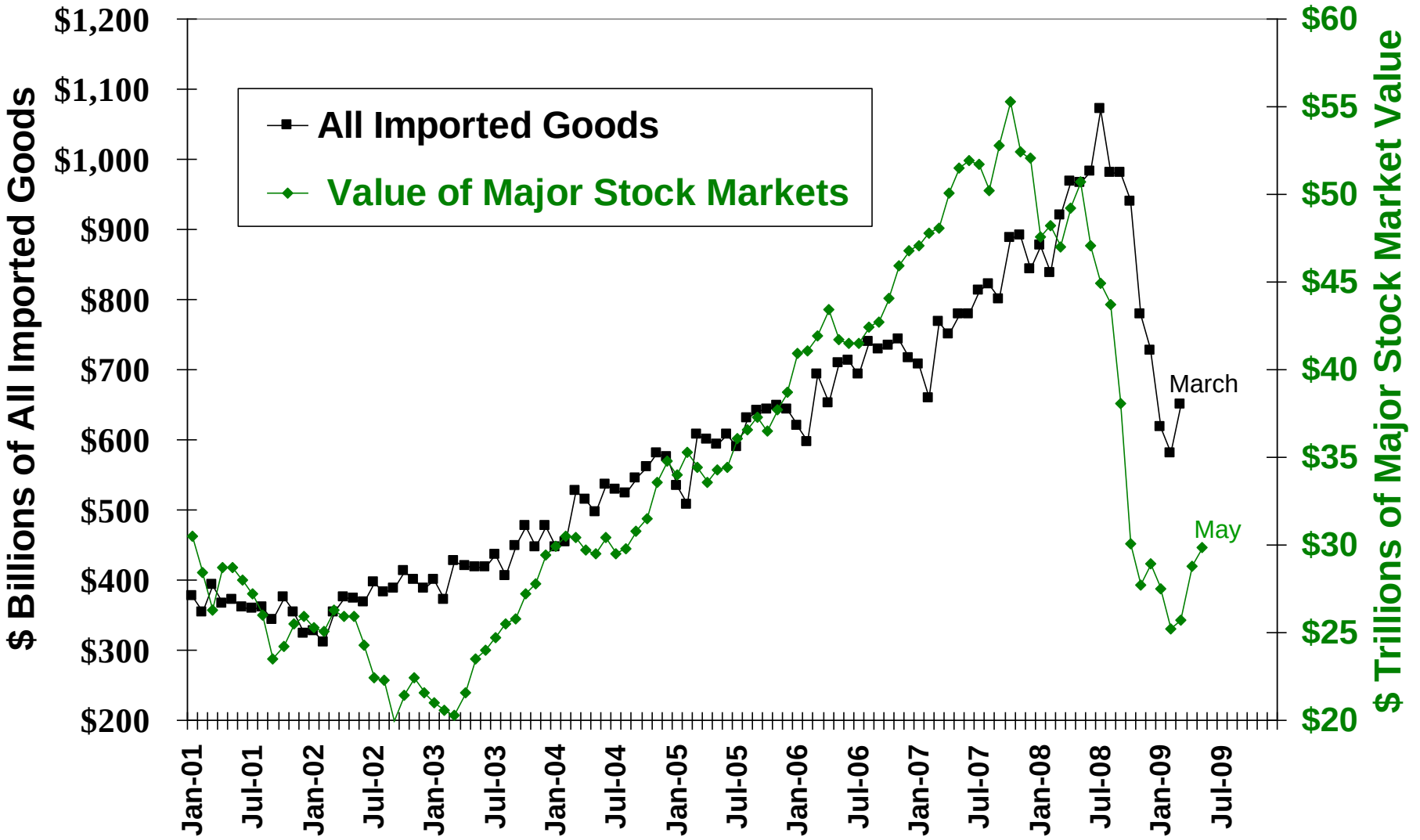
Monthly Value of Imports in Relation to Stock Market Value



