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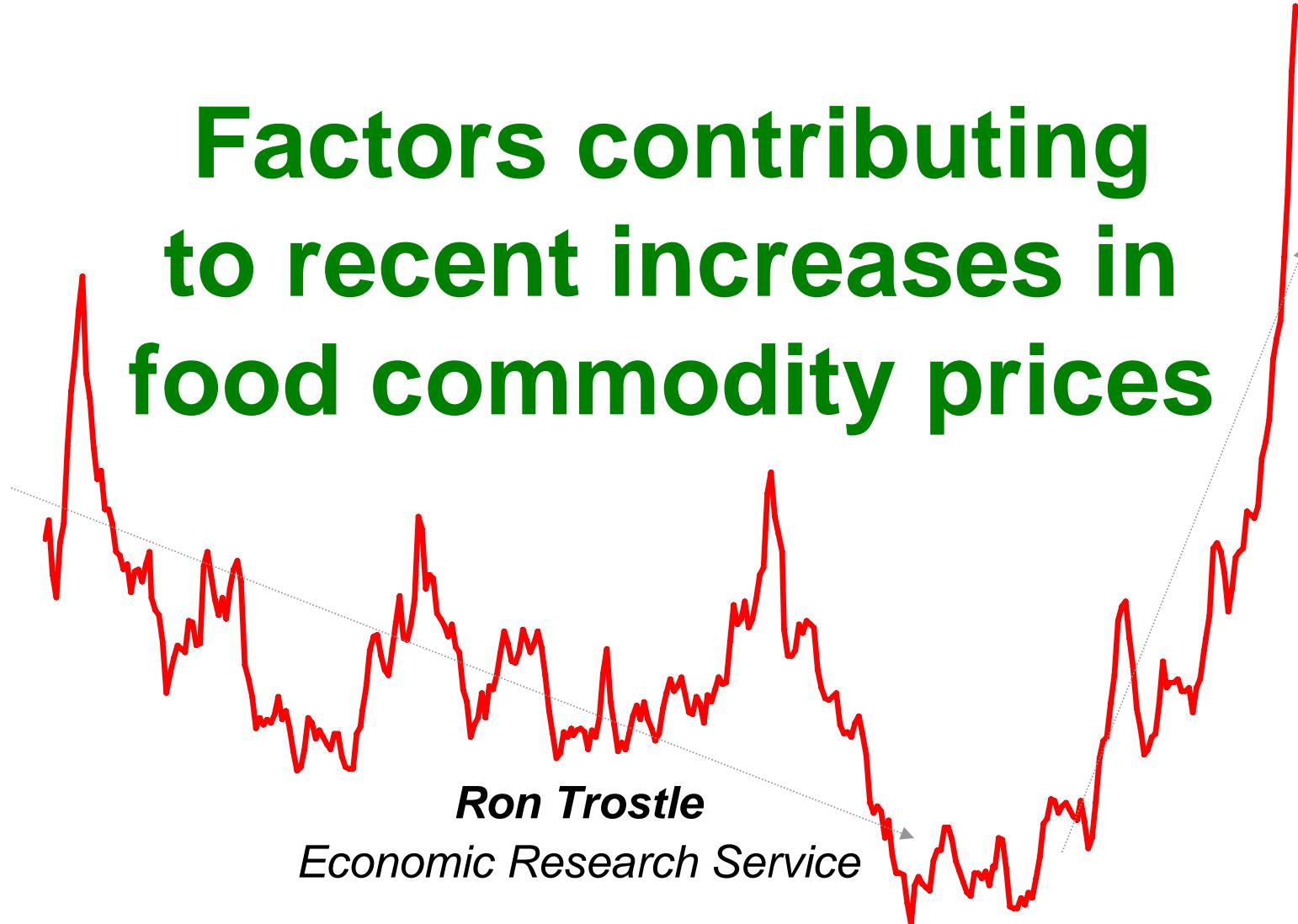
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# Factors contributing to recent increases in food commodity prices



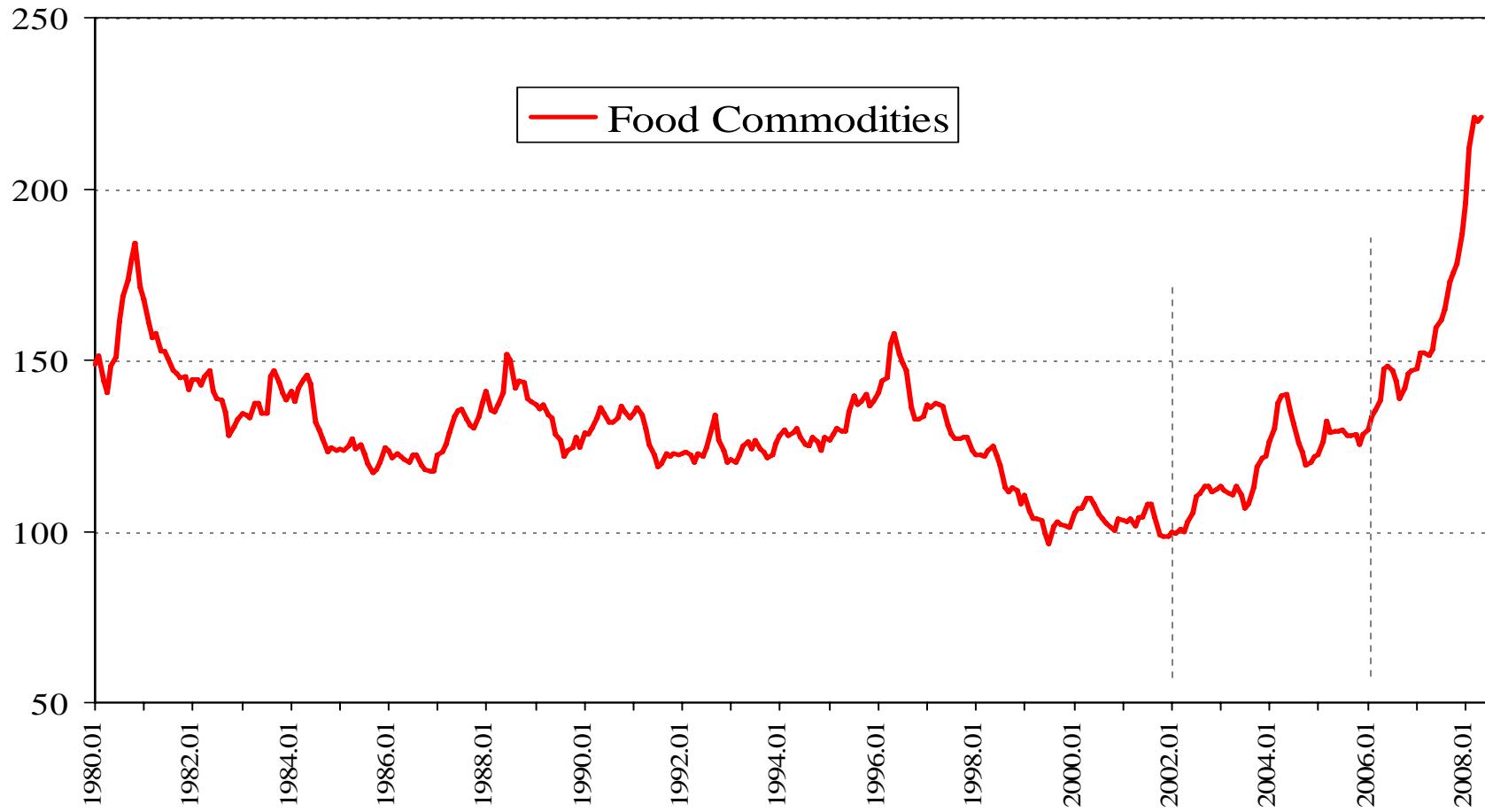
**Ron Trostle**  
*Economic Research Service*

*USDA Economists Group*  
June 10, 2008

# Food commodity prices: up 220 % since January 2002: 70 % since January 2006

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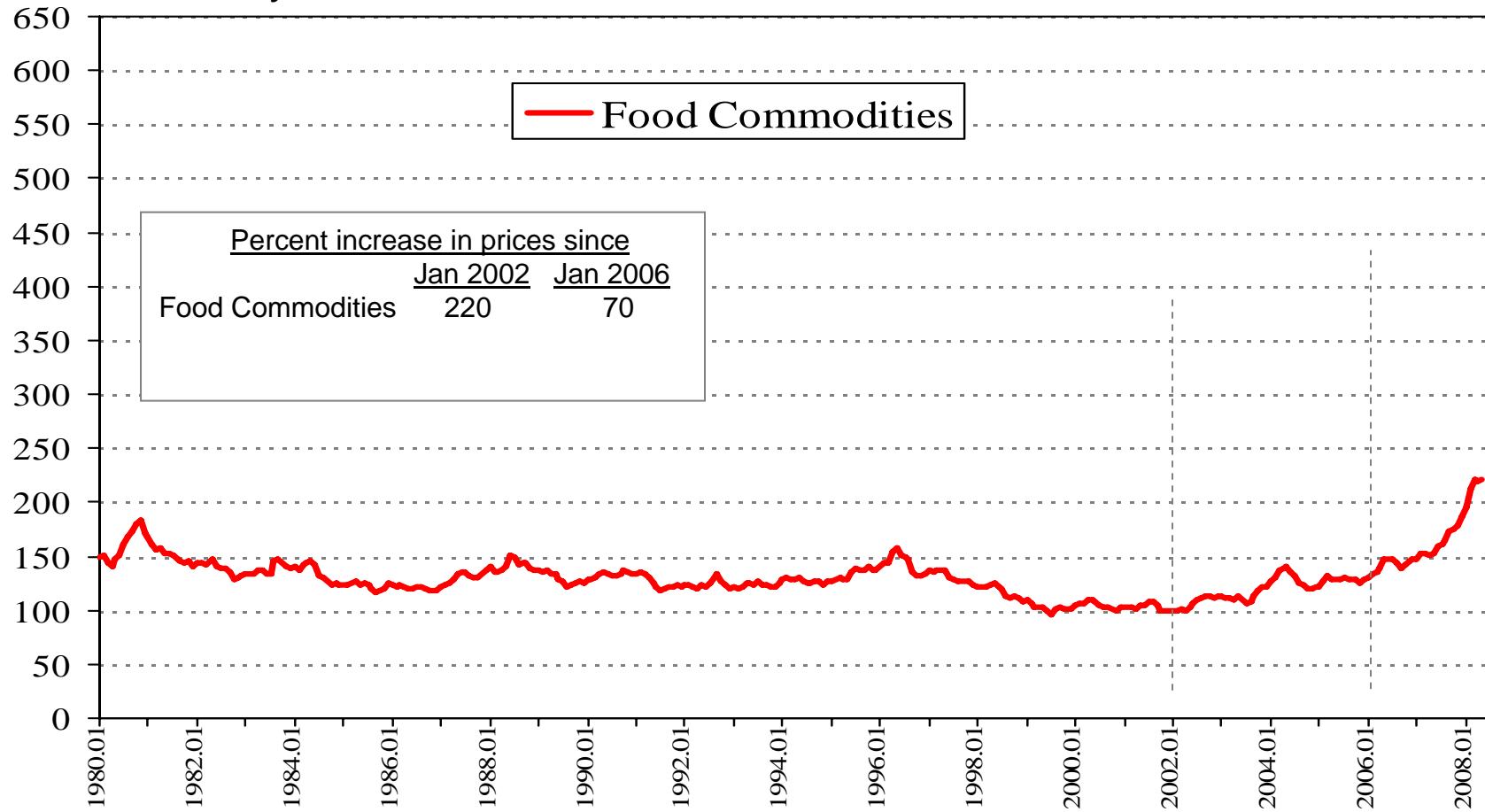
Index: January 2002 = 100



1/ Food Commodities include grains, vegetable oils, meats, sugar, and other basic food commodities.

