

***What's Driving High Food Prices?
Or is it Low Prices?***

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"What's Driving Food Prices"

July 2008, available at

www.farmfoundation.org

By Philip Abbott, Chris Hurt and Wally Tyner

Extraordinary Ag Commodity Price Volatility

	Corn \$/bu	Urea \$/ton
Apr, 2006	2.38	248
Apr, 2007	3.54	295
Nov, 2007	3.85	352
Apr, 2008	6.00	393
1-Jul-08	7.50	683
1-Sep-08	5.40	803
1-Oct-08	4.91	590
6-Nov-08	3.78	245

What did we see as **drivers of price run-ups** to July, 2008?

Do the same mechanisms explain **downturn?**
Do they apply to **fertilizer?**

Price dynamics and economic decisions

Instantaneous or lagged adjustments?

Expectations – **What to watch?**

Drivers of Price Changes

Supply – Utilization

Oil → Ethanol → Corn price link

Exchange rates and macroeconomic forces

Supply -Utilization

~~Weather?~~

~~Ag research – long run but not short run effect~~

World economic growth

Inelastic, growing net **export demand**

~~Chinese and Indian dietary transitions?~~

Low **stocks to use ratios** and inelastic demand

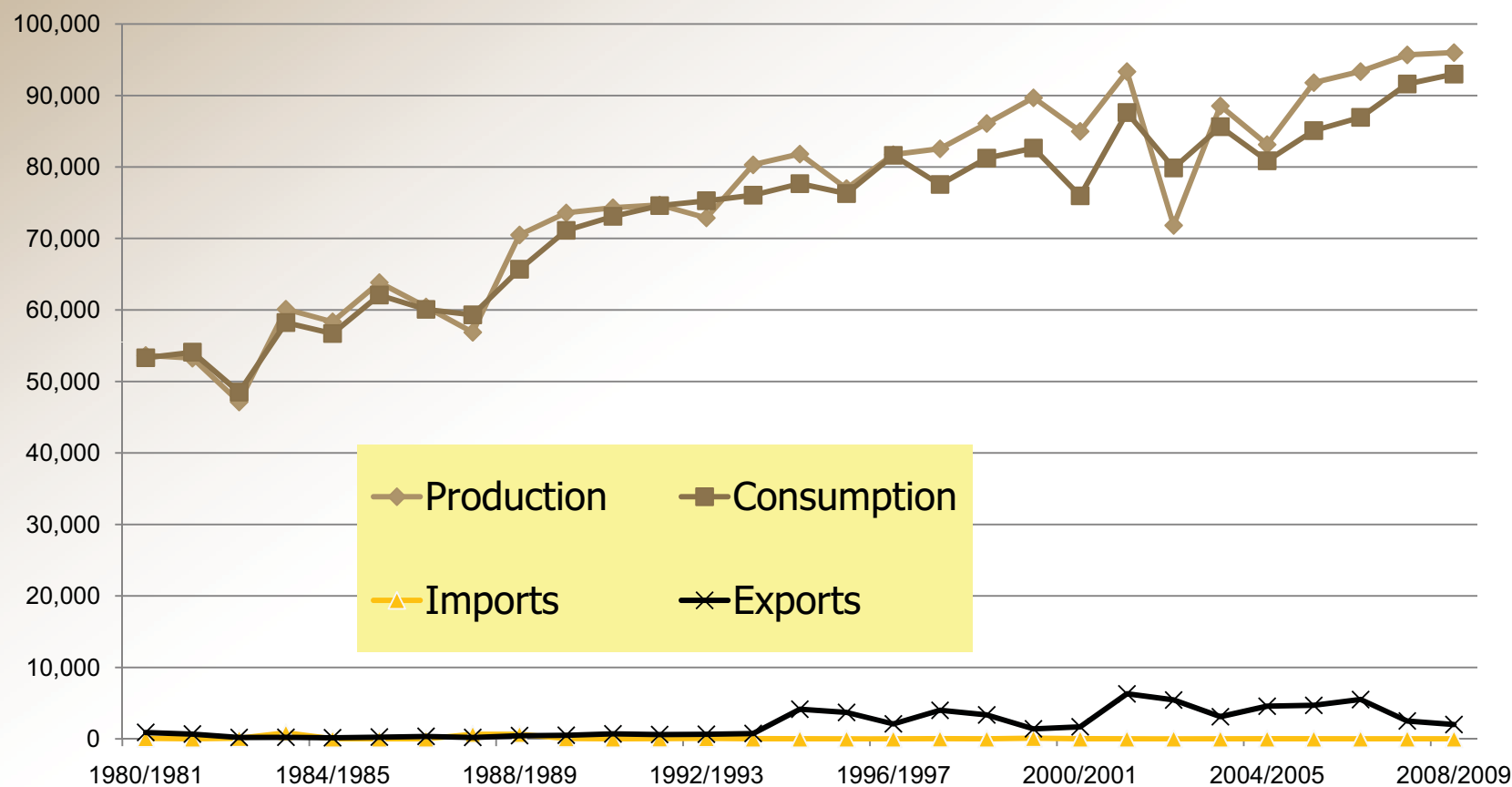
Policy responses of trading partners –

Tariff cuts and **Export taxes/ bans** (rice)

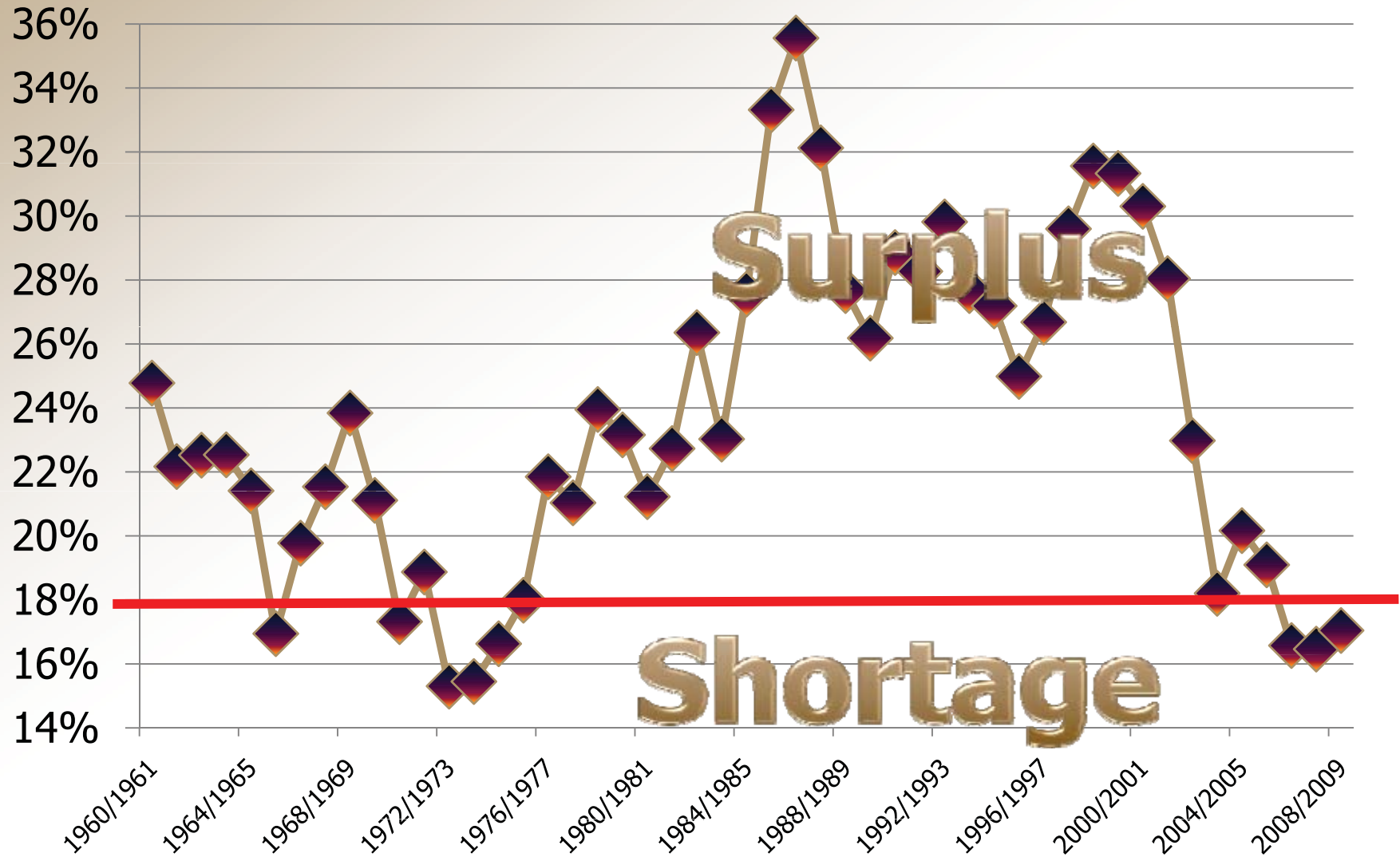
Food prices more affected in poor countries

