

The Impact of Oil Prices on the U.S. and Mexico Sweetener Markets

Presentation to:
the USDA Agricultural Outlook Forum
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Washington, DC www.lmc.co.uk
2/26/09



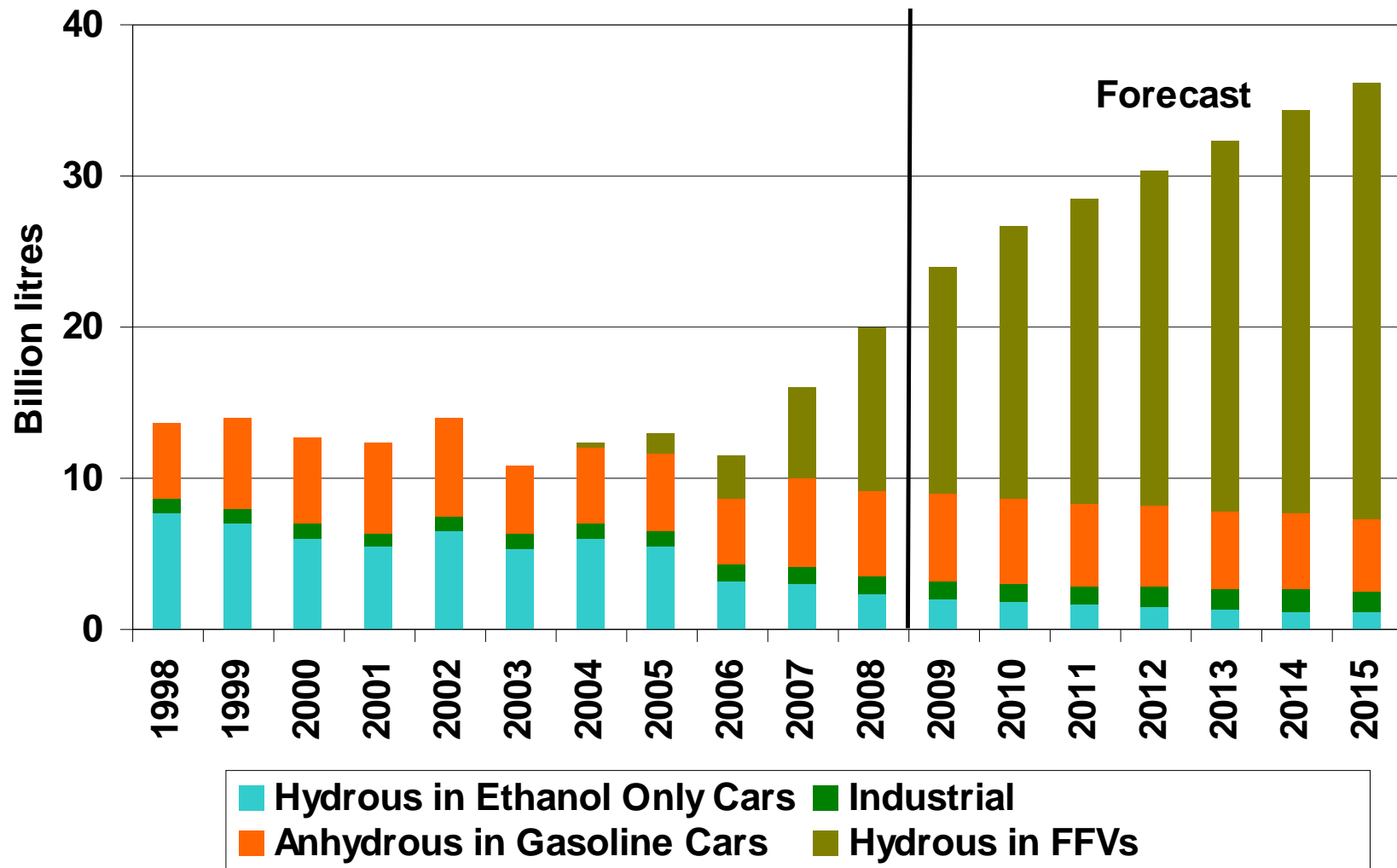
Presentation Structure



- Setting the scene
- The energy/sweetener connection in the NAFTA market
- High corn prices affect sweeteners in several ways
- Conclusions