Source: Global Trade Atlas and World Federation of Exchanges

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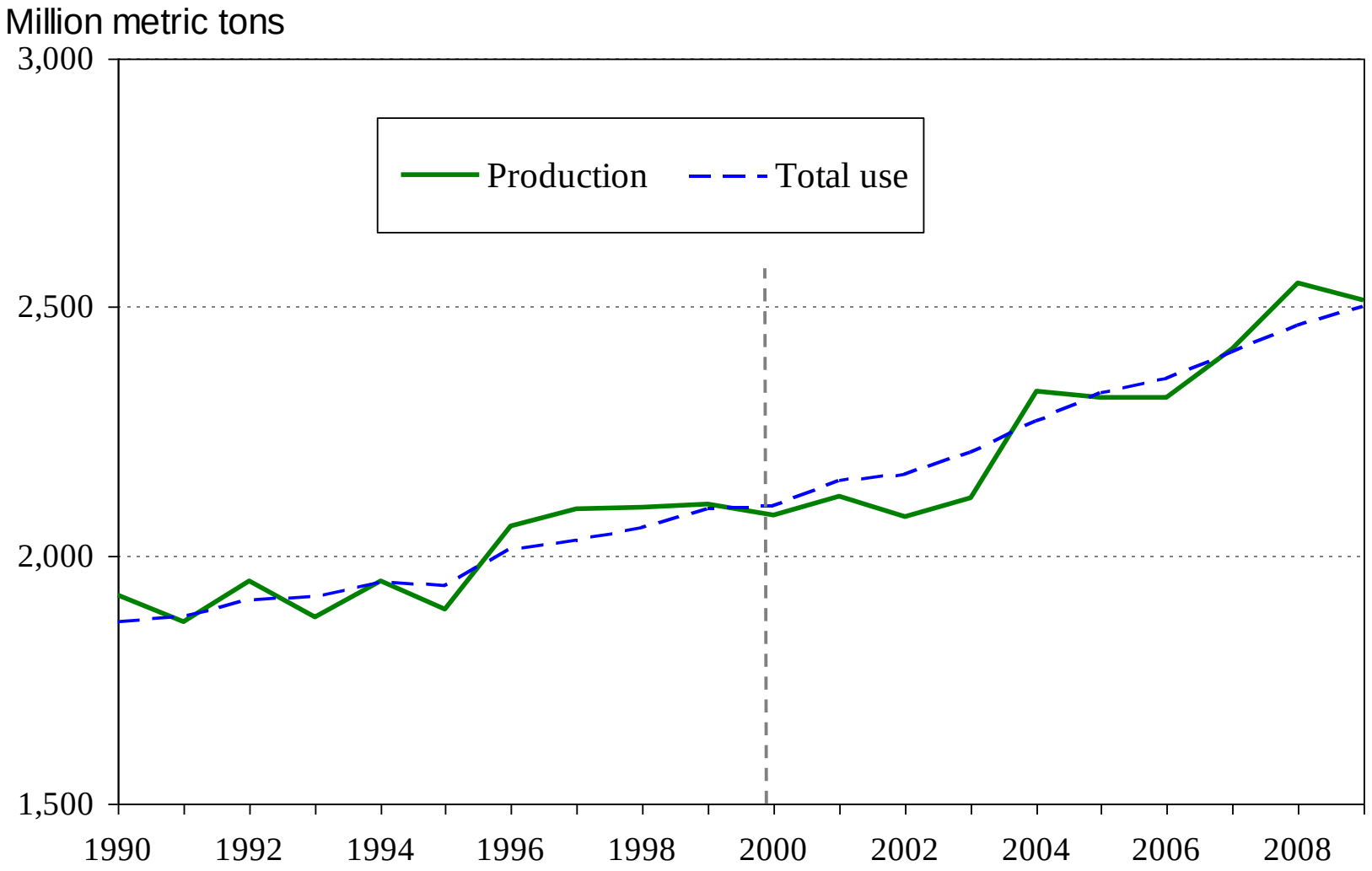
World grain & oilseeds

Total production and use



Source: USDA PS&D Database

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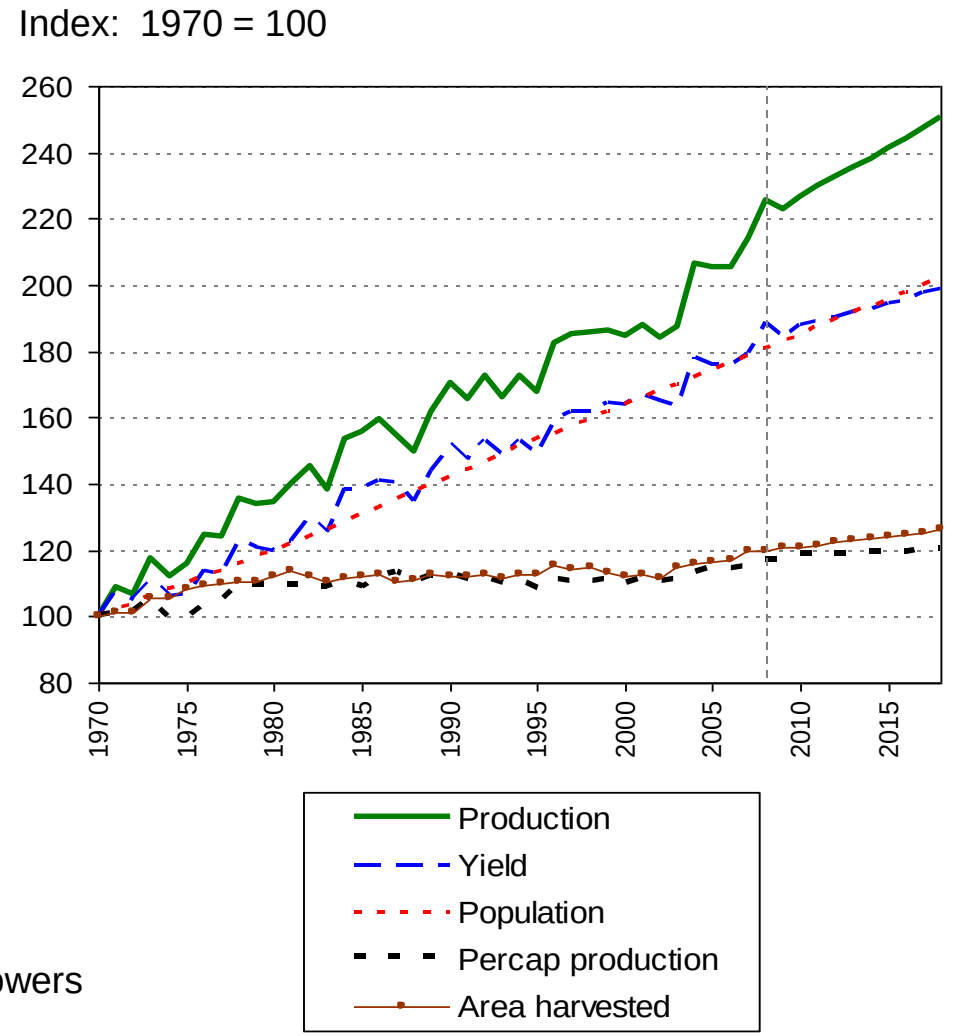
Total world grain & oilseeds[1]

Production, yield, area harvested, population & percap production

Exponential trend growth rates:

	1970-90	90-08	2009-18
Production	2.4	1.5	1.3
Yields	1.9	1.2	0.8
Area	0.50	0.29	0.49
Population	1.7	1.3	1.1
Per capita production	0.61	0.22	0.19

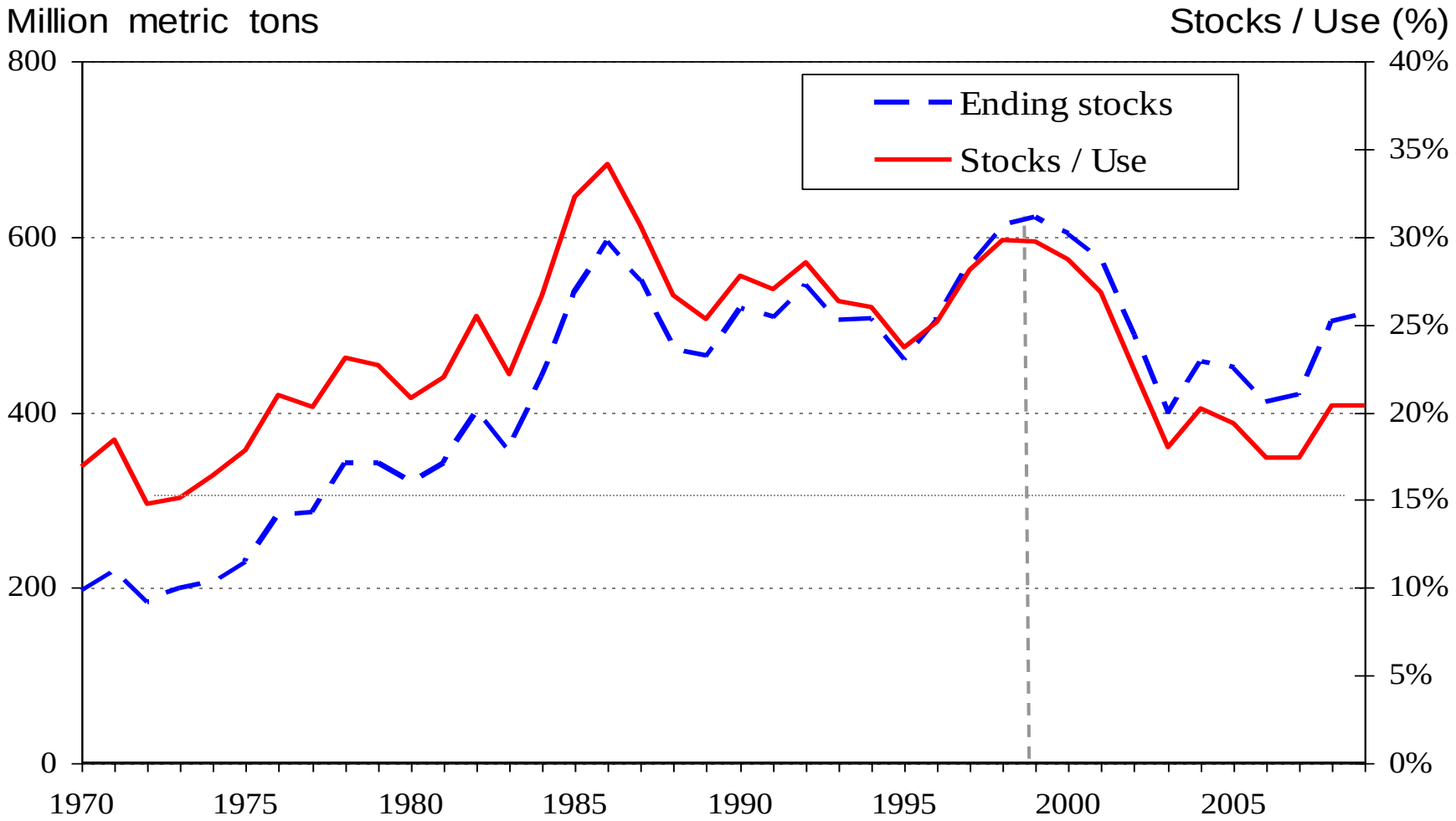


[1] Total oilseeds = soybeans + rapeseed + sunflowers

Source: Compiled from USDA's PS&D Database & Baseline Projections