Biofuels demands

India Rice Production/Consumption: (1,000 mt)



Total World Grains: Stocks to Use (1960-2008 Crops)





Mexico



Haiti



Philippines



Argentina

Current events -Supply-Utilization

Record U.S. and world cereals, oilseeds crops

Total grains, wheat, soybeans rice at record world output, corn close

Total grain production up 4% this year

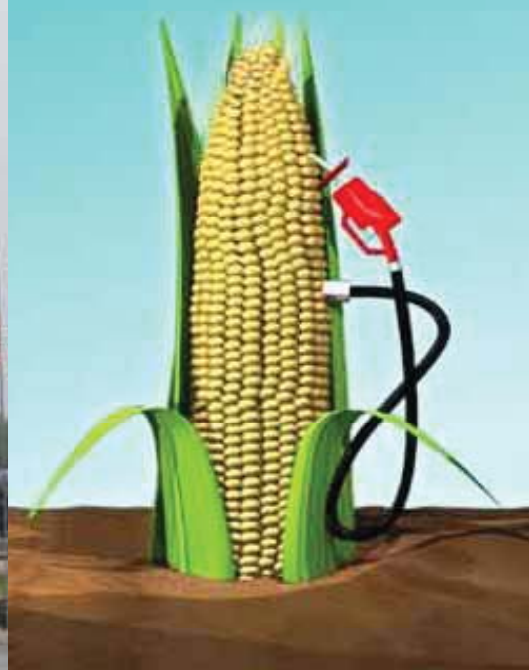
Stocks expected to be **restored** to more normal levels for most grains, oilseeds

Worldwide recession – but low income elasticities?

Biofuels demand means **expected corn stocks still low**, even with good production prospects

Today's corn prices would seem high had we not seen last 6-9 months

BioFuels Production



Oil – Corn Price Link

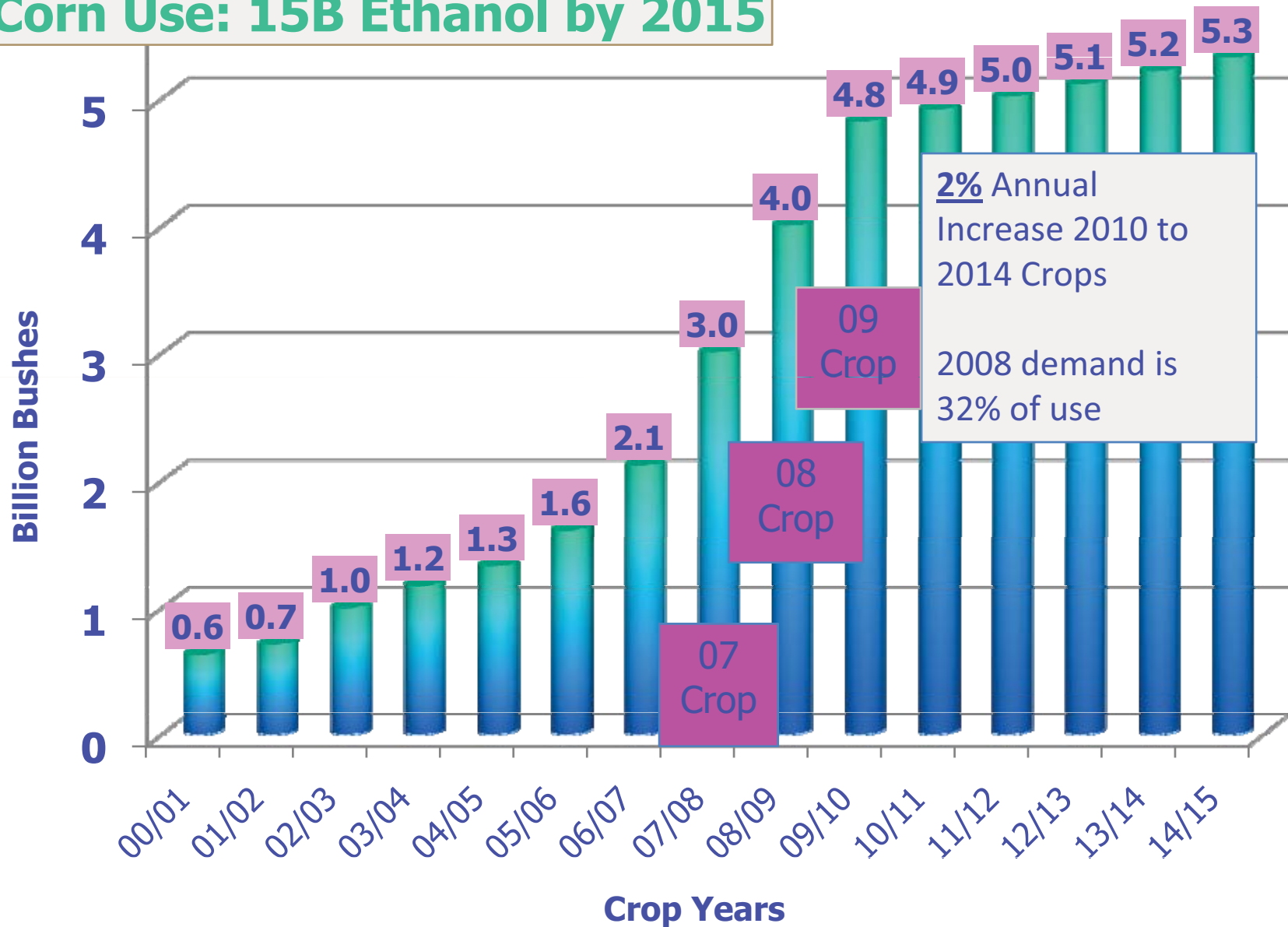
**Demand for corn to produce ethanol huge,
persistent**