# Food commodity prices: up 220 % since January 2002: 70 % since January 2006

Index: January 2002 = 100

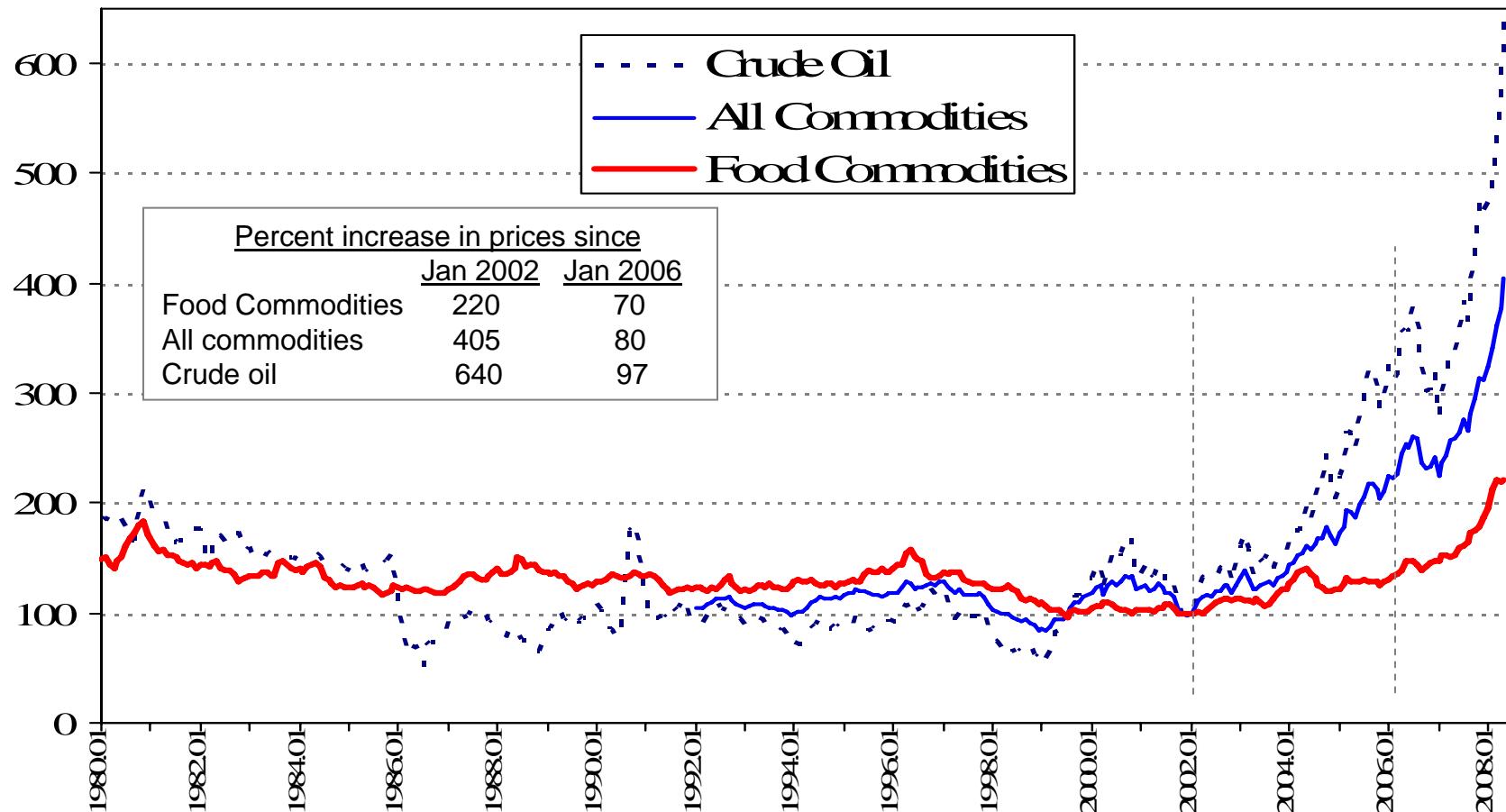


1/ Food Commodities include grains, vegetable oils, meats, sugar, and other basic food commodities.

# Prices of many commodities rose:

Crude oil up 640 % since January 2002

Index January 2002 = 100

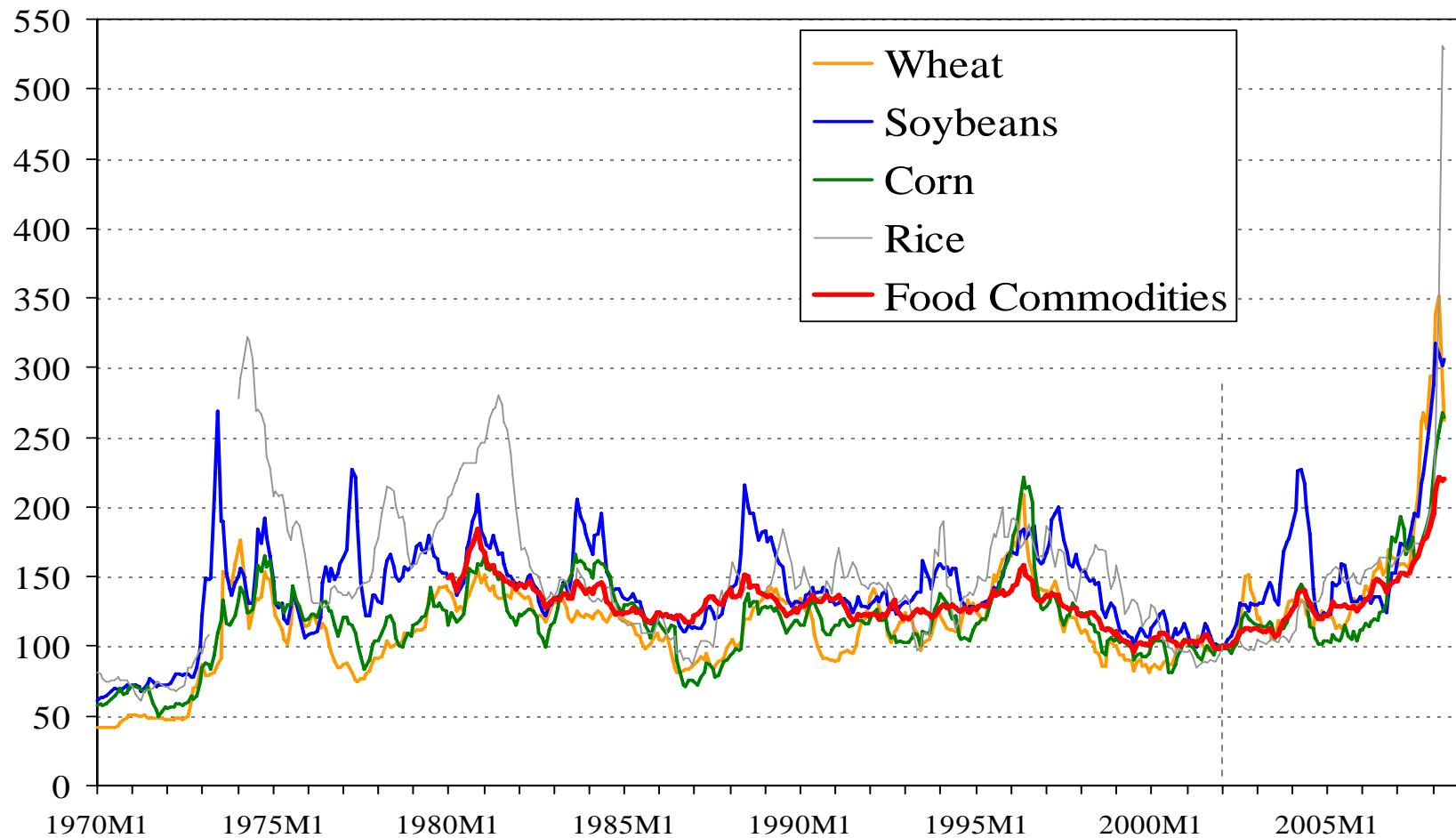


1/ Food Commodities include grains, vegetable oils, meats, sugar, and other basic food commodities.

# Crop prices increase

(wheat, soybeans, corn & rice)

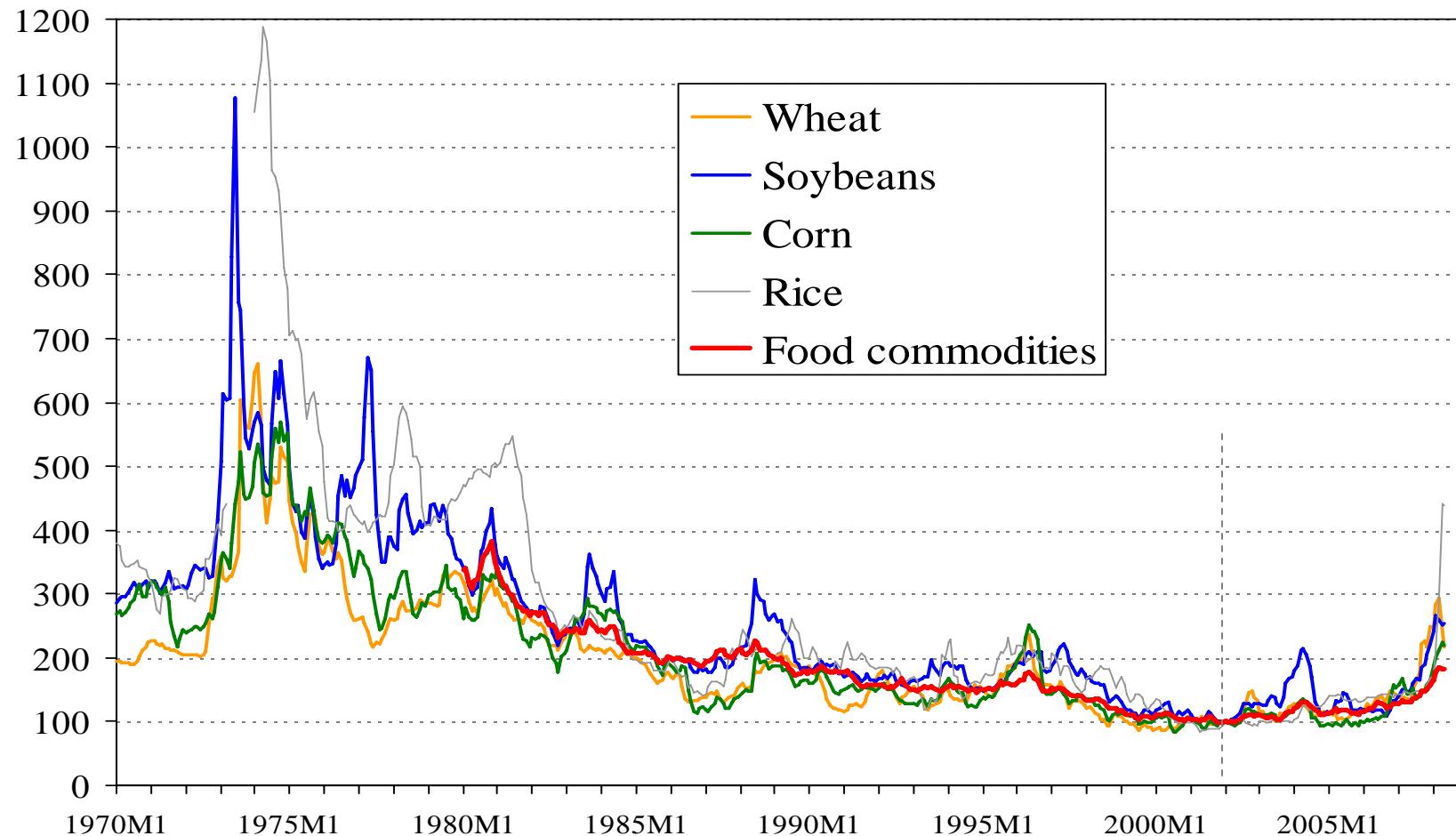
Index: January 2002 = 100



# Real crop prices

(wheat, soybeans, corn & rice)