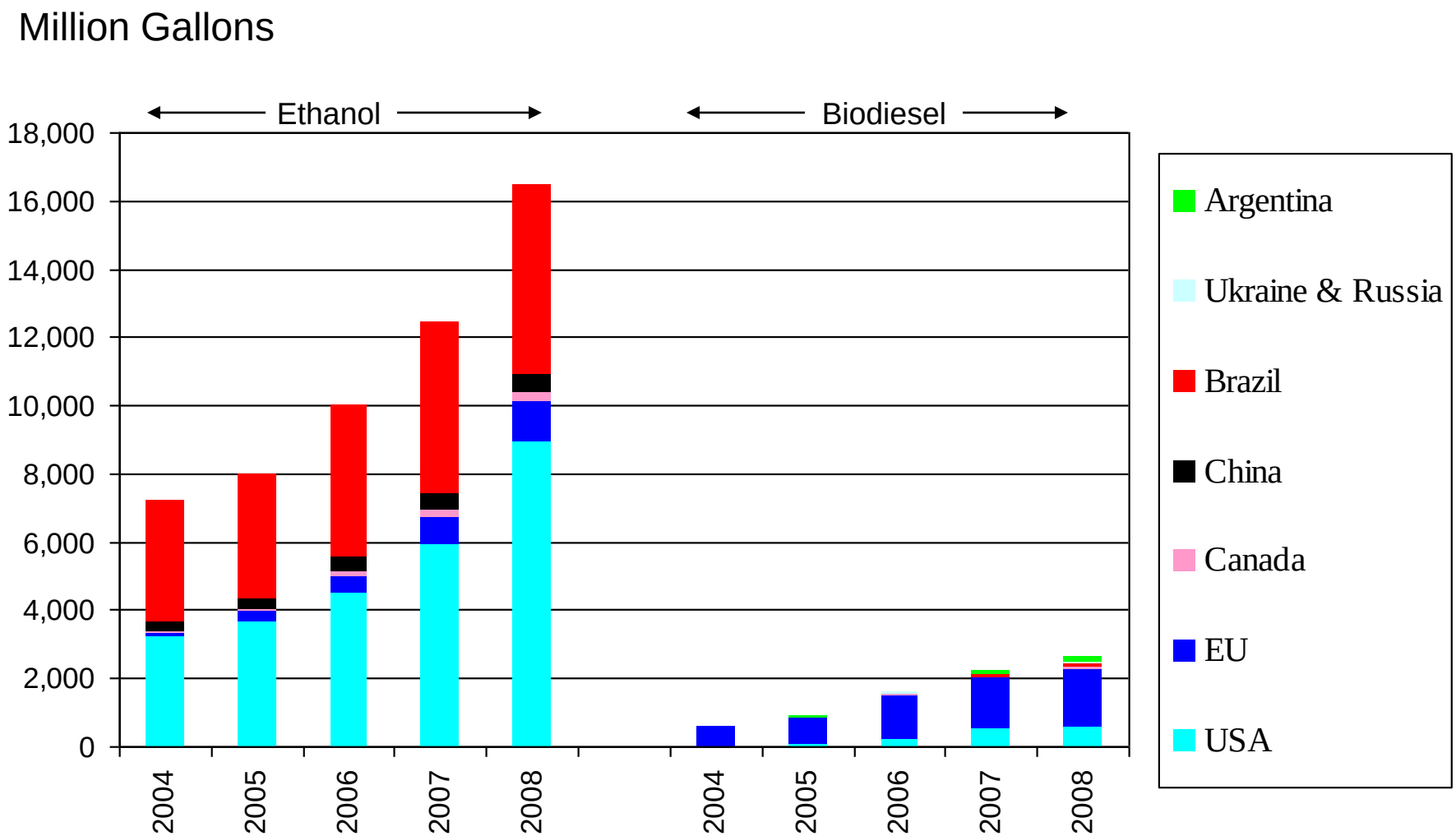
Total world grain & oilseeds

Stocks and stocks-to-use ratio



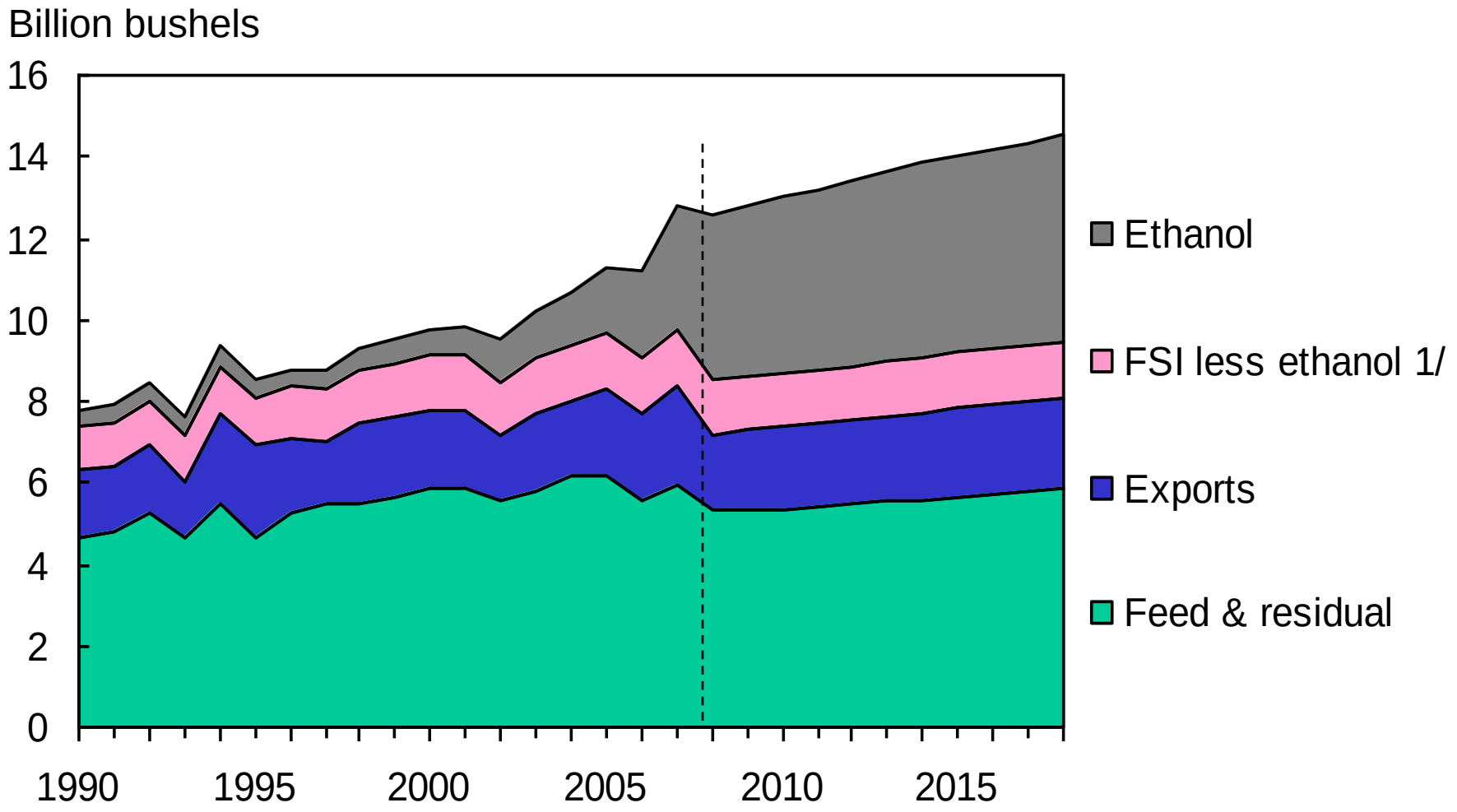
Source: USDA PS&D Database

Biofuels production: Largest producers



Source: USDA Agricultural Projections to 2017

U.S. corn use



1/ Food, seed, and industrial less ethanol.

