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Agricultural Outlook Forum
U.S. Department of Agriculture

Presented: February 26-27, 2009

Factors contributing to the sharp rise, and then fall, in food commodity prices: 2002-2009

Ron Trostle
Economic Research Service
U.S. Department of Agriculture

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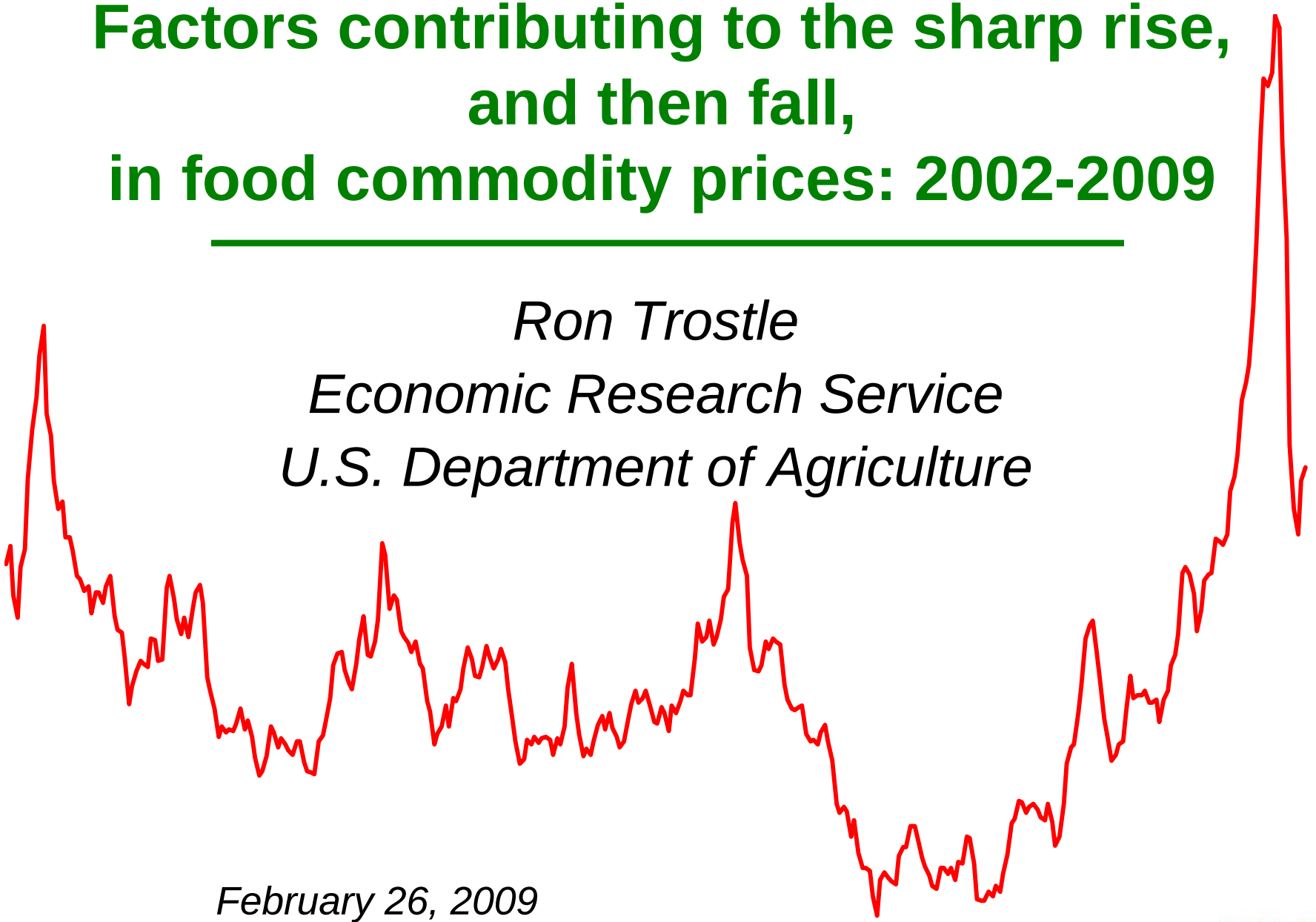

February 26, 2009

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Factors contributing to the sharp rise, and then fall, in food commodity prices: 2002-2009

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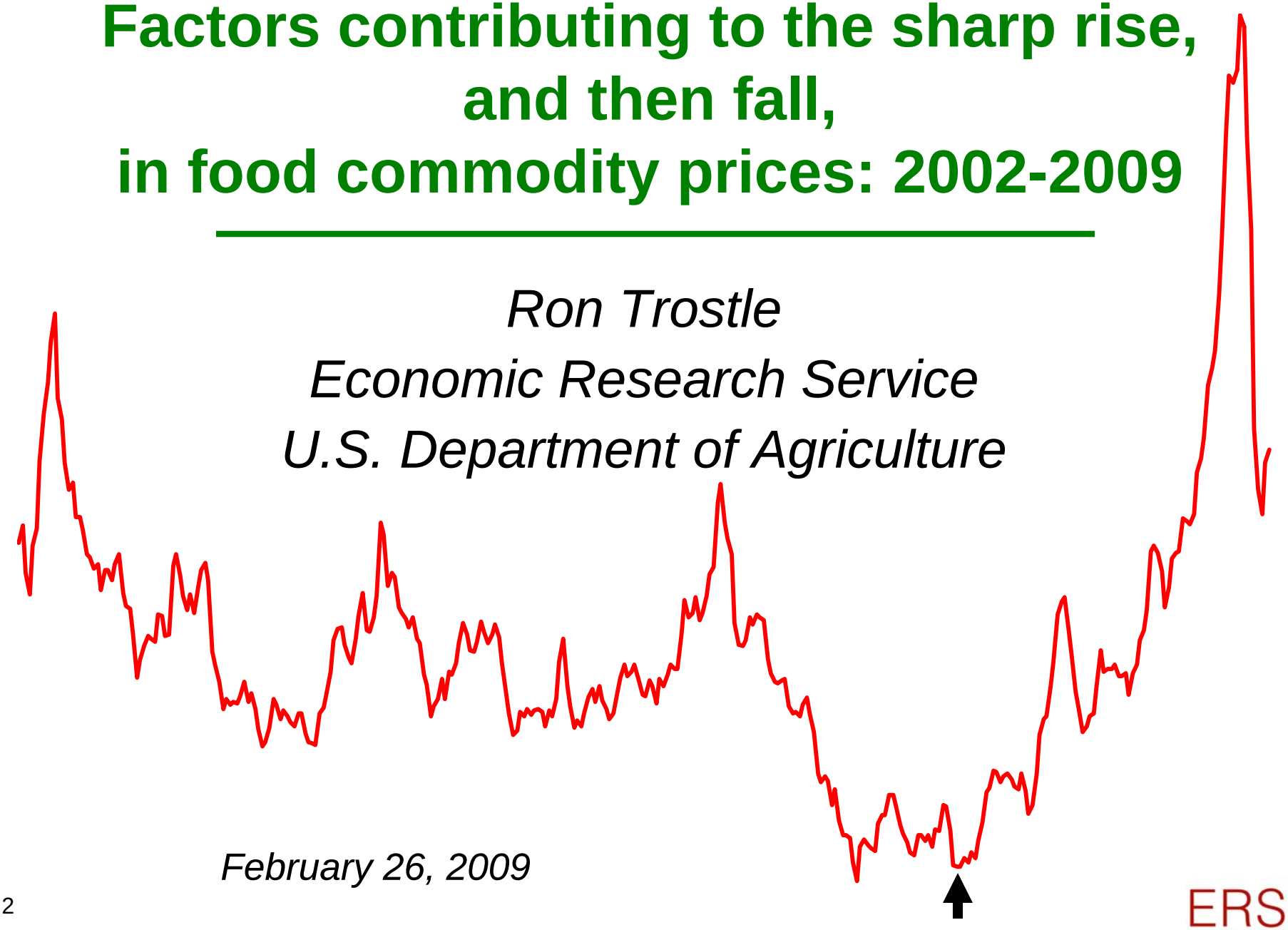

February 26, 2009

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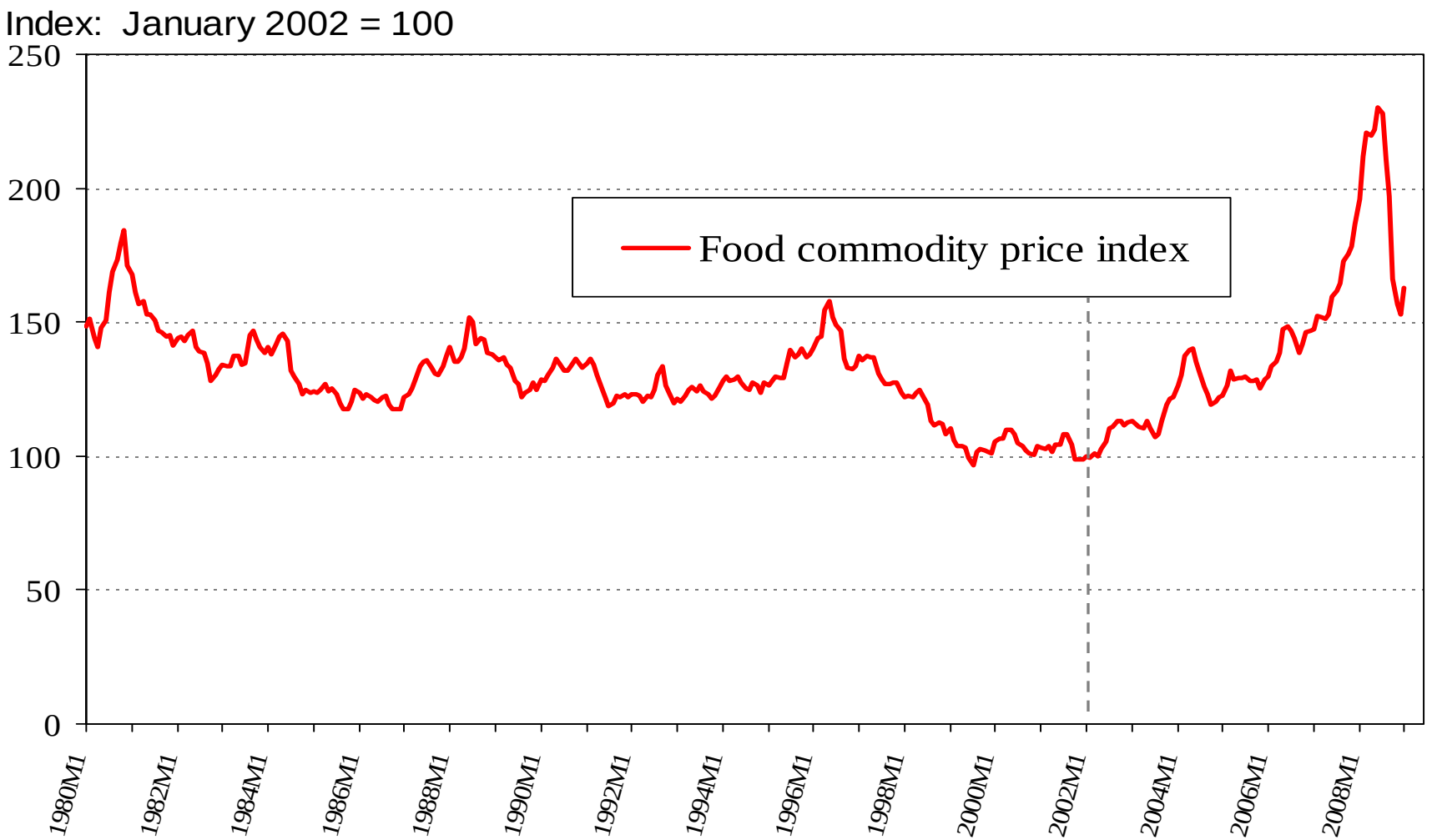
Food commodity prices since January 2002: Up 130 %, then down 1/3



Source: International Monetary Fund: International Financial Statistics

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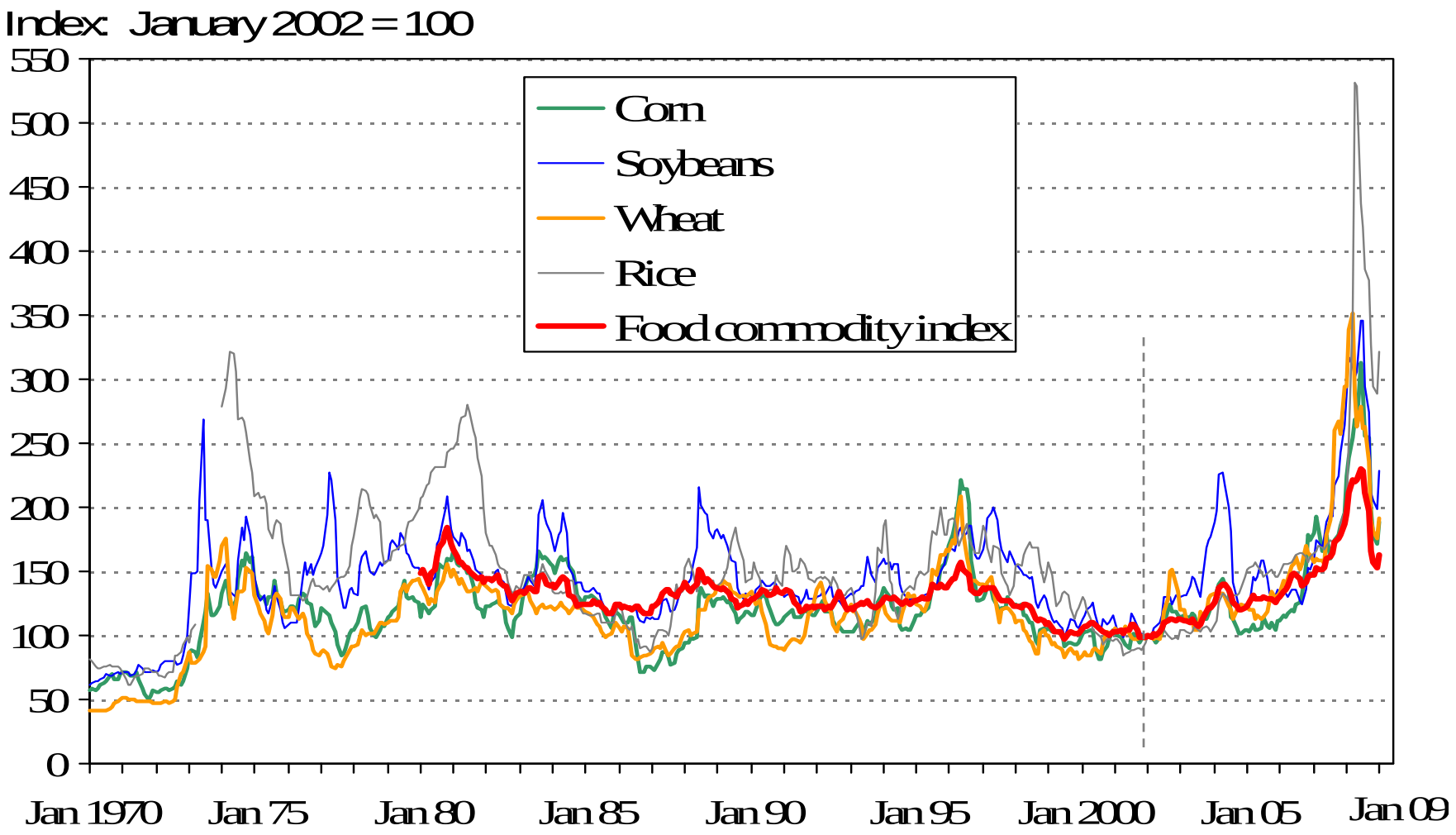
Food commodity prices:
Indices for selected crops and total food



Source: International Monetary Fund: International Financial Statistics

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Nominal price increases since January 2002 and declines since the peak

Commodity	Up	Down[1]	Since peak in
Wheat	337 %	62 %	Mid March, 2008
Corn	268 %	62 %	End of June, 2008
Soybeans	295 %	53 %	Early July, 2008
Rice	> 400 %	36 %	Late Sept, 2008
Index of food commodities	130 %	34 %	June, 2008

[1]Lowest price since peak, as of February 23, 2009.