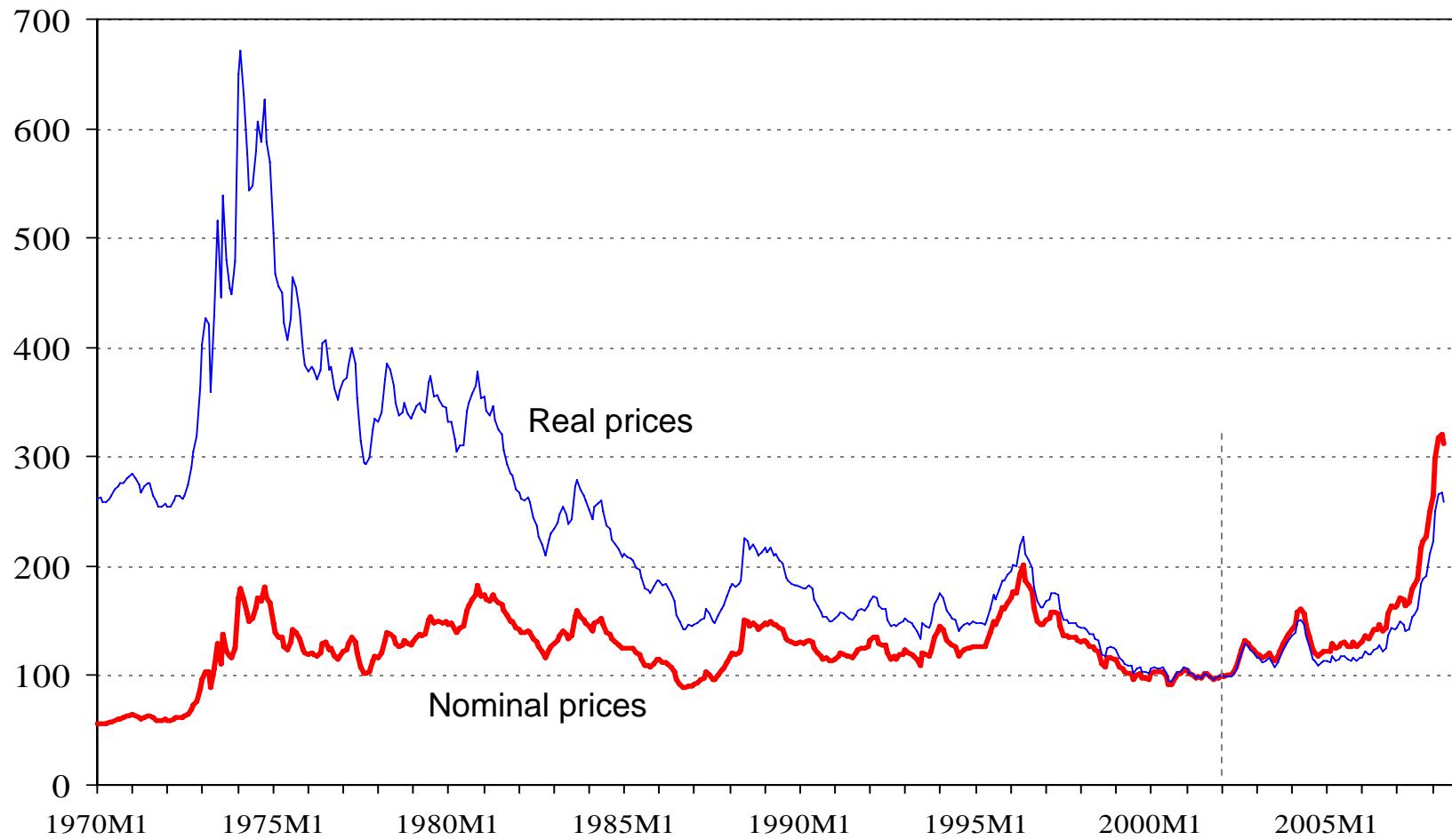
Index: January 2002 = 100



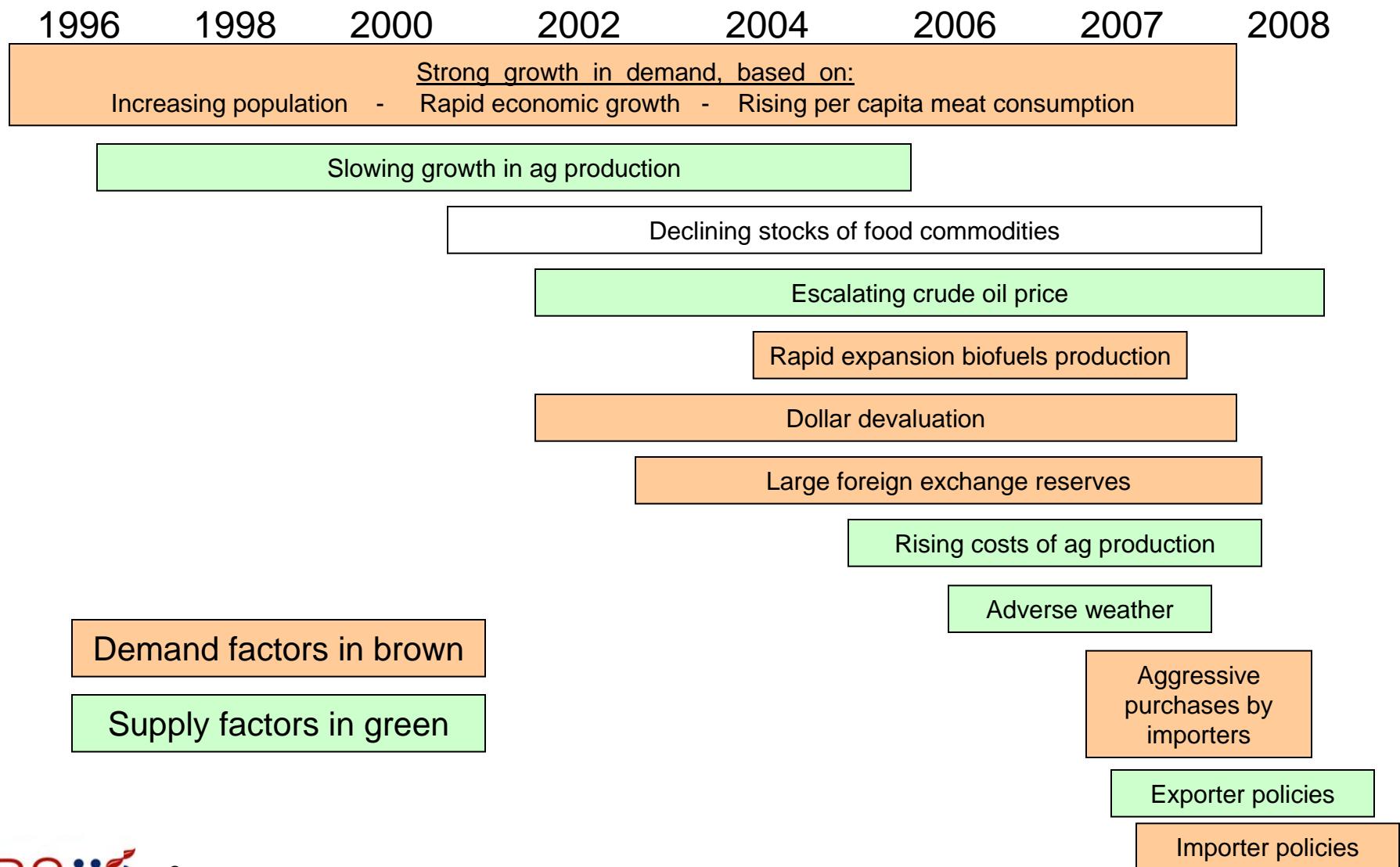
# Crop price increases: real vs. nominal

Average of 4 crops (wheat, soybeans, corn & rice)

Index: January 2002 = 100



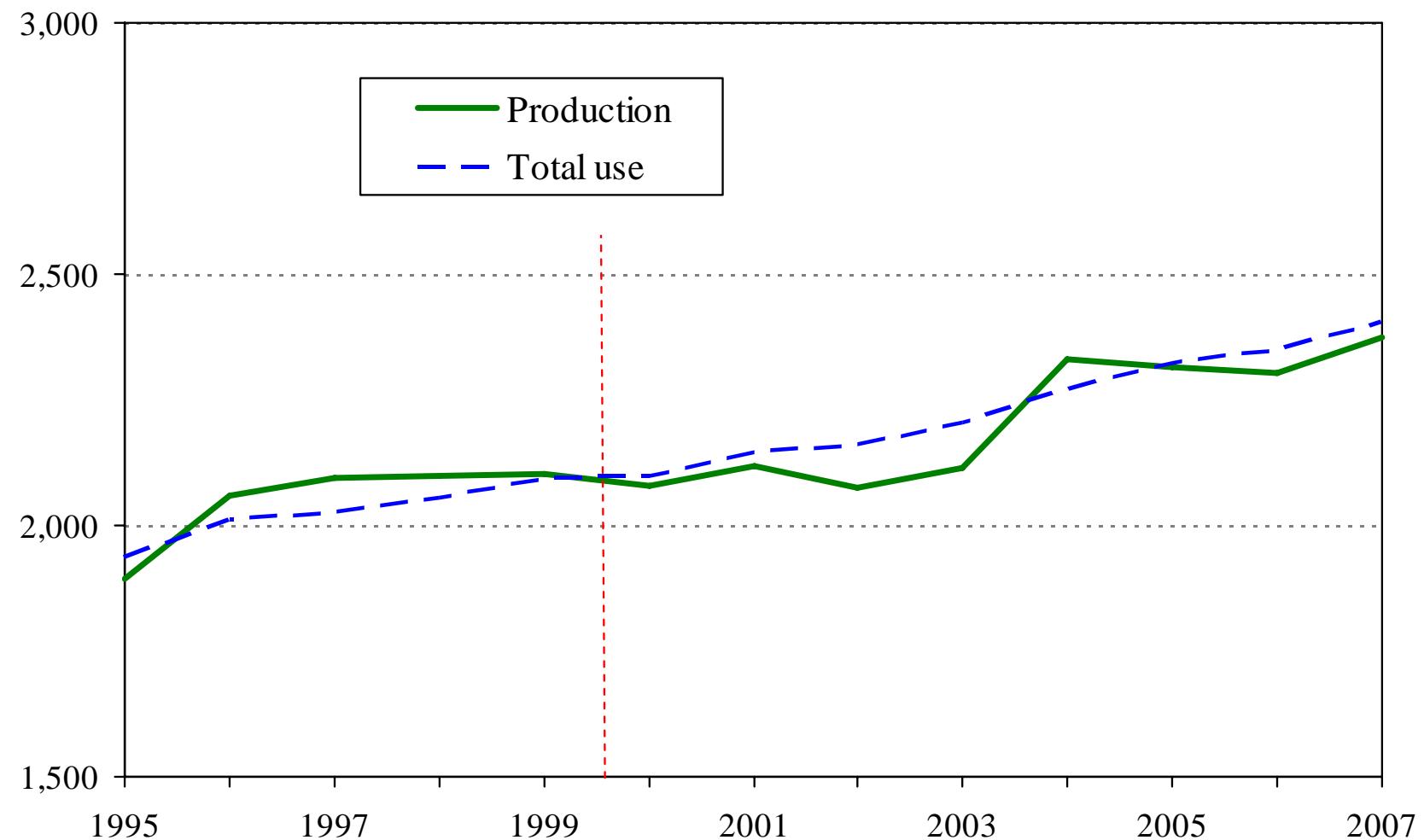
# Factors contributing to higher food commodity prices