Setting the scene: the sugar – energy link in the world market

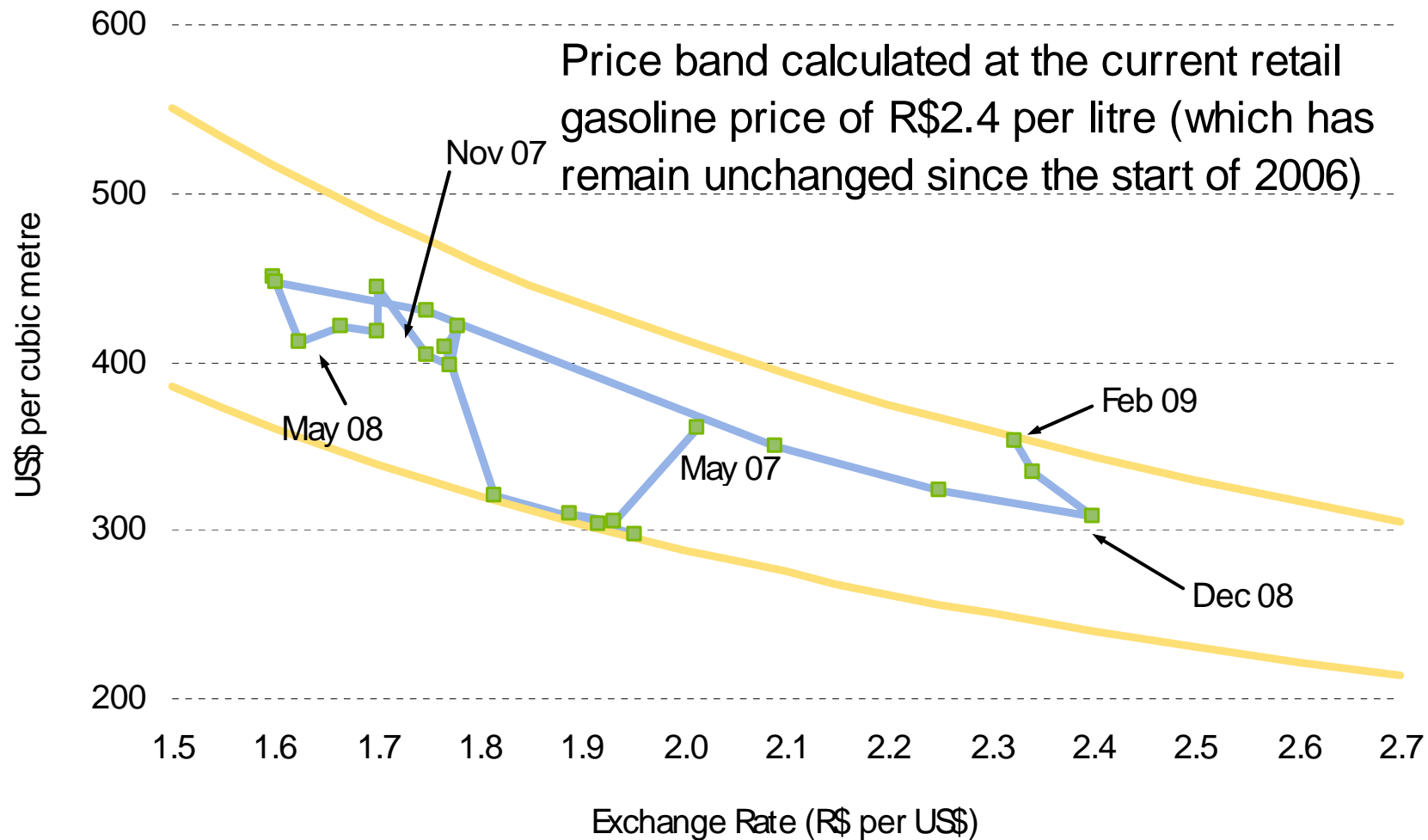
Brazil: FFV have created a huge *potential* ethanol market ... but ethanol must be priced competitively against gasoline capture it