Source: USDA Agricultural Projections to 2018.

Growth in world wheat and coarse grains use:

1980/81 - 2002/03 vs. 2002/03 - 2007/08

Use	1980/81 to 2002/03		2002/03 to 2007/08	
	MMT	%	MMT	%
Food	160	49	79	44
Feed*	144	44	48	27
U.S. corn for ethanol	27	7	53	29
Total	328	100	180	100

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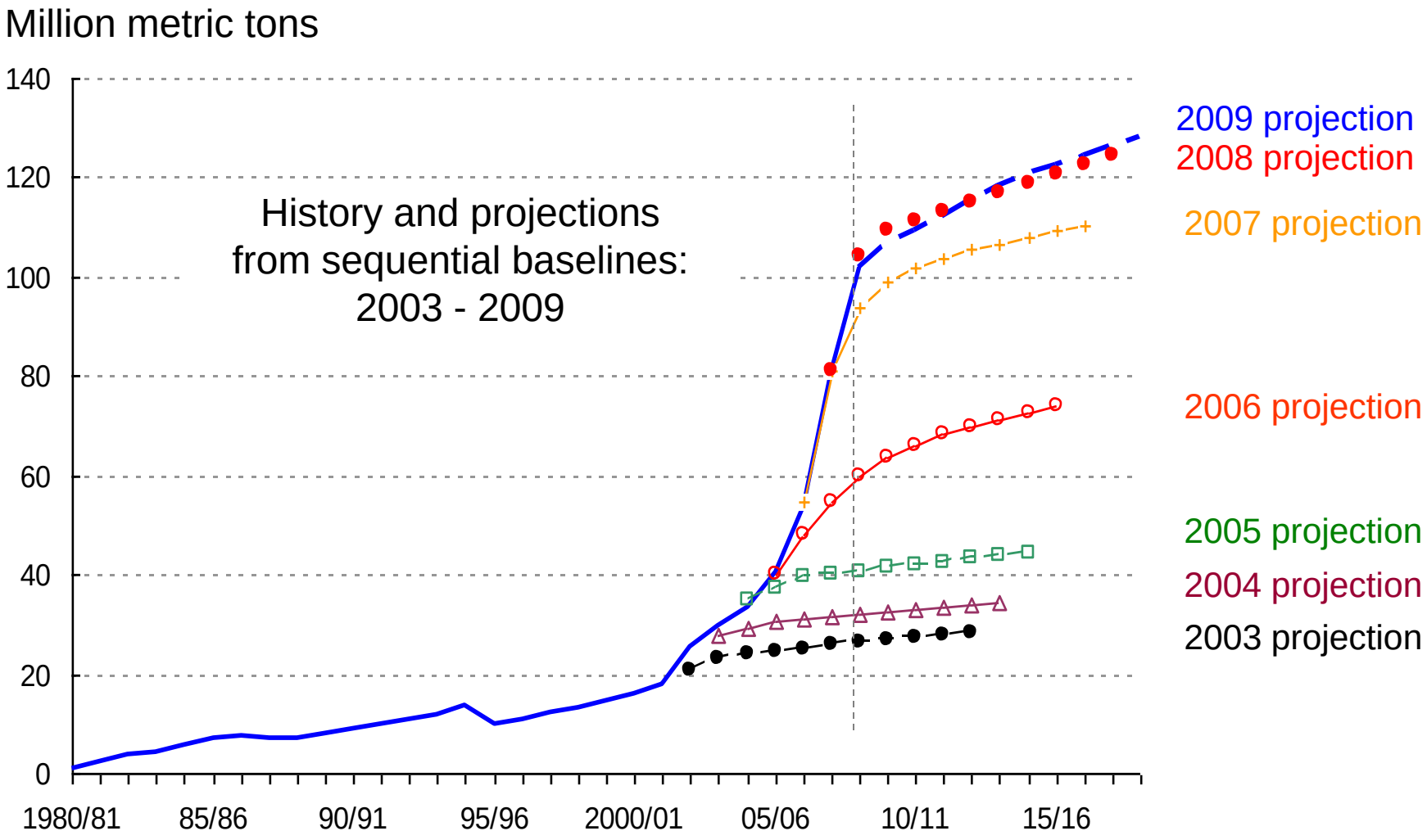
U.S. corn used for ethanol



Source: USDA Agricultural Baseline Projections, various reports.