# World grain & oilseeds

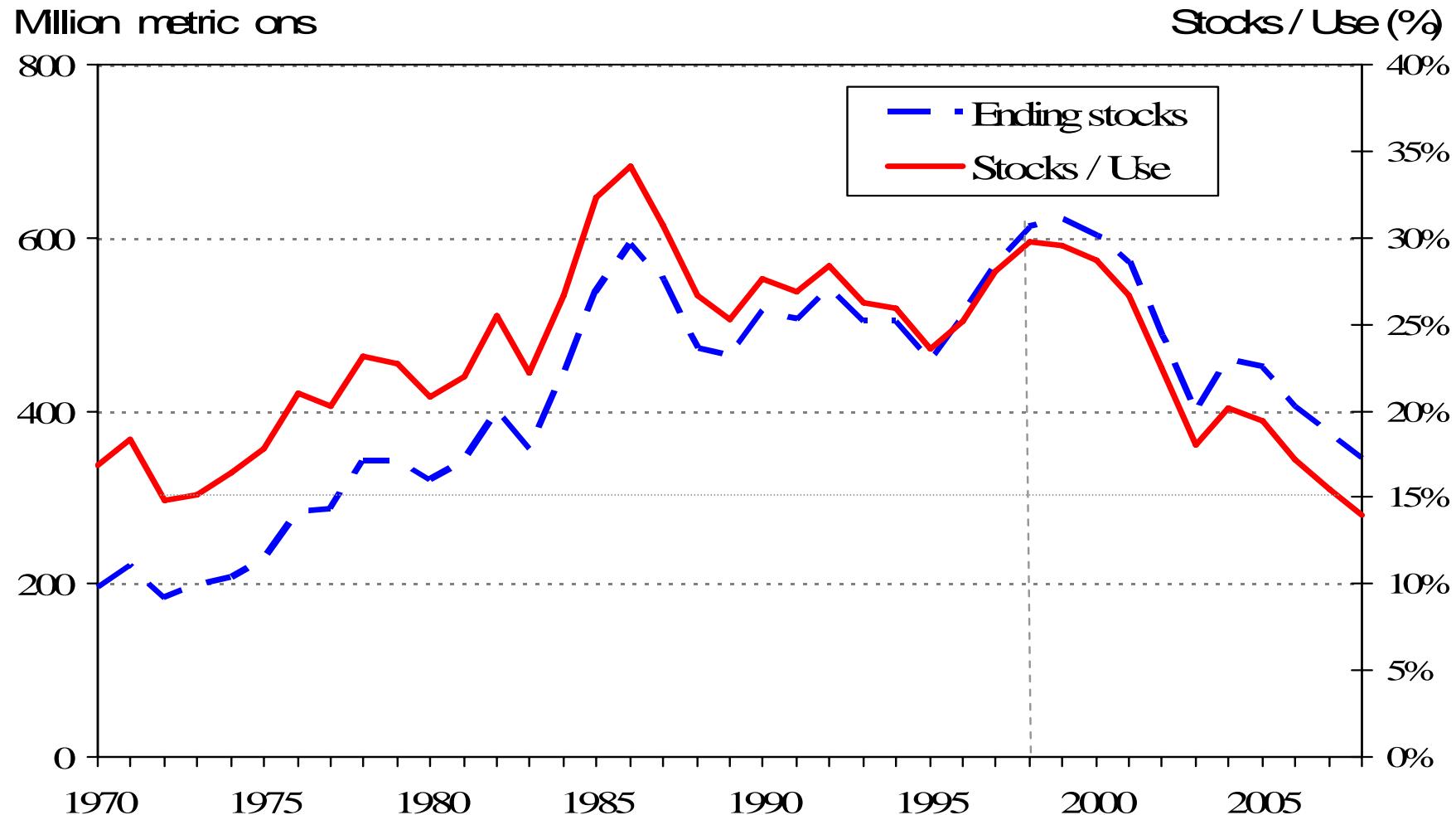
## Total production and use

Million metric tons



# Total world grain & oilseeds

## Stocks and stocks-to-use ratio

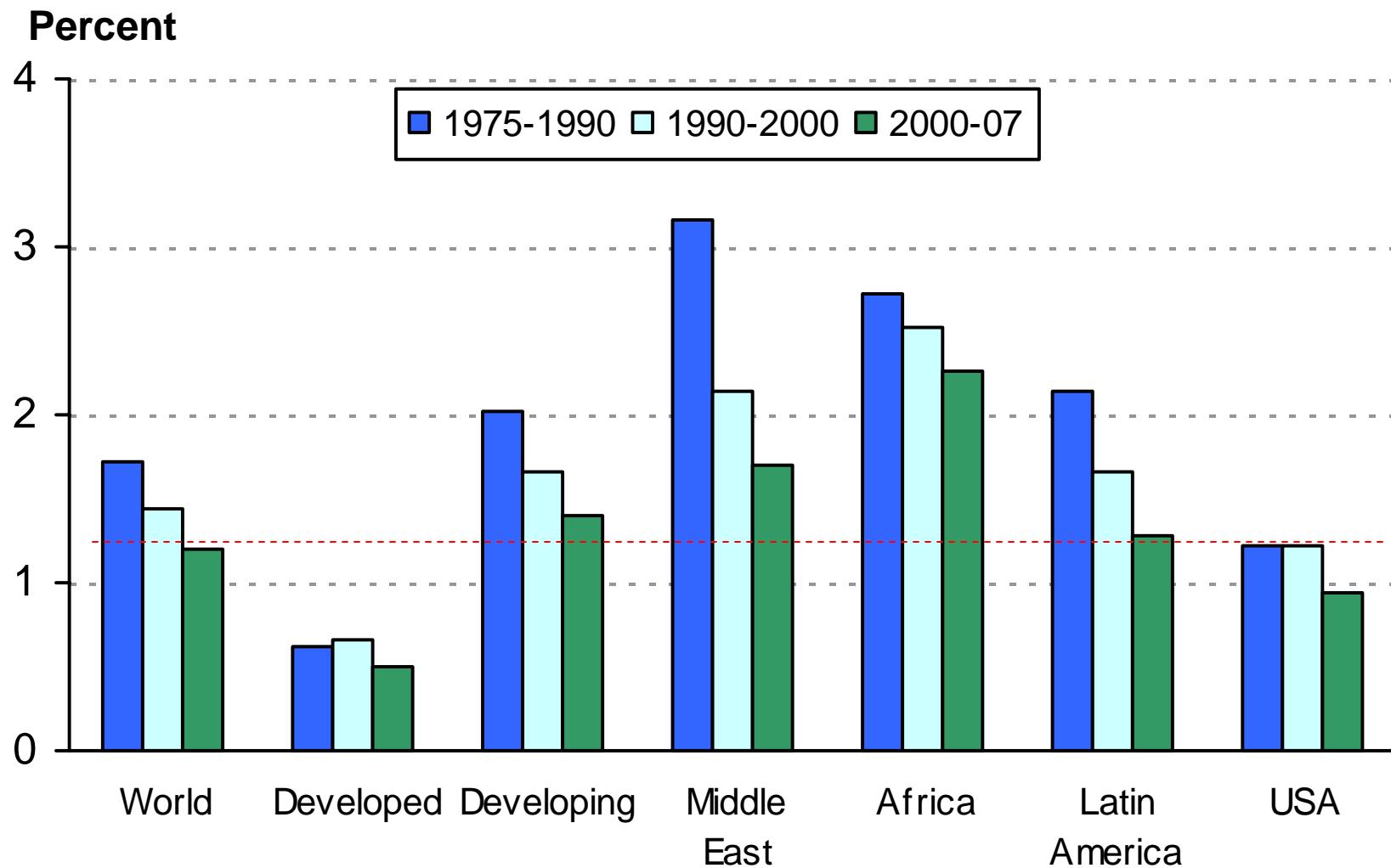


# Long term trends contributing to higher food commodity prices

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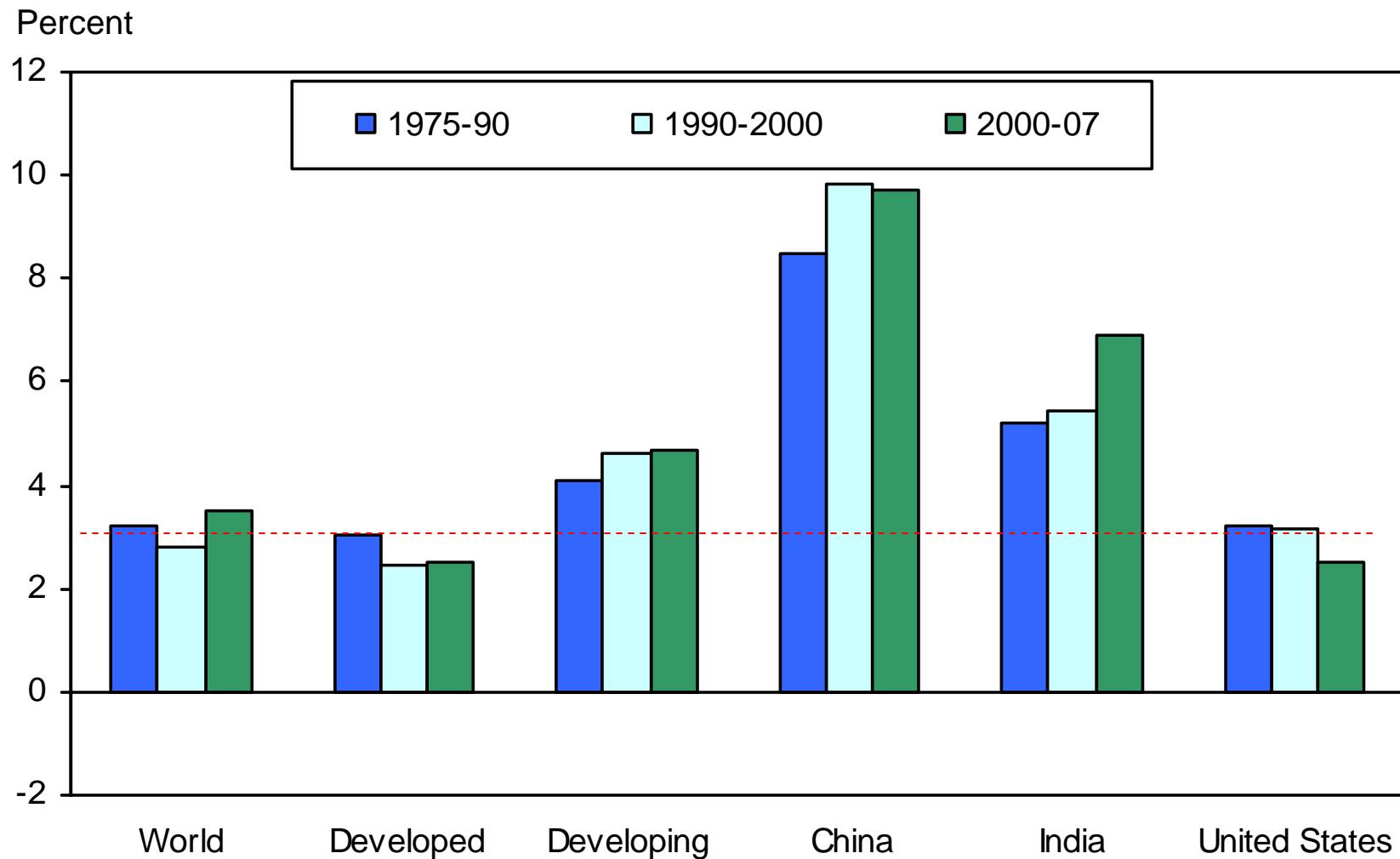
- Demand-side trends
- Supply-side trends

# Population growth rates decline (Percent by period)



# Strong economic growth

## Average Real GDP growth rates

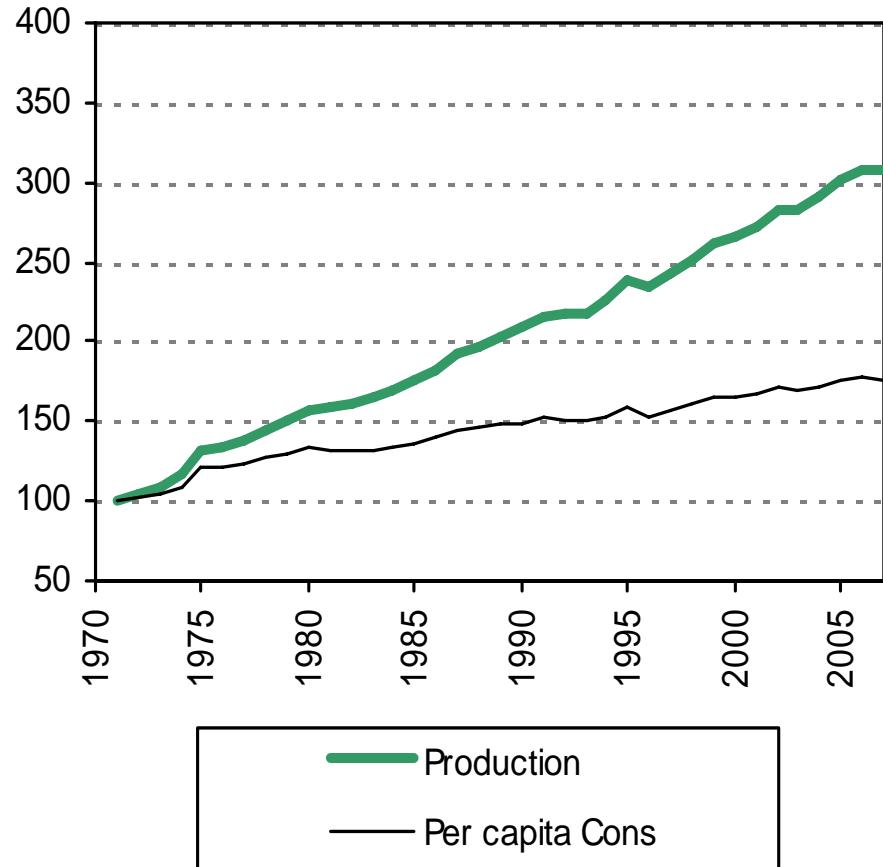


# Global meat<sup>1</sup>

## Production and per capita consumption

<b><u>Exponential trend growth rates:</u></b>		
	1975-90	90-07
Production	3.1	2.5
Population	1.7	1.4
Per capita consumption	1.4	1.1