Kansas City for wheat; Central Illinois for corn and soybeans.
CBOT for rice

Source: USDA/ERS

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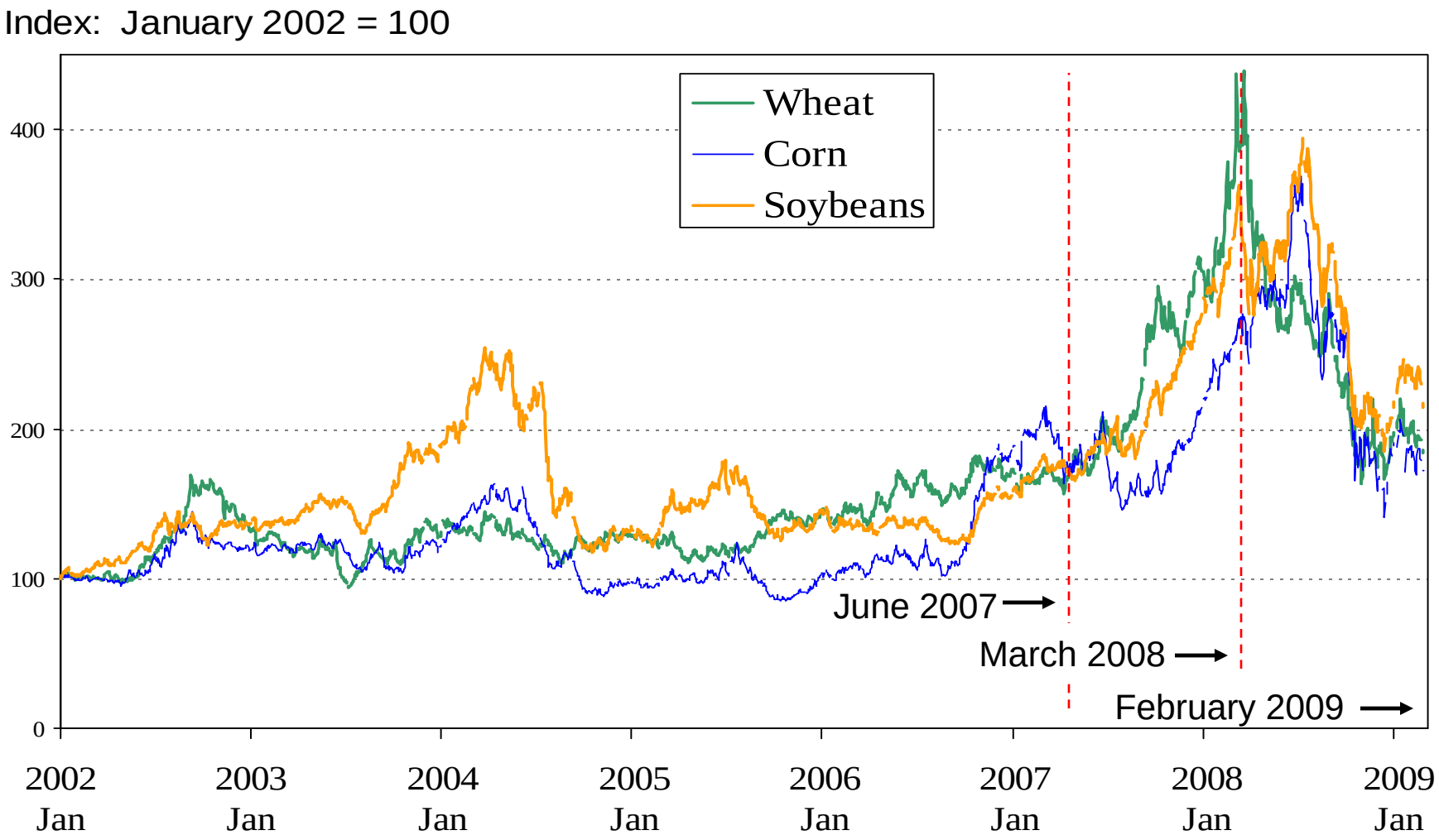
Daily Prices for Wheat, Corn, & Soybeans

January 2002 – February 2009: Three periods of price changes

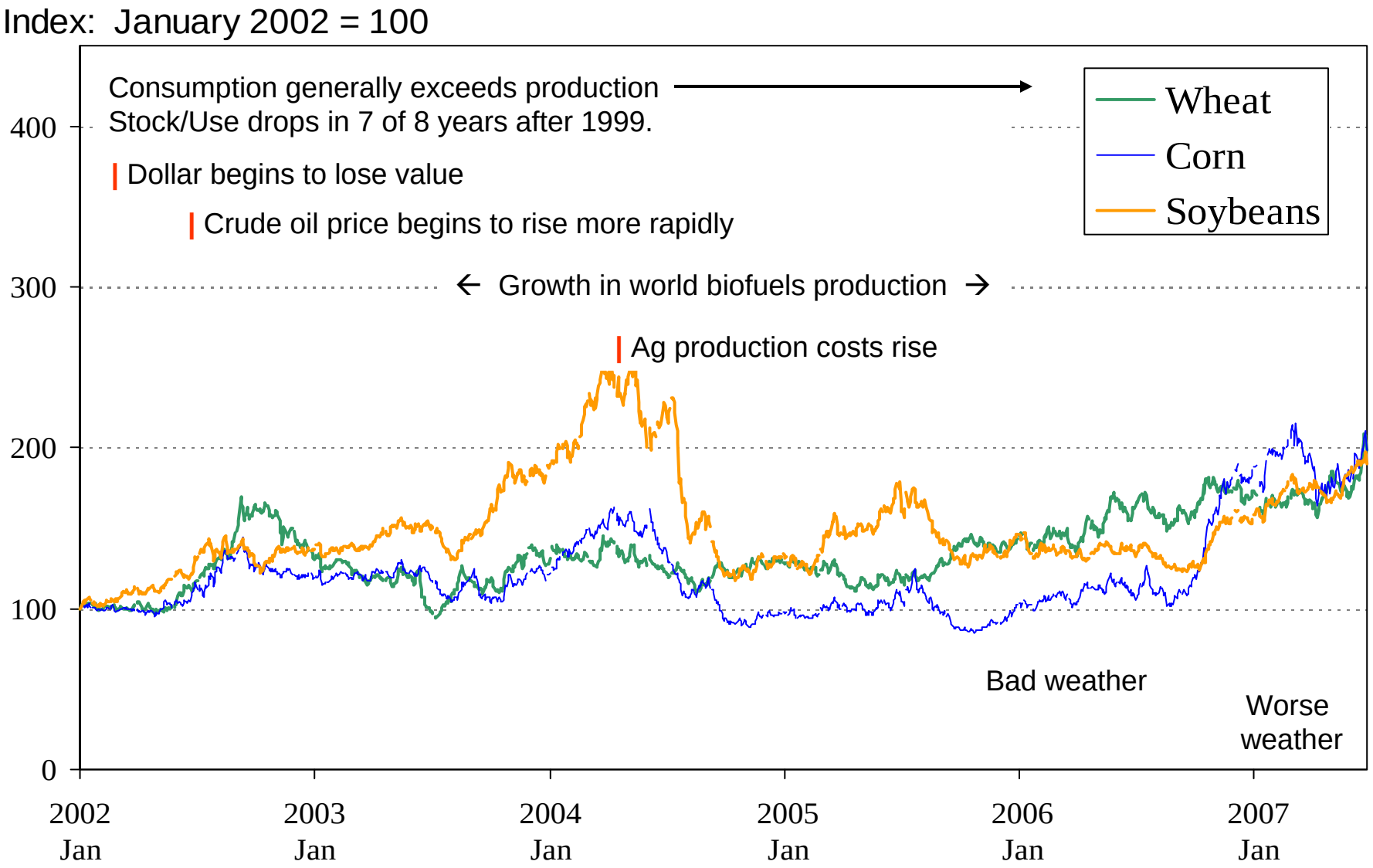


Source: USDA/ERS

ERS ECONOMIC RESEARCH SERVICE

Daily Prices for Wheat, Corn, & Soybeans

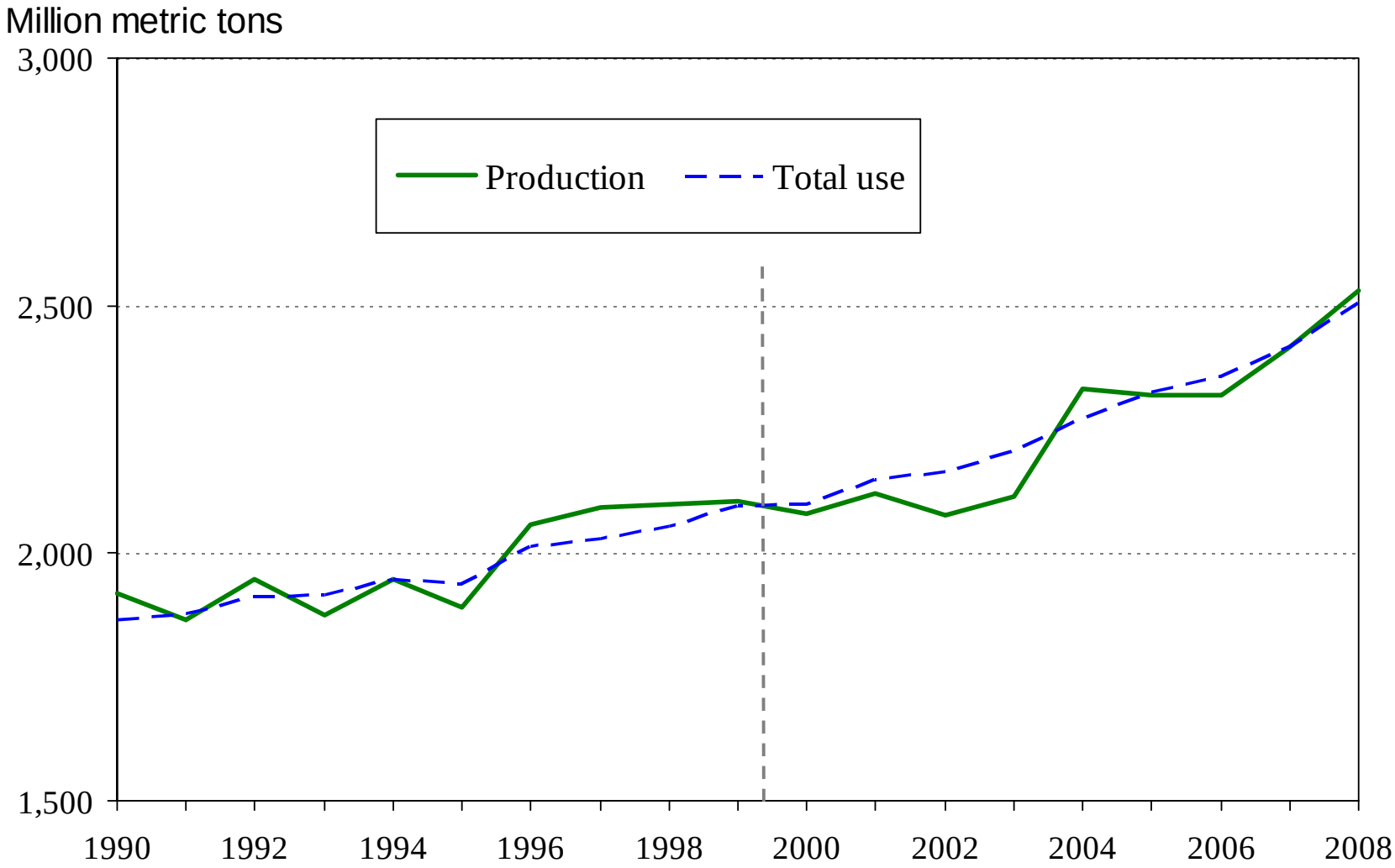
January 2002 – July 2007



Source: USDA/ERS

World grain & oilseeds

Total production and use



Source: USDA PS&D Database

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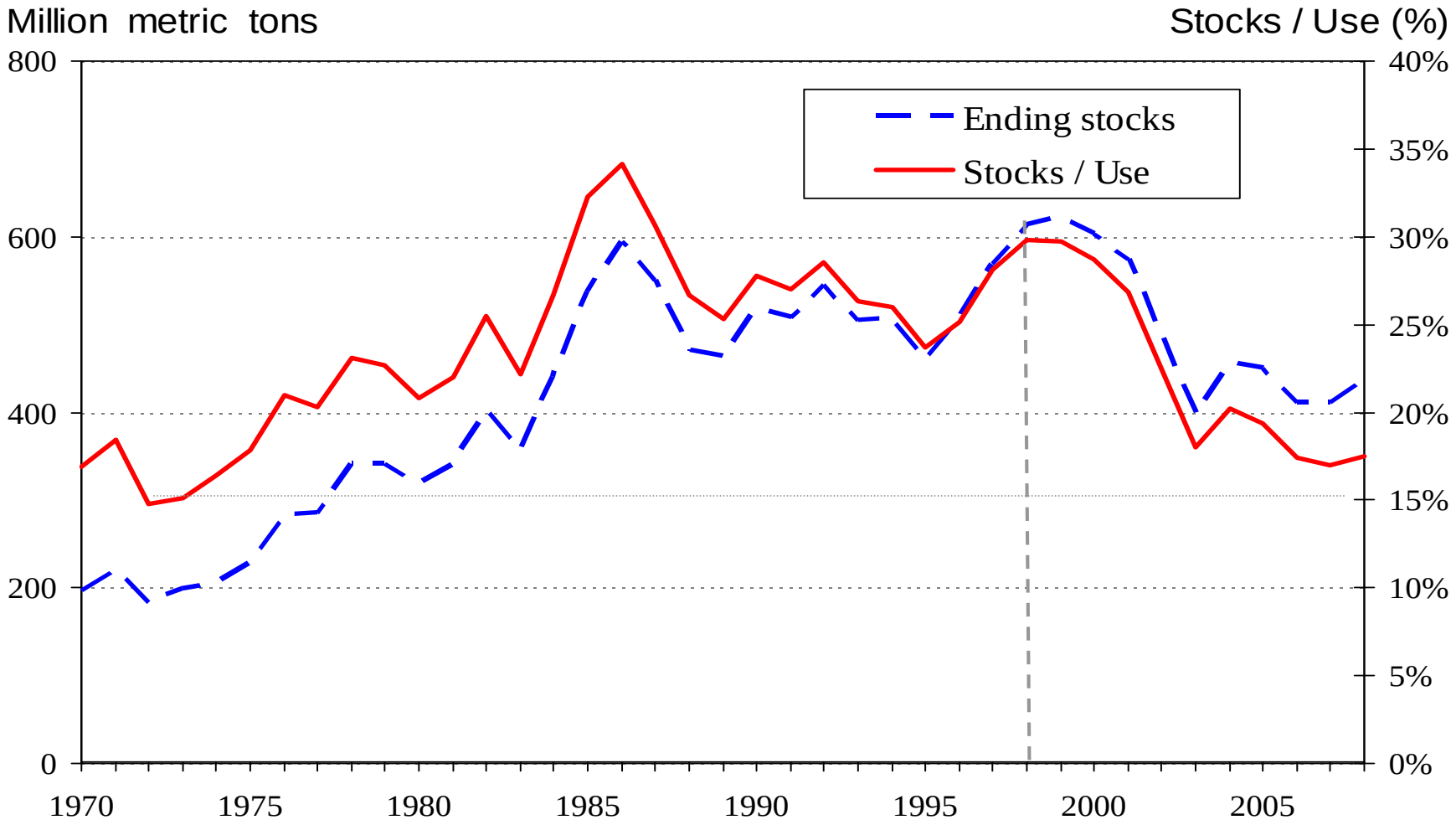
Total world grain & oilseeds