Oil/ gasoline price sets **corn price at energy value**

Refiner subsidy increases corn price

RFS also drove capacity investments

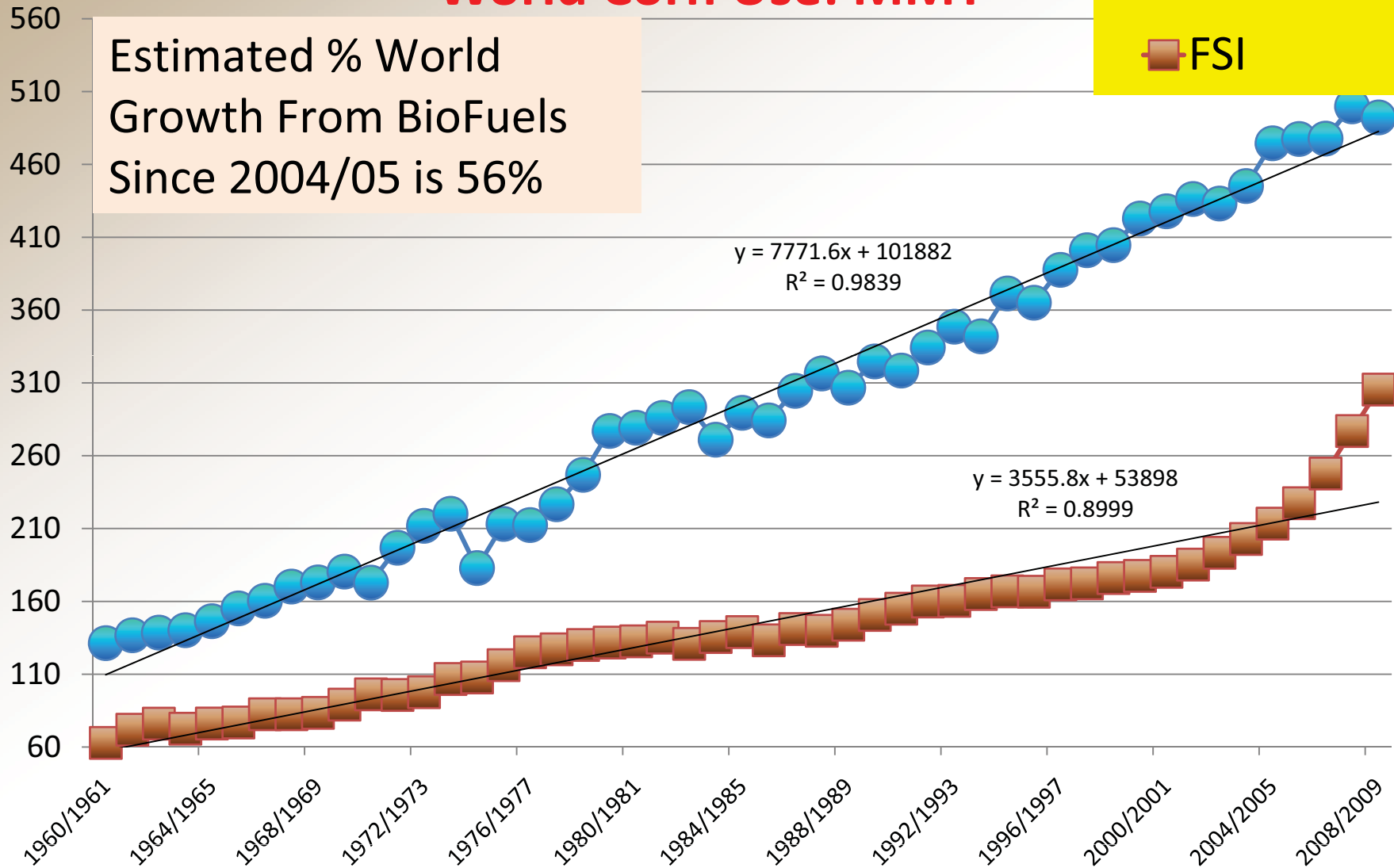
Corn Use: 15B Ethanol by 2015



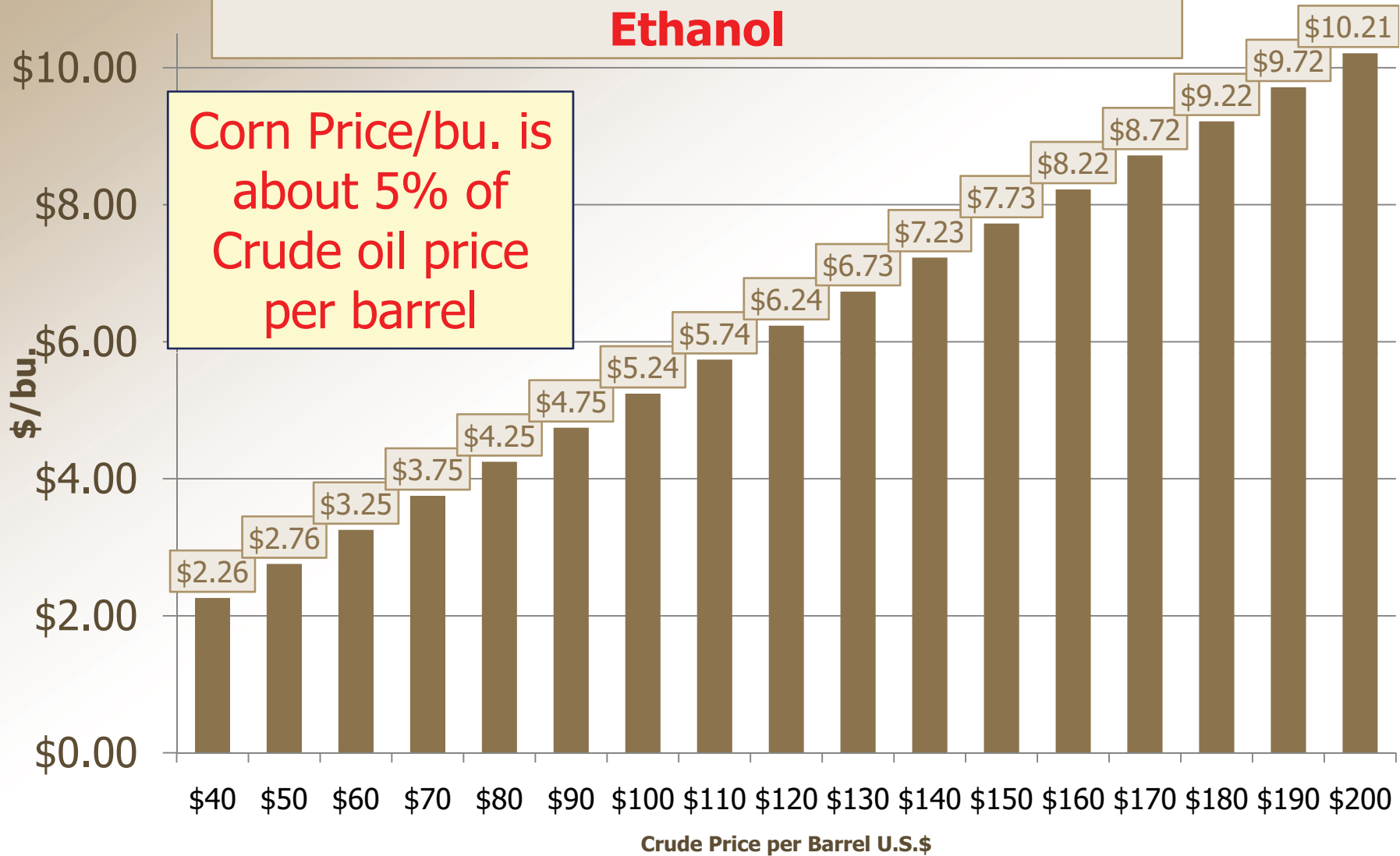
World Corn Use: MMT

- Feed Use
- FSI

Estimated % World Growth From BioFuels Since 2004/05 is 56%



Energy and Subsidy Value of U.S. Corn for Ethanol



Three Components of Ethanol Governmental Support

1. Renewable Fuel Standard (RFS):
 - Government mandated market
 - 2008 = 9 billion gallons/year, up to 2022 = 36bgy
2. Blenders Tax Credit (subsidy):
 - Ethanol Blender receives \$.51/gallon tax credit
 - Most bid into the price of corn = \$1.38/bu.
 - Drops to \$0.45 starting 1/1/09 = \$1.22/bu.
3. Ethanol Import Tariff:
 - \$0.54 + 2.5% per gallon import tariff
 - Protects against cheaper Brazilian sugar cane ethanol

Current events – Oil-Corn Link

Corn Price follows declining Oil Price

Capacity exists to meet corn ethanol RFS

Excess capacity?

Bad bets on future's prices, under-capitalized,...

Low expected corn stocks with good production prospects

Breaking the oil – corn price link

Low oil prices –

Food and feed demand dominate, outbid

RFS refiner fines, demand at this **minimum**

Low corn prices –

Ethanol refiner **capacity constraints**

Rents to refiners not corn growers

Dollar Depreciation/Appreciation



Dollar Depreciation / Appreciation

Extraordinary changes in exchange rates

Dollar depreciated

67% since 2002 (to July, 2008 45% to July, 2007, against €)

22% July 2007 to July 2008

More bilateral exchange rates changed in 2007/08

Commodity prices and exchange rates linked

Historical relationship evident

Prices in Euro's not dollars from 2007?