Uncertainties

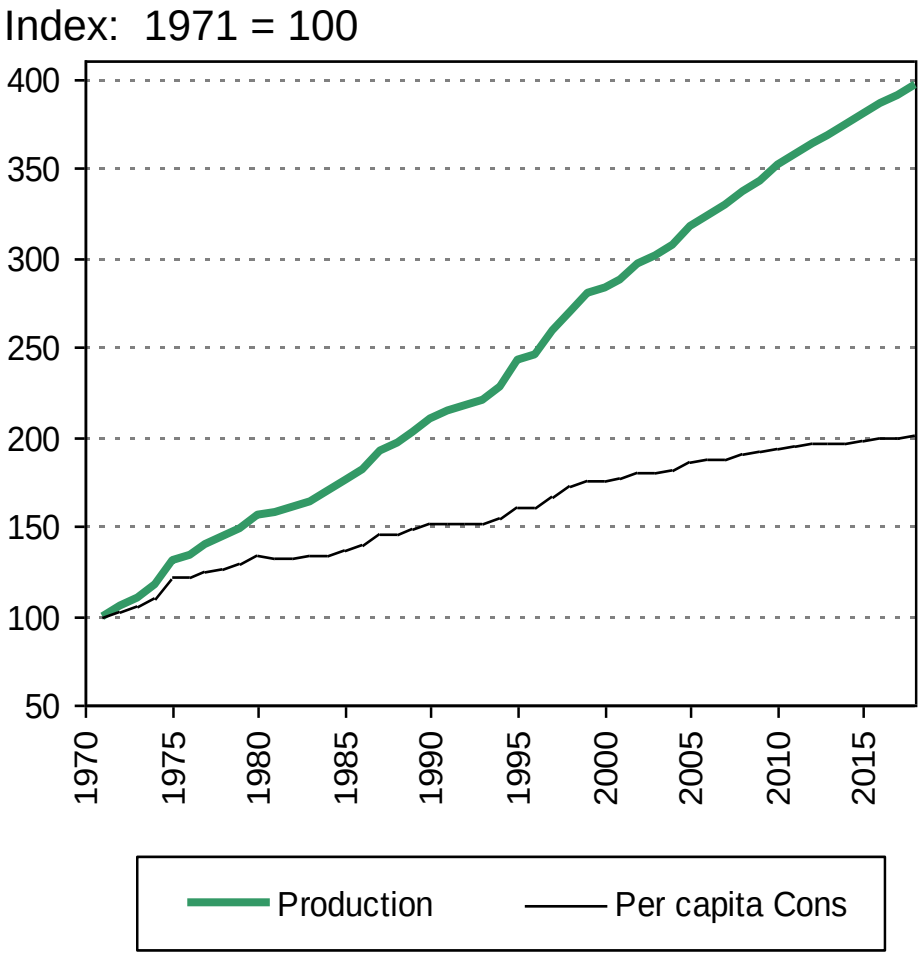
- Energy prices (oil & natural gas)
- Responsiveness to price changes
  - demand for biofuels vs. petroleum prices
  - supply of feed stocks vs. biofuels prices
  - costs of feedstock production vs. feedstock prices
    - Fertilizer (& natural gas), irrigation, farmland
- Additional crop land
- Water availability
  - manufacturing process
  - Increased irrigation
- New technological developments in biofuels industry
  - manufacturing process
  - new crop varieties: (higher yields; more suitable for biofuels)
  - new byproducts (with high value?)
- Biofuels policies & funding

Meat: Sum of all reporting countries[1,2]

Production and per capita consumption

Exponential trend growth rates

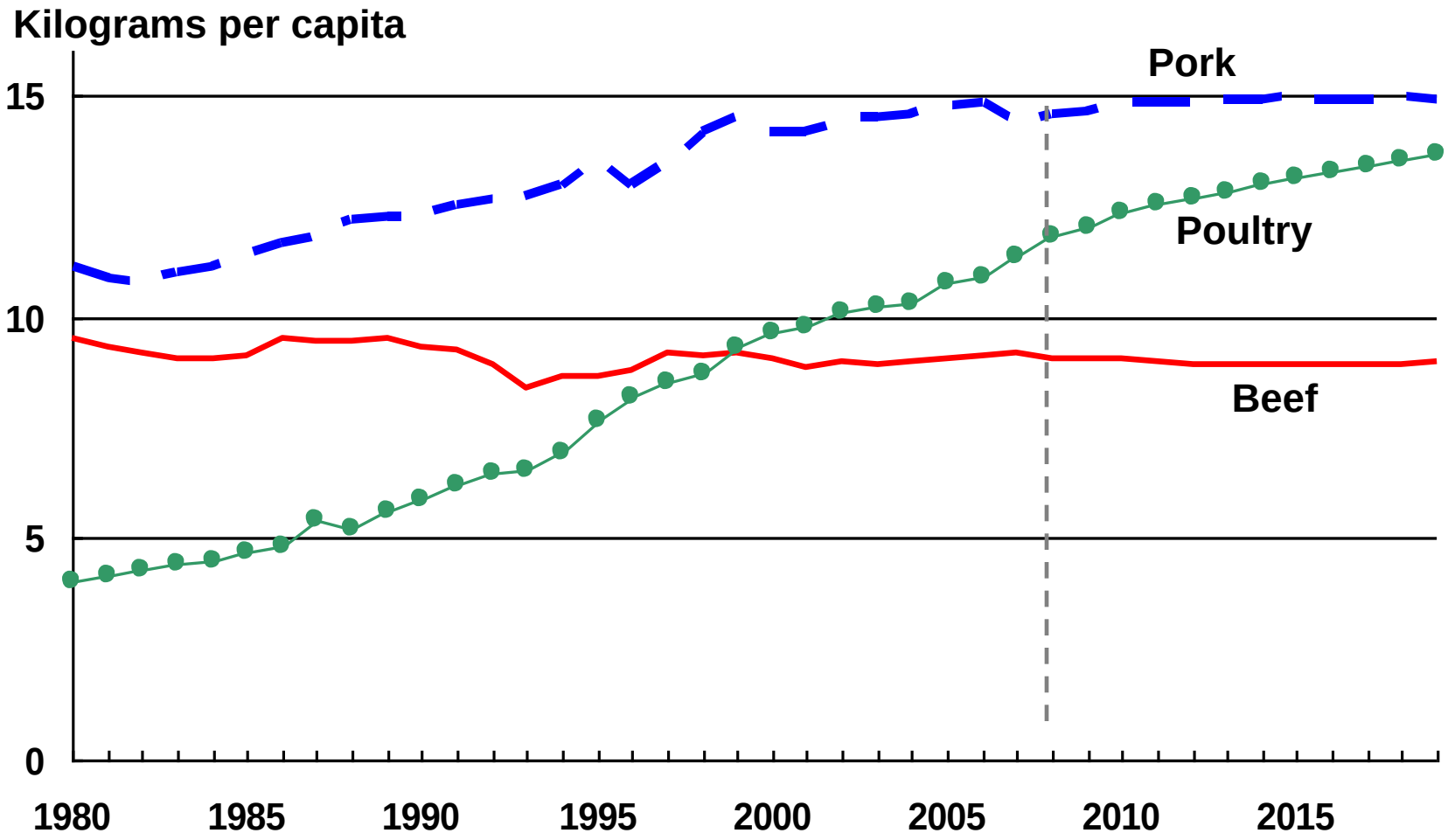
	1975-90	90-08	09-18
Production	3.1	2.8	1.6
Population	1.7	1.3	1.1
Per capita consumption	1.4	1.5	0.5