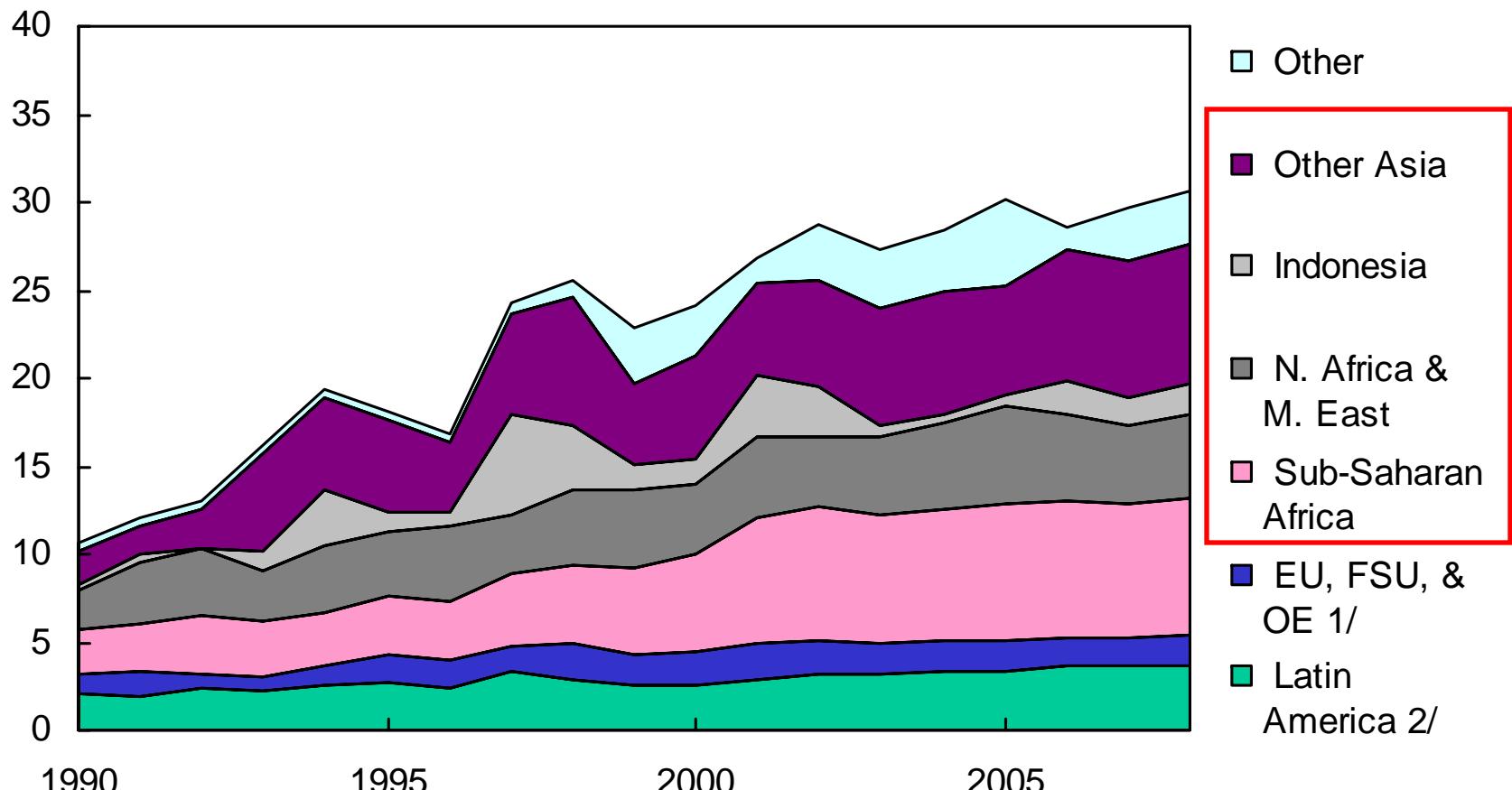
Index: 1971 = 100



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

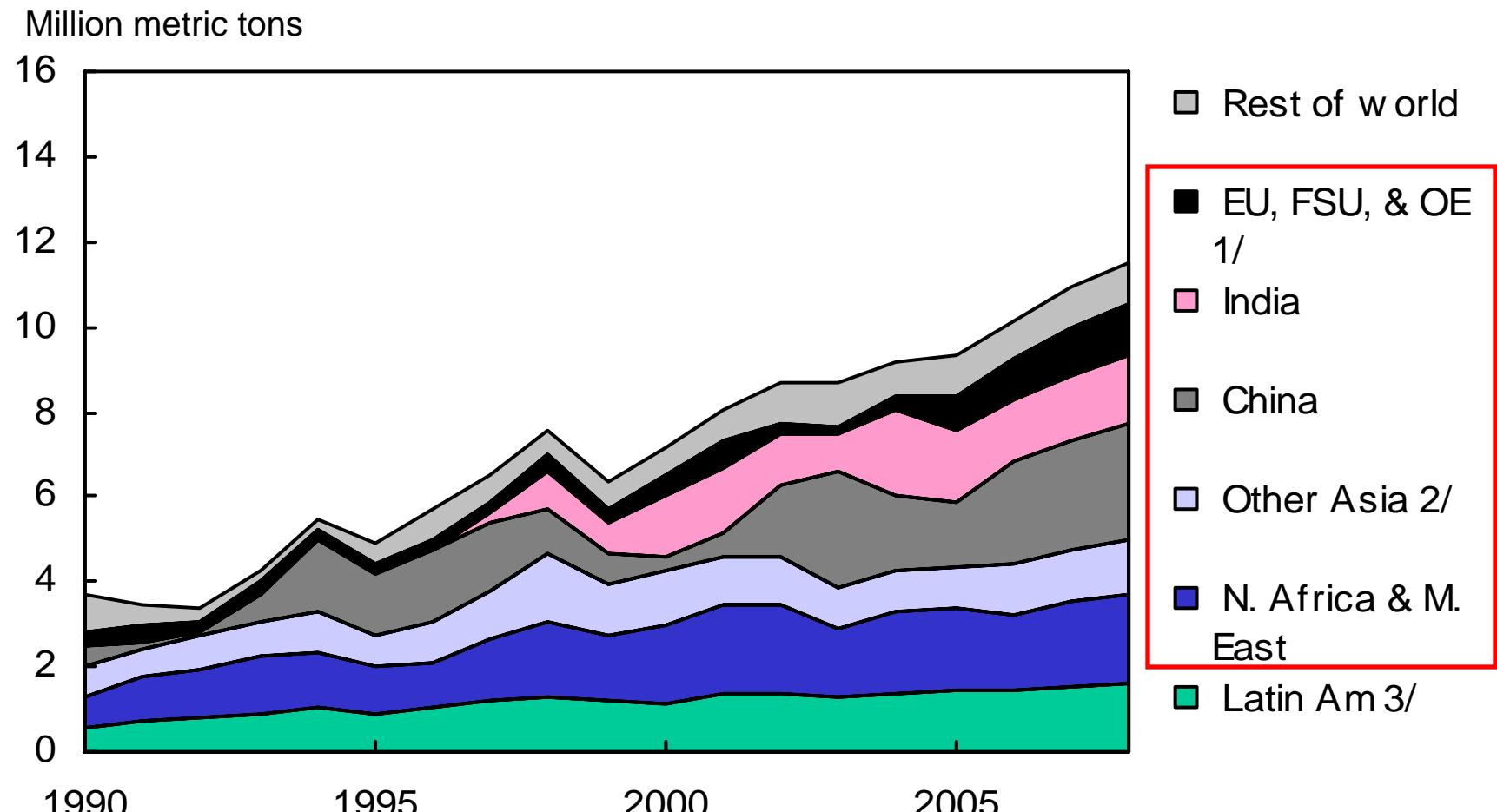
# Global rice imports

Million metric tons



1/ European Union, former Soviet Union, and other Europe. 2/ Includes Mexico.

# Global soybean oil imports

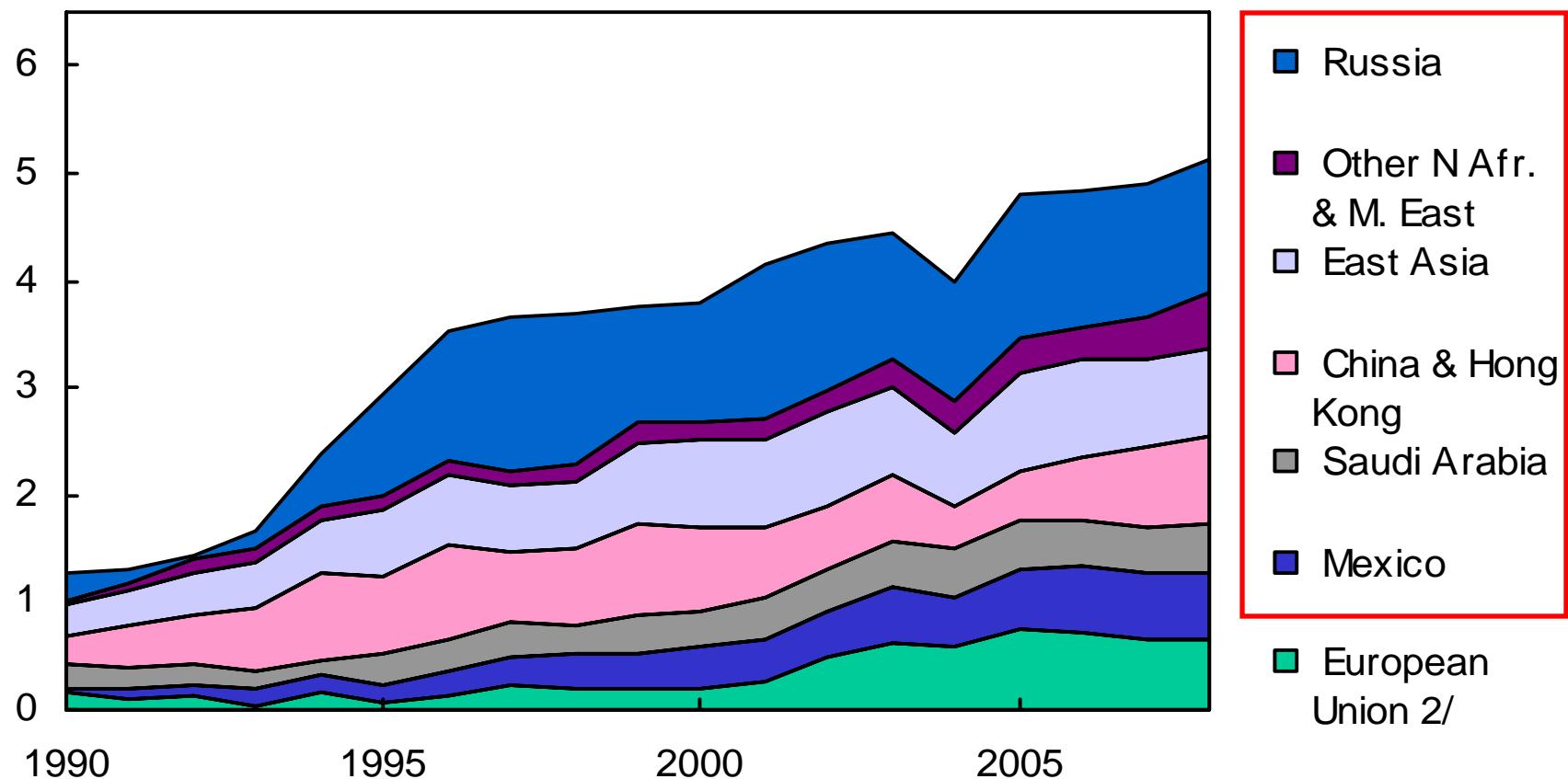


1/ European Union, former Soviet Union, and other Europe.

2/ Asia excluding India and China. 3/ Includes Mexico.

# Poultry imports 1/

Million metric tons



1/ Selected importers.

2/ EU-27 excludes intra-trade after 2002, EU-15 intra-trade before 2003, Slovenia before 1992.