Stocks and stocks-to-use ratio



Source: USDA PS&D Database

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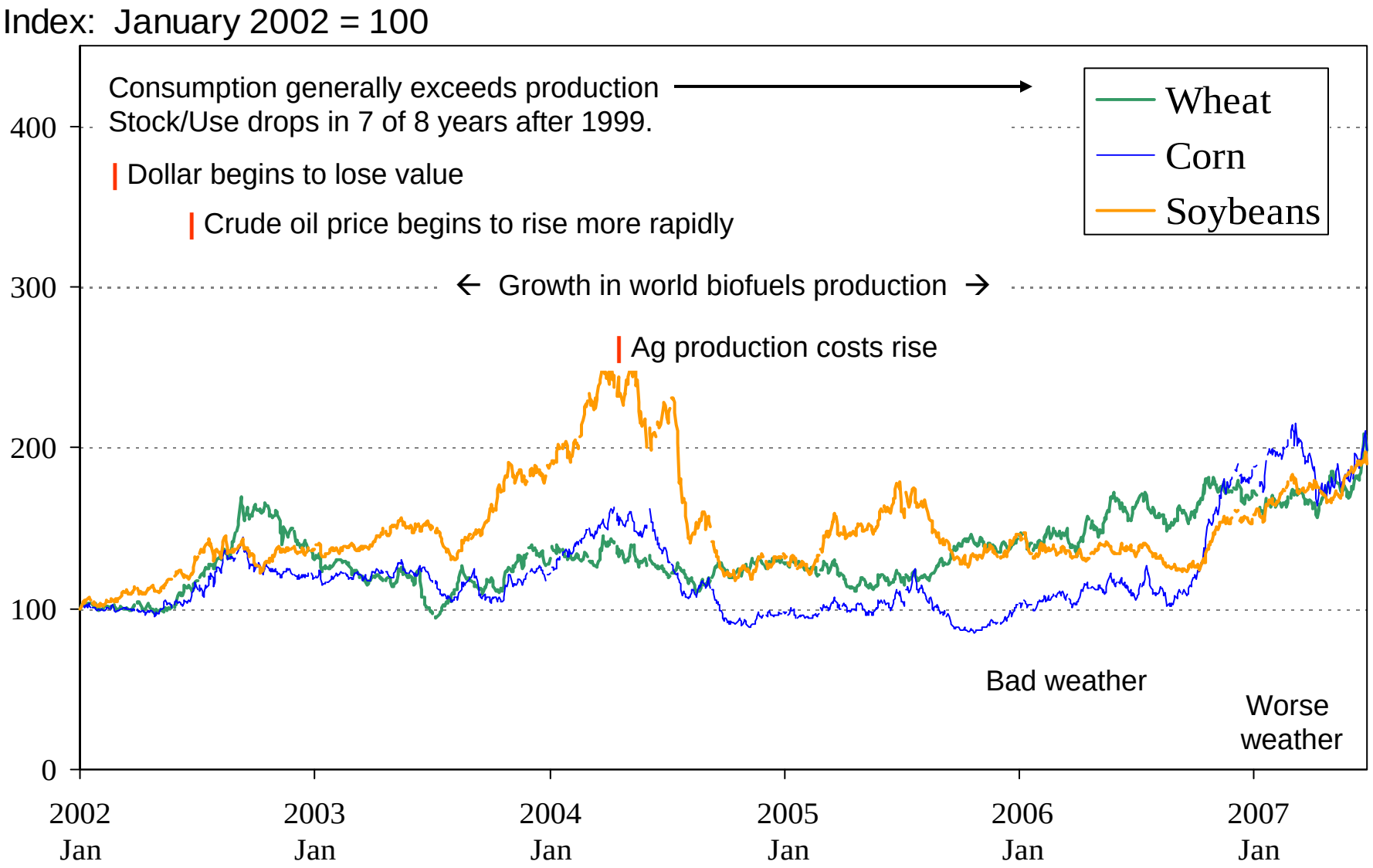
Daily Prices for Wheat, Corn, & Soybeans

January 2002 – July 2007



Source: USDA/ERS

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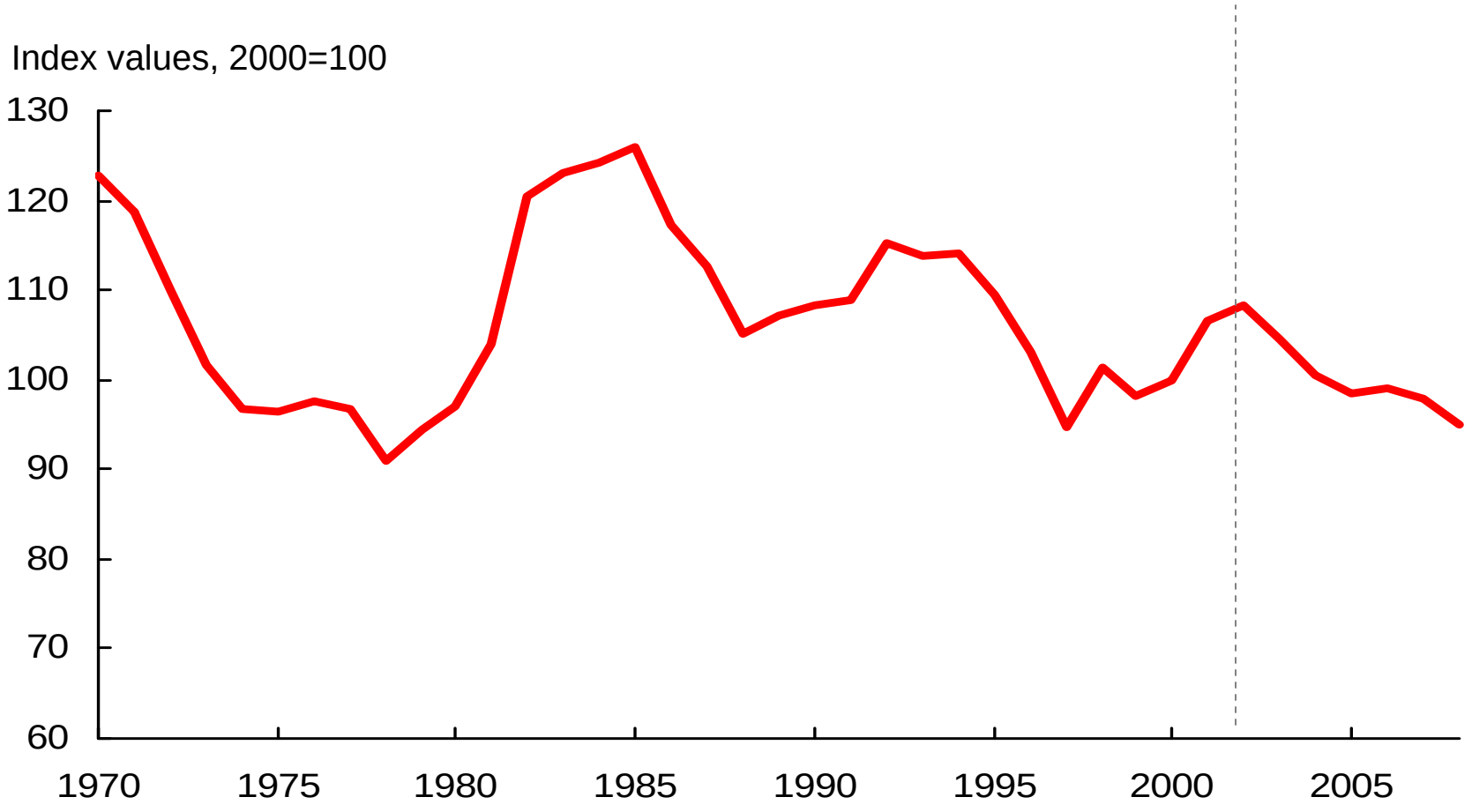
Value of U.S. dollar declines after 2002 1/



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

Source: USDA / ERS

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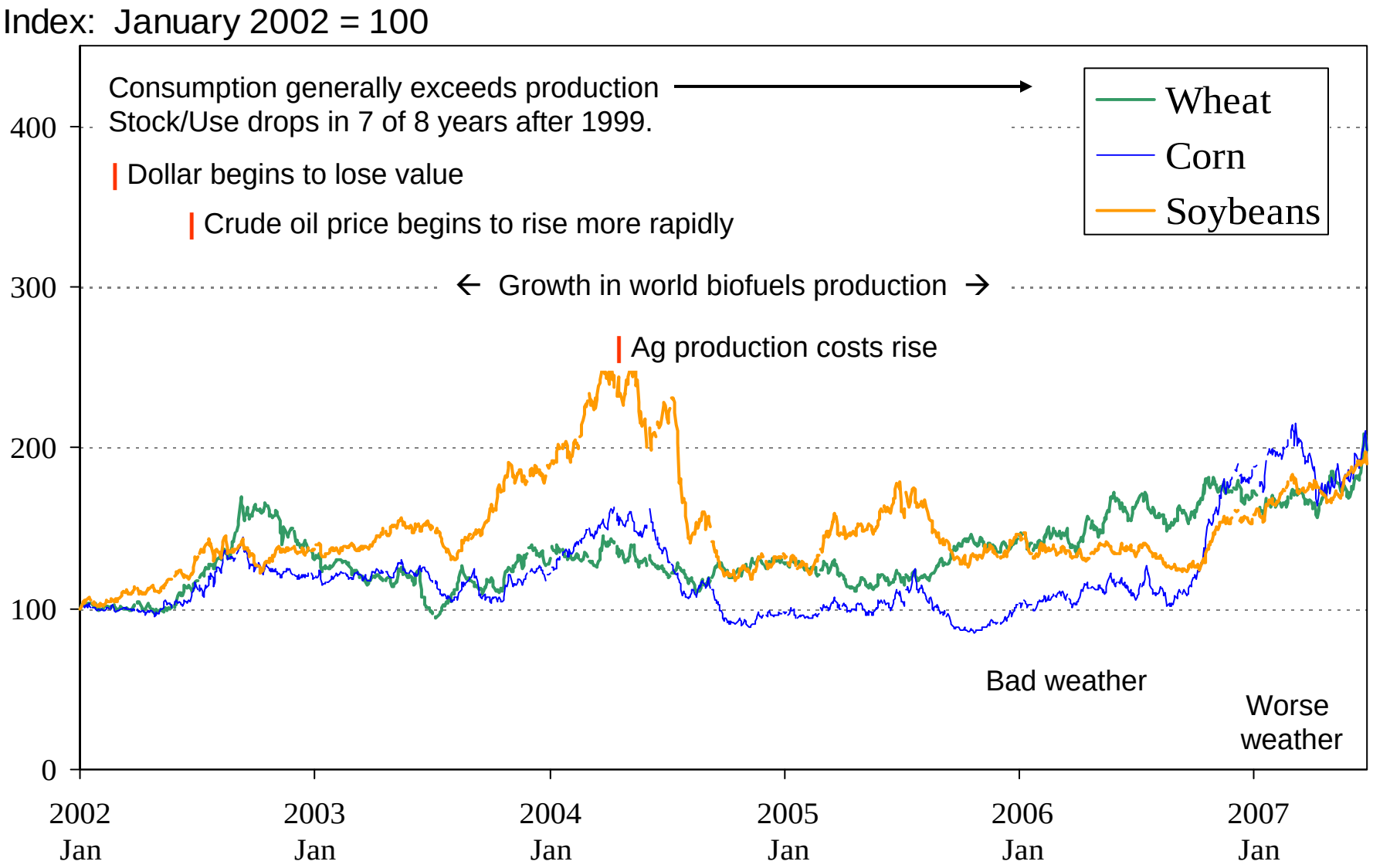
Daily Prices for Wheat, Corn, & Soybeans

January 2002 – July 2007



Source: USDA/ERS

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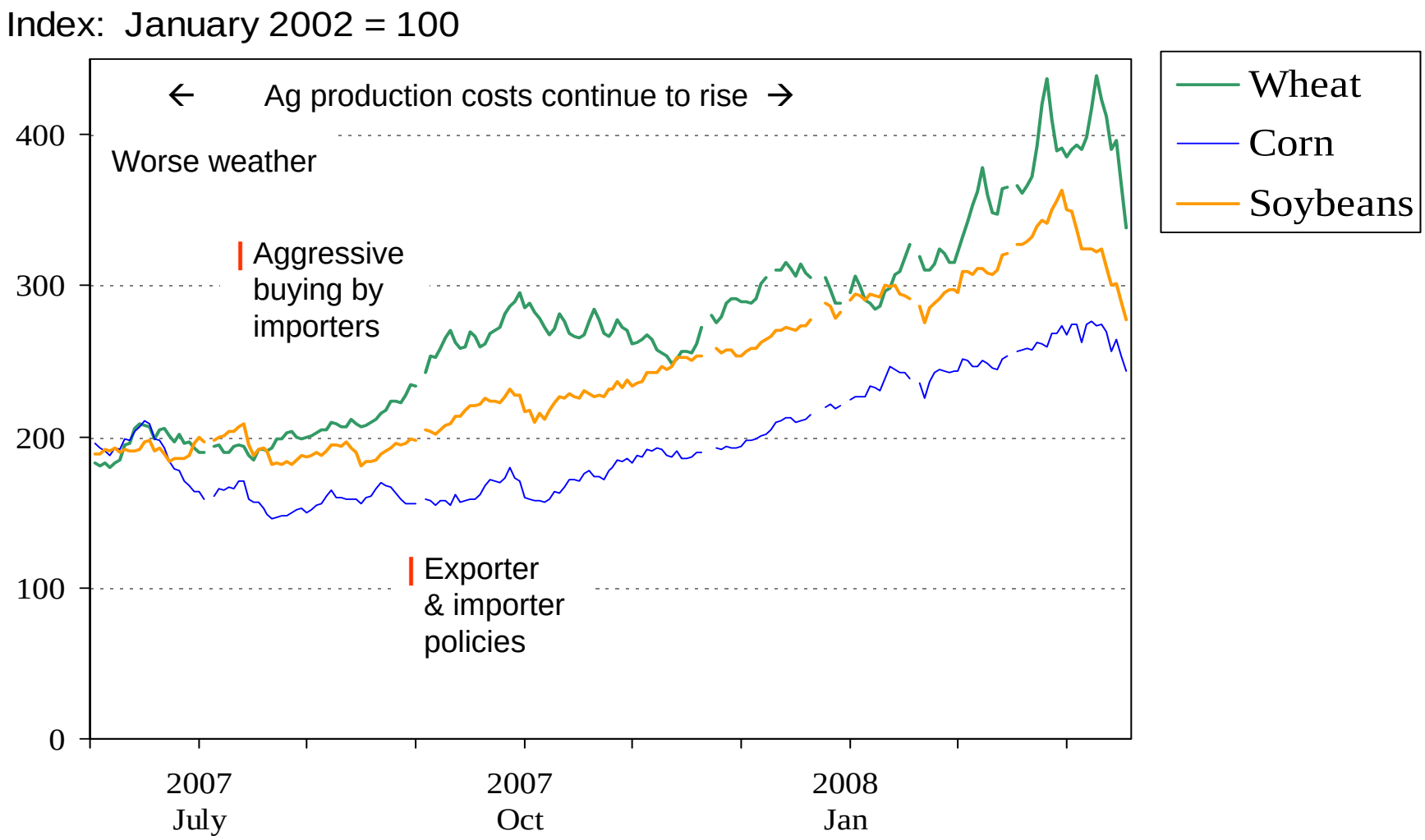
Daily Prices for Wheat, Corn, & Soybeans

