



**What's Driving
Food Prices?**



SINCE 1933

**Farm
Foundation**

Global Commodity Price Changes: What's Going On?

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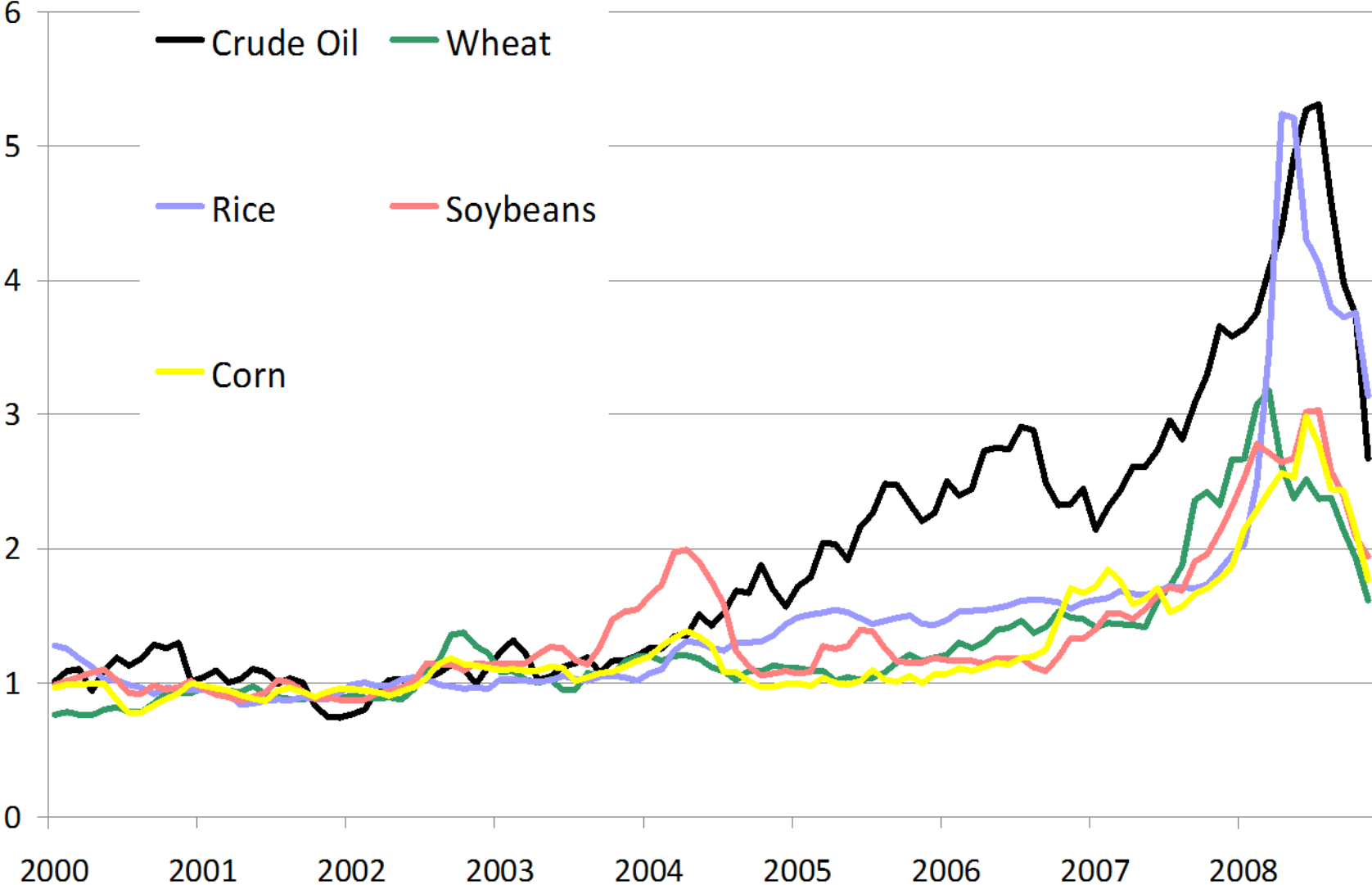
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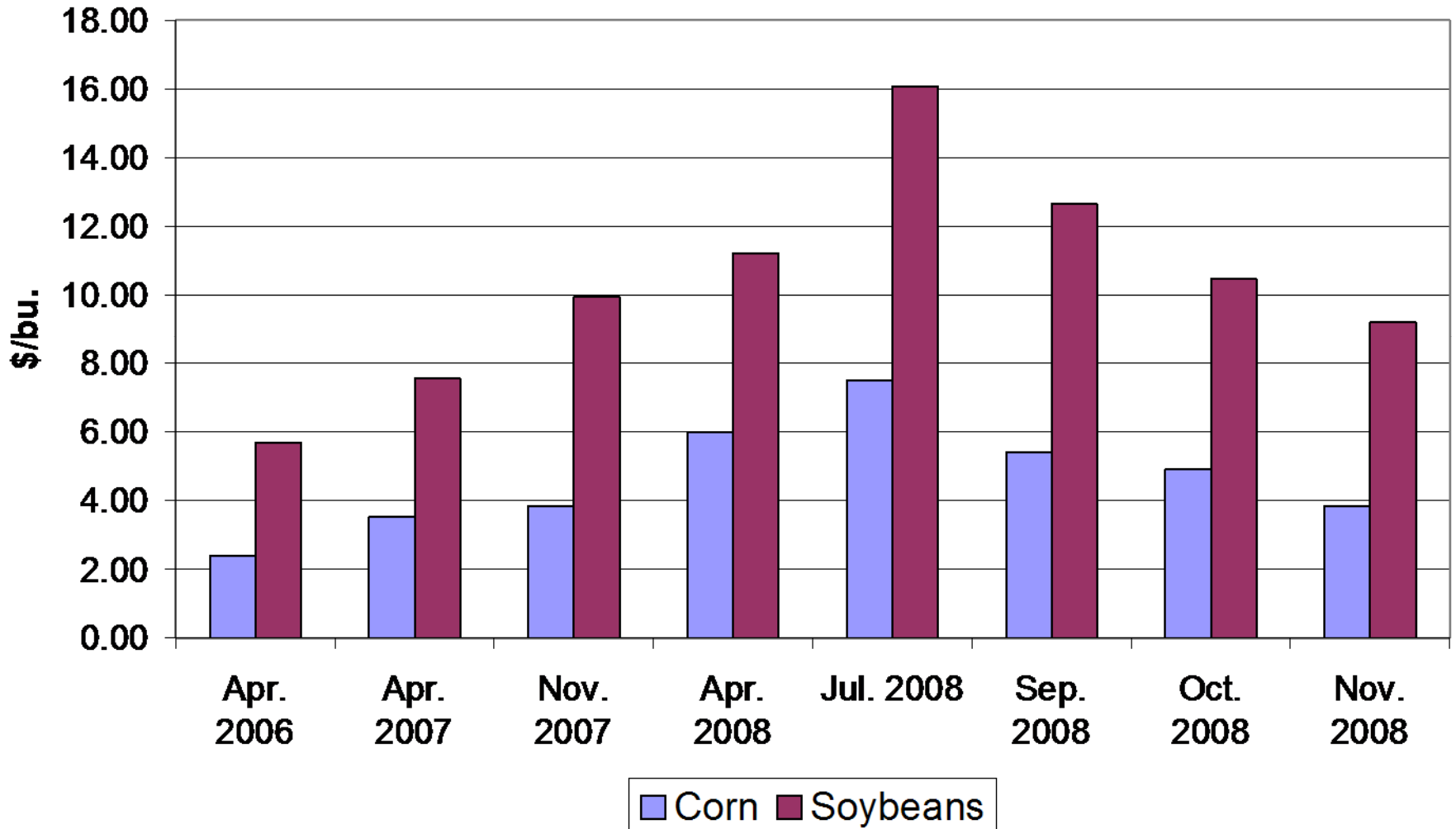
Introduction

- Is there some major driving force that is behind all the large recent commodity price changes or is it a perfect storm of individual commodity supply and demand circumstances that just happened to come together at the same time, or is it a combination of factors?
- It is clearly a combination.