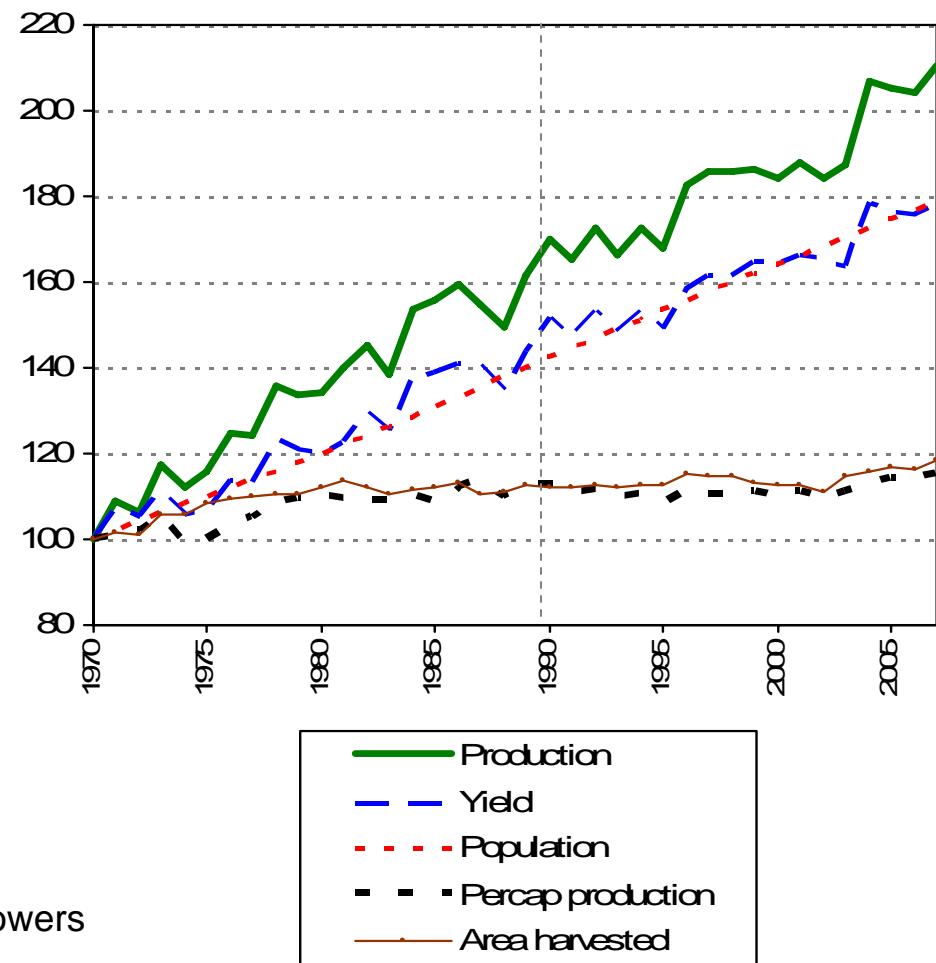
# Total world grain & oilseeds<sup>1</sup>

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 use	0.56	0.11

Index: 1970 = 100



<sup>1</sup> Total oilseeds = soybeans + rapeseed + sunflowers

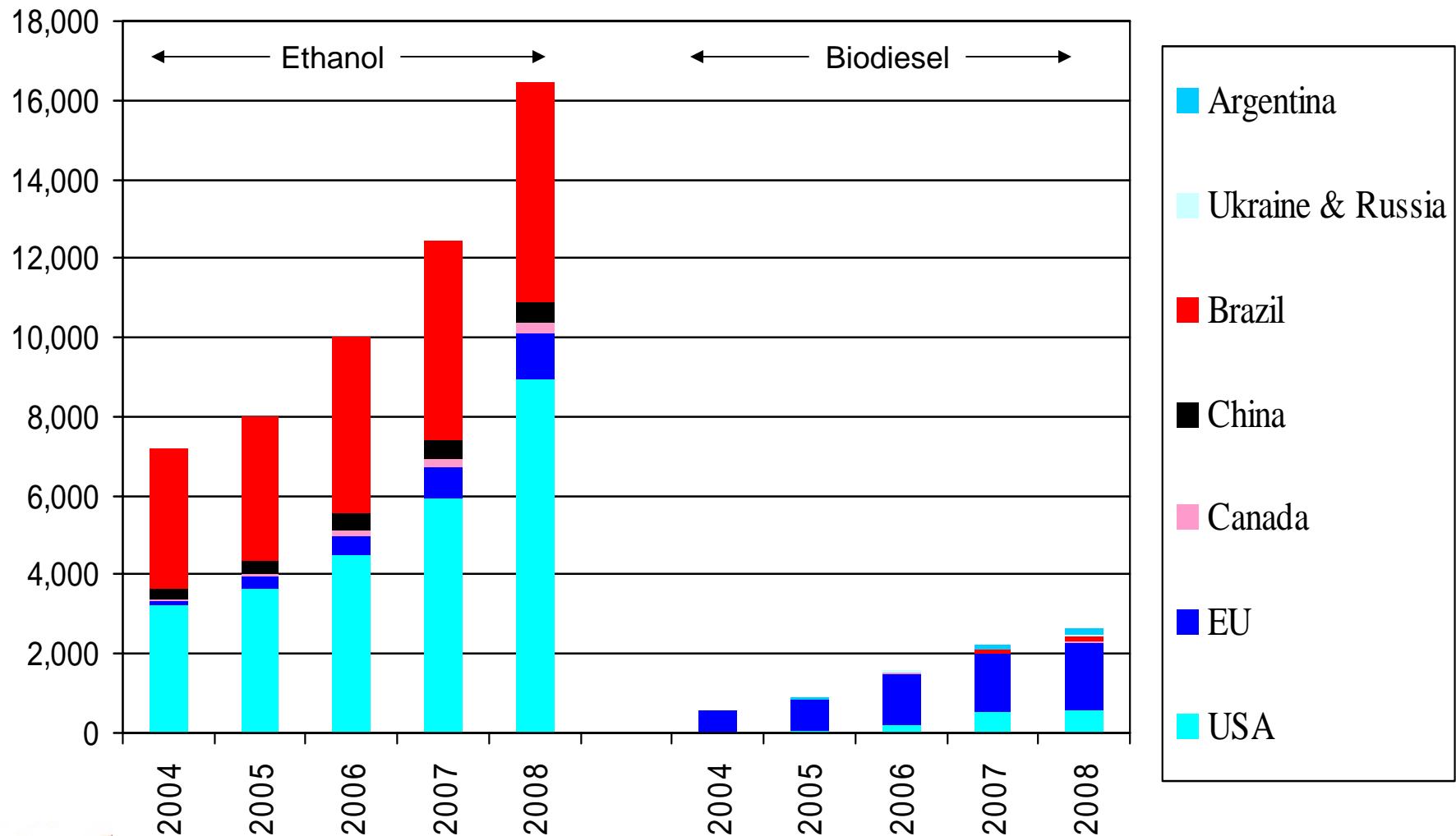
# Role of biofuels

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- Focus on feedstocks
- Major producers
- Impact on land use
- Impact on price relationships

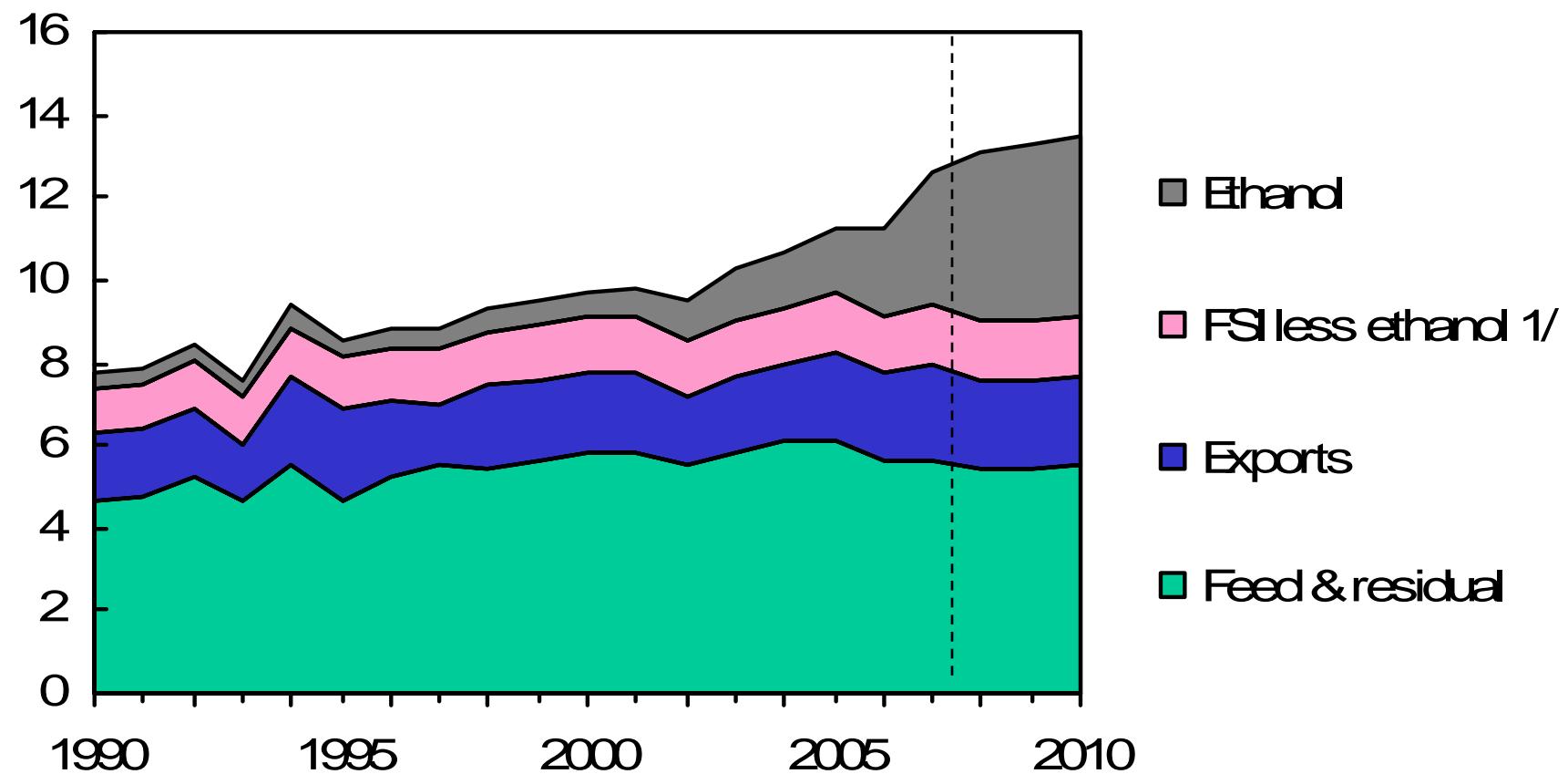
# Biofuels production: Largest producers

Million Gallons



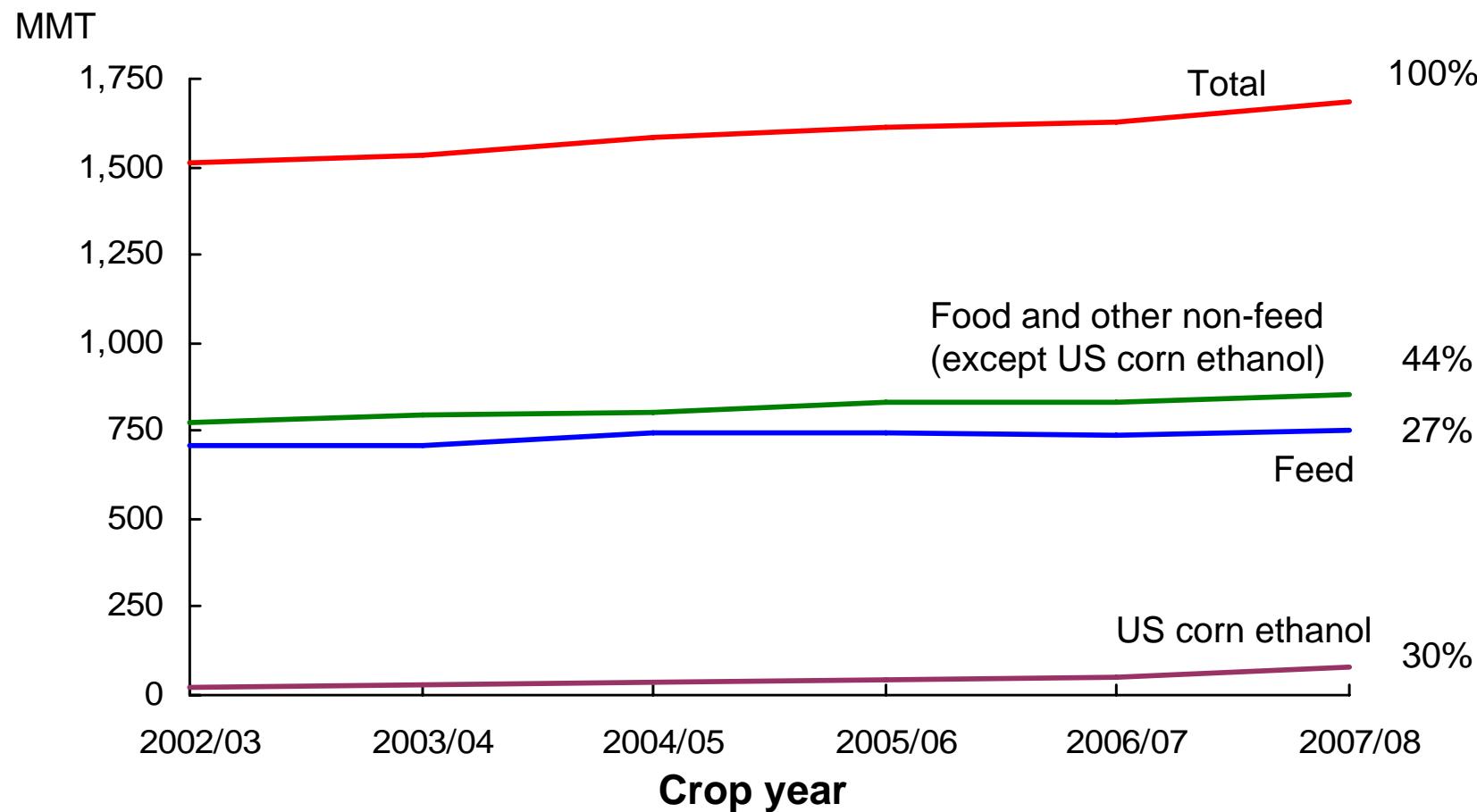
# U.S. corn use

Billion bushels



1/ Food, seed, and industrial less ethanol.