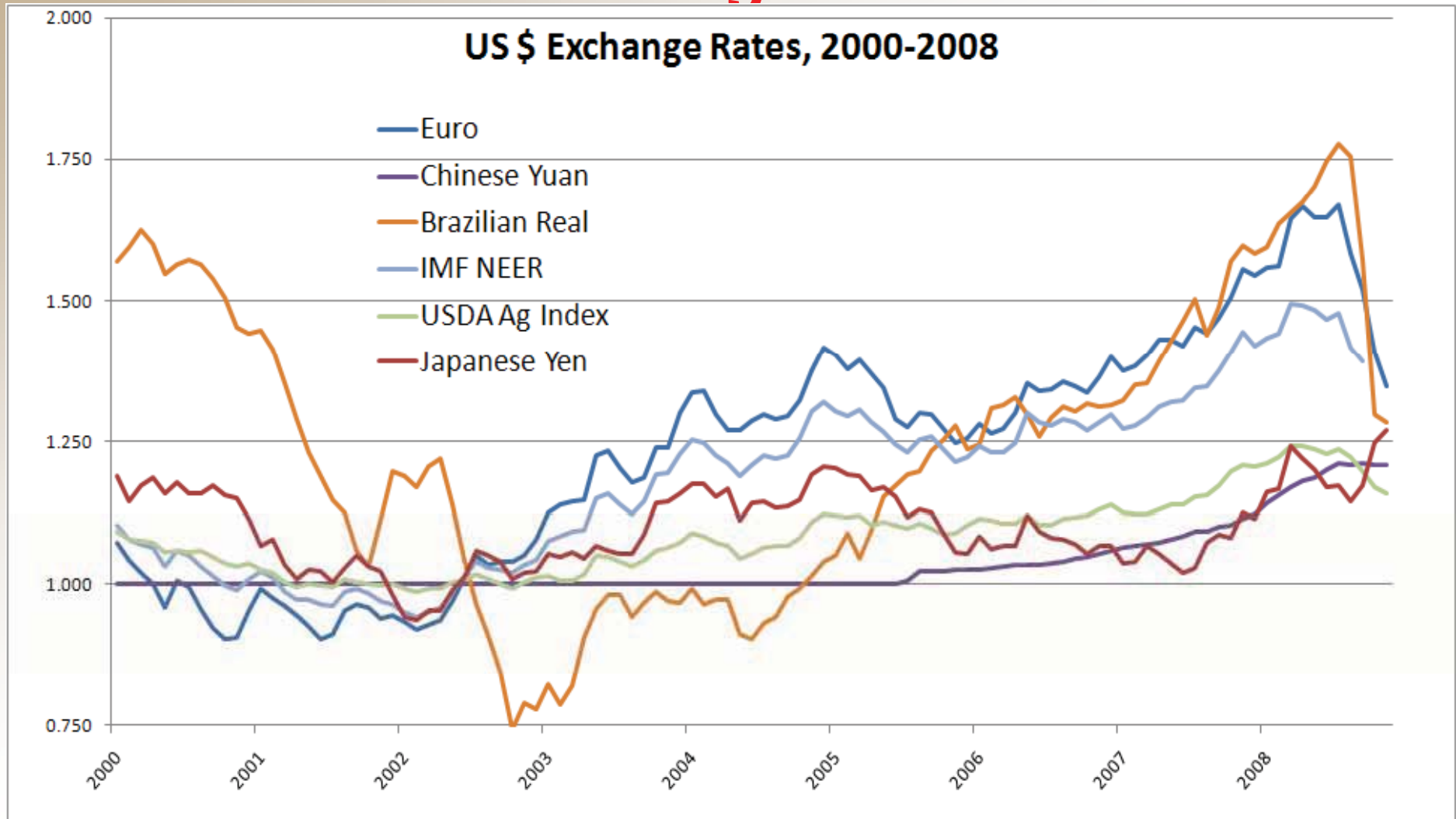
Crude oil, Corn in \$ versus Euro's

Exchange rate explains **Price/ S&U outliers**

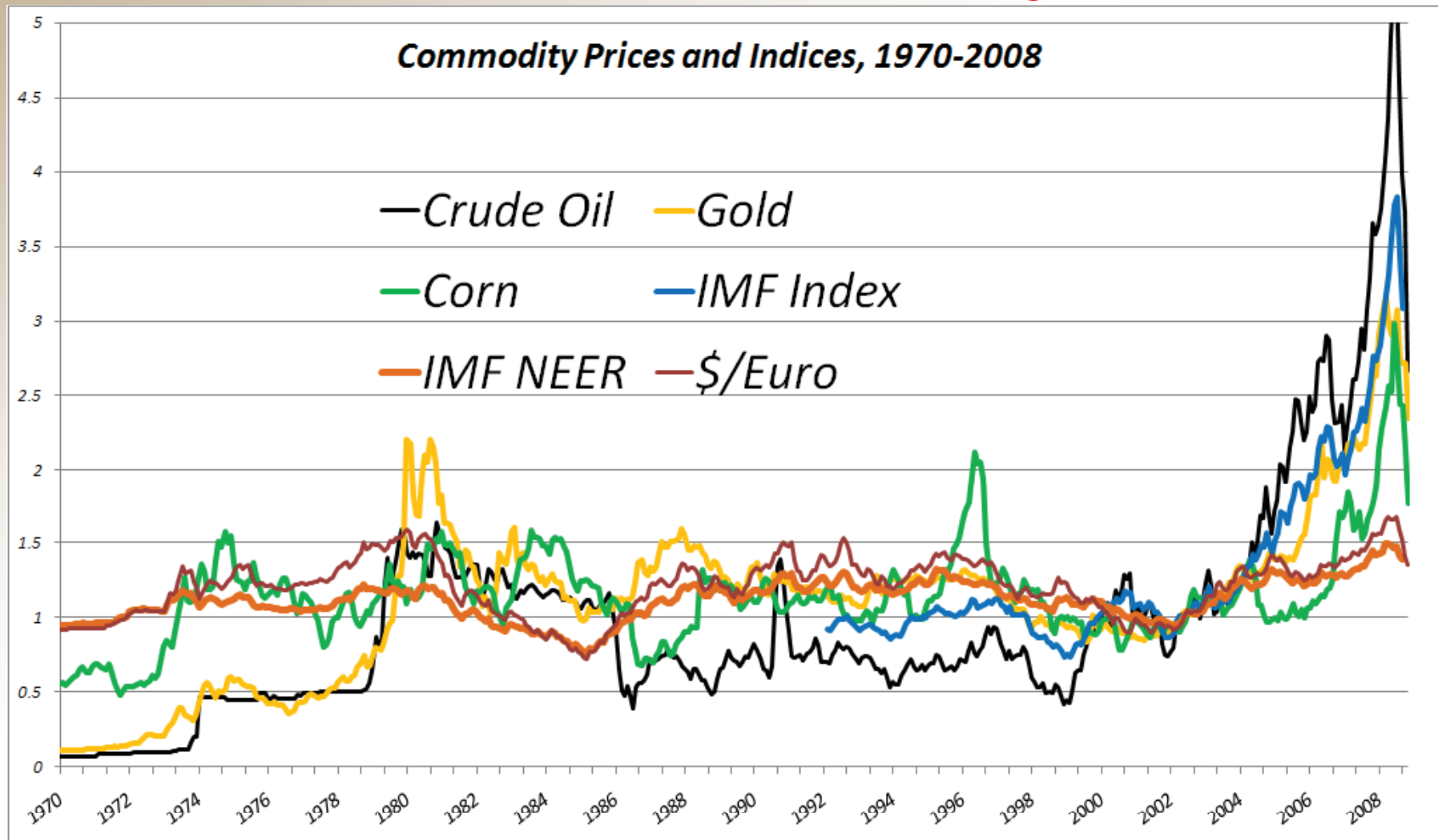
What leads or lags (oil or exchange rates)?