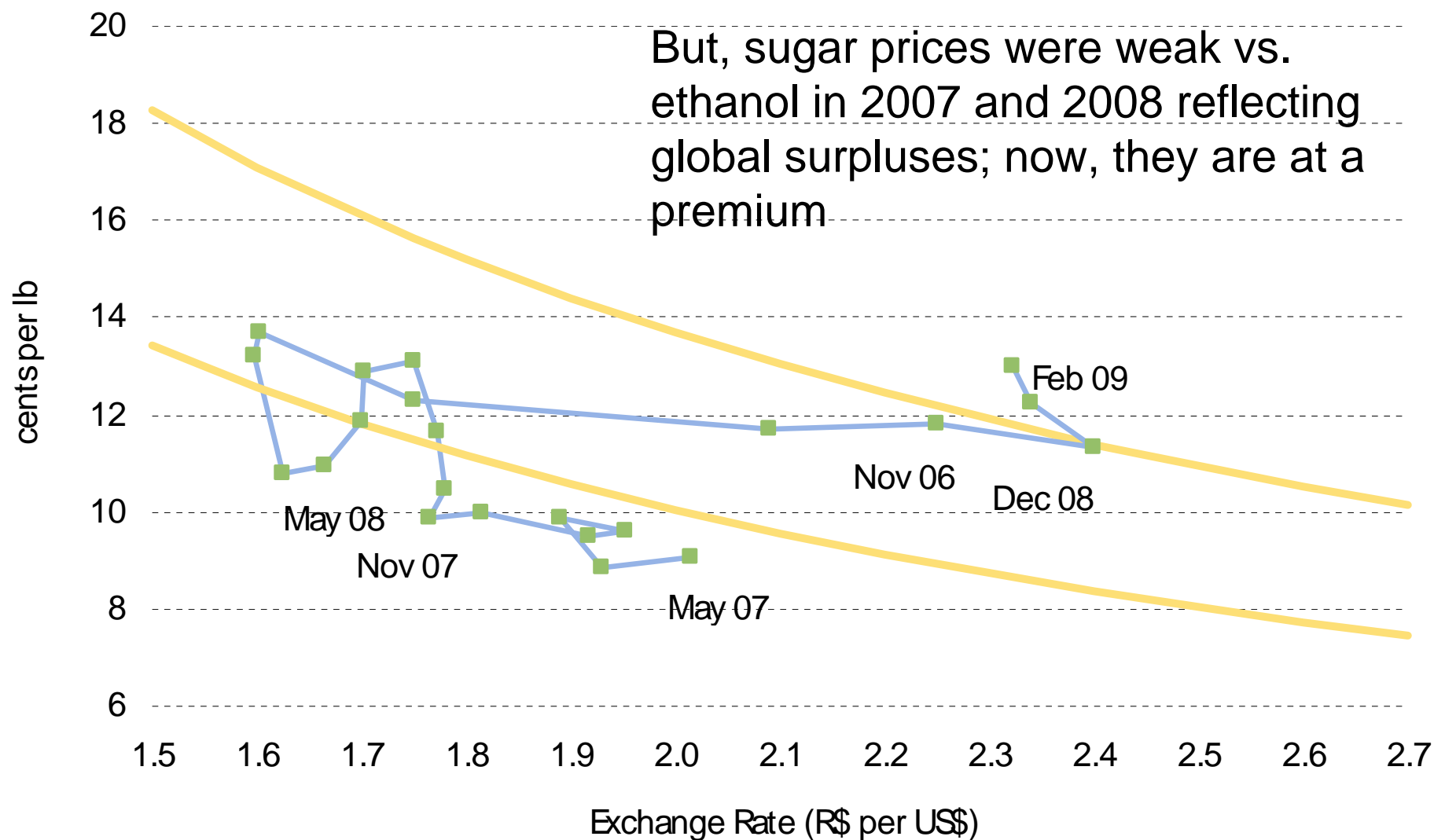
The need for ethanol to be priced competitively against gasoline has introduced a new dynamic