July 2007 – March 2008



Source: USDA/ERS

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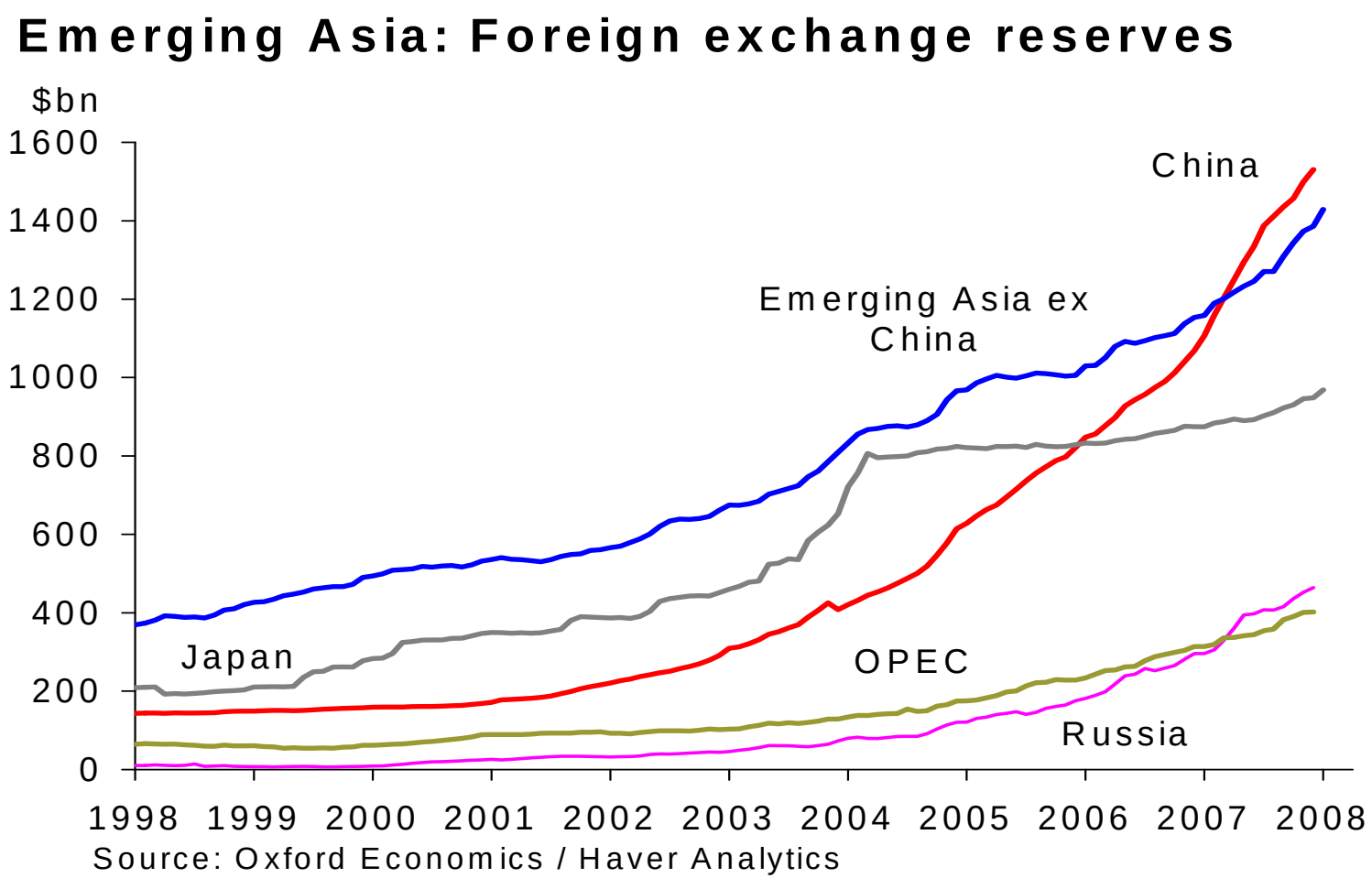
Foreign Exchange Reserves



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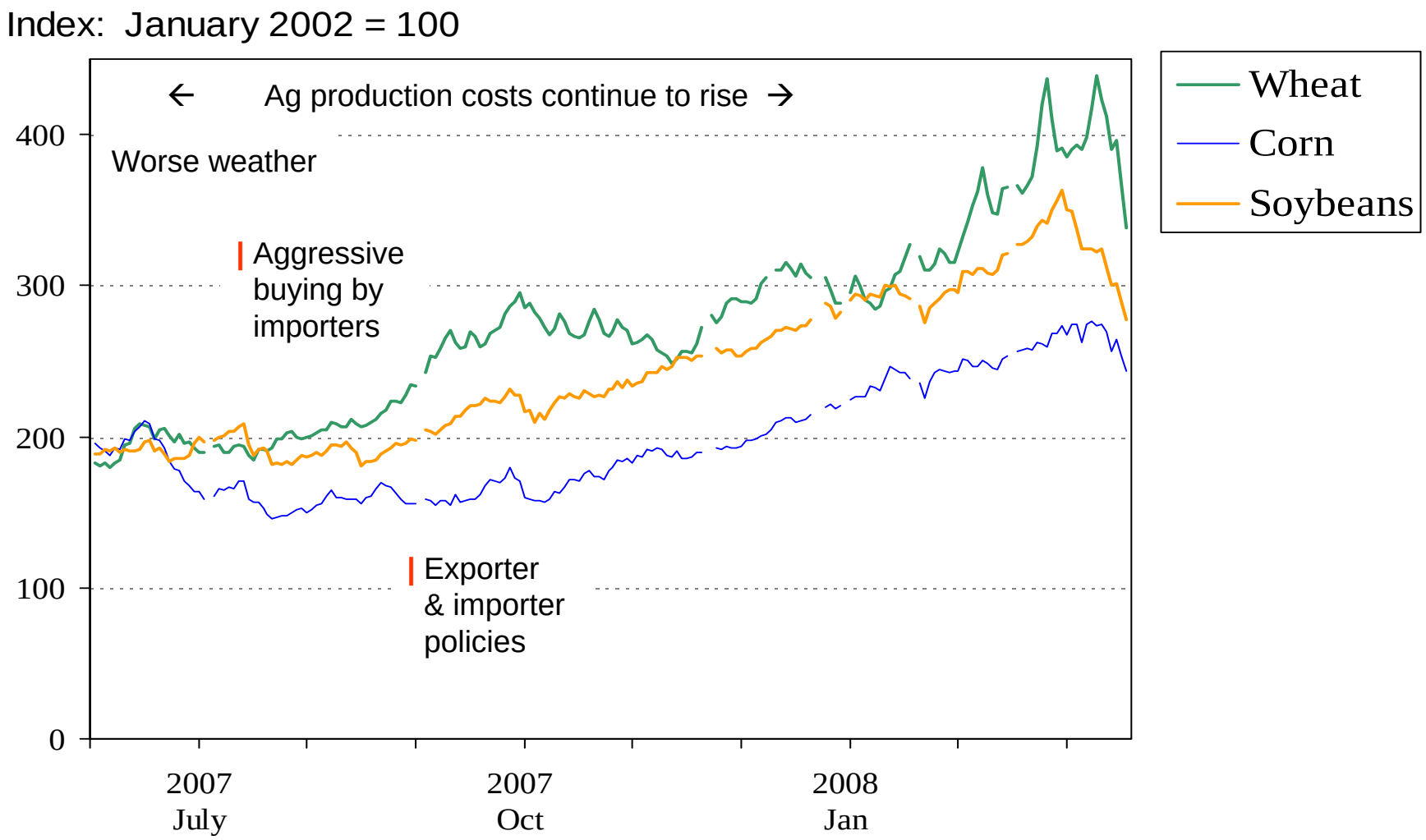
Daily Prices for Wheat, Corn, & Soybeans

July 2007 – March 2008



Source: USDA/ERS

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Policy responses to rising prices by selected countries - Exporters

Country	Raised export taxes	Export volume restrictions	Export bans
Argentina	x	x	
Cambodia			x
Egypt			x
Kazakhstan		x	
Russia	x		
Ukraine			x
Vietnam	x		x
China	x	x	
India	x	x	x
Indonesia	x		
Malaysia	x		
Serbia			x

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Policy responses to rising prices by selected countries – Importers 1/

Country	Reduced import tariffs	Increased consumer subsidies	Imposed price caps
Bangladesh	x	x	x
EU	x		
Mexico	x		
Morocco	x		
Mongolia		x	
Philippines		x	
Thailand	x		
China		x	x
India	x	x	
Indonesia	x	x	
Malaysia			x
Serbia	x		

1/ Countries in red font employed both import and export policies

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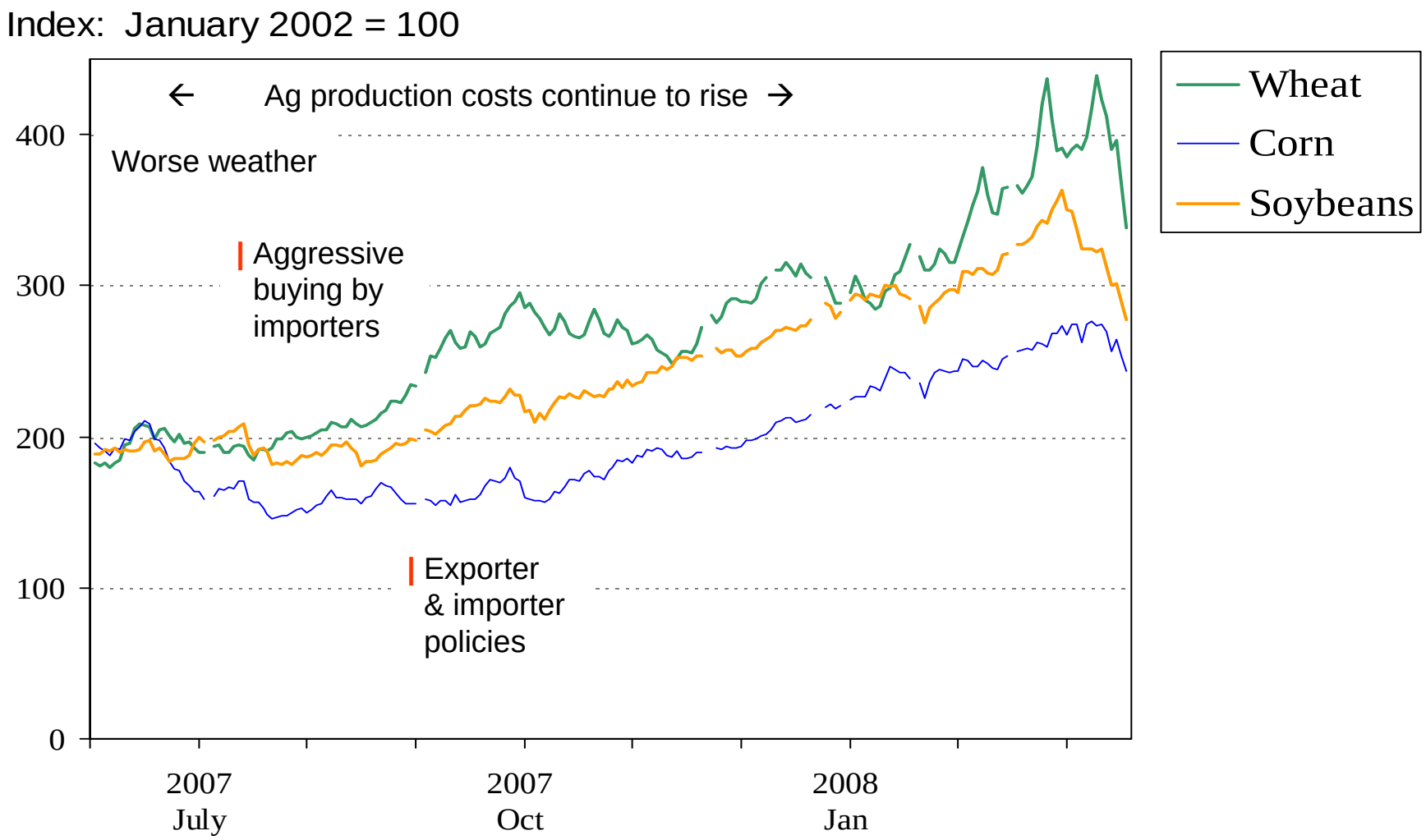
Daily Prices for Wheat, Corn, & Soybeans

July 2007 – March 2008



Source: USDA/ERS

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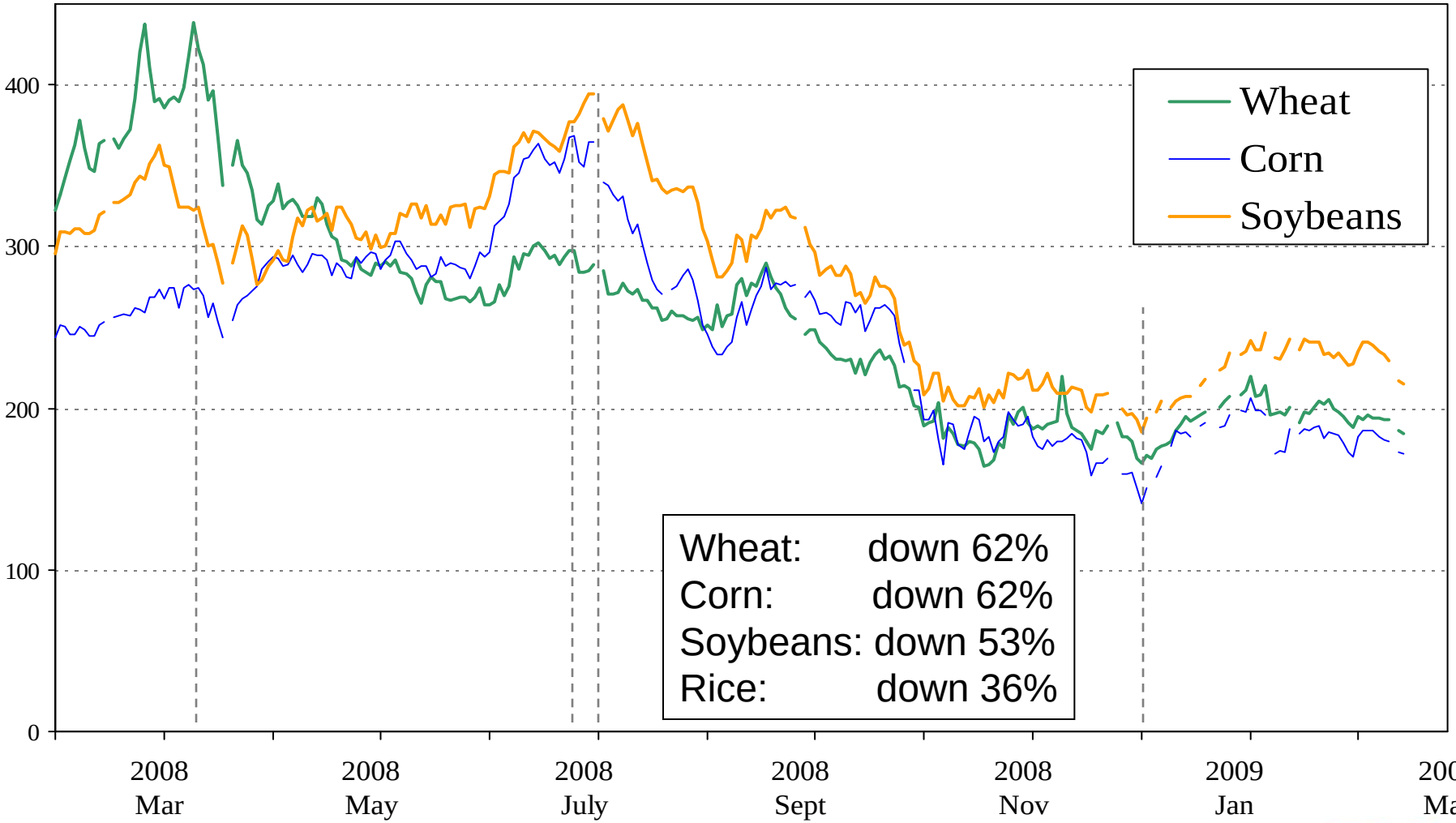
Daily Prices for Wheat, Corn, & Soybeans