Commodity Prices, 2000-2008



Corn and Soybean Price Variability



Introduction

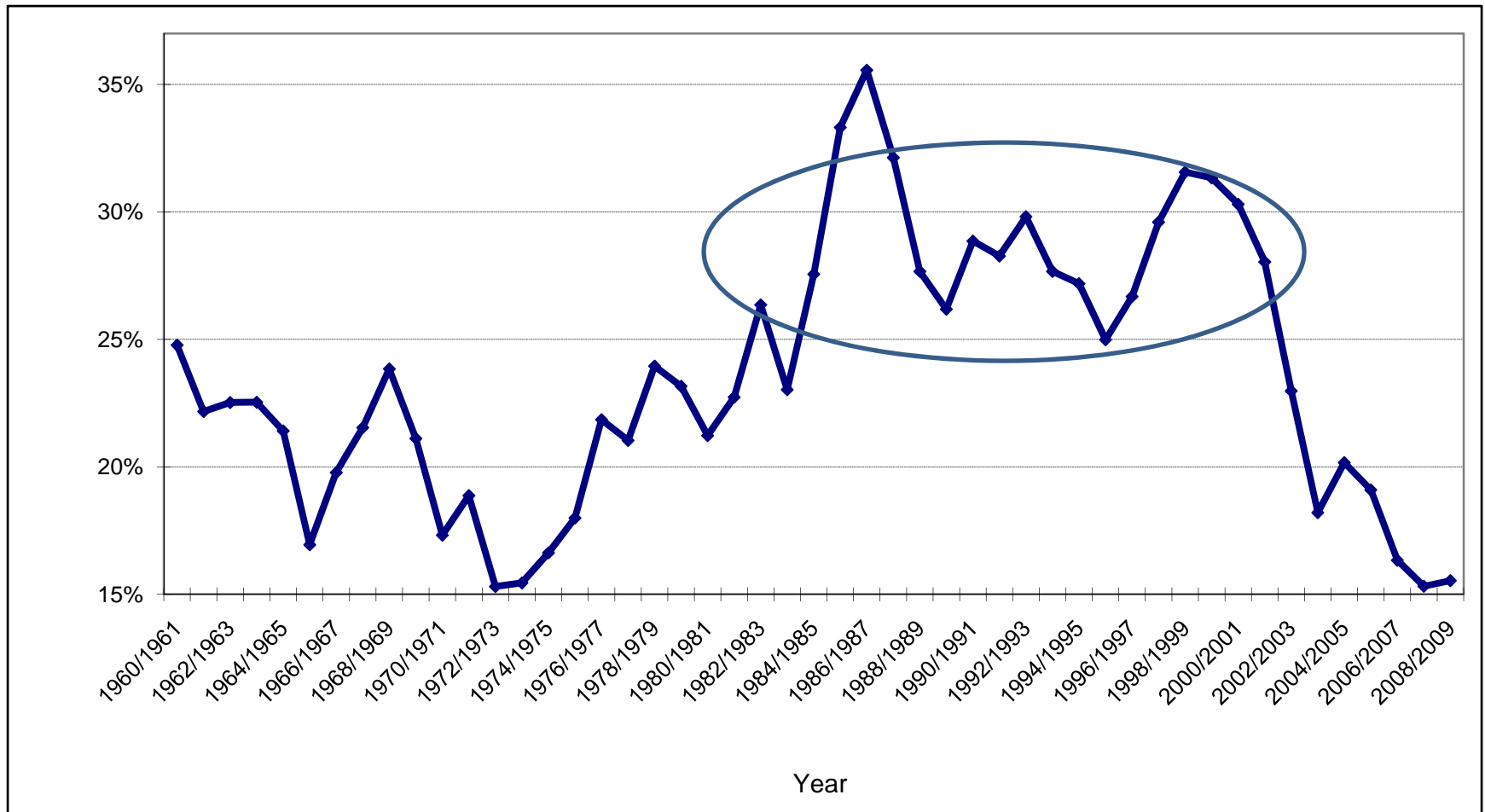
- The major themes in our analysis are:
 - supply and utilization shifted from surplus to shortage but differs by commodity in relative importance and underlying causes
 - the linkages of surging commodity prices with the falling US\$ exchange rate
 - the new linkage between energy and agricultural markets evidenced by biofuels growth.



Supply and Utilization

- *Growing food demand and dietary transition to more animal protein in developing countries has resulted in global consumption increasing faster than production. Many previous studies focus on China and India.*
 - we have moved from surplus in the 80s and 90s to shortage in recent years.
 - the supply shocks in 2007 were on top of very low stocks-to-use ratios that emerged over the past four to eight years depending on commodity.
 - India and China are not significant traders of agricultural commodities. The fact that consumption has been growing at a good pace in China and India is not a major factor in determining world commodity prices because they do not trade.

Stocks-to-Use Ratio for Total Grains in the World (1960-2009)

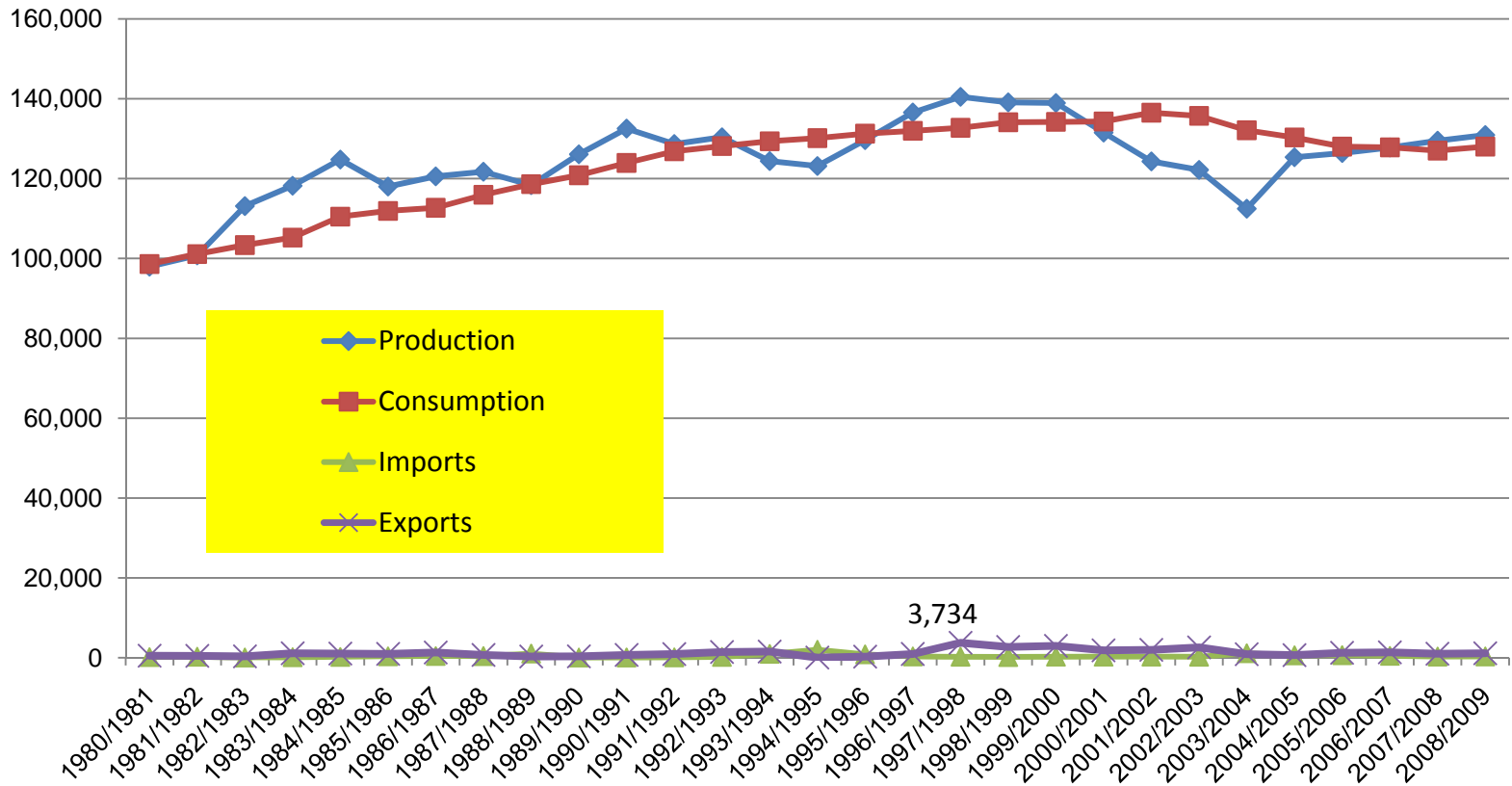




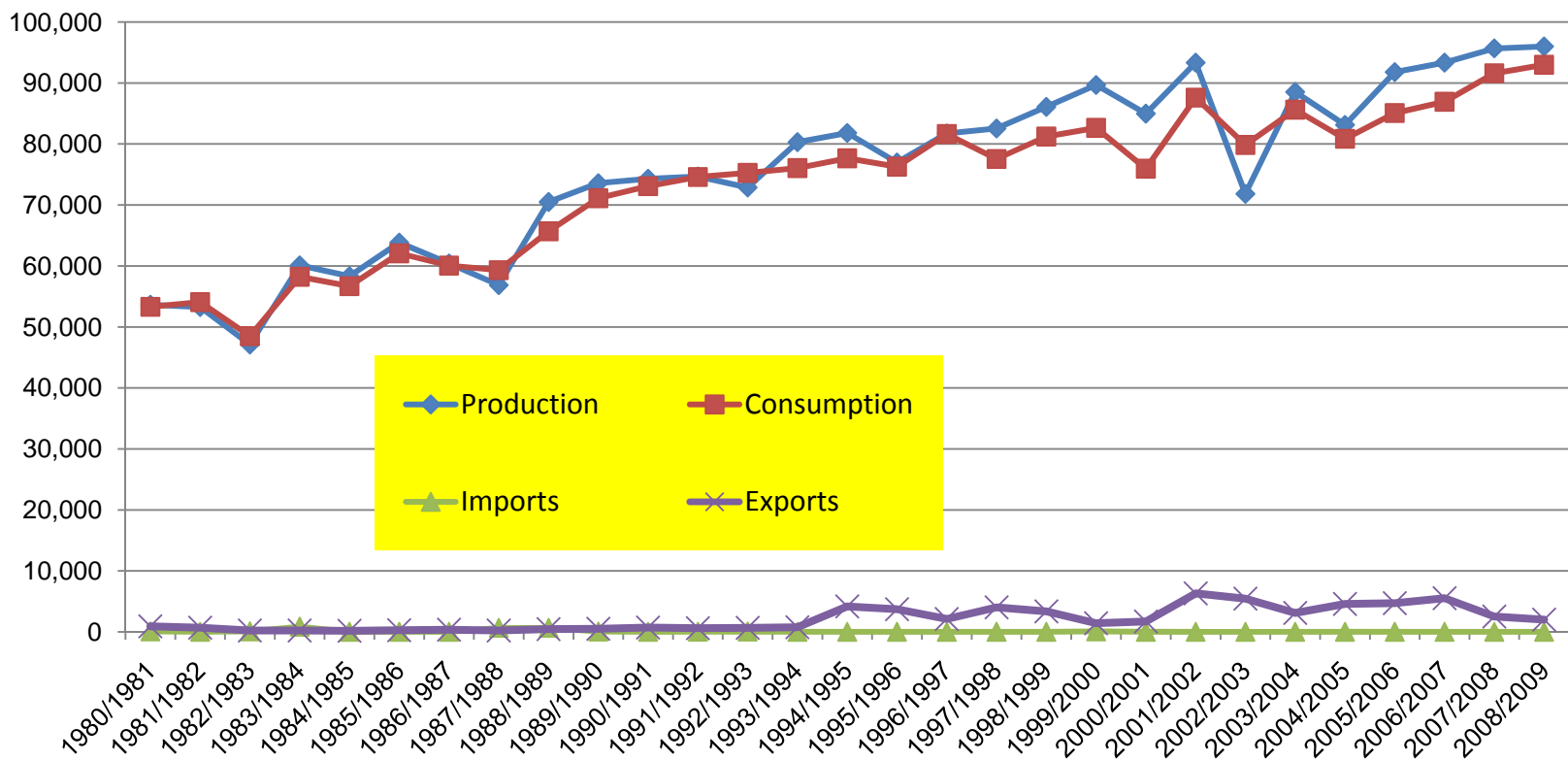
Global Production Shortfalls

- *Weather and crop disease issues in 2006-2007 made an already difficult situation worse.*
 - The shocks had large price impacts because the stocks-to-use ratio was already very low. Under normal circumstances, these shocks would have had a minor impact on prices.
 - The reactions of many traders to isolate their domestic markets made the situation much worse. This is particularly the case for rice, which is so thinly traded.