1 Total meat = beef + pork + chickens & turkeys.
2 Data are not reported in USDA's PS&D database for many small countries, therefore data are not a global total.

Source: USDA PS&D data and Agricultural Projections

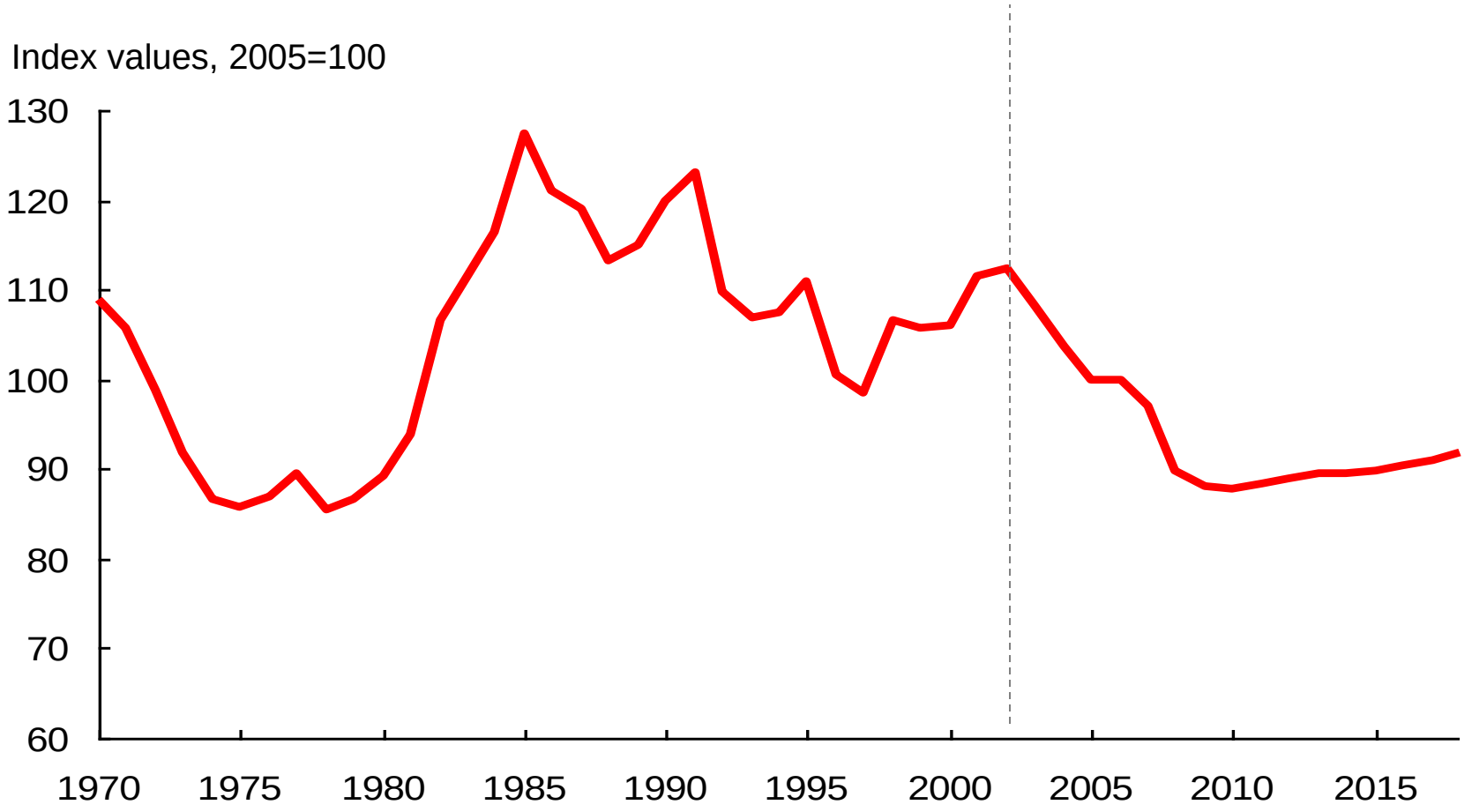
Per Capita Meat Consumption,
Reporting Countries [1]



1 Data is not reported in USDA's PS&D database for many small countries, therefore data are not global averages.

Source: USDA Agricultural Projections to 2018, February 2009

Value of U.S. dollar declines after 2002; projected to stabilize 1/



1/ Real U.S. agricultural trade-weighted dollar exchange rate, using U.S. agricultural export weights, based on 192 countries.