# Global wheat and coarse grains use, 2002/03 – 2007/08



Note: Category's share of the change in total use from 2002/03 to 2007/08.

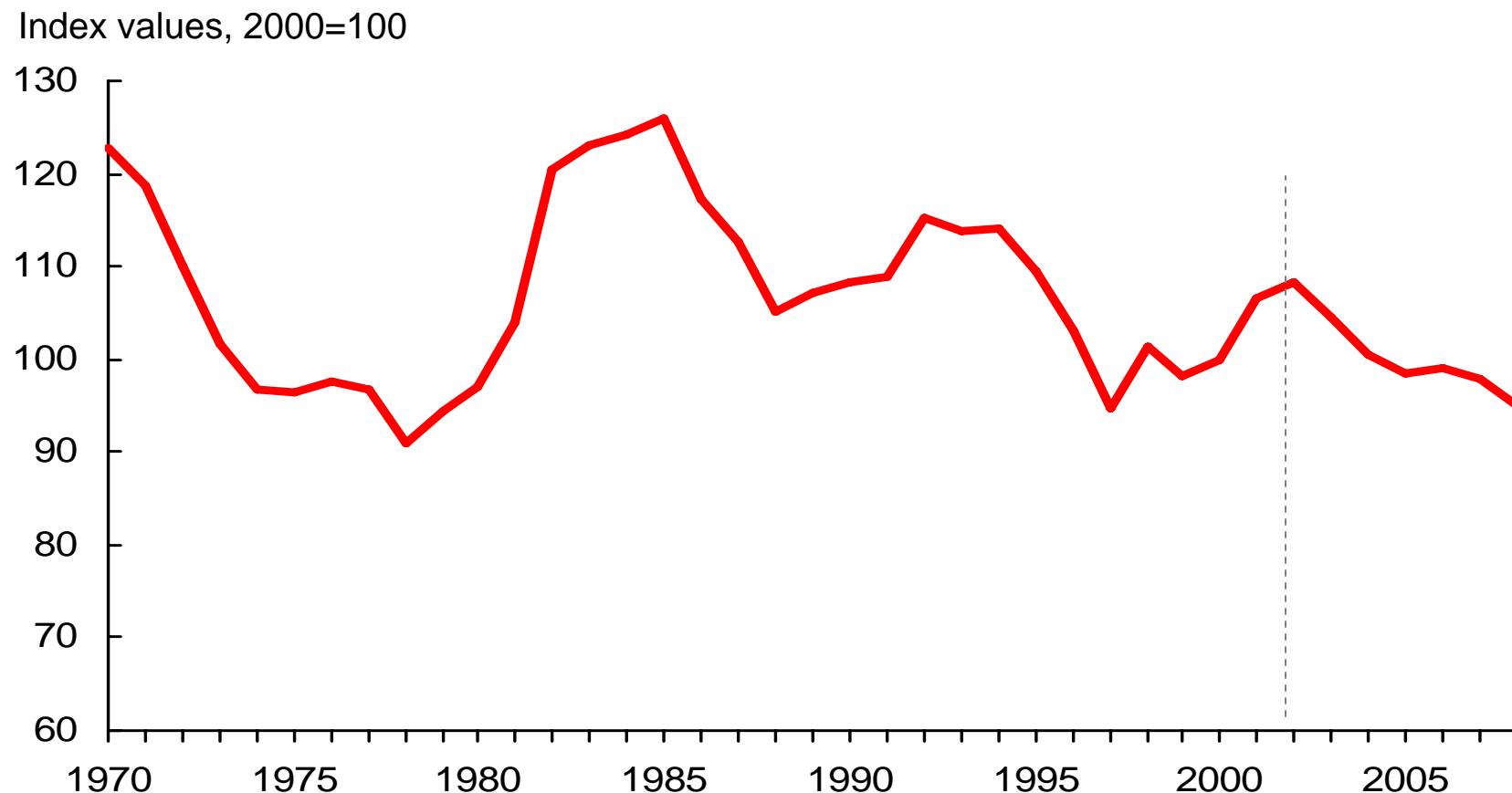
# Other contributing factors

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- Higher energy prices
- Weaker U.S. dollar
- Increasing foreign exchange reserves held by importers
- Adverse weather reduced crop production
- Role of hedge funds, index funds, & sovereign wealth funds:
  - (affect demand and/or volatility?)

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

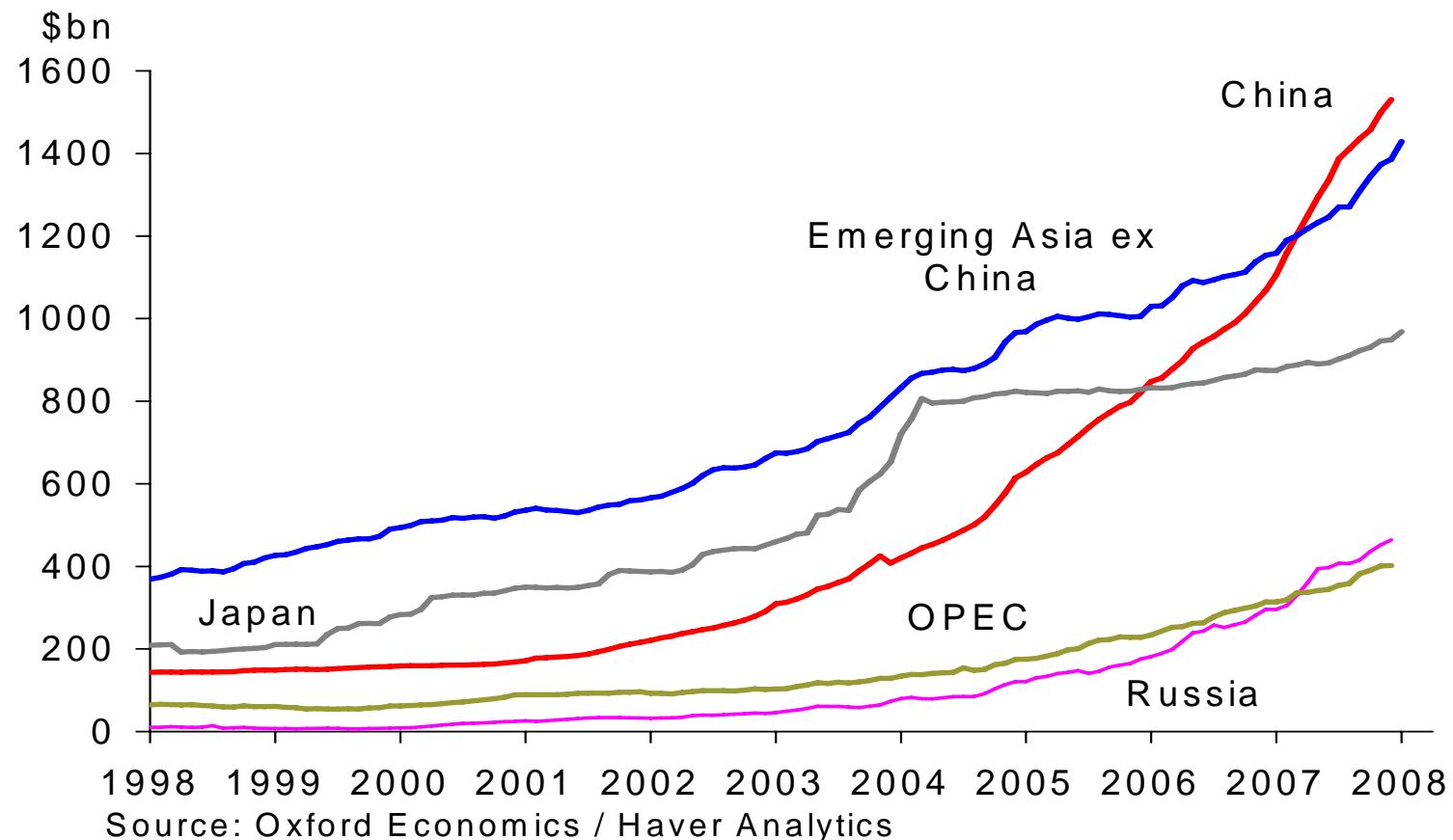
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1/ Real U.S. agricultural trade-weighted dollar exchange rate, using U.S. agricultural export weights, based on 192 countries.

# Foreign Exchange Reserves

## Emerging Asia: Foreign exchange reserves



# Adverse weather reduced crop production in 2006 and 2007

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- Ukraine & Russia: drought for 2 years
- Australia: severe drought for 2 years
- Europe: dry spring; harvest floods
- SE Europe: drought
- NW Africa: drought
- USA: late spring freeze
- Canada: hot and dry
- Turkey: dry

# Food Price Inflation: Policy responses by some exporters and importers

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- Export restrictions
- Lower import tariffs
- Consumer subsidies

# Defensive measures to control inflation -- Exporters

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➤ Eliminated export subsidies:

- China (grains & products)

➤ Export taxes:

- China (grains & products)
- Argentina (wheat, corn, soybeans, soymeal, soyoil)
- Russia (wheat)
- Malaysia (palm oil)
- Kazakhstan (wheat)

➤ Export quantitative restrictions:

- Argentina, Ukraine (wheat)
- India & Vietnam (rice)

➤ Export bans:

- Ukraine, Serbia, India (wheat)
- Egypt (rice)
- Kazakhstan (oilseeds & veg oils)
- Cambodia (rice to neighboring countries)
- Indonesia (rice)

# Defensive measures to control inflation -- Importers

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## ➤ Reduce Import tariffs:

- India (wheat flour)
- Indonesia (soybeans, wheat; will “green line” wheat flour)
- Serbia (wheat)
- Thailand (pork)
- EU (grains)
- Korea & Mongolia

## ➤ Subsidized distribution of imported staples

- Morocco (import wheat; subsidize bread sales)

## ➤ Promoting a/o subsidizing production:

- Indonesia (soybeans)

## ➤ Other:

- Iran imported corn from the USA

# Other developments

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➤ **Domestic price controls:**

- China (cooking oils, grain, meat, milk & eggs)
- Thailand (food)

➤ **Protests**

- Malaysia (millers & bakers)
- Indonesia (soybean prices; meat prices)
- Pakistan (wheat)
- USA (wheat)