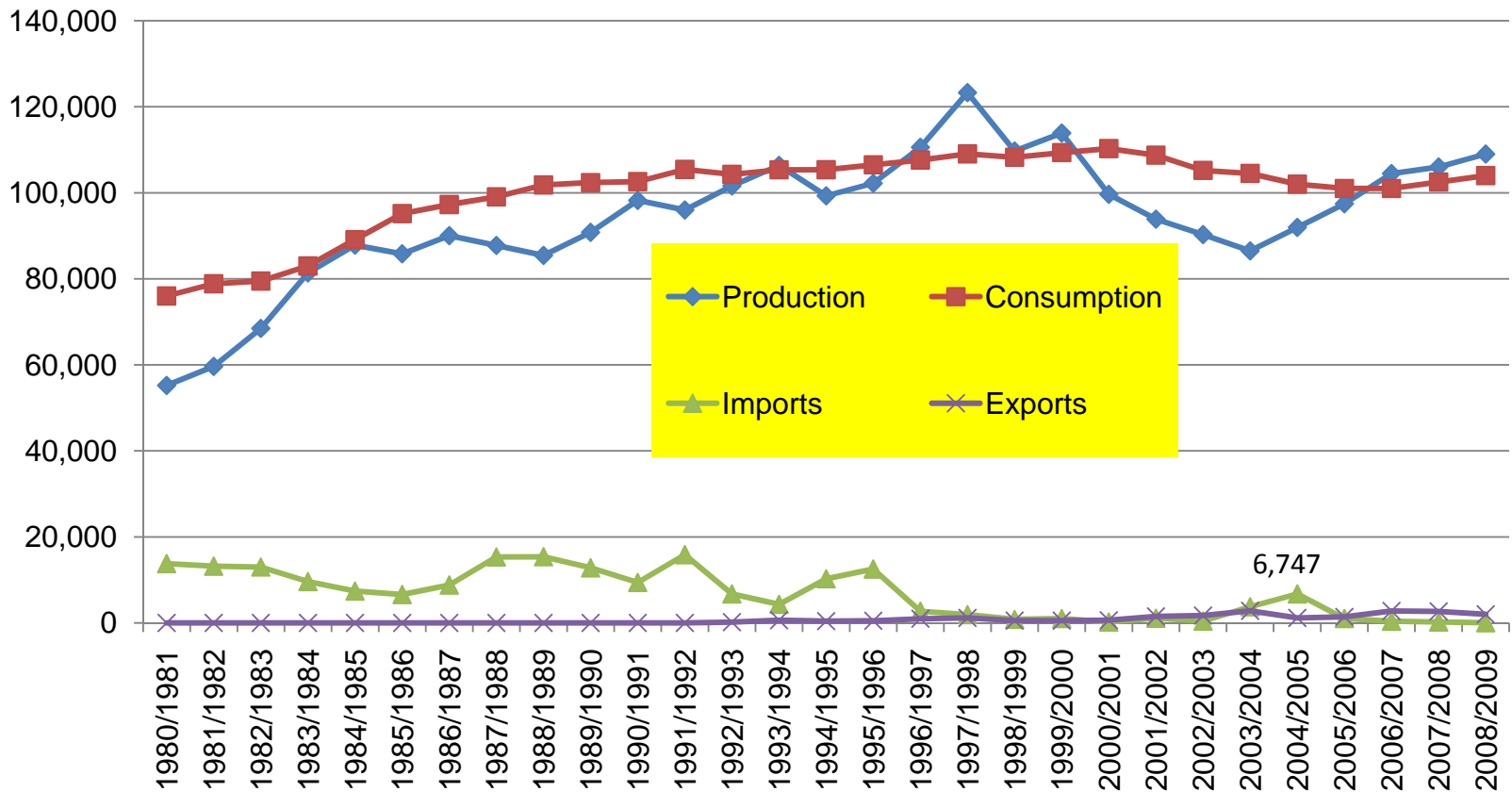
China Rice Production/Consumption/Trade (1,000 mt)



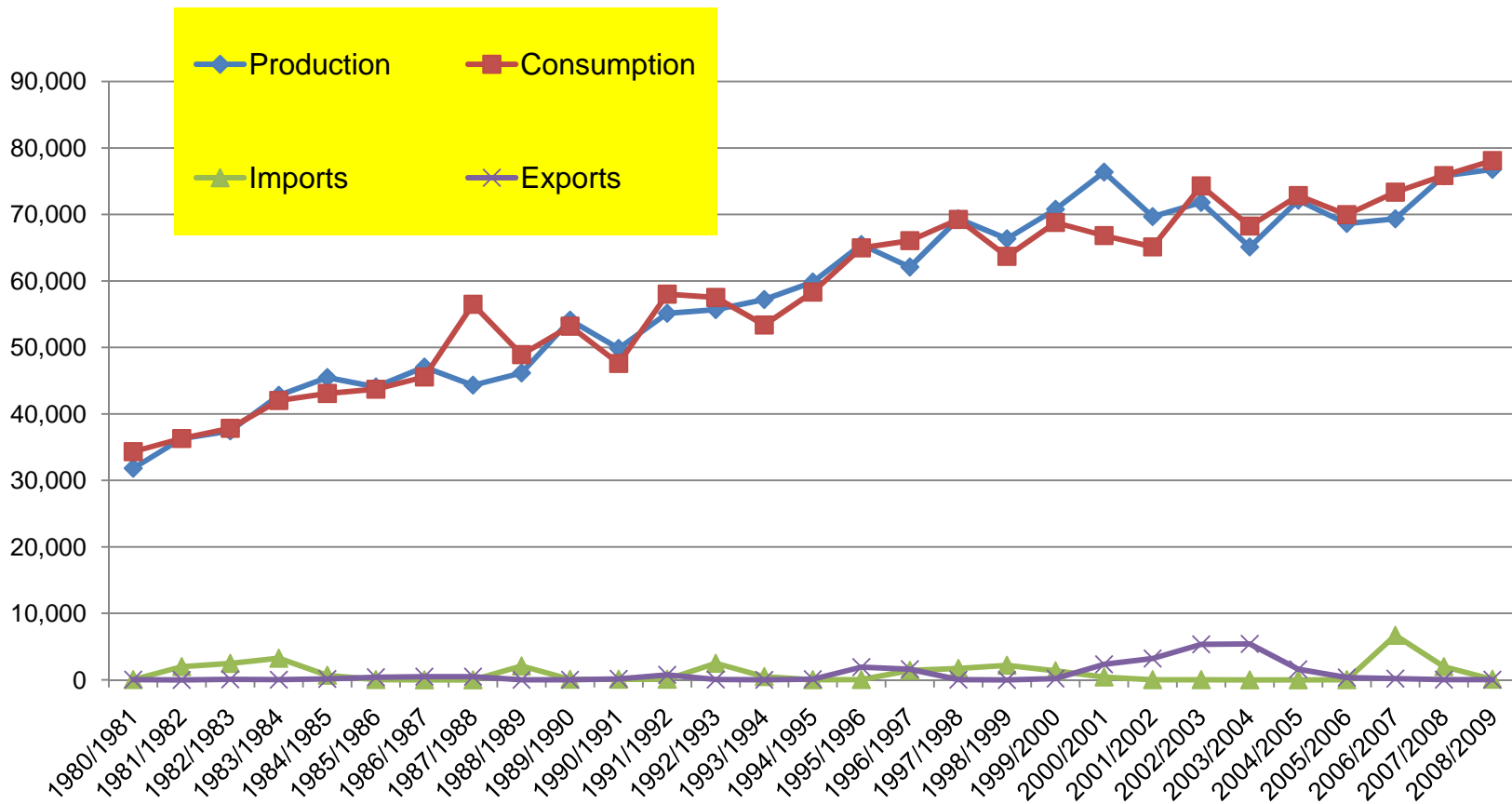
India Rice Production/Consumption/Trade (1,000 mt)