March 2008 – February 2008

Index: January 2002 = 100



Source: USDA/ERS

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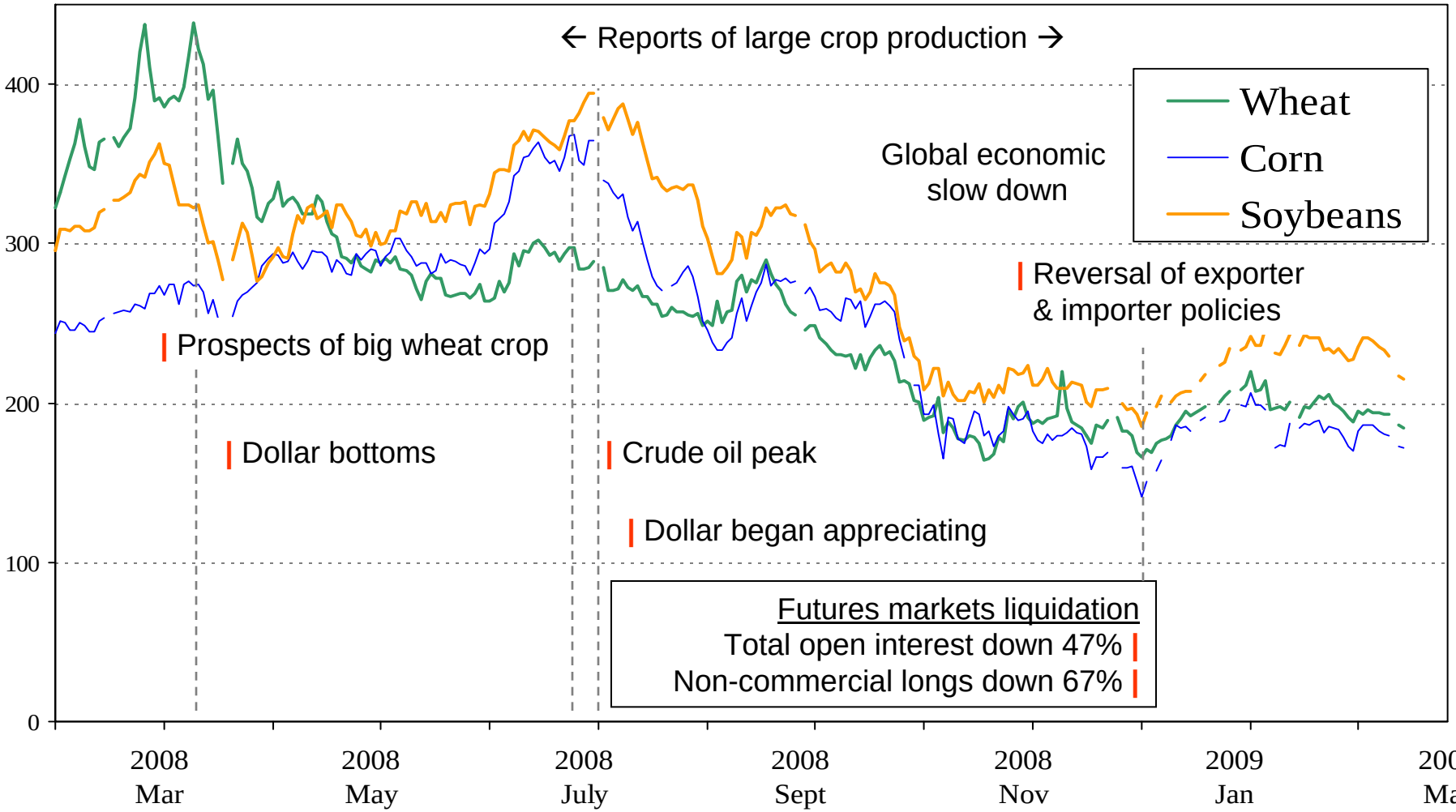
Daily Prices for Wheat, Corn, & Soybeans

March 2008 – February 2009

Index: January 2002 = 100



Source: USDA/ERS

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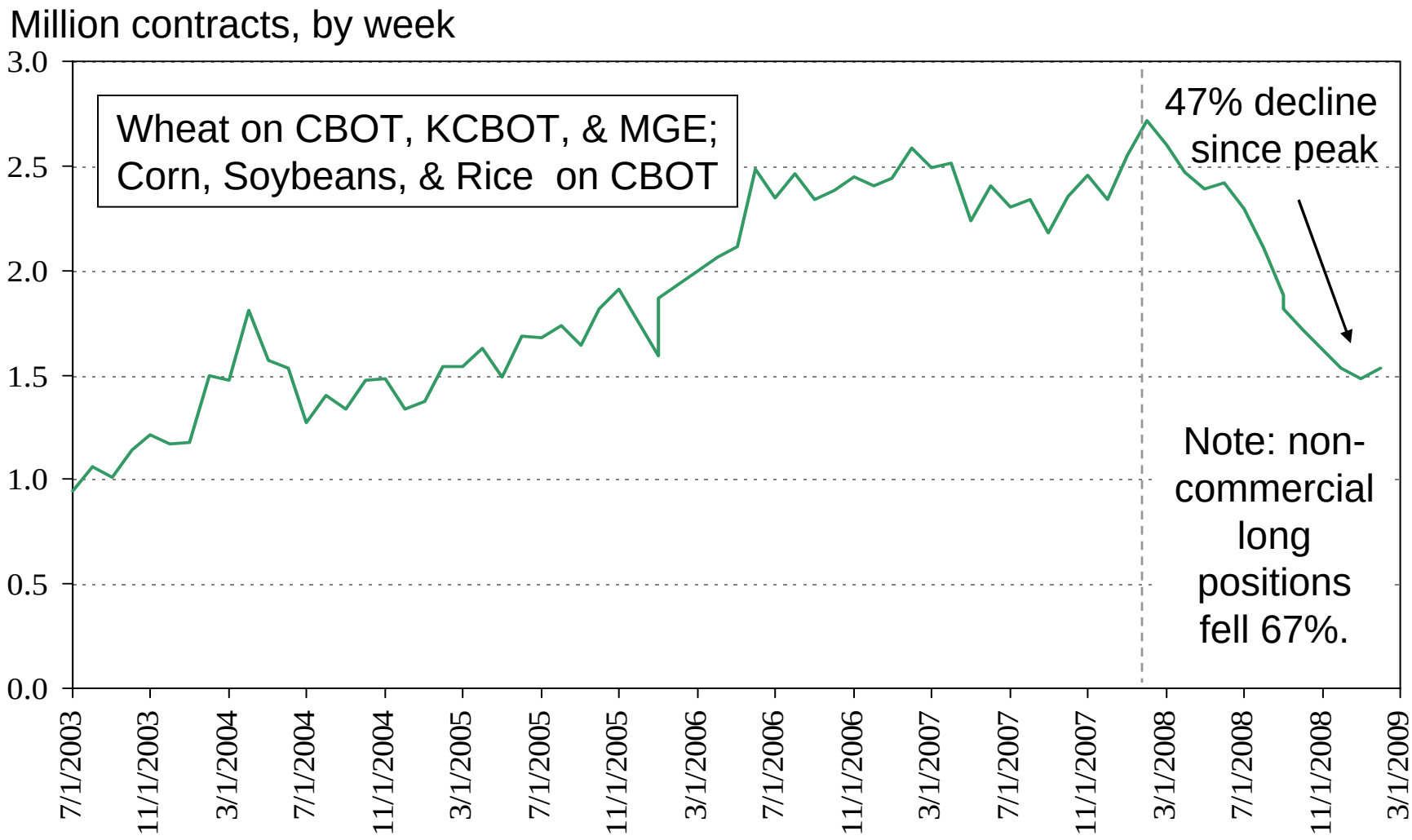
Total Open Interest: U.S. Futures Markets for Wheat, Corn, Soybeans, and Rice



Source: U.S. Commodity Futures Trading Commission

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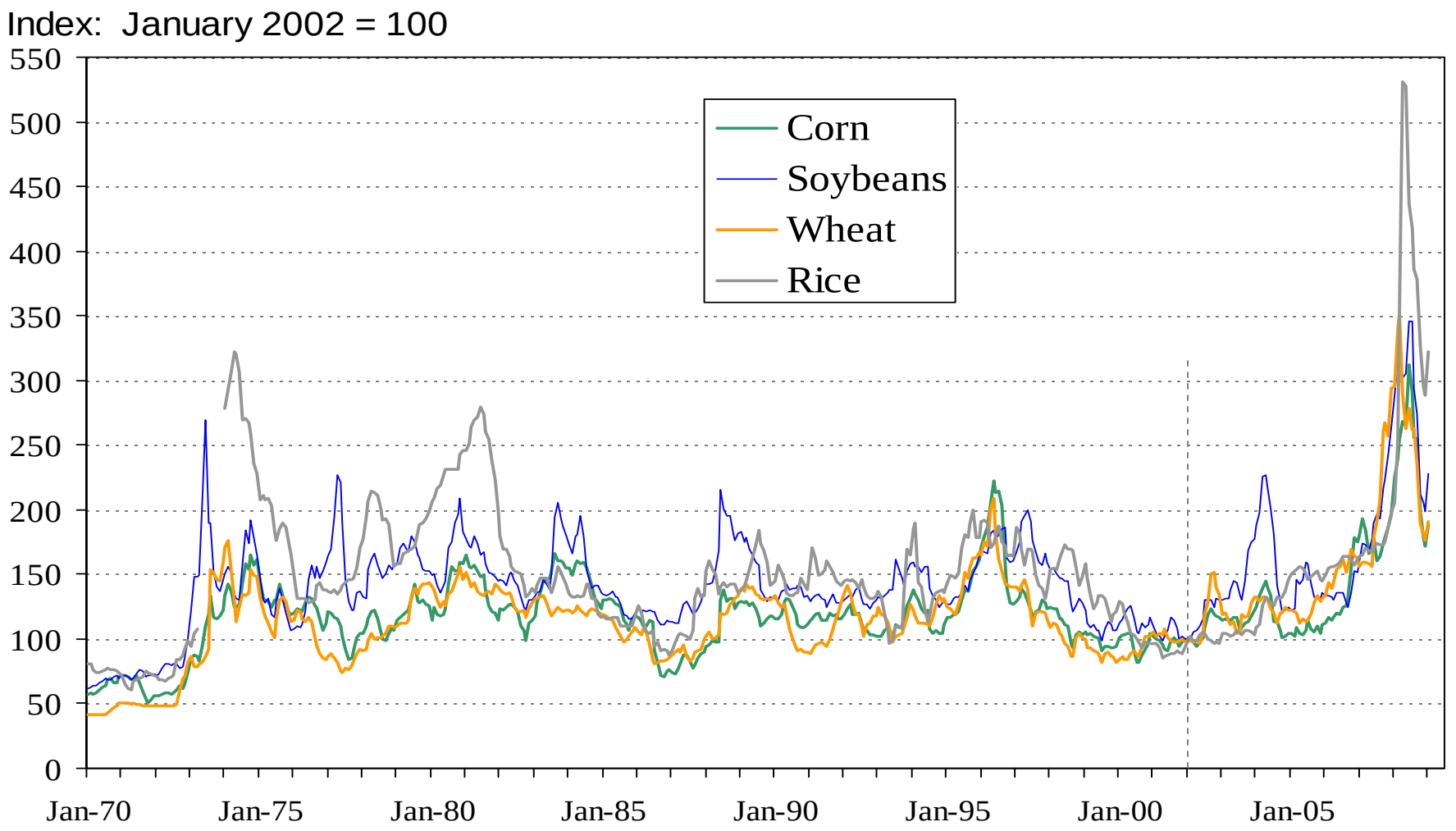
Spikes in food commodity prices:
Will this time be any different?



Source: International Monetary Fund: International Financial Statistics

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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:

- Relatively high energy prices
- Ag production costs
- Slowing growth in total crop production

Supply factors **Demand factors**

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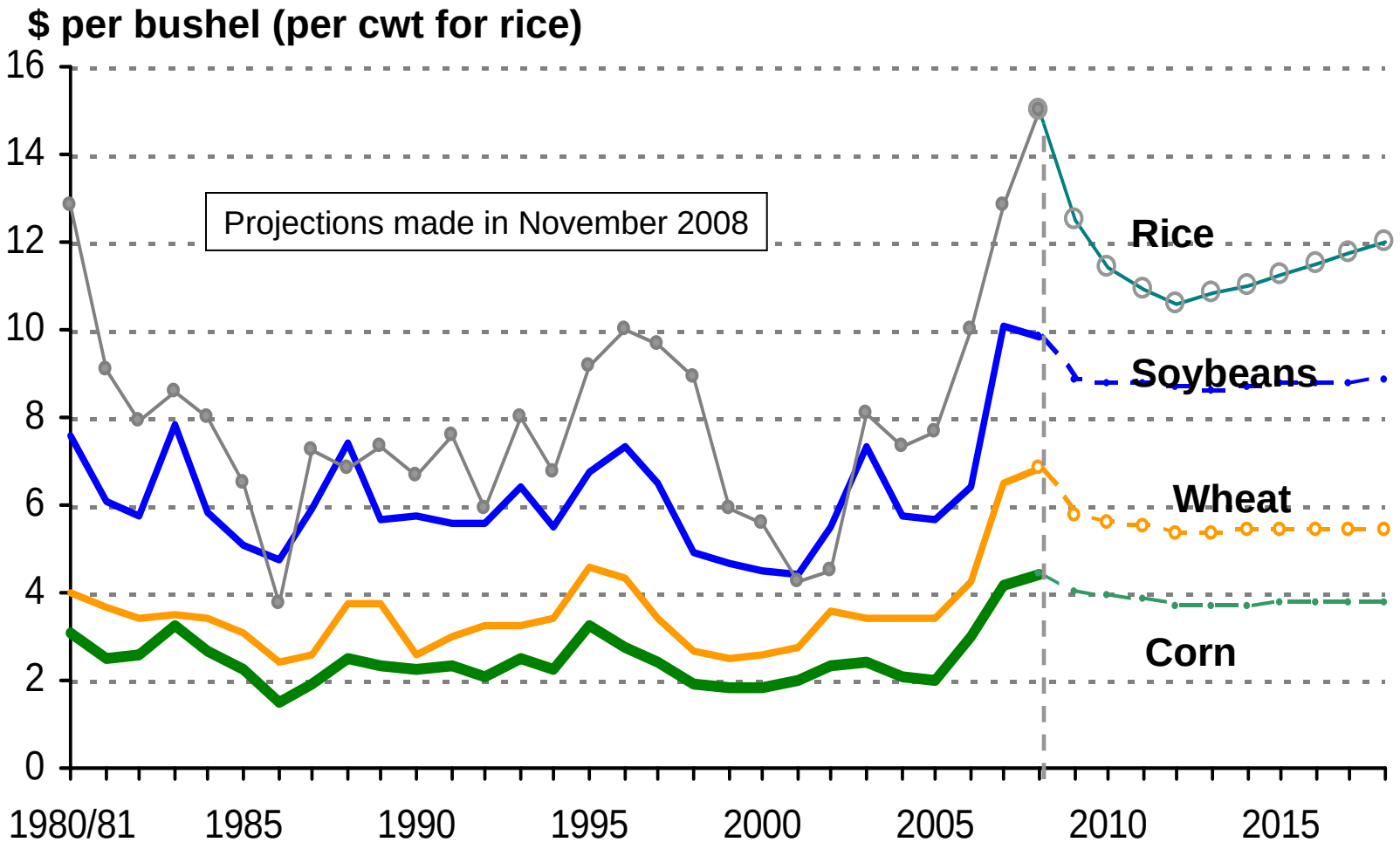
U.S. commodity prices: soybeans, wheat, corn & rice

History, current year, & projections



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

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Global Agricultural Supply and Demand:
Factors Contributing to the Recent Increase in Food Commodity Prices

A report available at:

http://www.ers.usda.gov/publications/WRS0801.pdf

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202-694-5280

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End of slides used in presentation

The following slides provide more detail on various aspect of the story.