Both are **symptoms** of worldwide economic performance

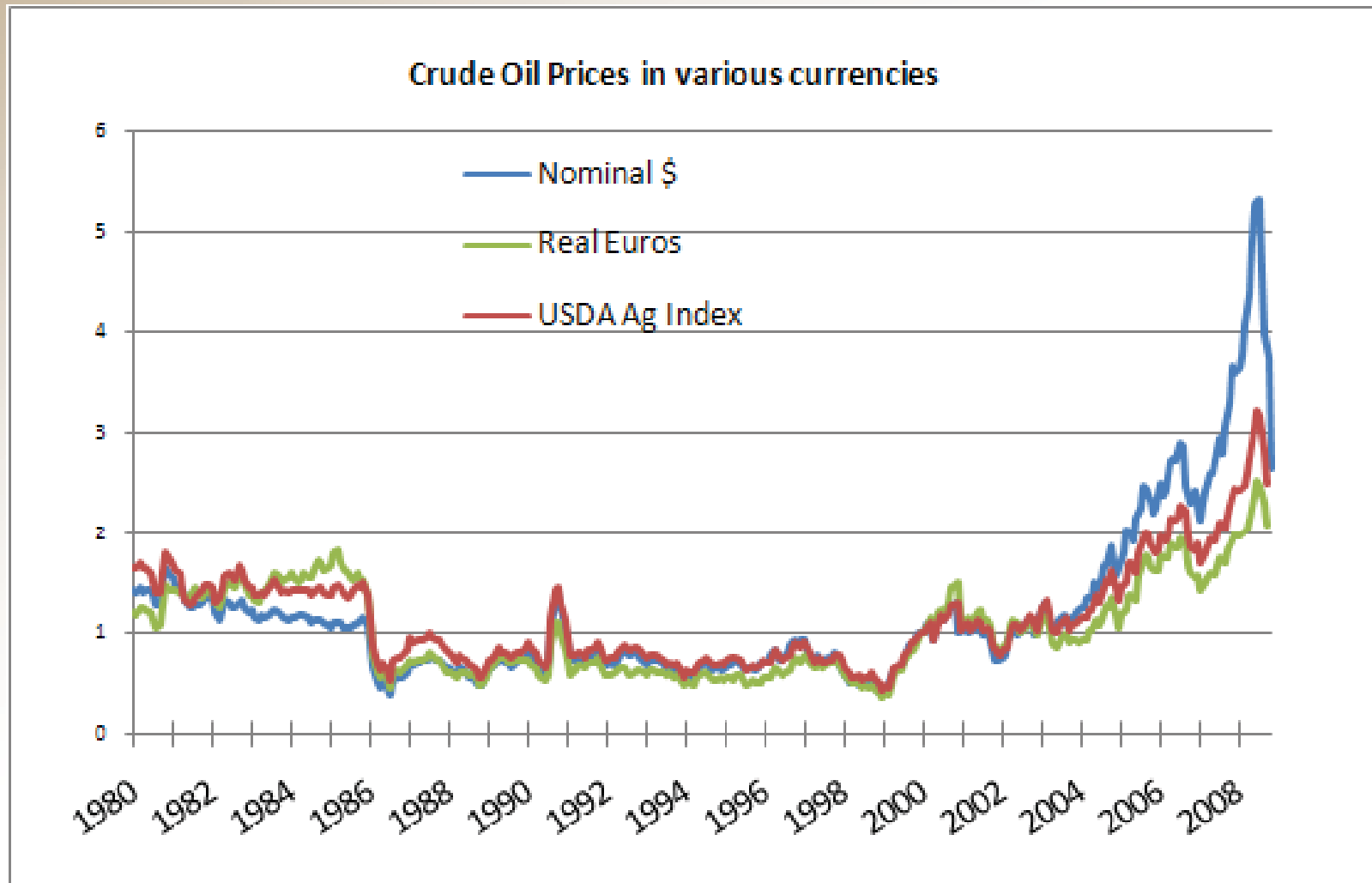
Exchange rates



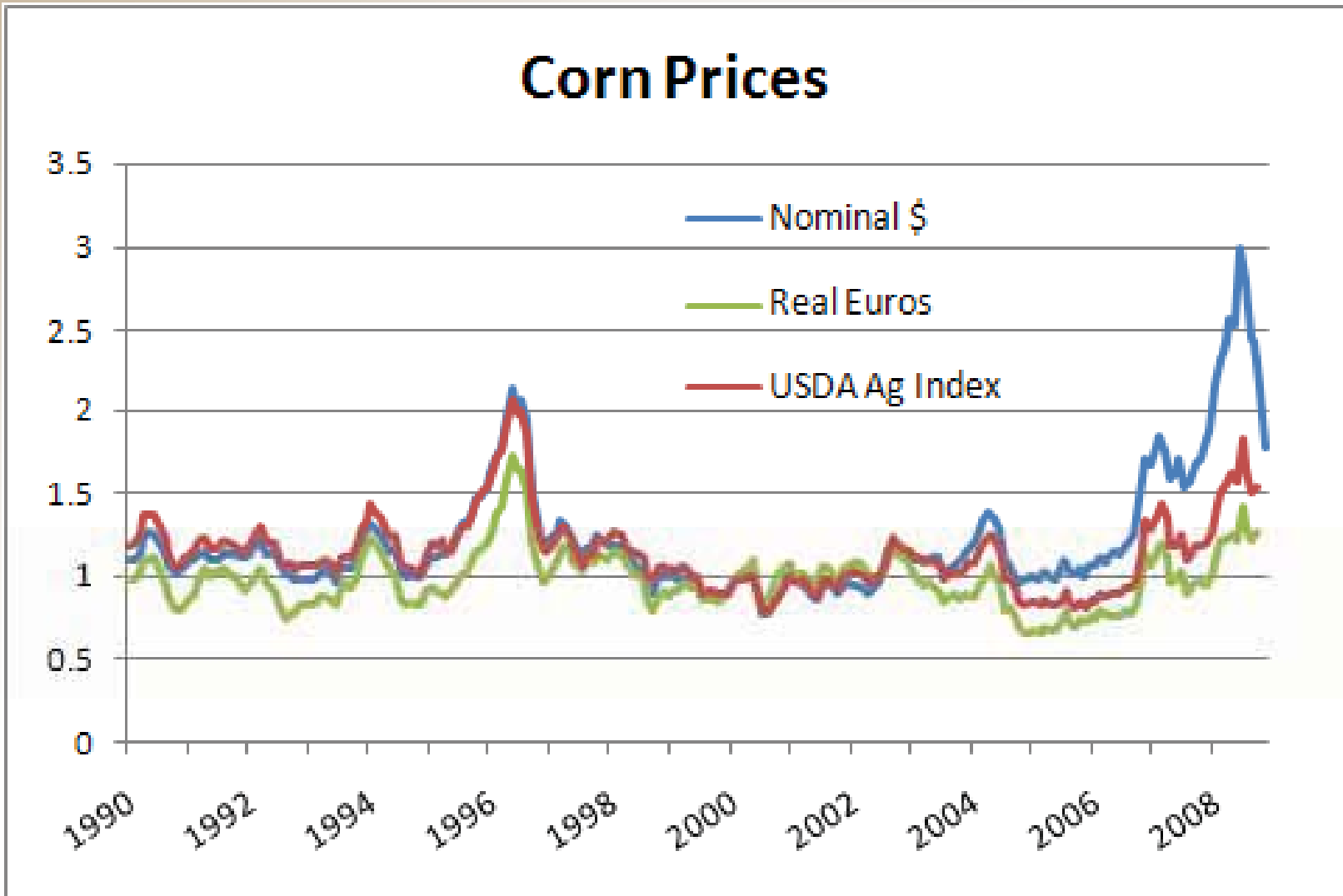
Commodity Price and \$ exchange rate correlation - History



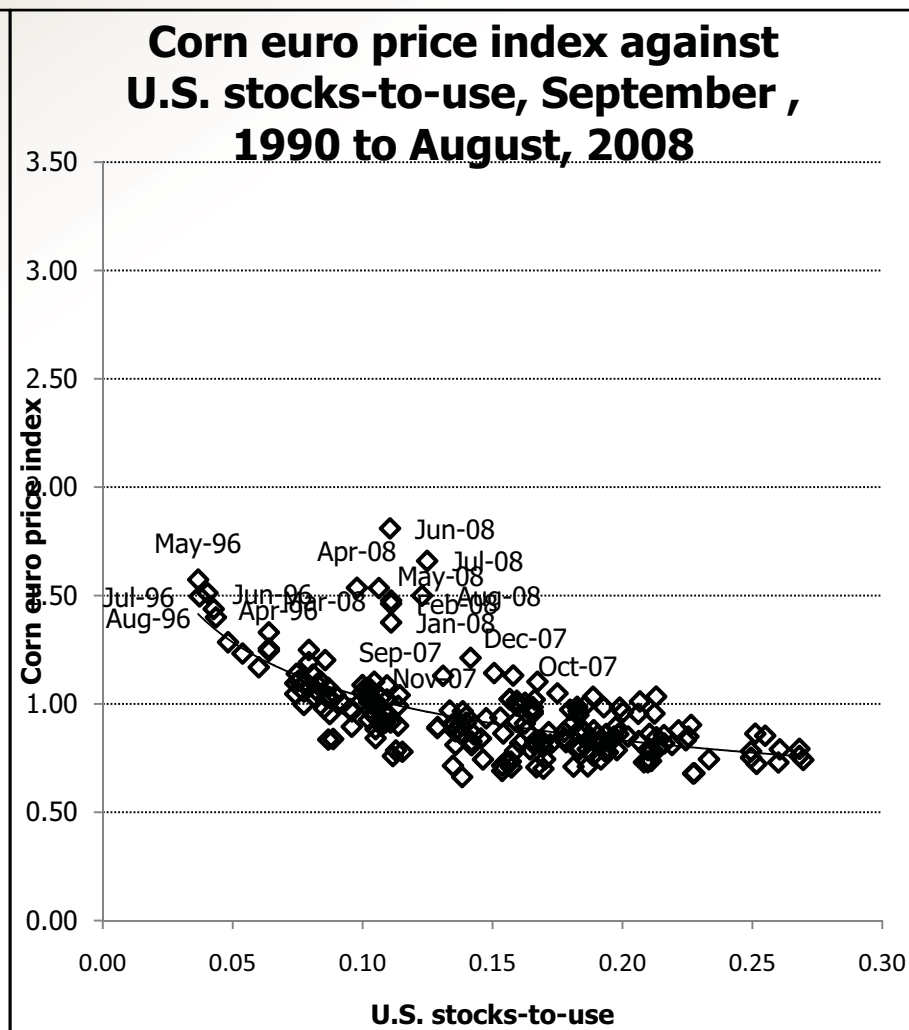
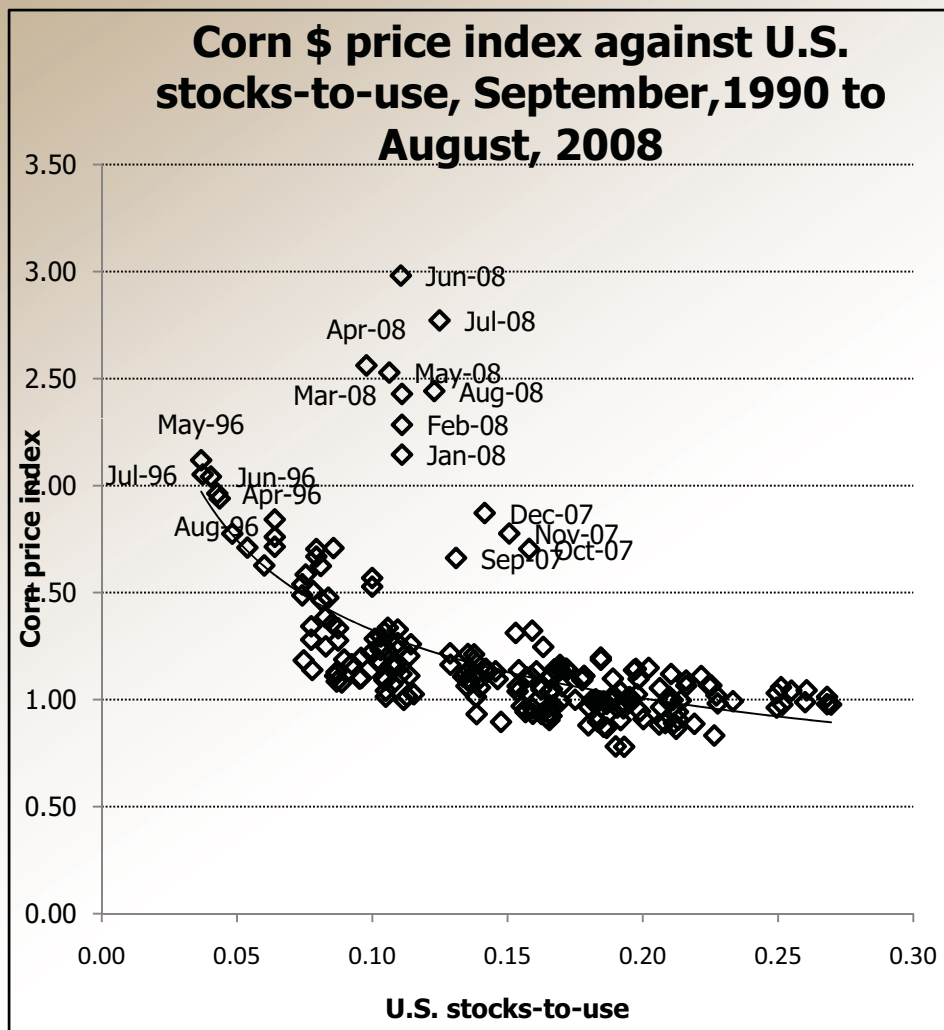
Crude Oil Price in \$ and €