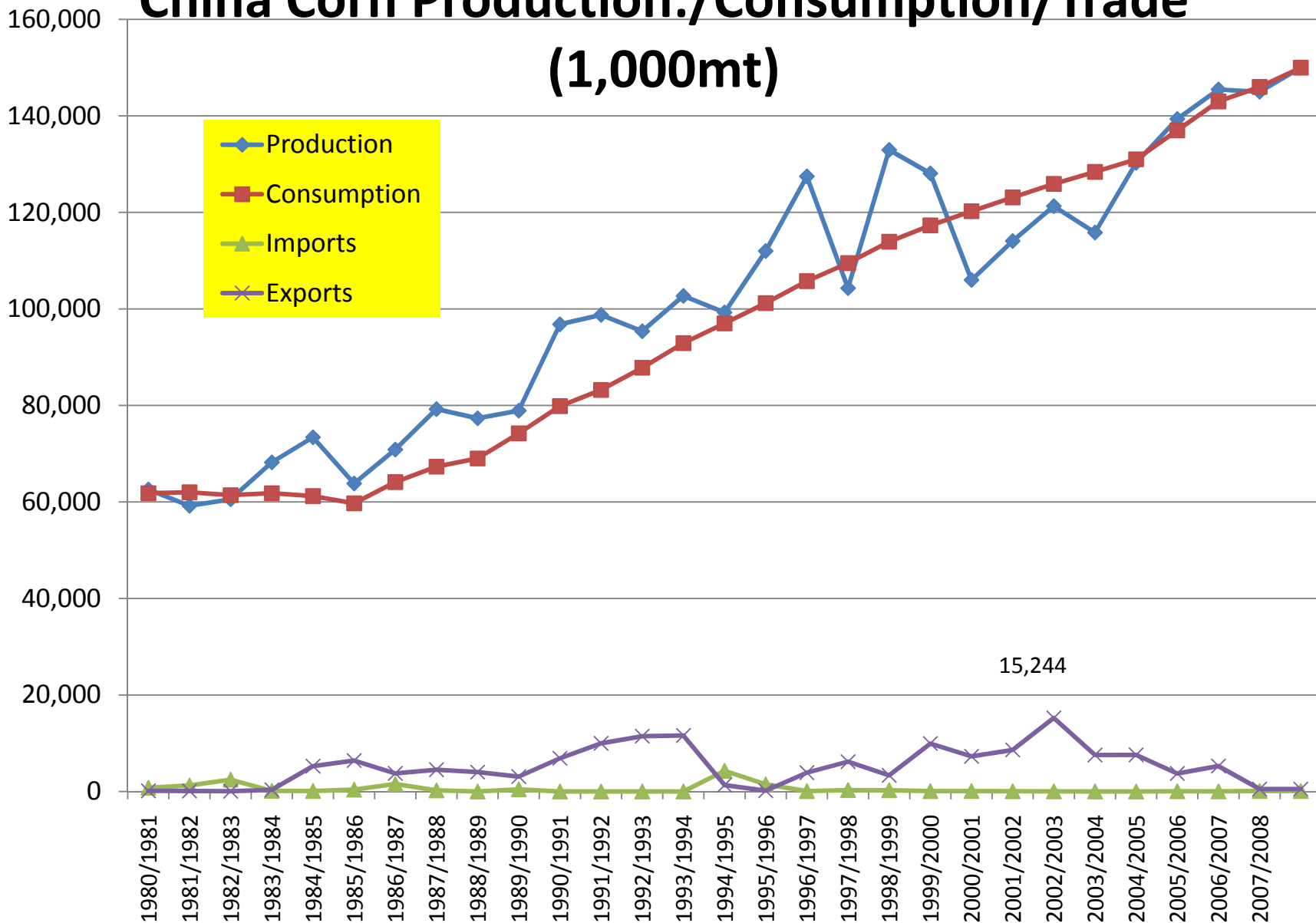
China Wheat Production/Consumption/Trade (1,000 mt)



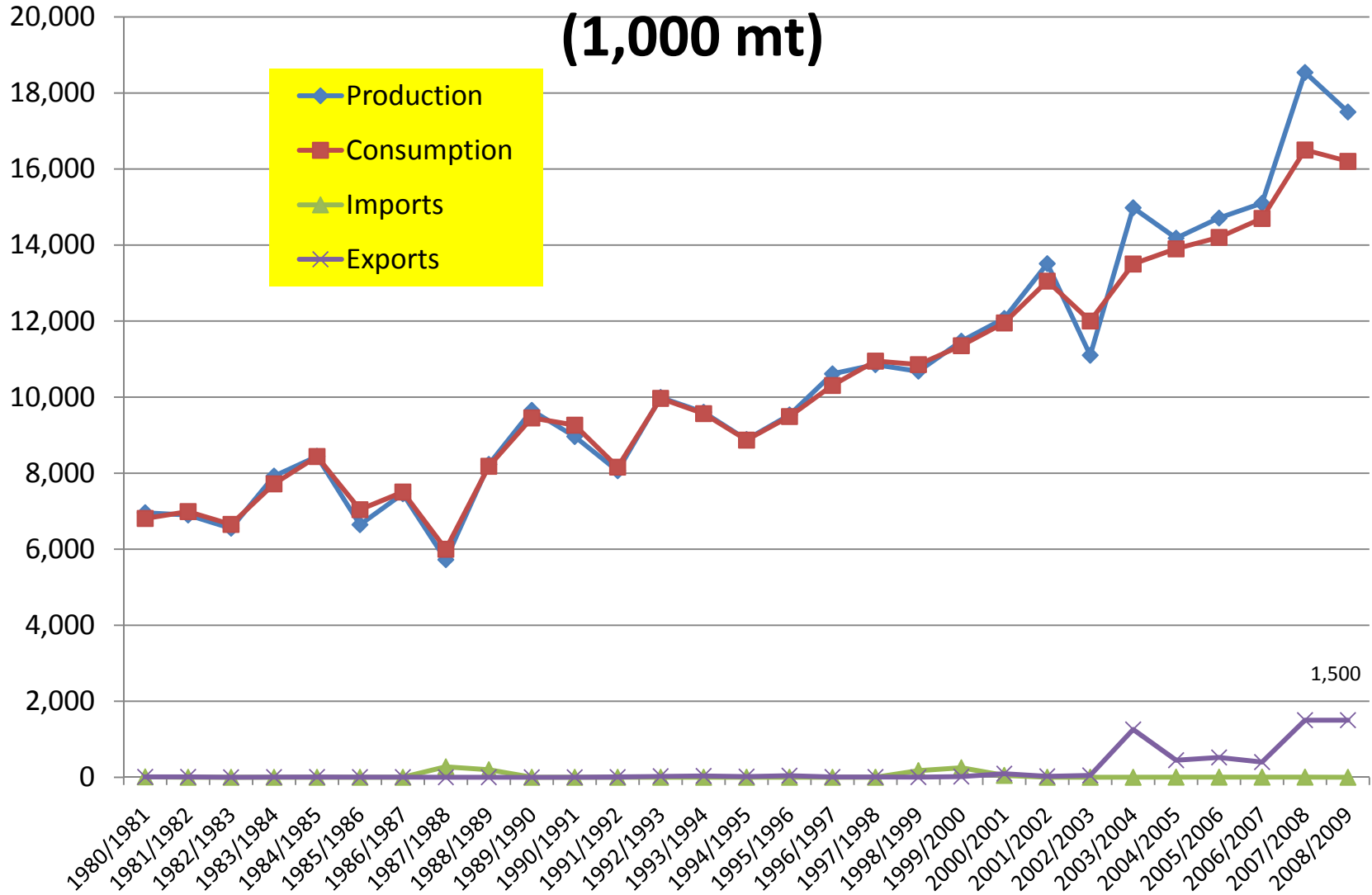
India Wheat Production/Consumption/Trade (1,000 mt)



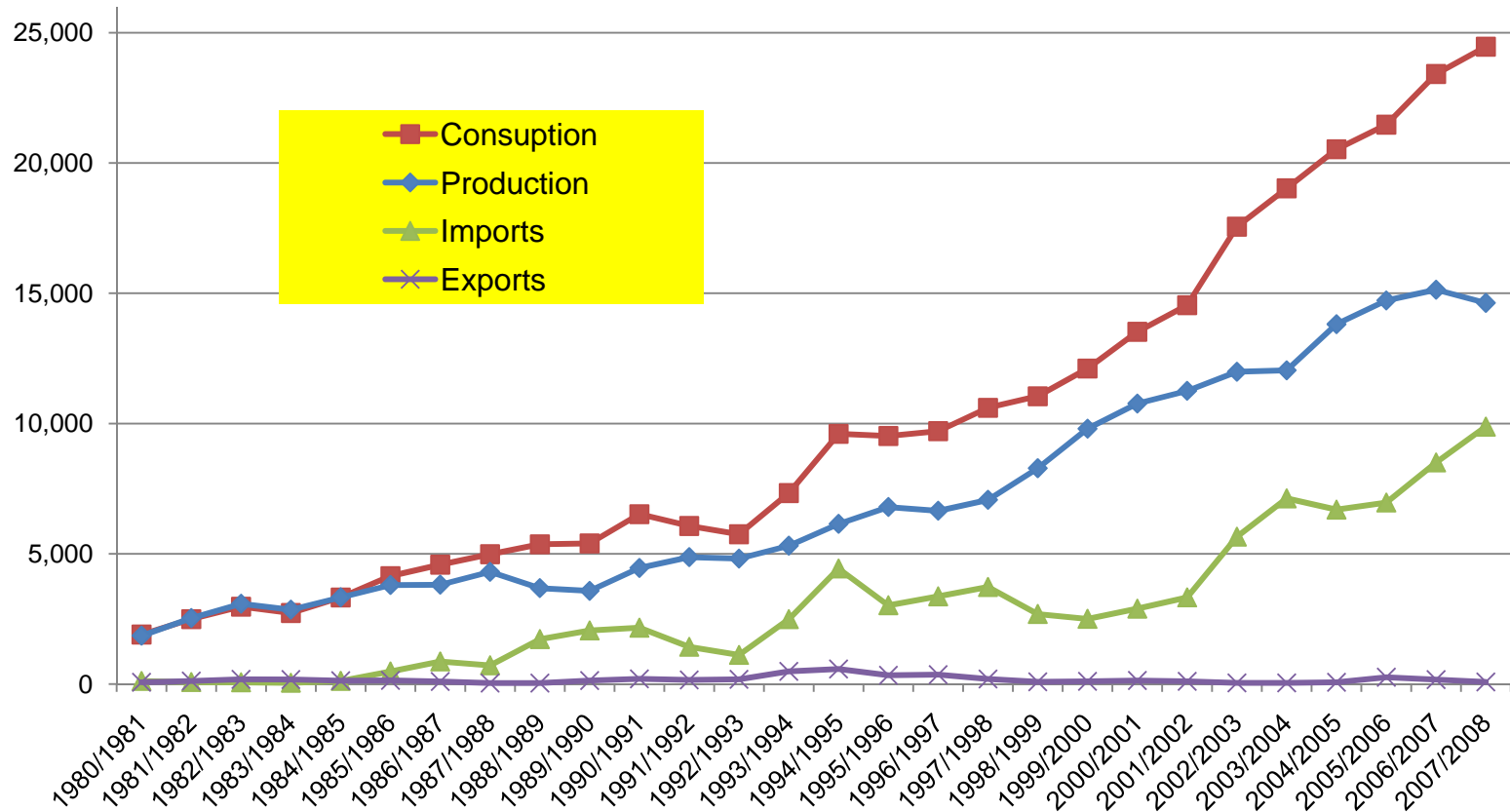
China Corn Production:/Consumption/Trade (1,000mt)



India Corn Production/Consumption/Trade (1,000 mt)



China All Oils: Production/Consumption/Trade (1,000 mt)



Agricultural Research

- *Lower investment in agricultural research and application of existing technology has led to lower growth in productivity in commodity production.*
 - The world was in agricultural surplus in the 1980s and 1990s and invested less in agricultural research. The surplus mentality did not change as we moved from surplus to shortage at the turn of the century.
 - Everyone agrees that we need to increase investment in agricultural research. No one should believe that this change will be a quick fix.
 - Short term solutions will rely on policy changes and more widespread adoption of existing technology.