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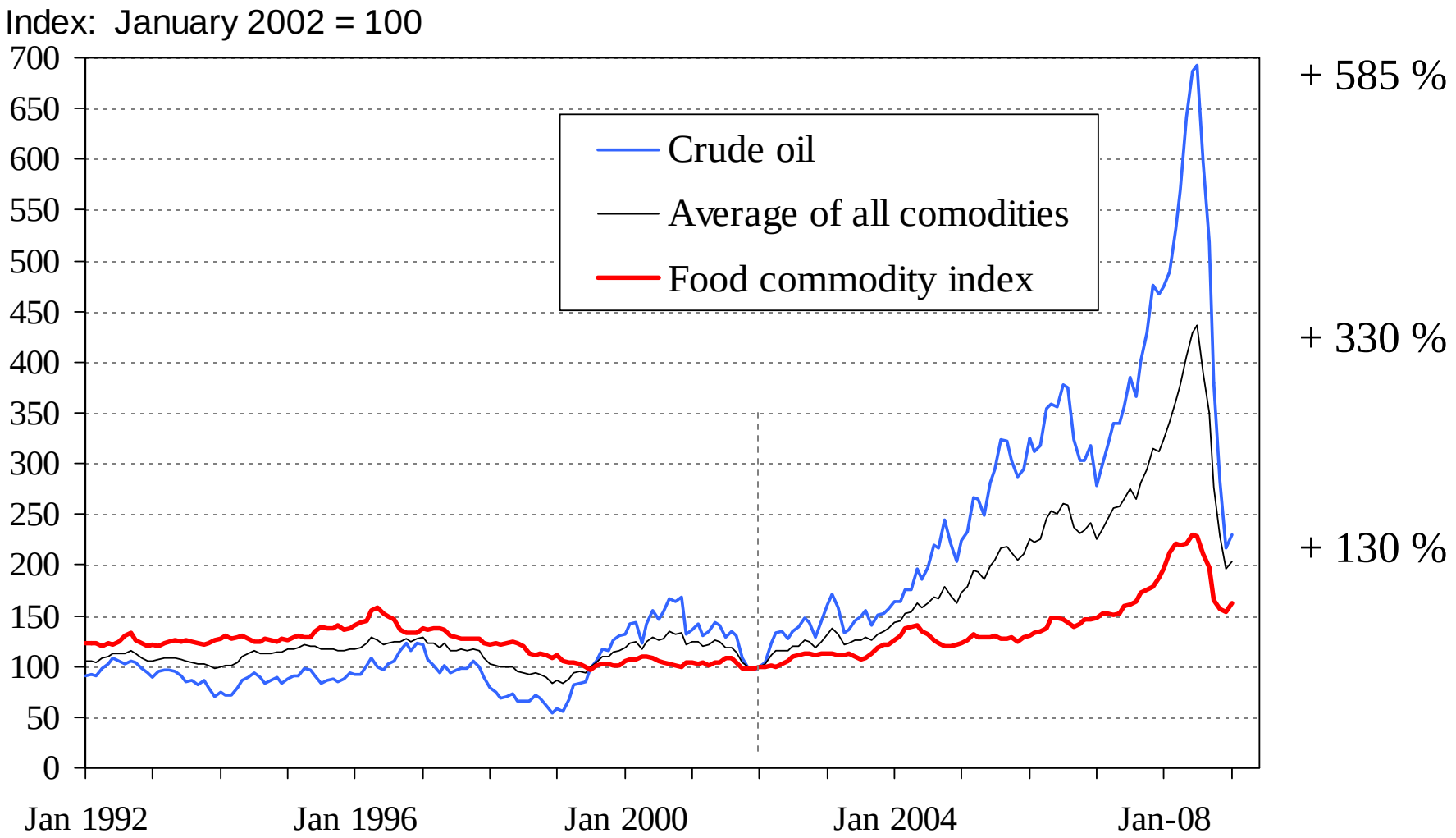
Prices of many commodities rose even more



Source: International Monetary Fund: International Financial Statistics

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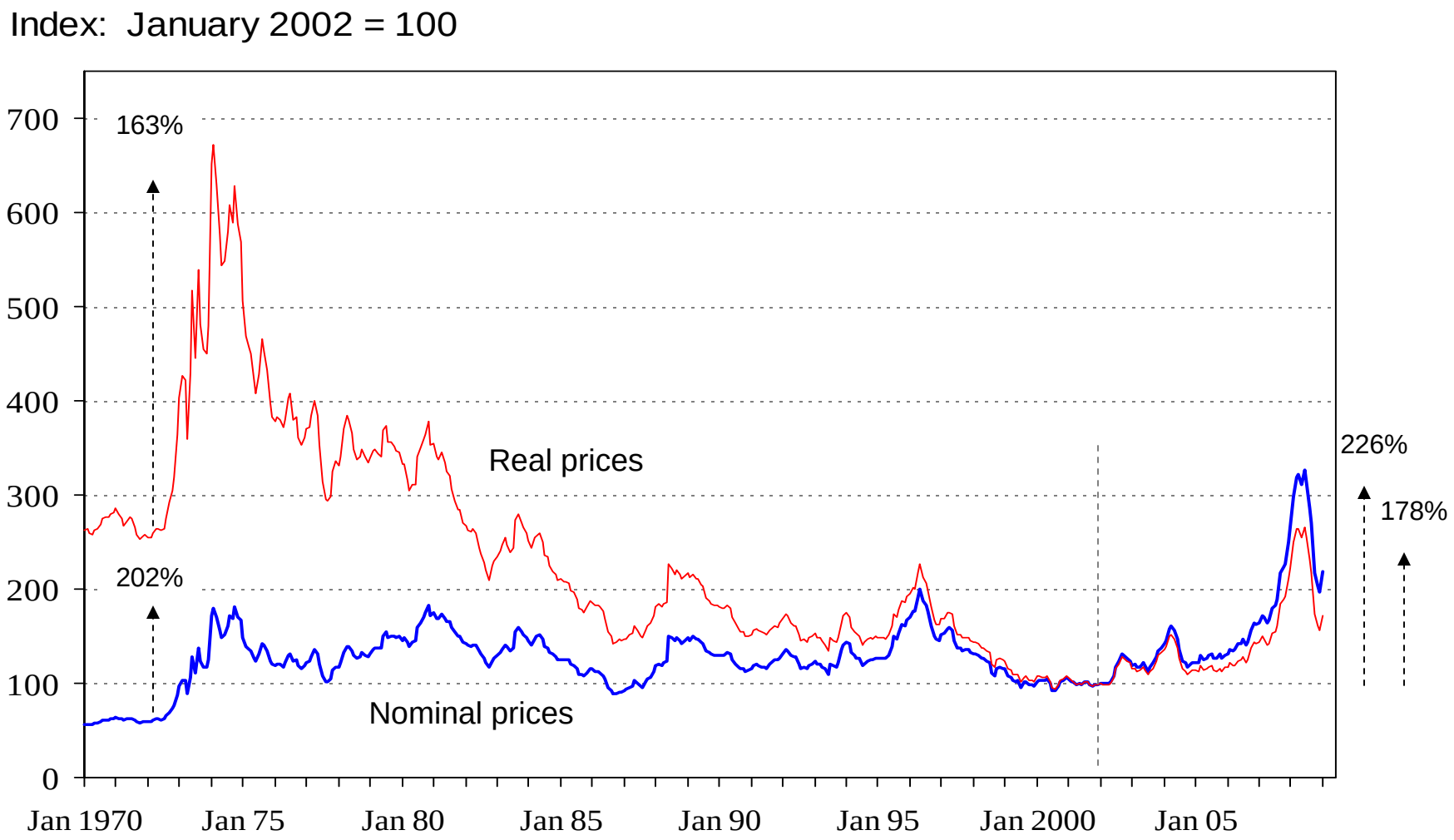
Crop price increases: real vs. nominal

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

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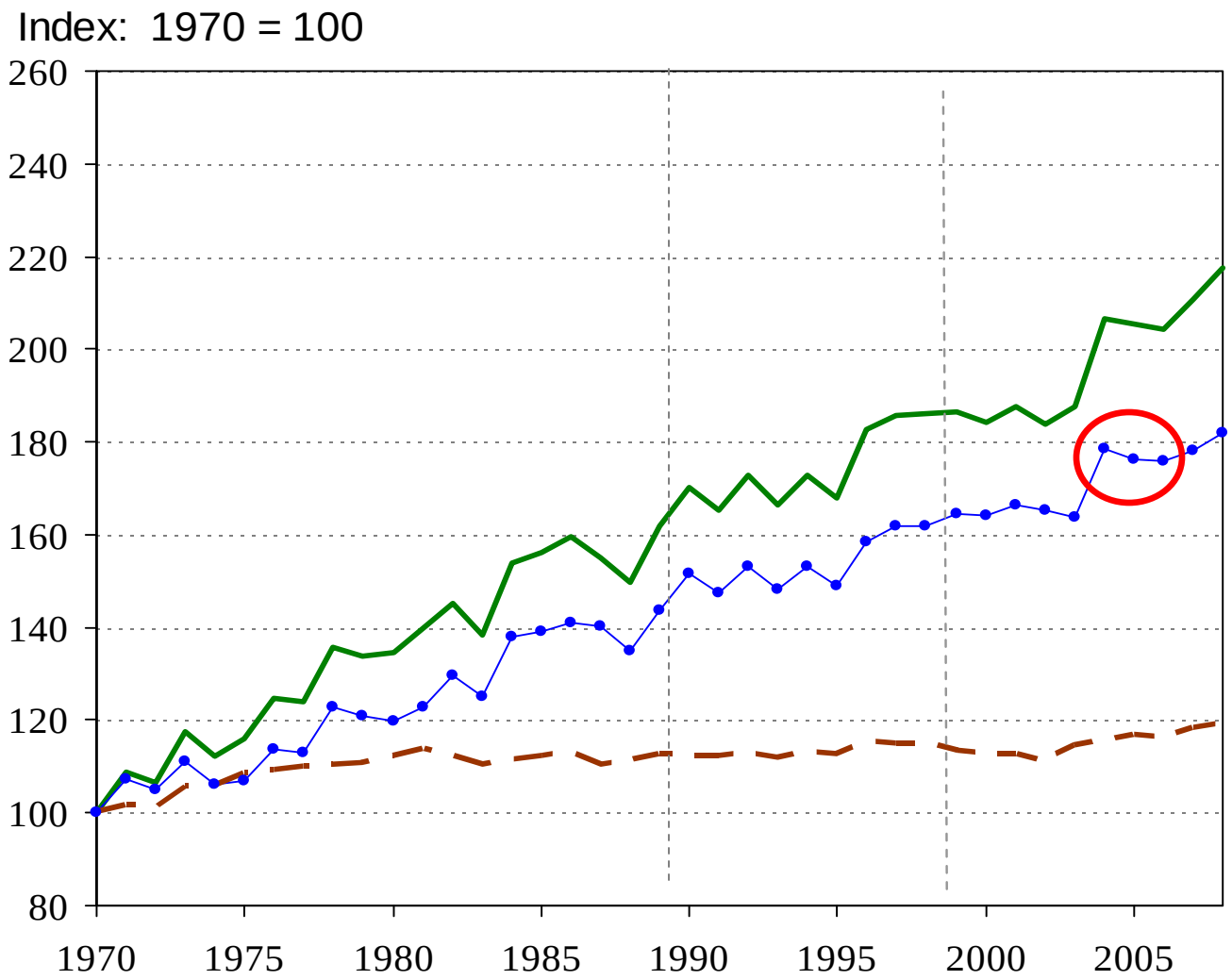
Total world grain & oilseeds[1]

Production, yield, & area harvested



Trend growth rates:

	1975-90	90-07
Prod	2.2	1.3
Area	0.15	0.17
Yields	2.0	1.1

[1] Total oilseeds = soybeans + rapeseed + sunflowers

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Source: USDA Agricultural Projections to 2017

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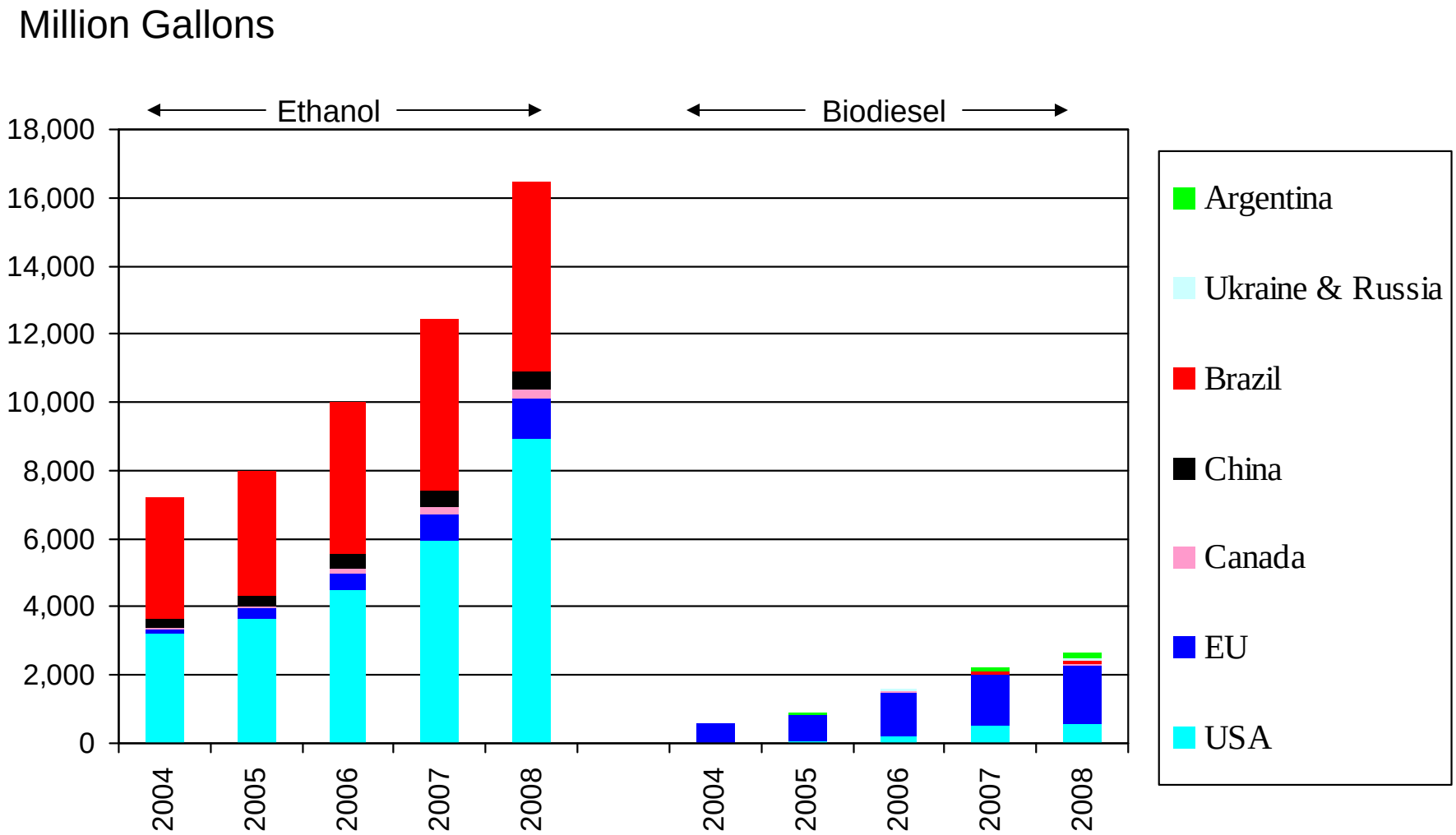
Biofuels production: Largest producers