Corn Price in \$ and €



Price versus Stocks to use in \$ versus €



Current events – Exchange rates

Dollar has appreciated in spite of financial crisis
22% from July to October, 2008

**Dollar appreciation, oil price decline, corn price fall
almost instantaneous**

**World wide recession, safe haven in financial crisis
behind \$ appreciation**

Magnitudes of adjustments larger than models predict

Recession reduces oil demand, price
Fed interest rate cut - \$ led oil and corn

CRUDE OIL NEAREST FUTURES .. weekly OHLC plot

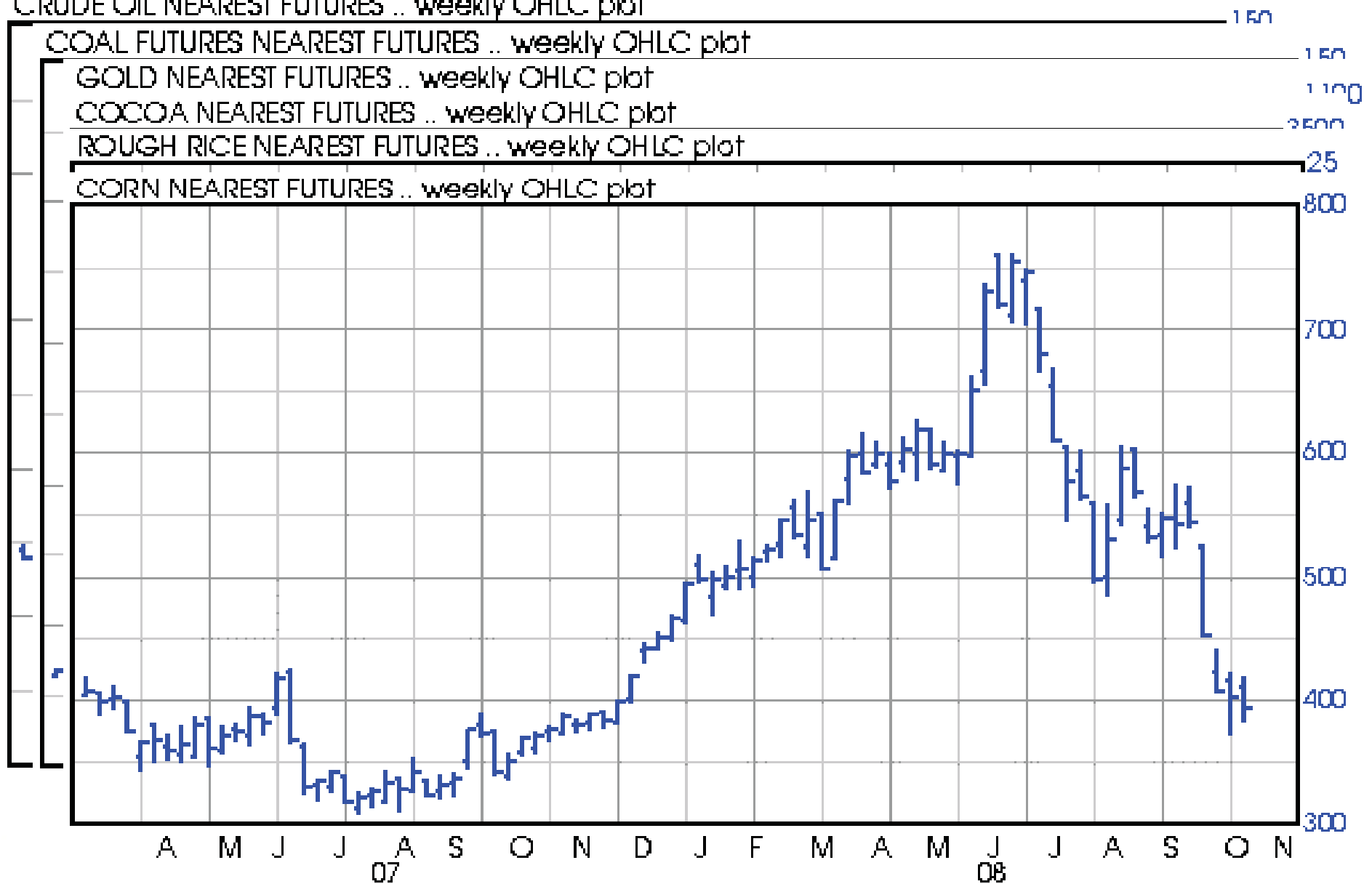
COAL FUTURES NEAREST FUTURES .. weekly OHLC plot

GOLD NEAREST FUTURES .. weekly OHLC plot

COCOA NEAREST FUTURES .. weekly OHLC plot

ROUGH RICE NEAREST FUTURES .. weekly OHLC plot

CORN NEAREST FUTURES .. weekly OHLC plot



Price Dynamics

Leads and lags → Difficult economic outcomes

Well integrated oil, grain, oilseed markets, foreign exchange market
Sticky capacity and price adjustments: ethanol, hog herds, fertilizer

Oil price run up with larger corn stocks, before RFS:

Huge ethanol profits, then excess capacity

Hog herds and feed costs

Margins, not prices adjust

Fertilizer

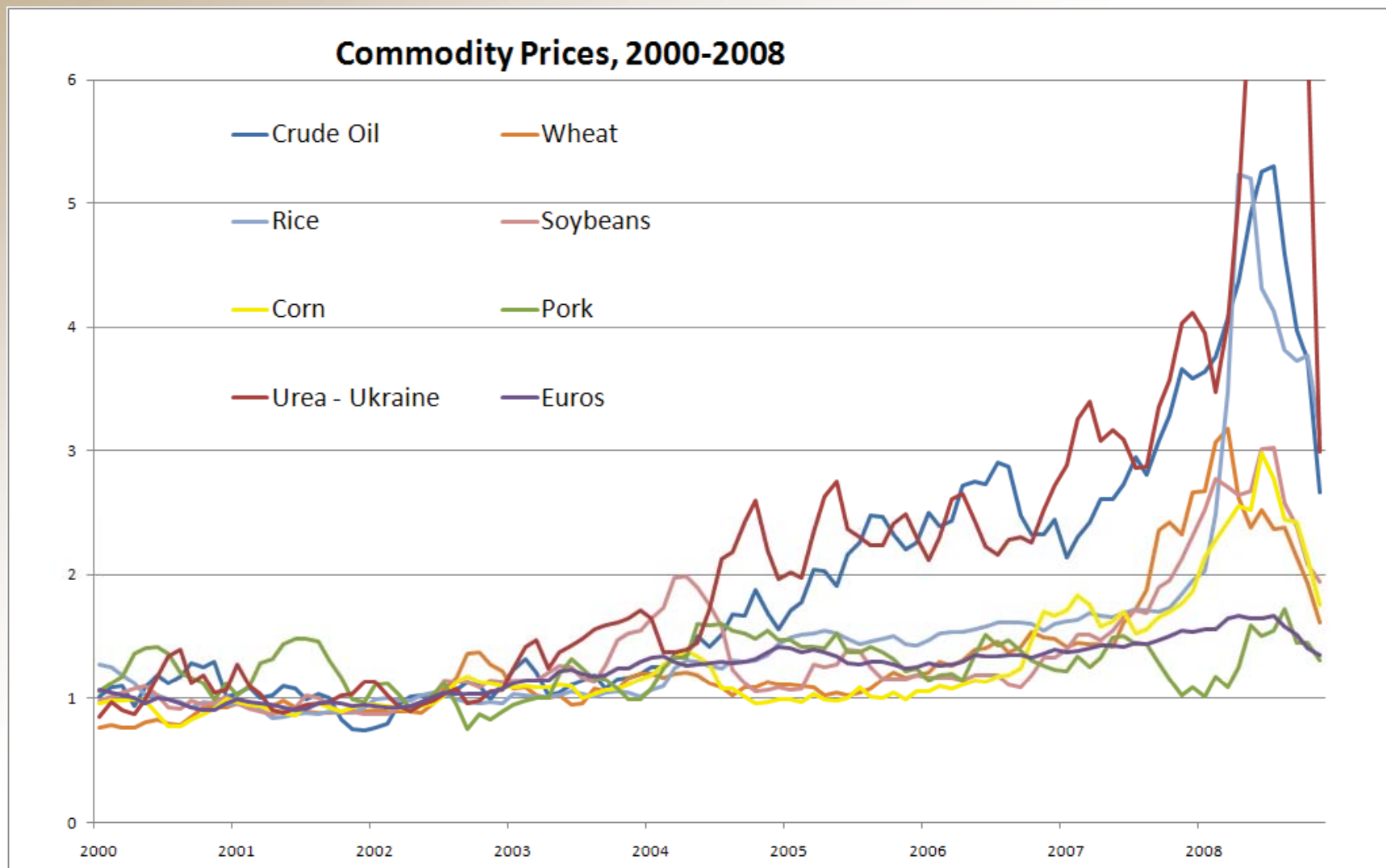
~~Cost push on corn (Texas A&M)~~

Derived demand – corn leads

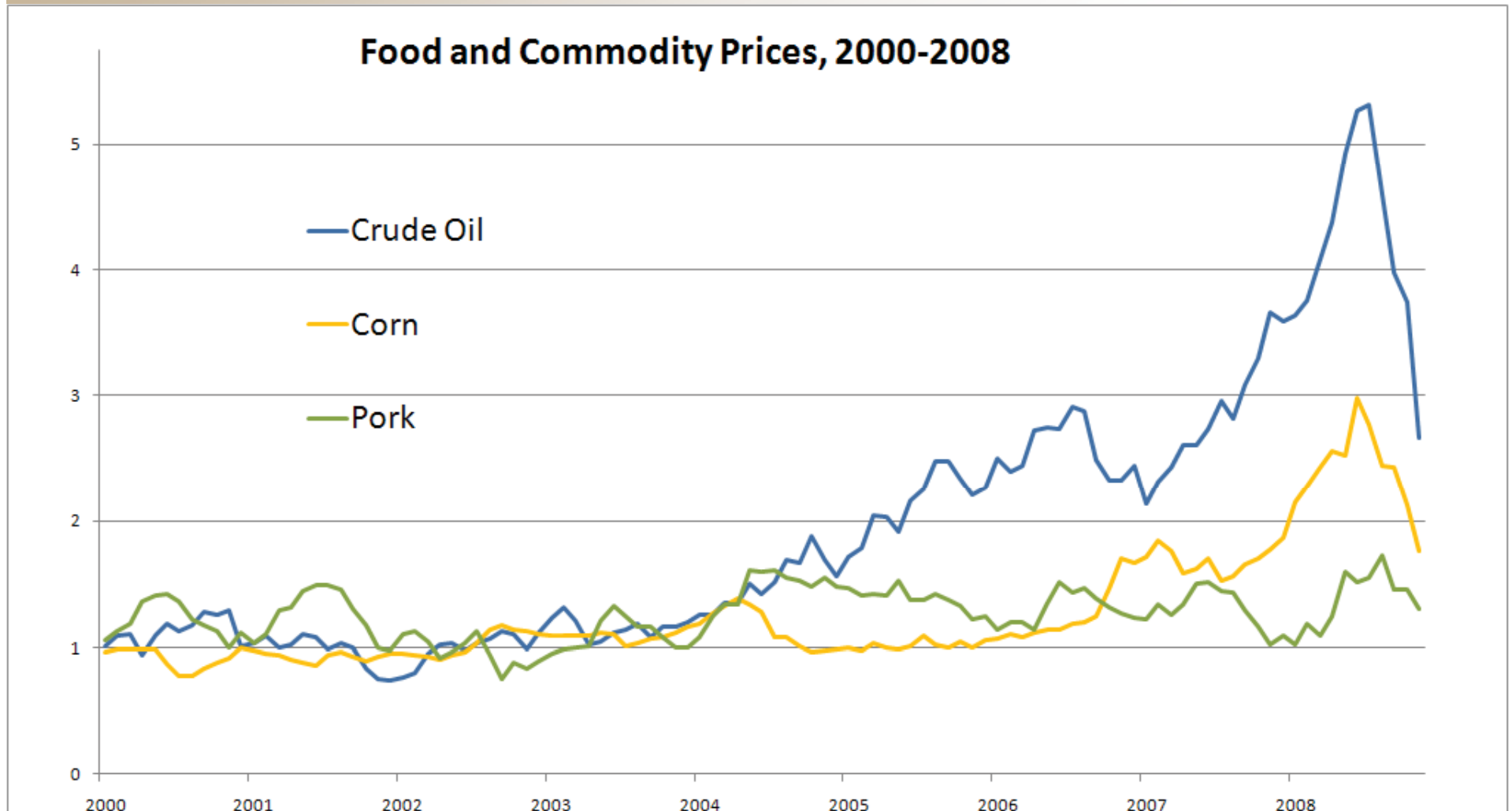
At high corn/fertilizer prices incentives to intensify