Global Potential Supply Response

- There is a large potential supply response that could come from developing country farmers increasing their production and productivity in response to the higher prices. Thus, for some poor farmers in some regions, higher commodity prices could be an engine of economic development.
- IFPRI and FAO have argued that most poor farmers are net buyers. That is true in some regions. But even then, if agricultural wages increase, some of these farmers could still be better off.
- Short-term policy measures such as targeted food programs that still permit world prices to be transmitted to developing country farmers are key. We need policy measures that handle the short-term food problems without destroying longer term potential for economic gain for developing country farmers.

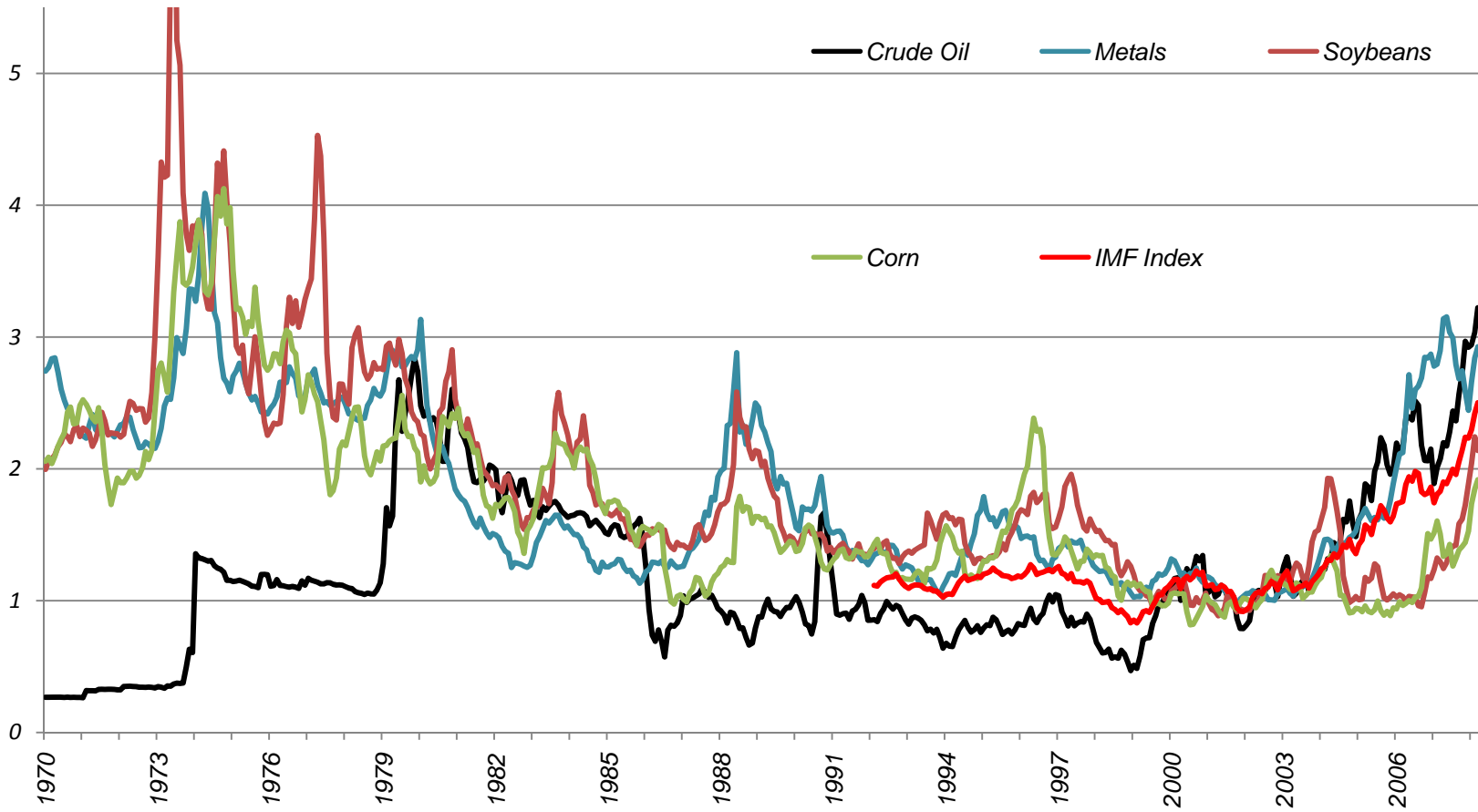
Speculation in Commodity Markets

- The two questions are whether the increased speculative activity increased price volatility, and if it increased the overall level of prices.
- **Volatility has increased**, in part due to the increased volume being traded.
- There is little evidence from existing research that the **level** of commodity prices, beyond short periods, is affected by the increased amount of speculative activity.

US\$ Depreciation

- Most other studies grossly understate the importance of the link between the exchange rate and commodity prices.
 - The analysis presented here clearly shows the historic links and how they have differed from one period to another depending on what else was going on in the global economy.
 - The US trade deficit is an important driver of US\$ depreciation .
 - Oil, agricultural commodities, and most other commodities are priced in US\$, but are purchased in the local currency.

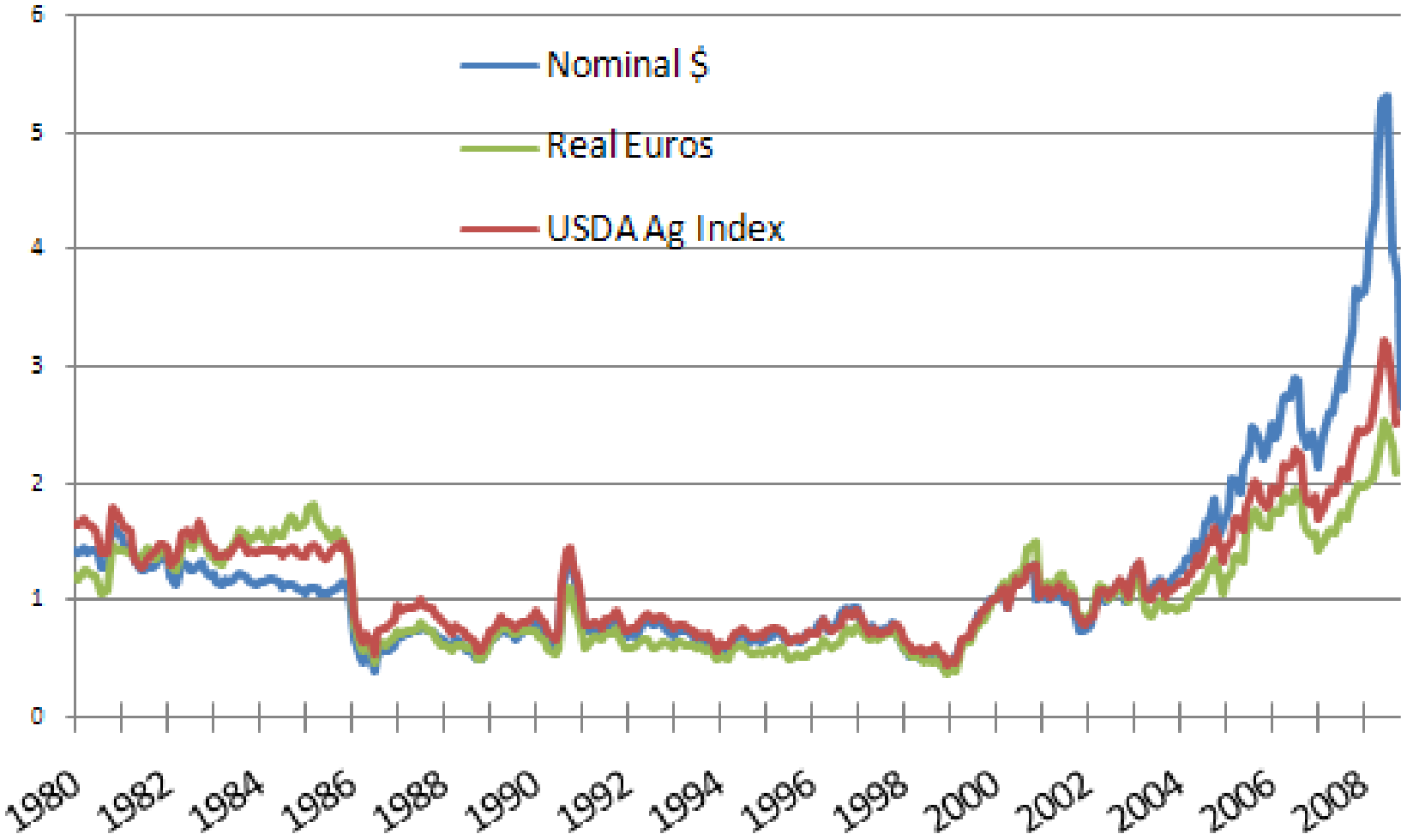
Deflated Commodity Prices and Indices, 1970-2008 (2002 = 1)



US\$ Depreciation

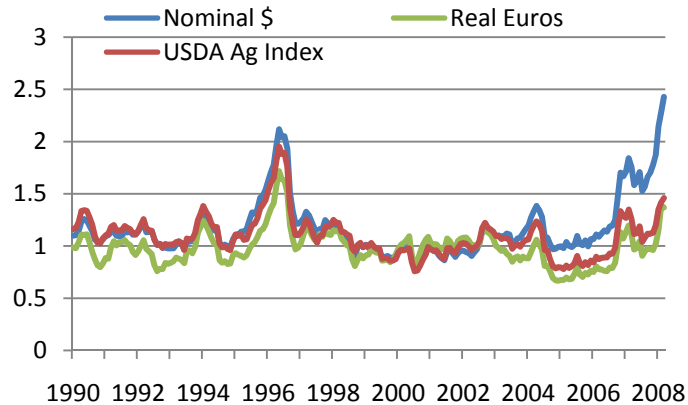
- For the period 2002 to 2008 nominal dollar percent increases for corn, soybeans and its products, wheat, and rice, as well as crude oil and gold are typically more than three times equivalent changes in other, deflated currencies.
- Exchange rates (or whatever they are a symptom of) played a key role in the current price run-ups.
- For the 1994 to 1997 period, results are strikingly different. Price changes in the three currency measures are nearly the same. This is strong evidence that price run-ups in the mid-1990s were largely driven by supply-utilization factors, with exchange rates playing almost no role.