Source: USDA Agricultural Projections to 2017

Adverse weather reduced production:

- 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

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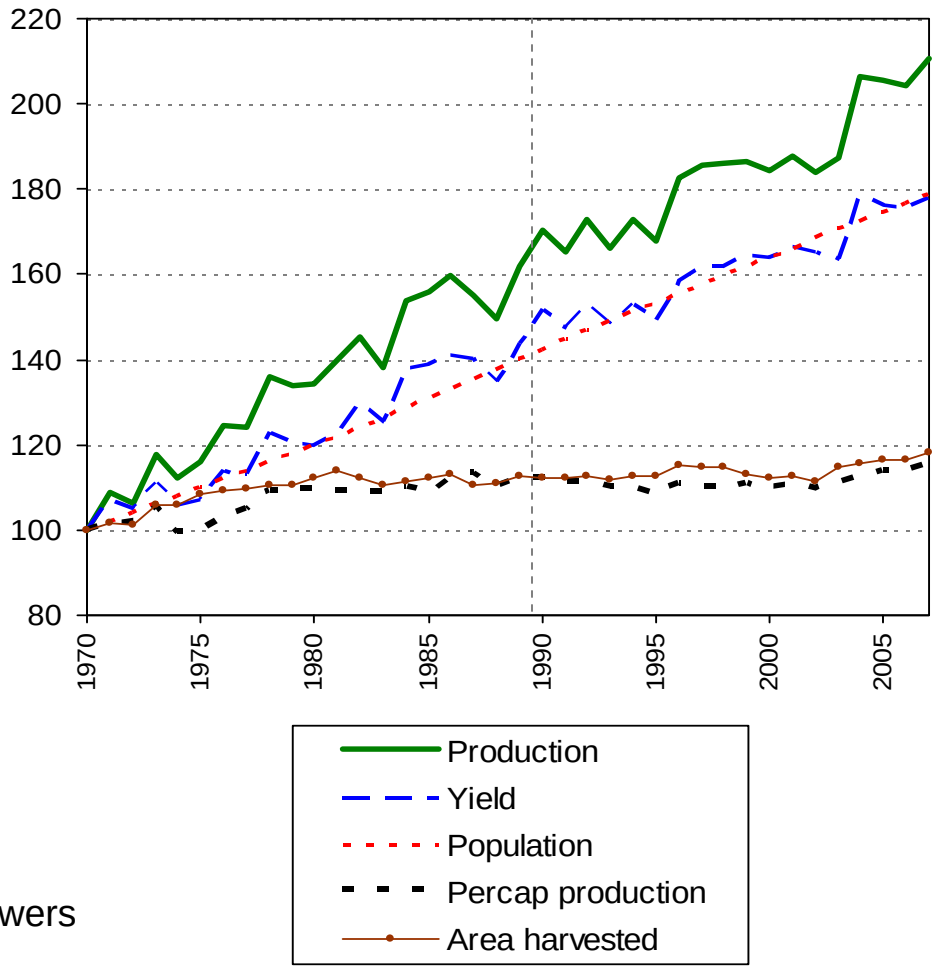
Total world grain & oilseeds[1]

Production, yield, area harvested, population & percap production

Exponential trend growth rates:

	1970-90	90-07
Production	2.2	1.3
Yields	2.0	1.1
Area	0.15	0.14
Population	1.7	1.4
Per capita production	0.56	0.11

Index: 1970 = 100



[1] Total oilseeds = soybeans + rapeseed + sunflowers

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Source: Compiled from USDA's PS&D Database

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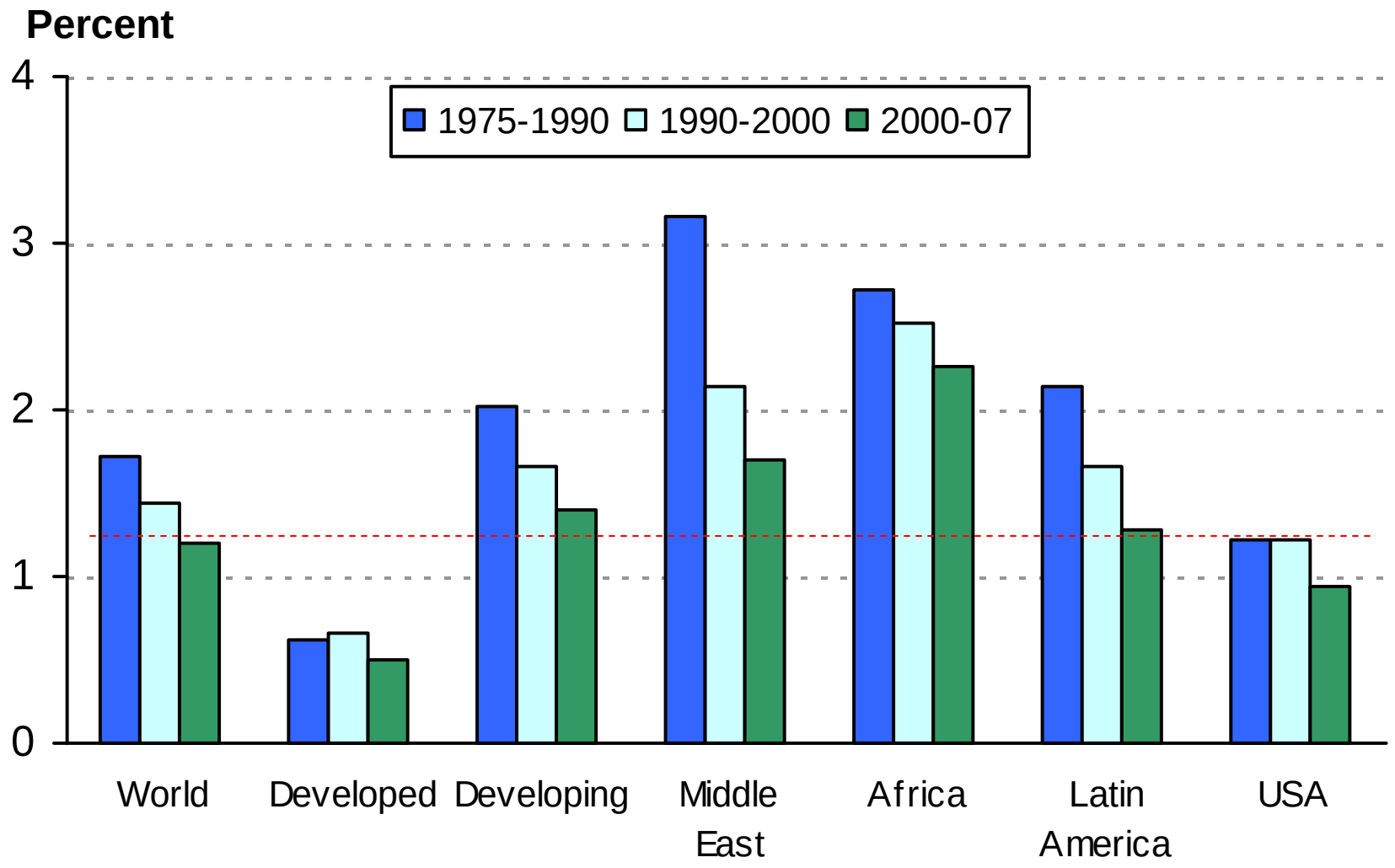
Population growth rates decline
(Percent by period)



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Source: USDA Agricultural Baseline Projections to 2017.

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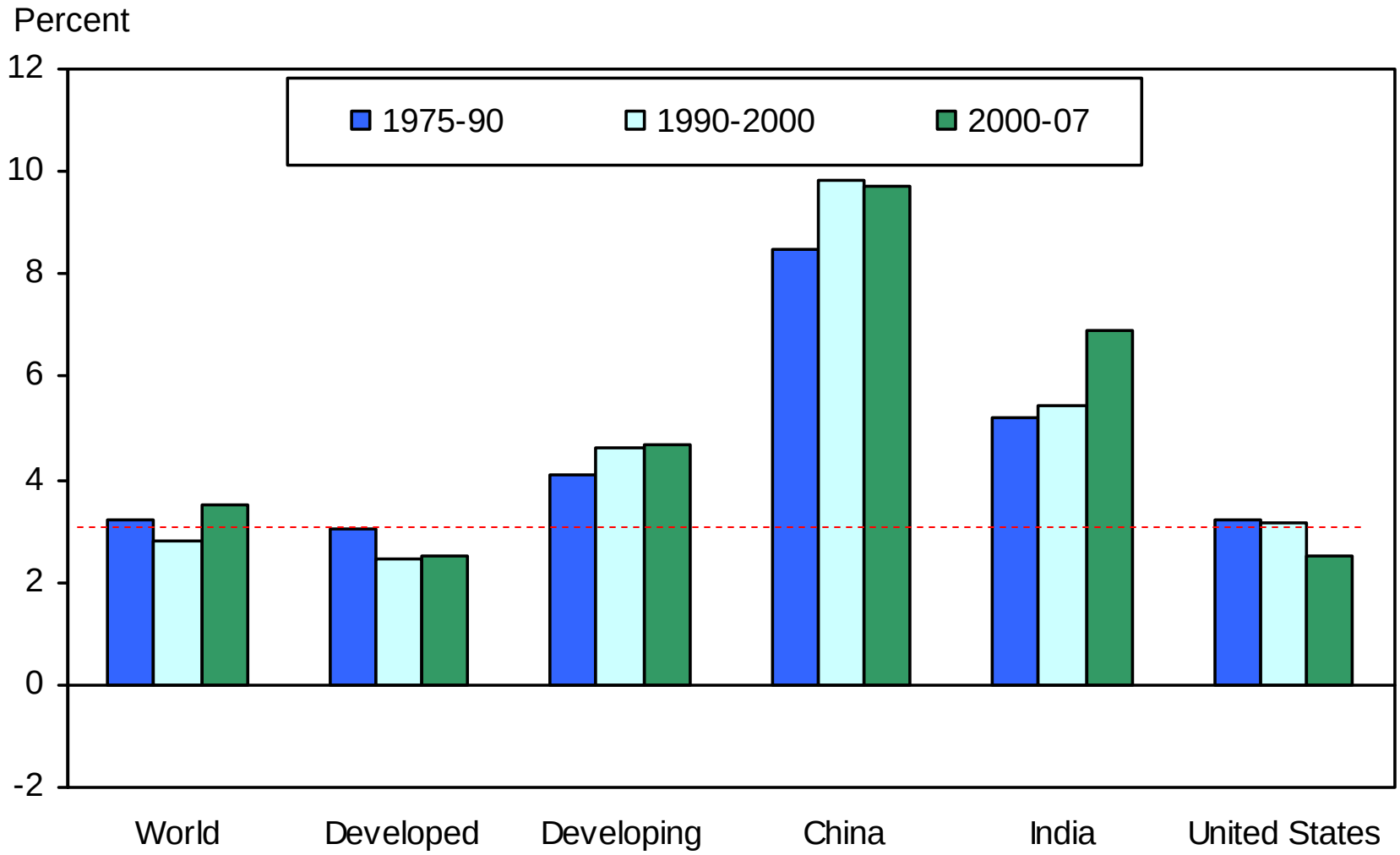
Strong economic growth

Average Real GDP growth rates



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Source: USDA Agricultural Baseline Projections to 2017.

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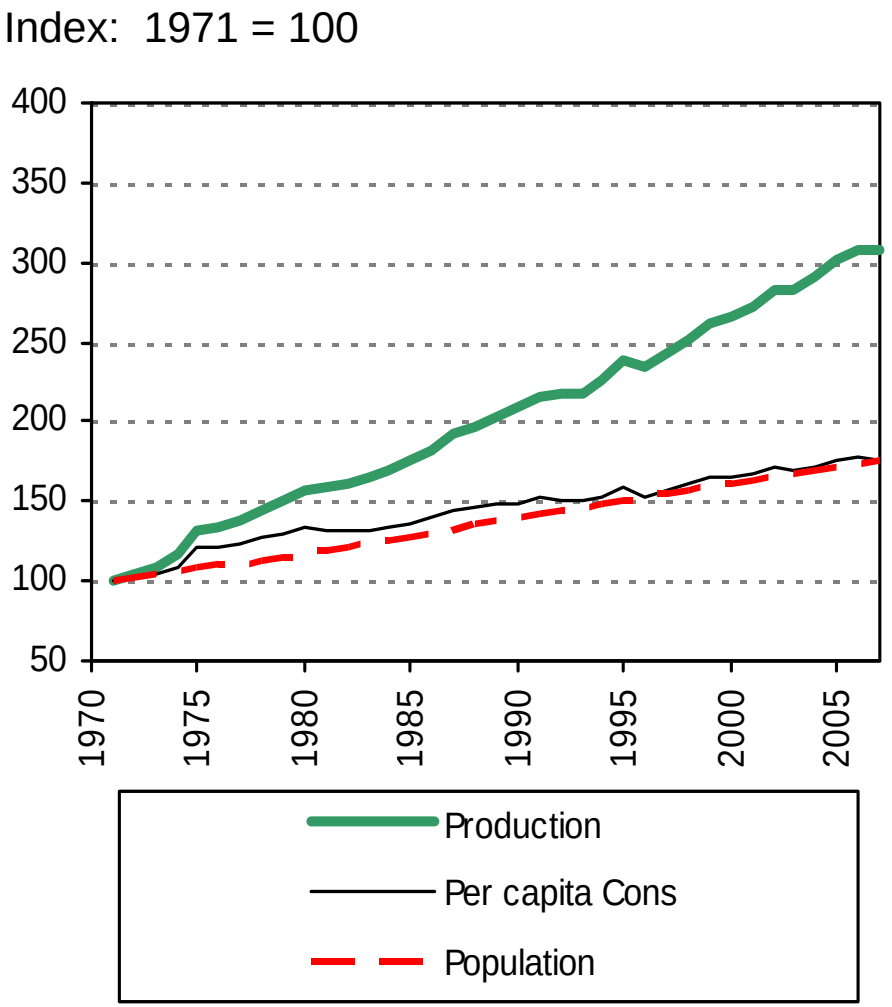
Global meat[1]

Production, per capita consumption, and population

Exponential trend growth rates:

	1975-90	90-07
Production	3.1	2.5
Population	1.7	1.4
Per capita consumption	1.4	1.1



1 Total meat = beef + pork + chickens & turkeys.

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Source: USDA Agricultural Projections to 2017.