- Brazilian millers must sell ethanol competitively against gasoline to retain their market
- This places a ceiling over ethanol prices
- And, as we will see, sugar prices will broadly follow ethanol prices
- In theory, gasoline, ethanol and sugar prices should follow oil ... but Brazilian gasoline prices are set by the government

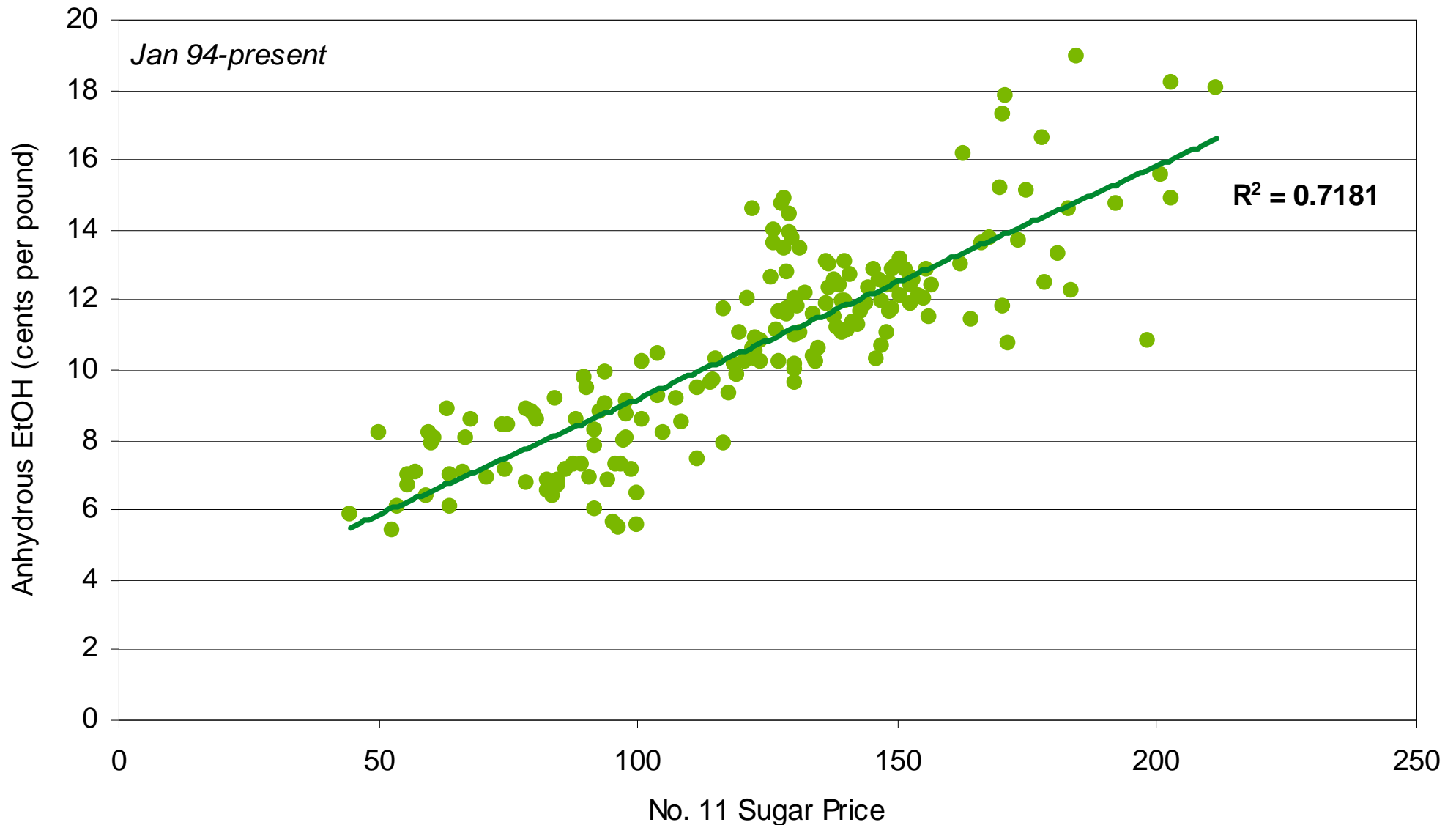
The emergence of FFVs has forced the ethanol price to within band set by gasoline price in different states