Crude Oil Prices in various currencies

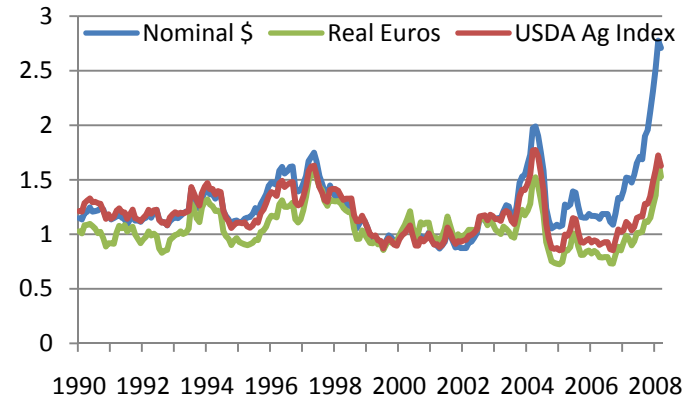


Agricultural Commodity Price Indices in Various Currencies, 1990-2008

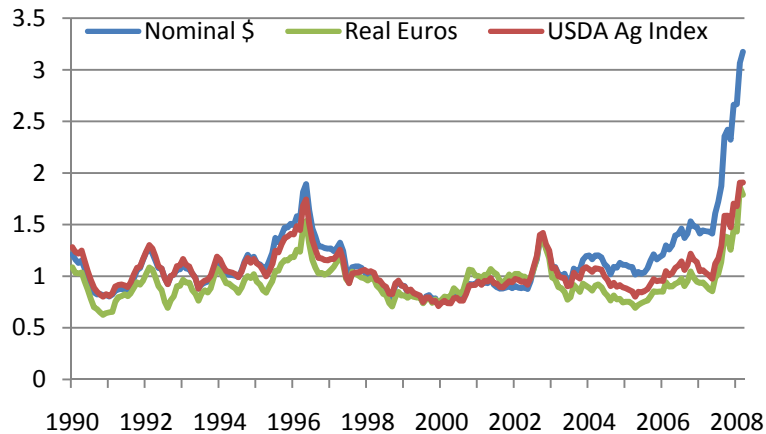
Corn Prices



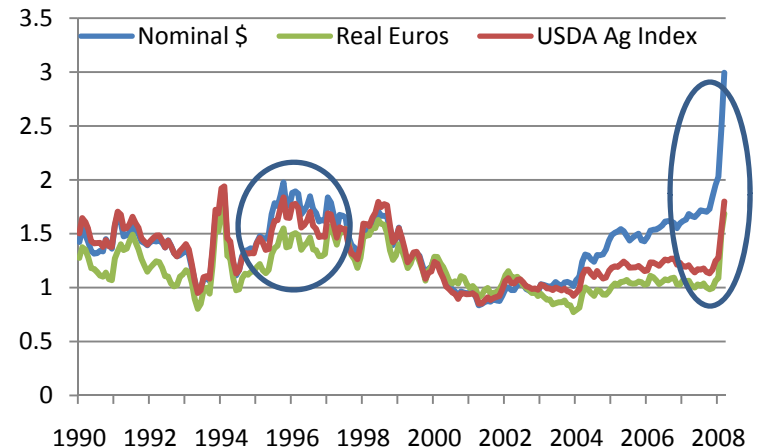
Soybean Prices



Wheat Prices

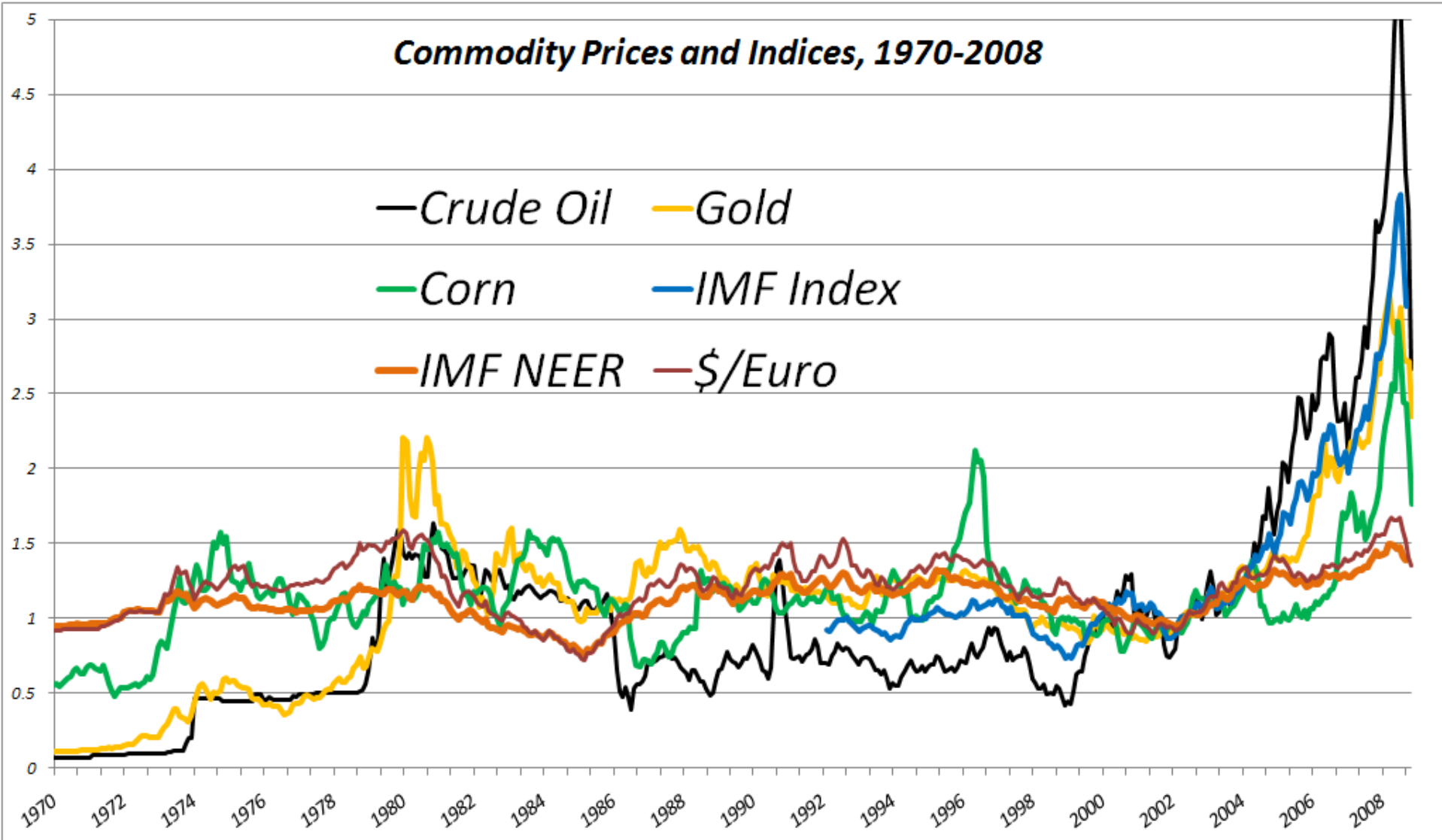


Rice Prices



Commodity Prices and Indices, 1970-2008

—Crude Oil —Gold
—Corn —IMF Index
—IMF NEER —\$/Euro





Global Food Price Impacts

- Current food price increases and the depreciating dollar are bringing stronger inflationary pressure elsewhere in the world than in the United States. US core inflation has been about 2.2%, while many developing countries have rates triple that.
- In the United States, food expenditures are only 10% of consumption expenditures, and expenditures on cereals are a small fraction of food expenditures. In Bangladesh and Sri Lanka, where food riots have occurred, food share of consumer expenditure is above 60%, and it is high in many developing countries.
- Food inflation and general inflation are higher now in countries that consume greater shares of their budgets as staple foods.
- We have yet to see the full transmission of feed grain and oilseed price increases into animal product food items.