Capacity constraints – fertilizer overshoots

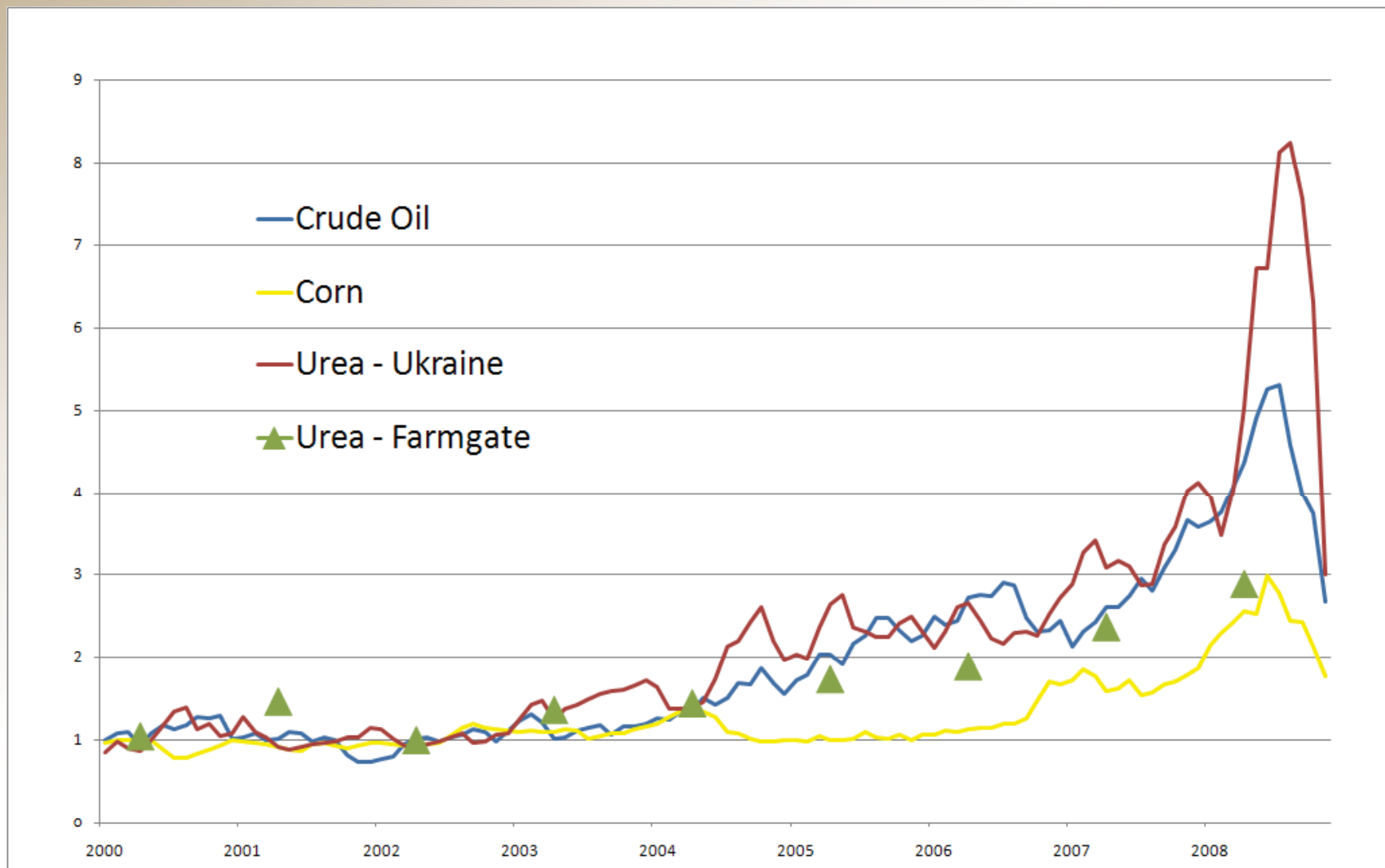
Commodity Prices since 2000



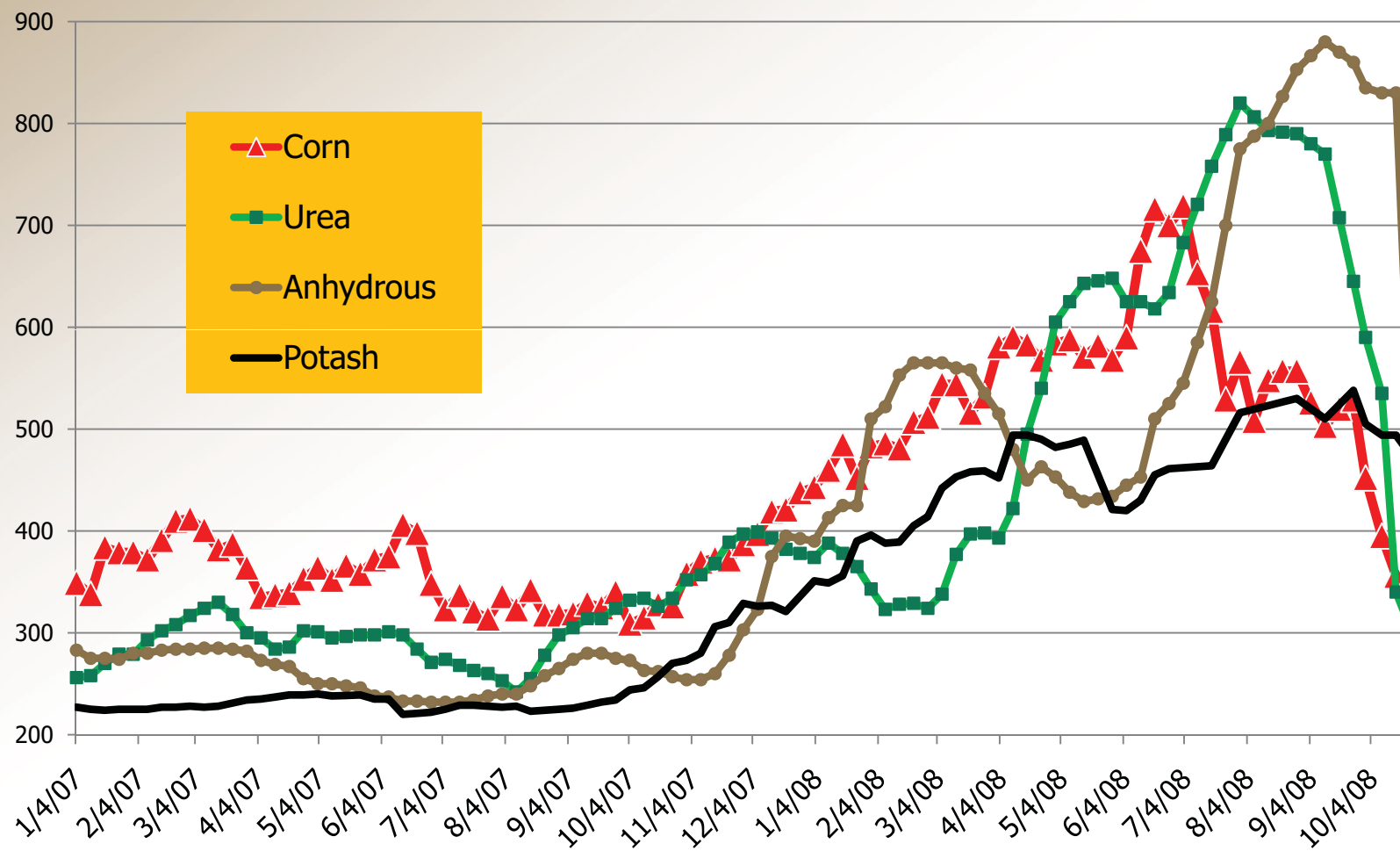
Oil, Corn, Pork Prices



Oil, Corn, Fertilizer Prices



Weekly Corn and Fertilizer Prices



Current events – Price Dynamics

\$, oil and agricultural commodities moving together – in predictable if poorly understood ways

Worldwide recession, financial crisis, Fed/Treasury policy

Fertilizer price collapse – delayed

Capacity constraints delay price declines

Prices not costs matter

Farms put off fall applications

World prices matter to Asian derived demand



Expectations

Sometimes they are way off

What to Watch?

\$ exchange rate and Oil Price critical to agricultural markets

Volatile, unpredictable in short run

Strongly dependent on **worldwide economic performance**

Be aware of **lagged adjustments in related prices**

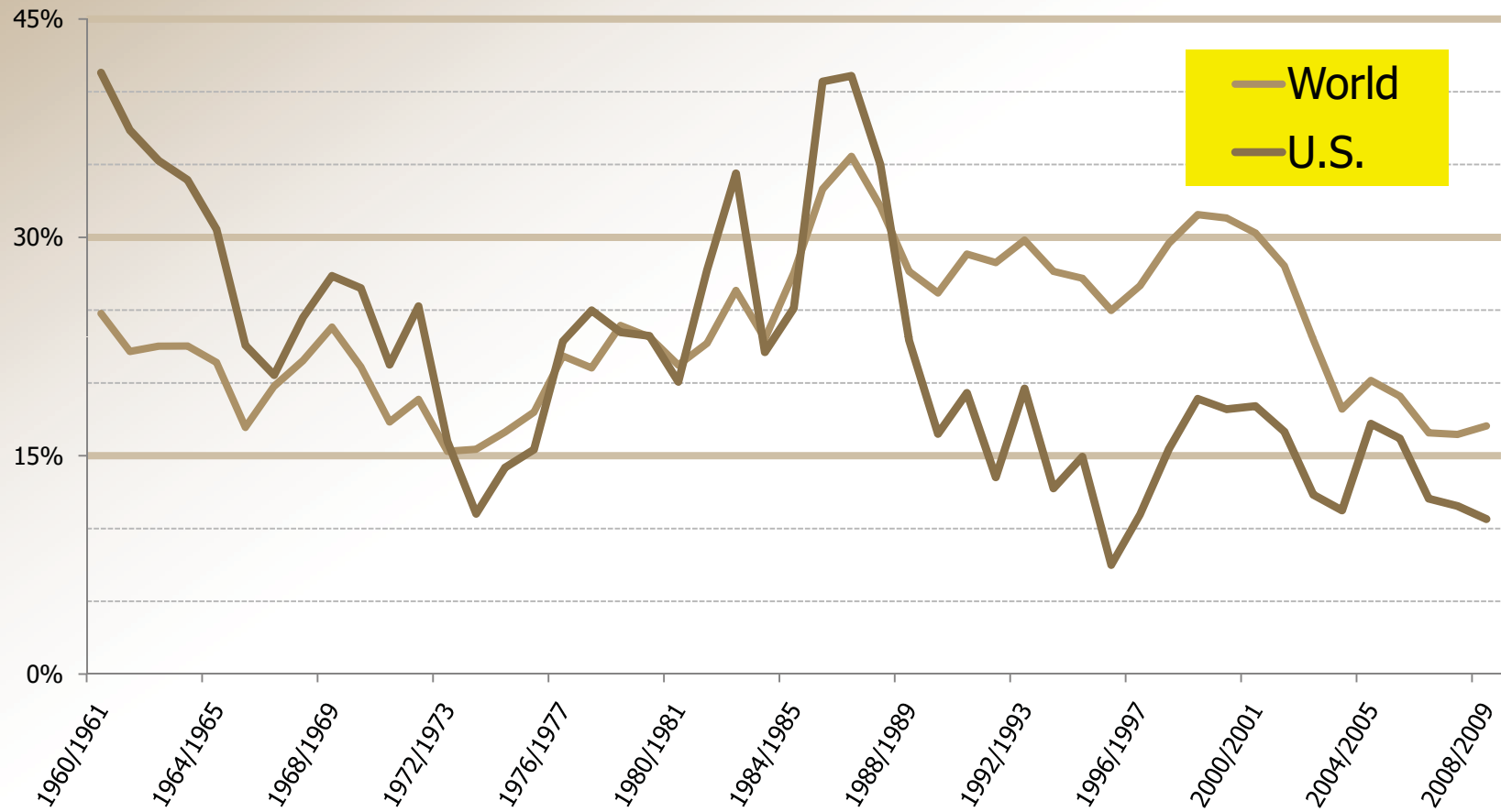
Fertilizer is a **derived demand**, lags matter



Farm
Foundation

The complete report is available at:
www.farmfoundation.org

Total Grains: Stocks to Use Ratio



Ethanol Capacity: Existing + Under Construction: Source: Renewable Fuels Association