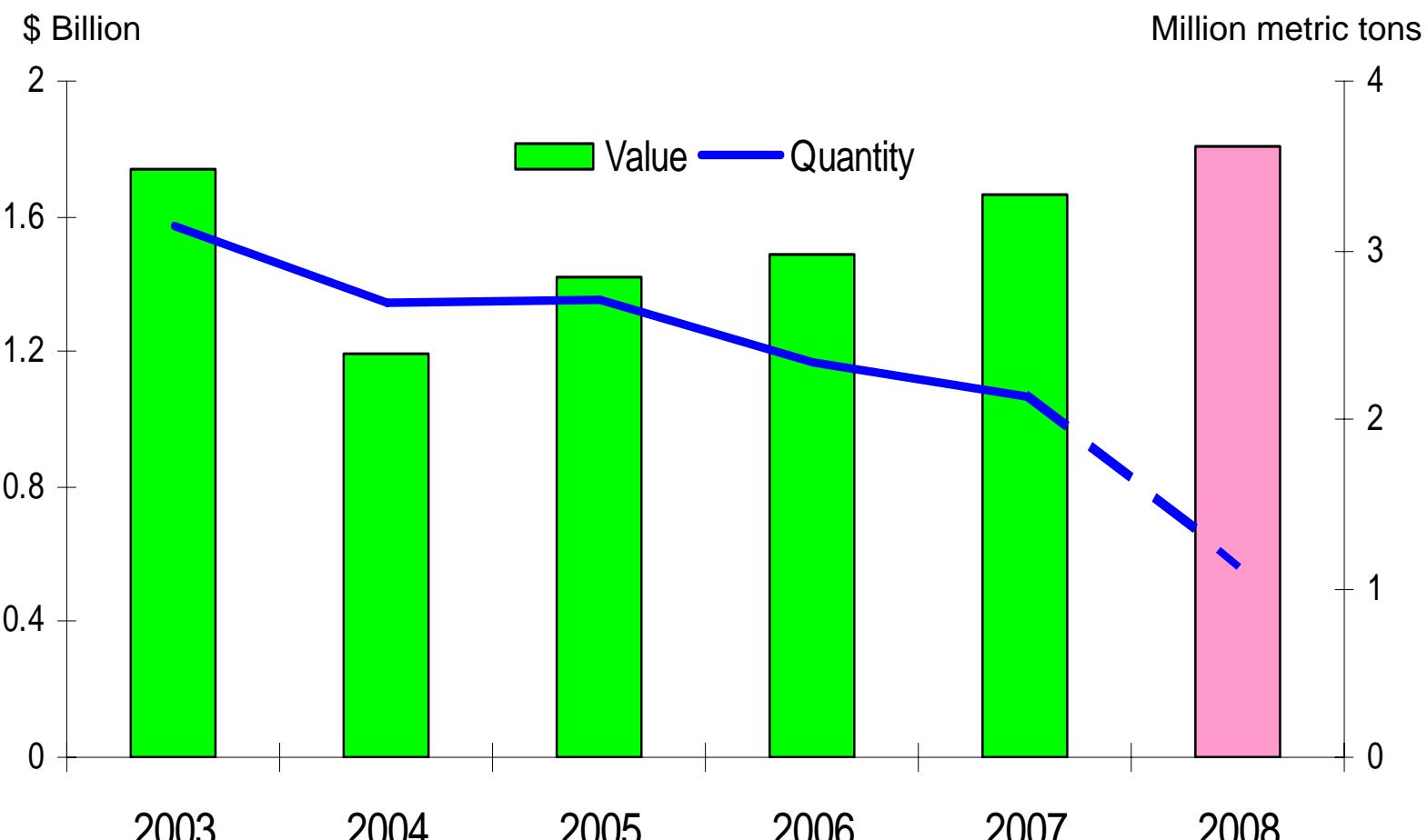
➤ **Food riots:**

Guinea	Mauritania	Morocco
Senegal	Cameroon	Mexico
Uzbekistan	Yemen	Niger
Burkina Faso	Egypt	Haiti
Ethiopia	Philippines	Thailand

## Impact of high food commodity prices on consumers food budgets

	High-income countries	Low-income food-deficit countries
<b>I. Base Scenario</b>		
Income	40,000	800
Food expenditure	4,000	400
Food as % of income	<u>10.0%</u>	<u>50%</u>
 <b>Disaggregate retail food spending (staples vs. non-staples)</b>		
Staples as % of total food spending	20%	70%
Expenditures on staples	800	280
Expenditures on non-staples	3,200	120
 <b>II. Scenario: 50% Price increase in staples Partial pass through on staples</b>		
Assumed % pass through	60%	60%
Increase in cost of staples	<u>240</u>	<u>84</u>
New cost of staples	1040	364
New total food costs	4,240	484
Food as % of income	<u>10.6%</u>	<u>61%</u>

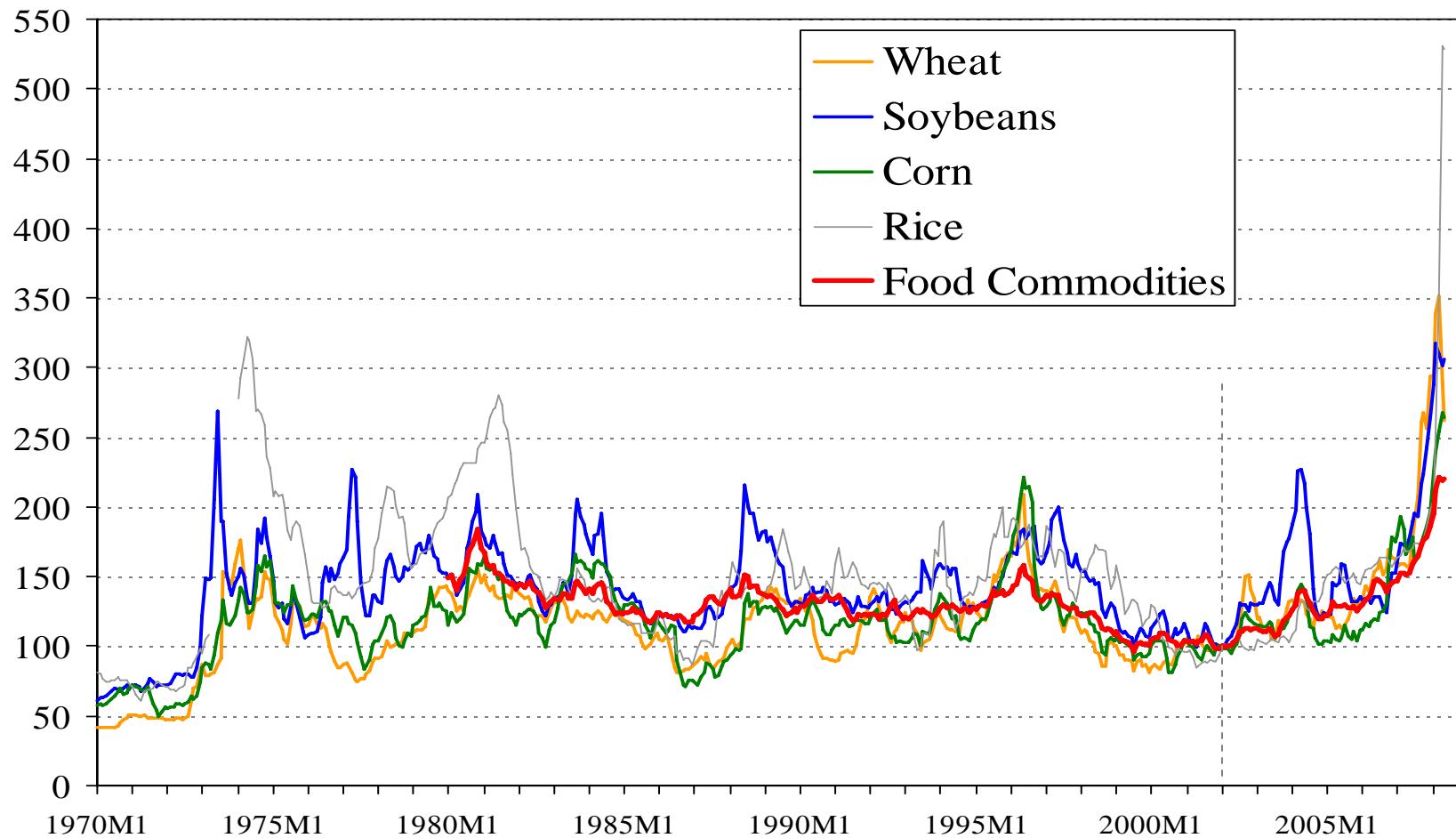
# U.S. Title II Food Aid Allocations



\*2008 is a forecast

# Food commodity price spikes since 1970

Index: January 2002 = 100



# Categories of factors contributing to higher food commodity prices

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## Temporary factors:

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

## Structural changes:

- High oil prices
- Biofuels production
- High ag production costs

## Continuation of long-term trends:

- Rapid economic growth in many developing countries
- Population growth in developing countries
- Increasing per capita meat consumption

## Questionable future impact:

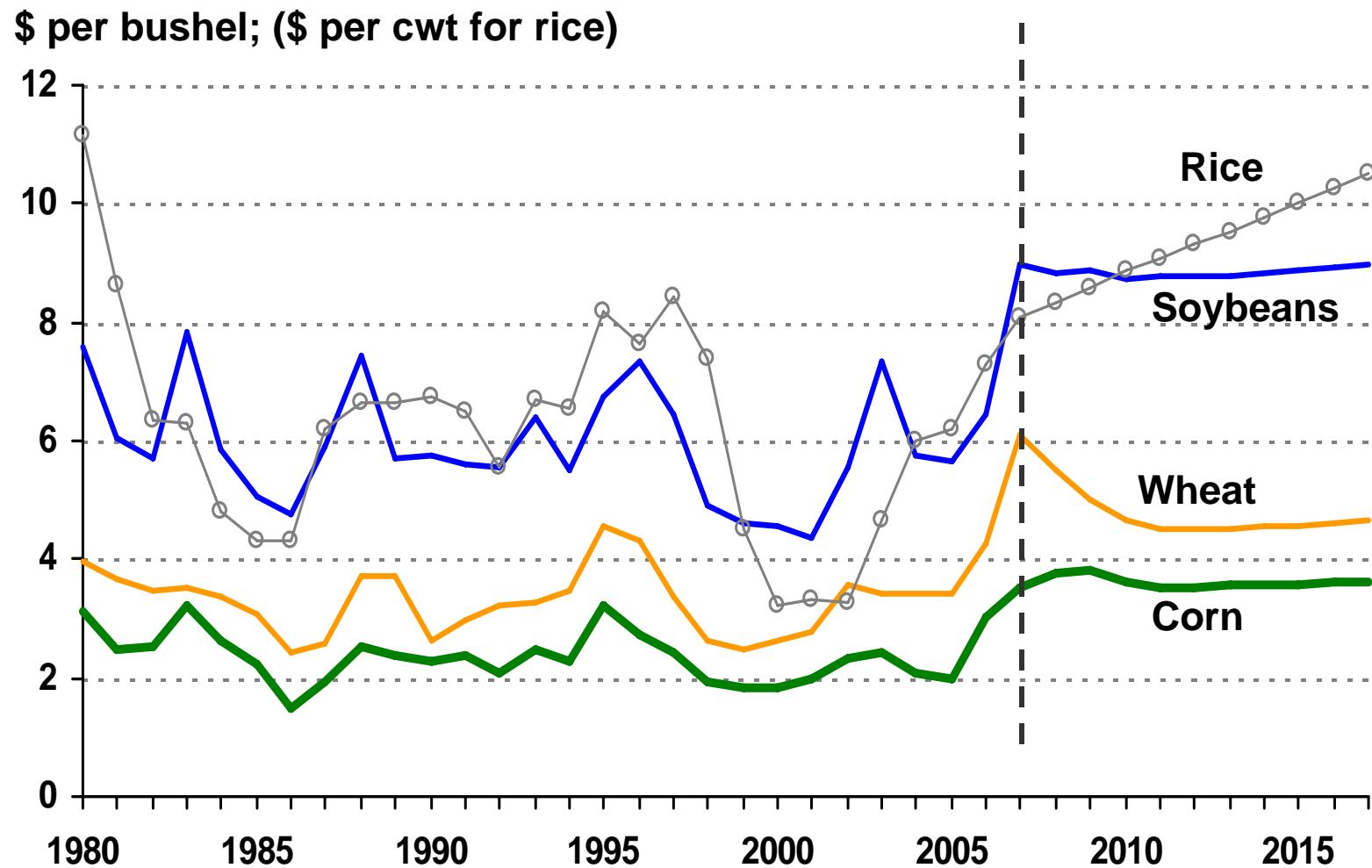
- Further dollar depreciation
- Slower growth in ag productivity
- Role of large foreign exchange reserves held by importers

- Supply factors in green
- Demand factors in brown

# U.S. Commodity Prices: History & Projections

## Soybeans, Wheat, Corn, & Rice

Projections from Nov 2007 USDA Baseline



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

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Report available at:

<http://www.ers.usda.gov/Publications/WRS0801/>

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