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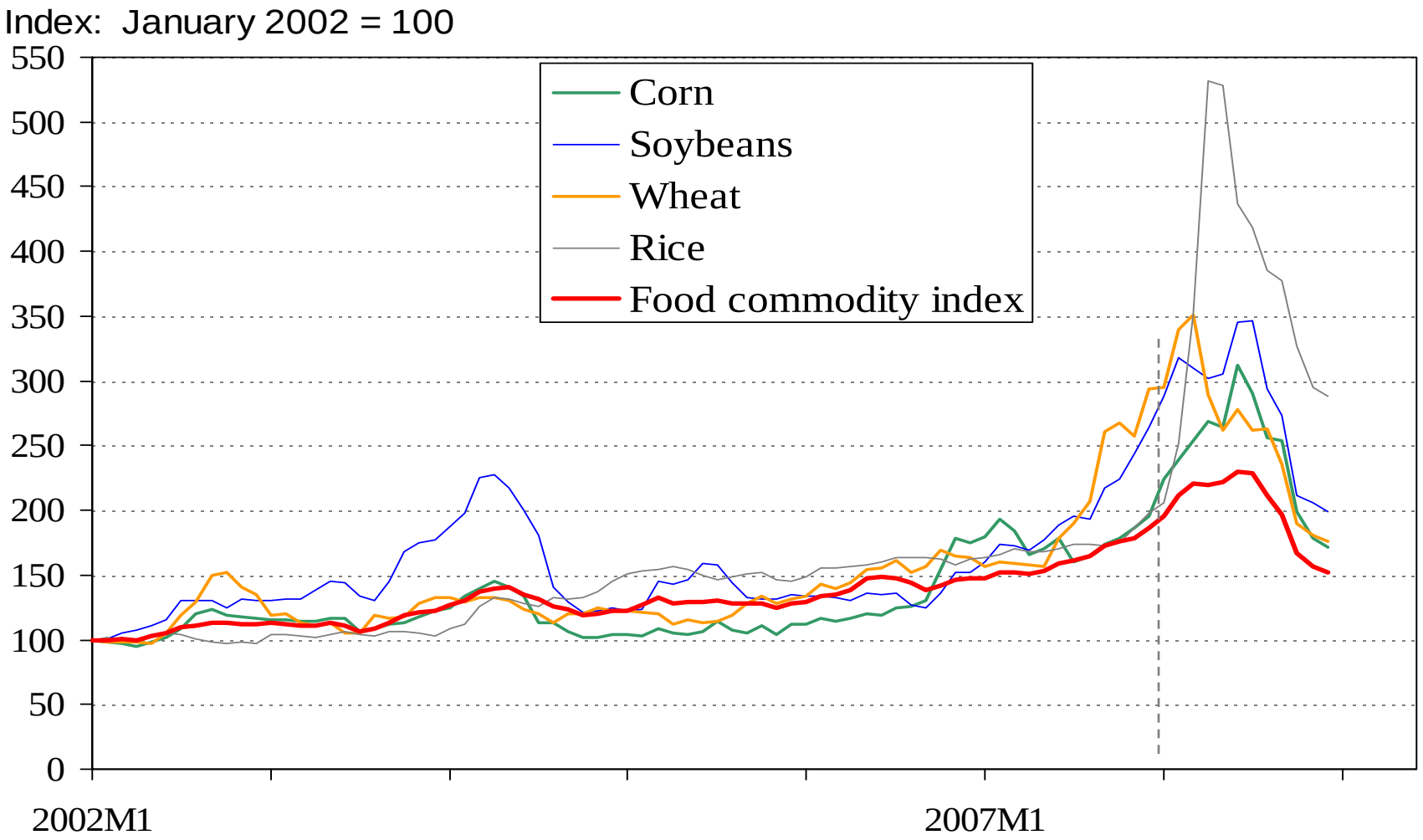
Food commodity prices:
Indices for selected crops and total food



Source: International Monetary Fund: International Financial Statistics

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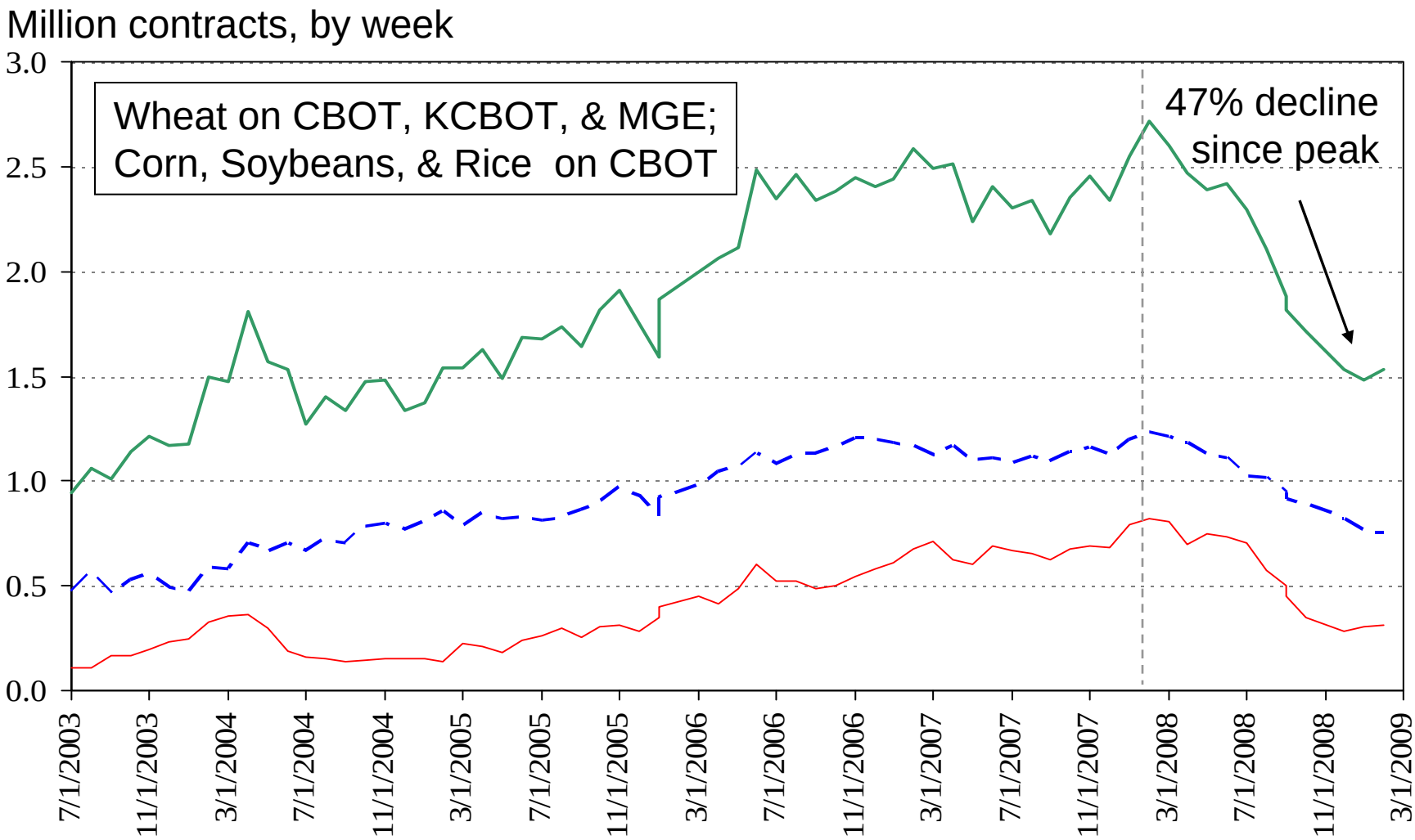
Total Open Interest: U.S. Futures Markets for Wheat, Corn, Soybeans, and Rice



Source: U.S. Commodity Futures Trading Commission

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Nominal price increases since January 2002 and declines since the peak

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Corn	268 %	62 %	End of June
Soybeans	295 %	53 %	Early July
Rice	> 400 %	36 %	Late September
4-crop average	247 %	40 %	April
Index of food commodities	130 %	34 %	June

[1]Lowest price since peak, as of January 29, 2009.
Kansas City for wheat; Central Illinois for corn and soybeans.

Source: USDA/ERS

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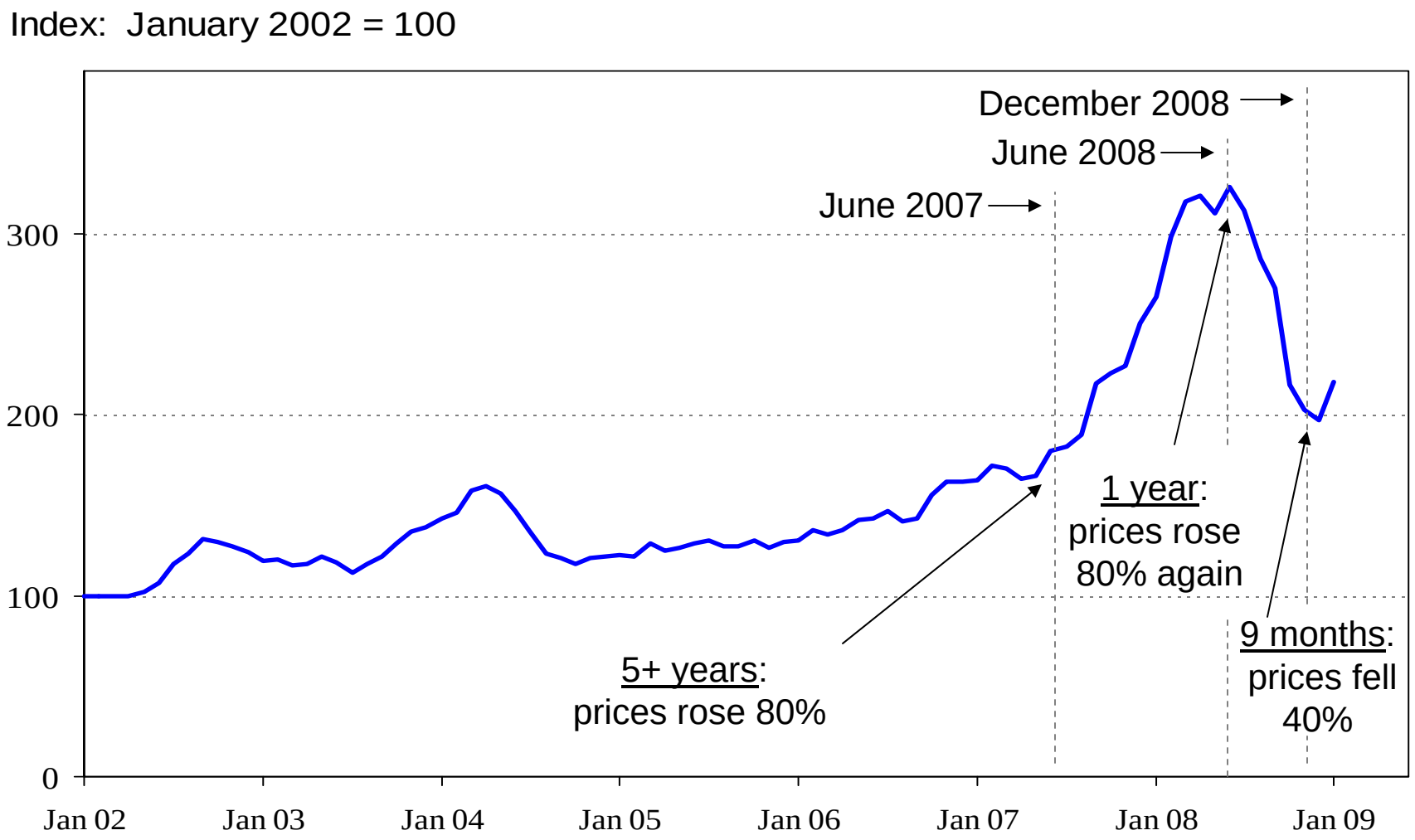
Nominal Crop Price Index

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

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Conditions in the summer of 2007:

- Dollar was weak
- Oil price was record high
- Production costs were high
- Biofuels production had been expanding rapidly
- World consumption growing faster than production
- Low stock/use ratio

Also

- Foreign exchange reserves were large and growing
- Involvement of funds were increasing

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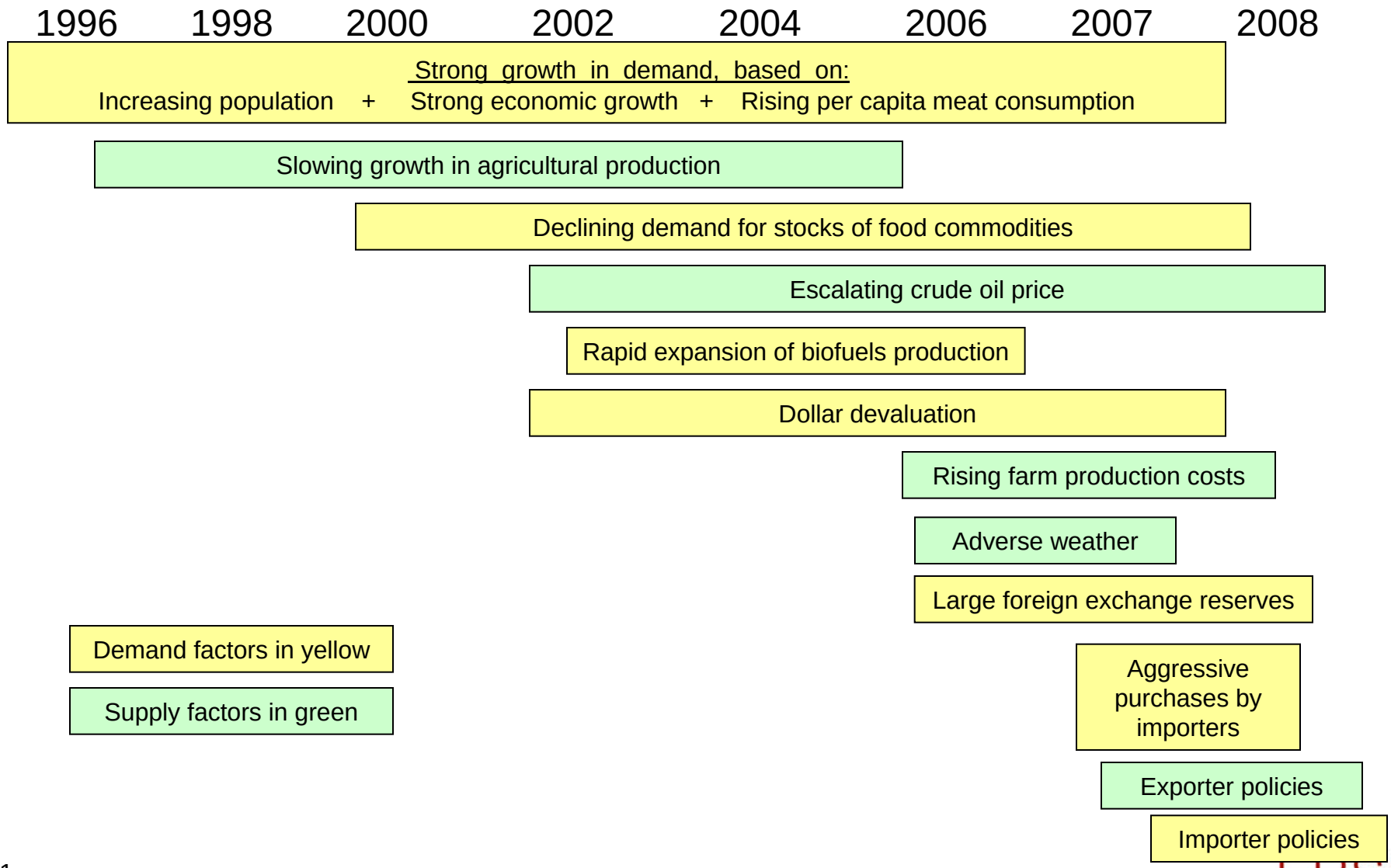
Factors contributing to higher food commodity prices