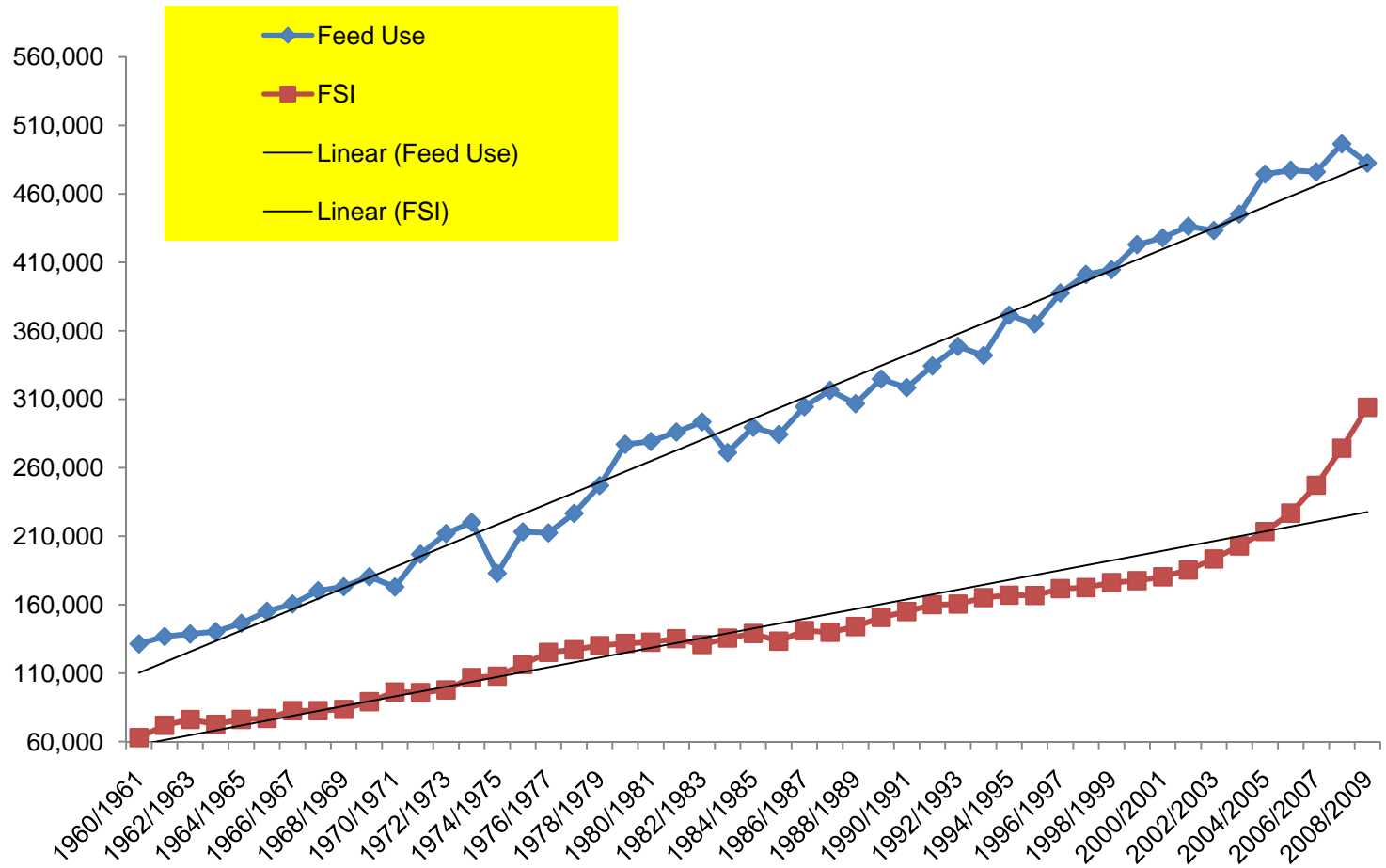
Biofuels

- *Biofuels programs in the US and EU, which provide subsidies and mandates for biofuels leading to greater use of corn and vegetable oil for biofuels, have stimulated increases in the prices of these commodities.*
 - The US ethanol industry would not have come into existence in the 1980s without subsidies. The same is true for the US biodiesel industry, which occurred later. The EU biodiesel industry also was made possible by mandates and subsidies.
 - Subsidies and other factors have contributed to subsequent growth of biofuels.

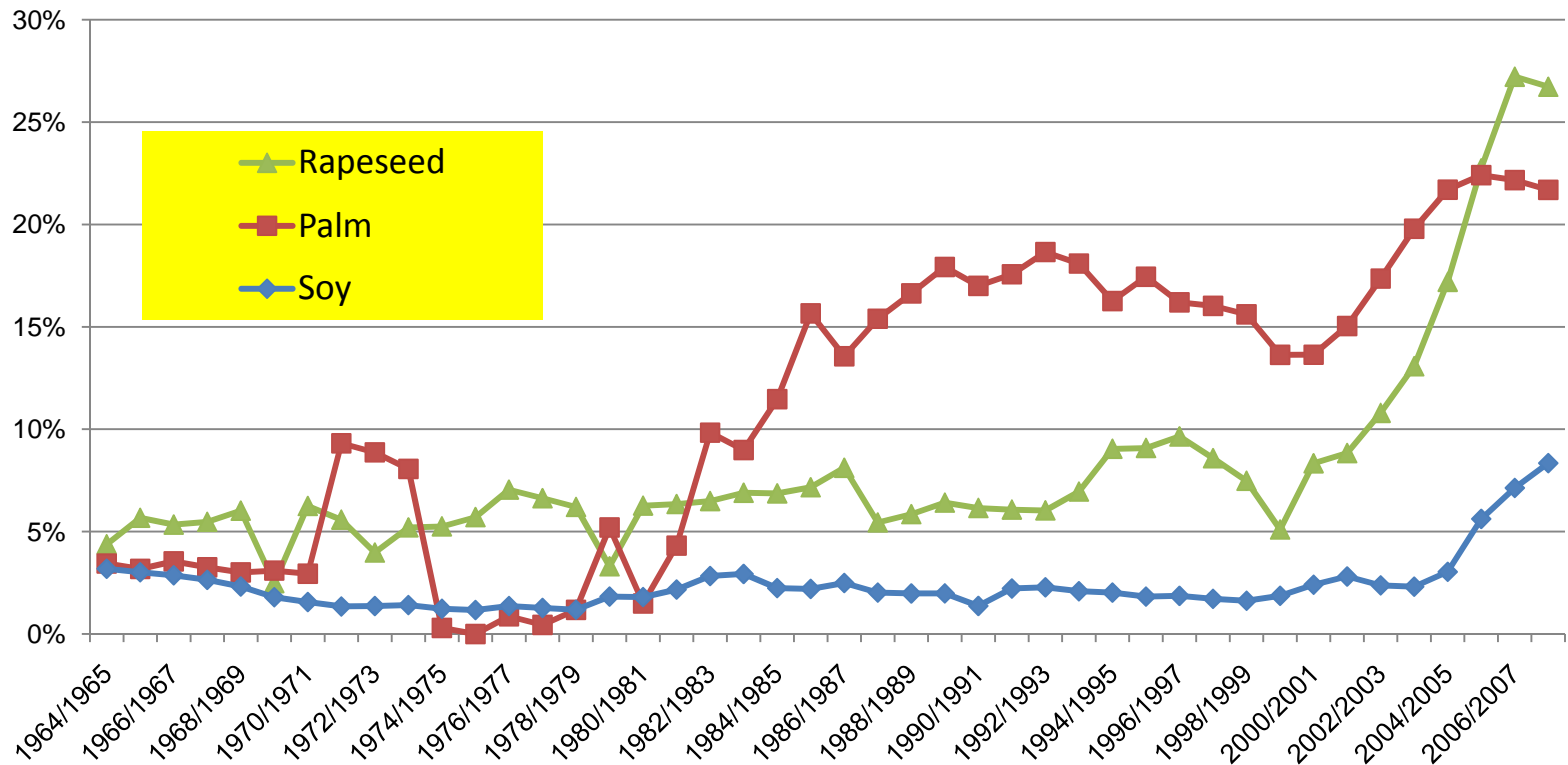
Biofuels

- Most of the global increase in demand for corn in the past four years has come from the growth in United States' use of corn for ethanol.
- Much of the global increase in rapeseed oil (driven by EU biodiesel) is due to biodiesel. For soy oil, most of the increase is still food related.

World Corn Use - Feed and FSI (1,000mt)



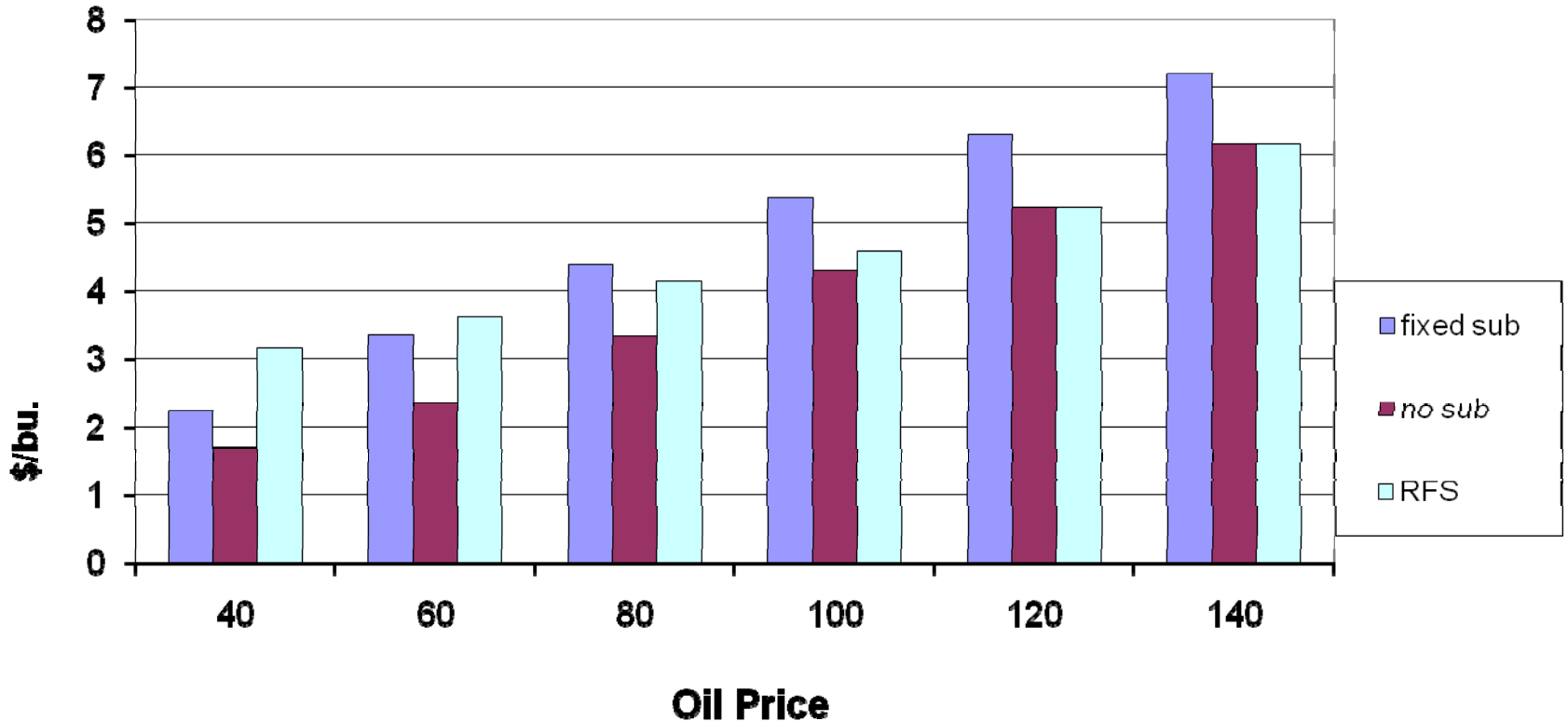
World Oils: Industrial Use as Percent of Total



Biofuels

- Higher oil prices have been driving corn prices.
 - Higher crude leads to higher gasoline, which increases the demand for ethanol, which provides incentives to build more ethanol plants, which increases the demand for corn. Higher corn demand leads to higher corn price.
- The US ethanol subsidy and import tariff have contributed to increased corn prices. The lower US\$ has also contributed.
- Up to this point, the ethanol mandates have not been binding, so have had little or no impact on corn prices or ethanol production.