Source: *USDA Agricultural Projections to 2018*, February 2009. USDA, Economic Research Service.

Weather in the future ??

Weather played a major role in recent past

- *In 2006*
  - Australia
  - Ukraine & Russia
- *and 2007*
  - Europe: dry spring; harvest floods
  - SE Europe: drought
  - Ukraine & Russia: drought (2nd year)
  - USA: late spring freeze
  - Canada: hot and dry
  - Australia: 2nd year of severe drought
  - NW Africa: drought
  - Turkey: dry

Who will be the importers?

Near term:

- Countries with large or growing foreign exchange reserves?

Longer term:

- Food deficit countries with faster population growth?

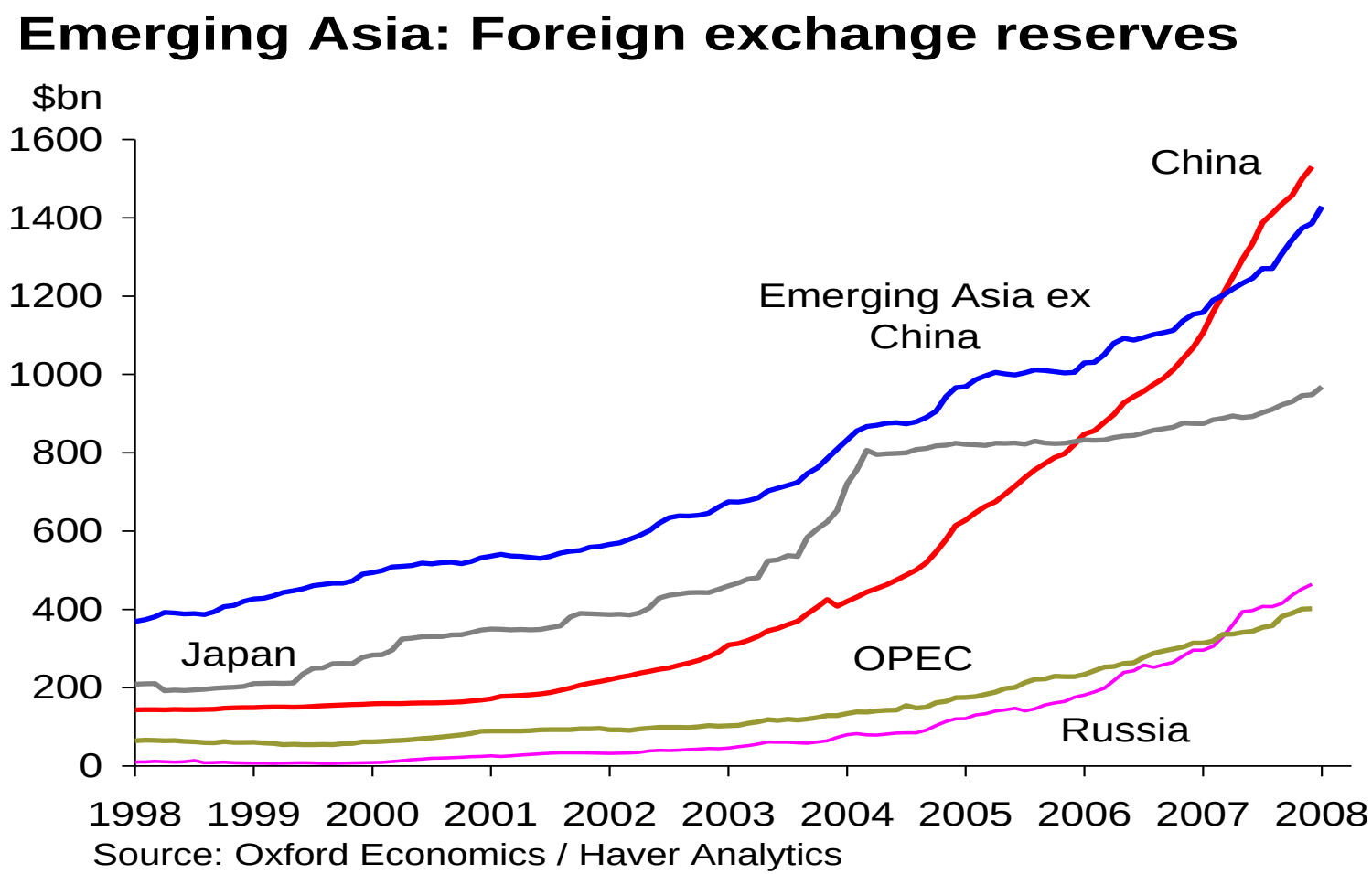
Policy responses to rising prices by selected countries

Country	Exports			Imports	Domestic policies	
	Raised export taxes	Export volume restrictions	Export bans	Reduced import tariffs	Increased consumer subsidies	Imposed price caps
Export policies:						
Argentina	x	x				
Cambodia			x			
Egypt			x			
Kazakhstan		x				
Russia	x					
Ukraine			x			
Vietnam	x		x			
Import policies:						
Bangladesh				x	x	x
EU				x		
Mexico				x		
Morocco				x		
Mongolia					x	
Philippines					x	
Thailand				x		

Policy responses to rising prices by selected countries

Country	Exports			Imports	Domestic policies	
	Raised export taxes	Export volume restrictions	Export bans	Reduced import tariffs	Increased consumer subsidies	Imposed price caps
Both export and import policies:						
China	x	x			x	x
India	x	x	x	x	x	
Indonesia	x			x	x	
Malaysia	x					x
Serbia			x	x		

Foreign Exchange Reserves



Thanks very much and I'm looking forward to your comments!

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