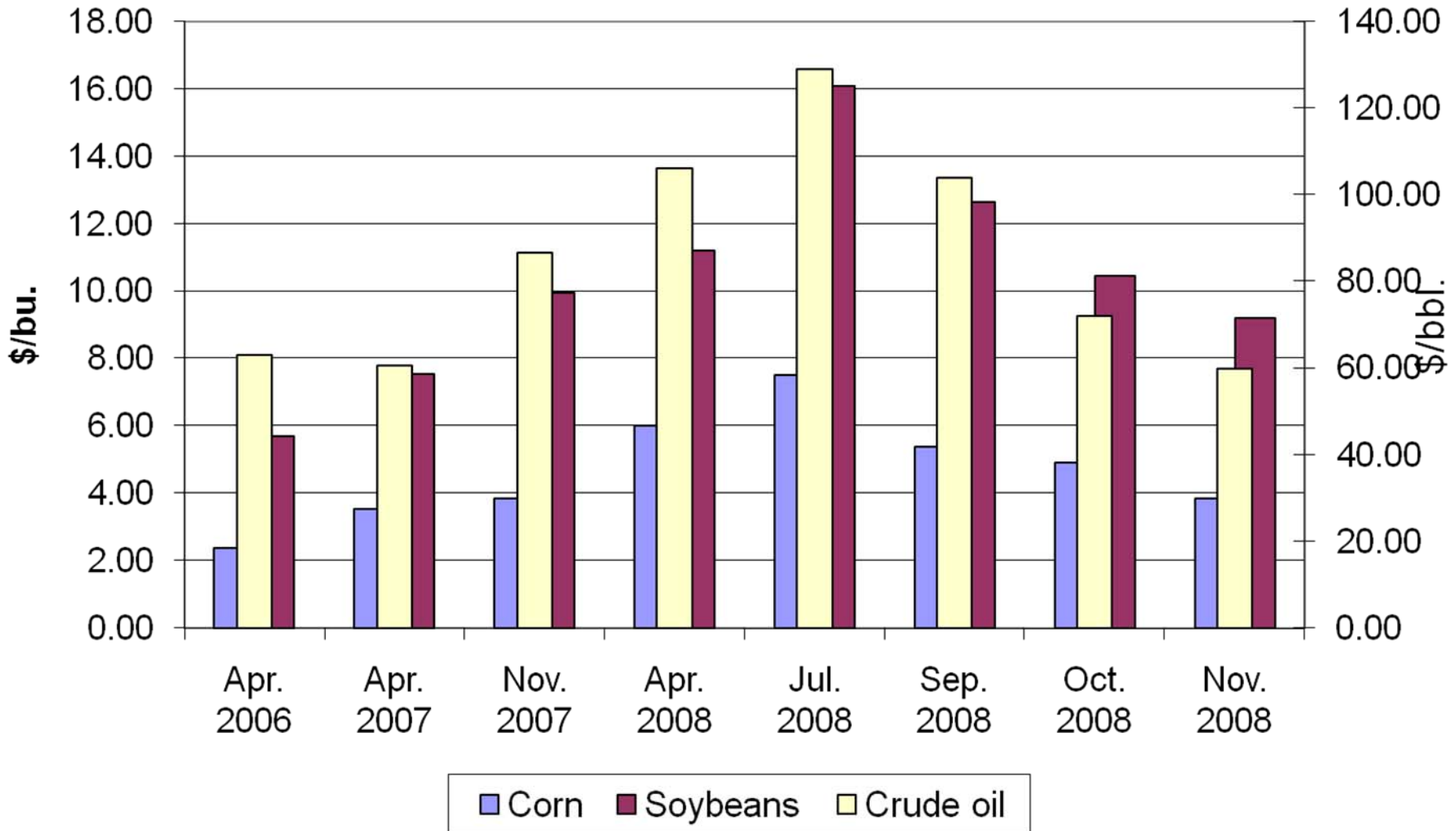
Corn Price Under Alternative Policies and Oil Prices



Biofuels

- Between 2004 and earlier this year, oil went from \$40 to \$120, and corn went from \$2 to \$6, both tripling.
- Of the \$4 increase in the price of corn, about \$1 is due to the US subsidy and \$3 to the higher crude oil price.
- Even if changes are made in US policies, corn prices would be expected to remain high so long as the crude oil is high.
- With crude at \$60, corn is now less than \$4 as would be expected

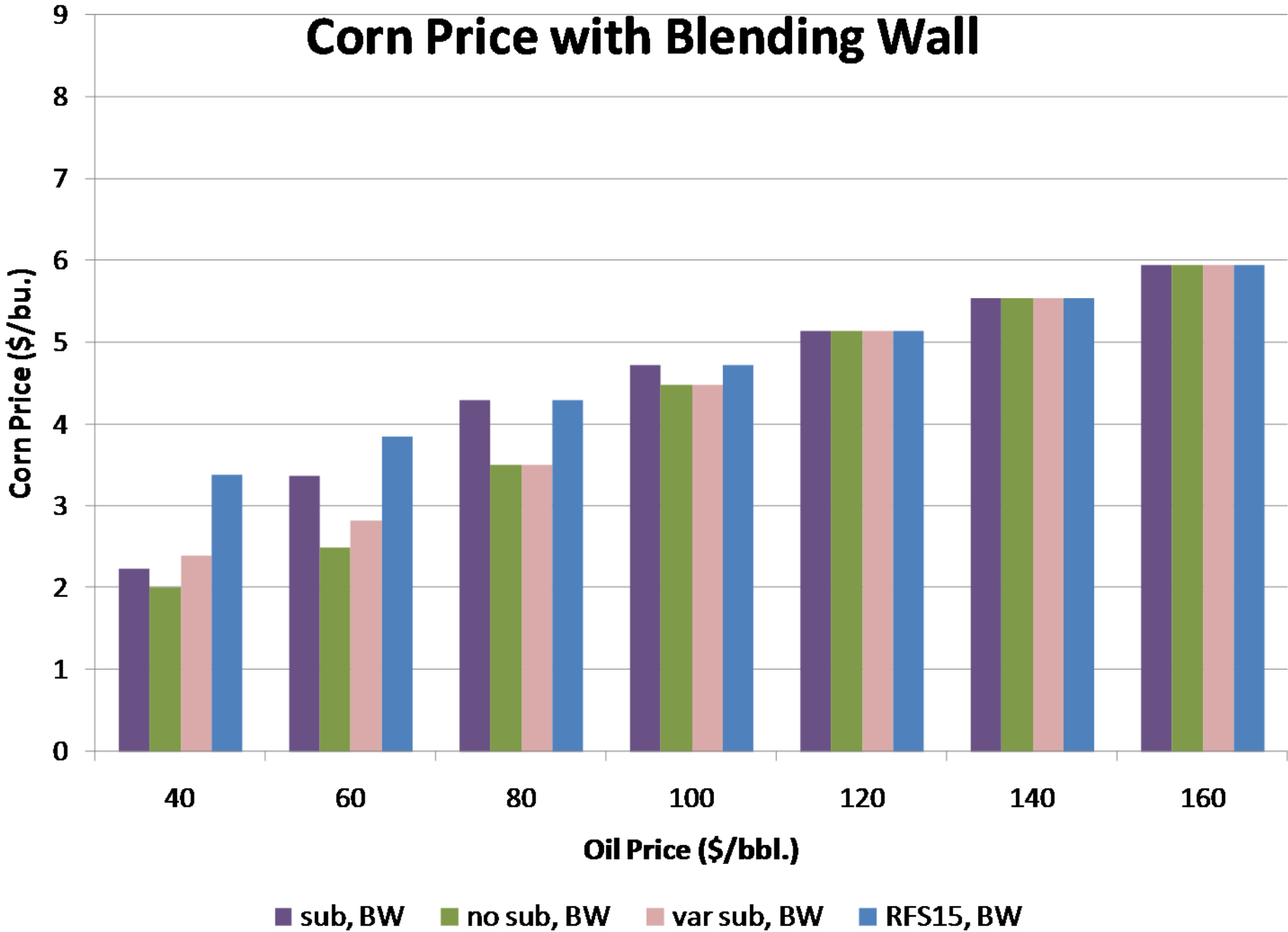
Crude, Corn, and Soybean Price Variability



Other Ethanol Issues

- An issue that will face the industry very soon is the “blending wall.” That is the max ethanol that can be consumed at the E10 blending limit.
- Another important issue is the ethanol import tariff. Reducing or eliminating the import tariff would likely reduce pressure on corn prices and the level of domestic ethanol production if we are at the blending wall.

Corn Price with Blending Wall



Crude Oil Price Increase

- Other studies have concluded that a significant driver of current commodity price increases is the price of crude oil. We argue that the major impact of oil price increases so far has been on the demand side, not the supply side.
- In other words, the initial price increases were “demand pull.” Crude oil price increases subsequently have increased the cost of producing agricultural commodities through increases in the price of fertilizer, diesel, propane, agricultural chemicals and other inputs.

Conclusion

- We began this work by asking if there were some major driving force that was behind all the price increases or was it a perfect storm of individual commodity supply and demand circumstances that just happened to come together at the same time?
- It was a combination of diverse and complex factors involving commodity supply and utilization, US\$ depreciation, and biofuels.
- Those same factors (global supply and demand, value of the US\$, and biofuels) also are behind the recent drop in commodity prices.



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