The link between ethanol and sugar should keep sugar prices within the corresponding band



World sugar price and Brazil ethanol prices are highly correlated

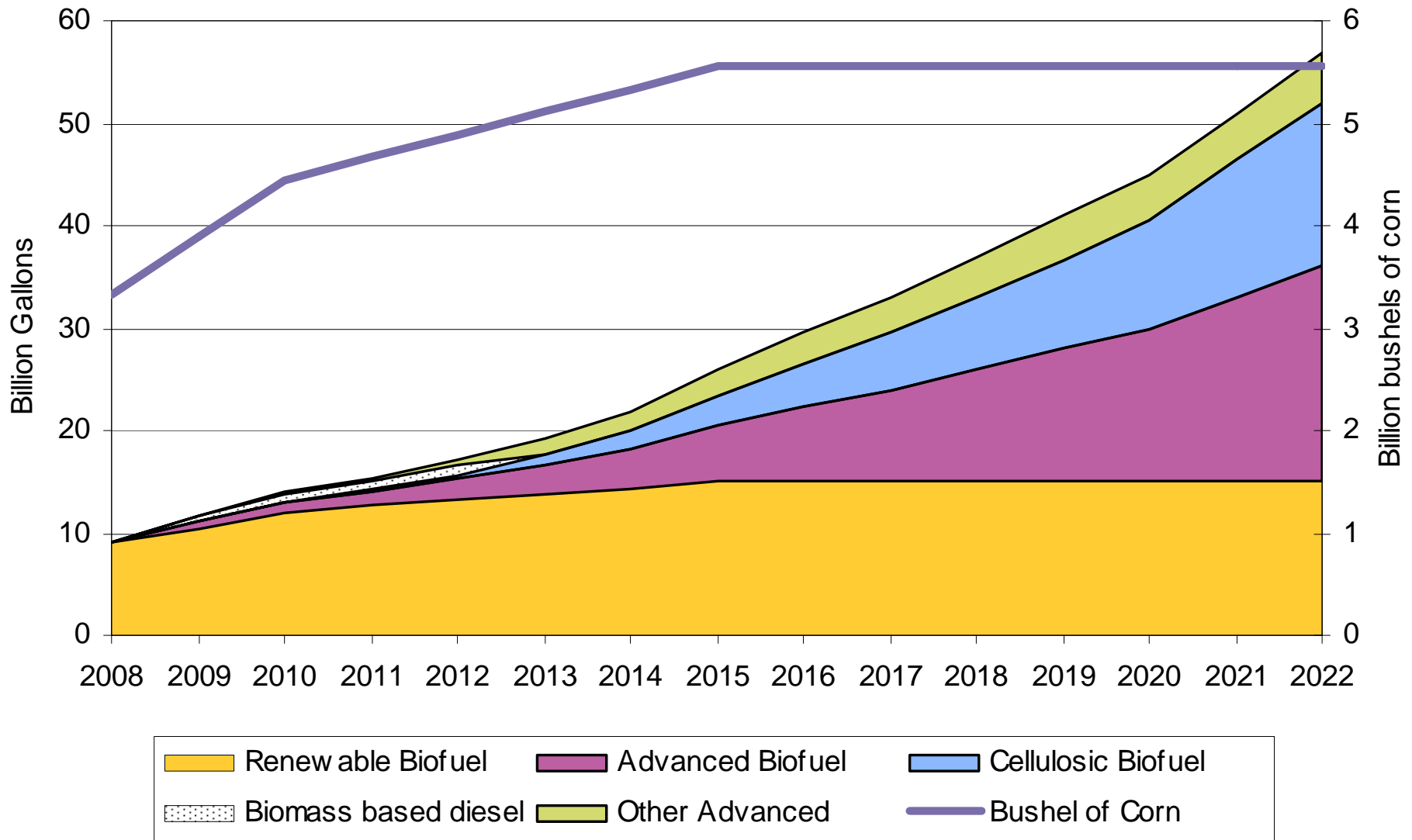


The energy – sweetener connection in North America

Corn, not sugar provides the link between energy and sweeteners in the NAFTA market

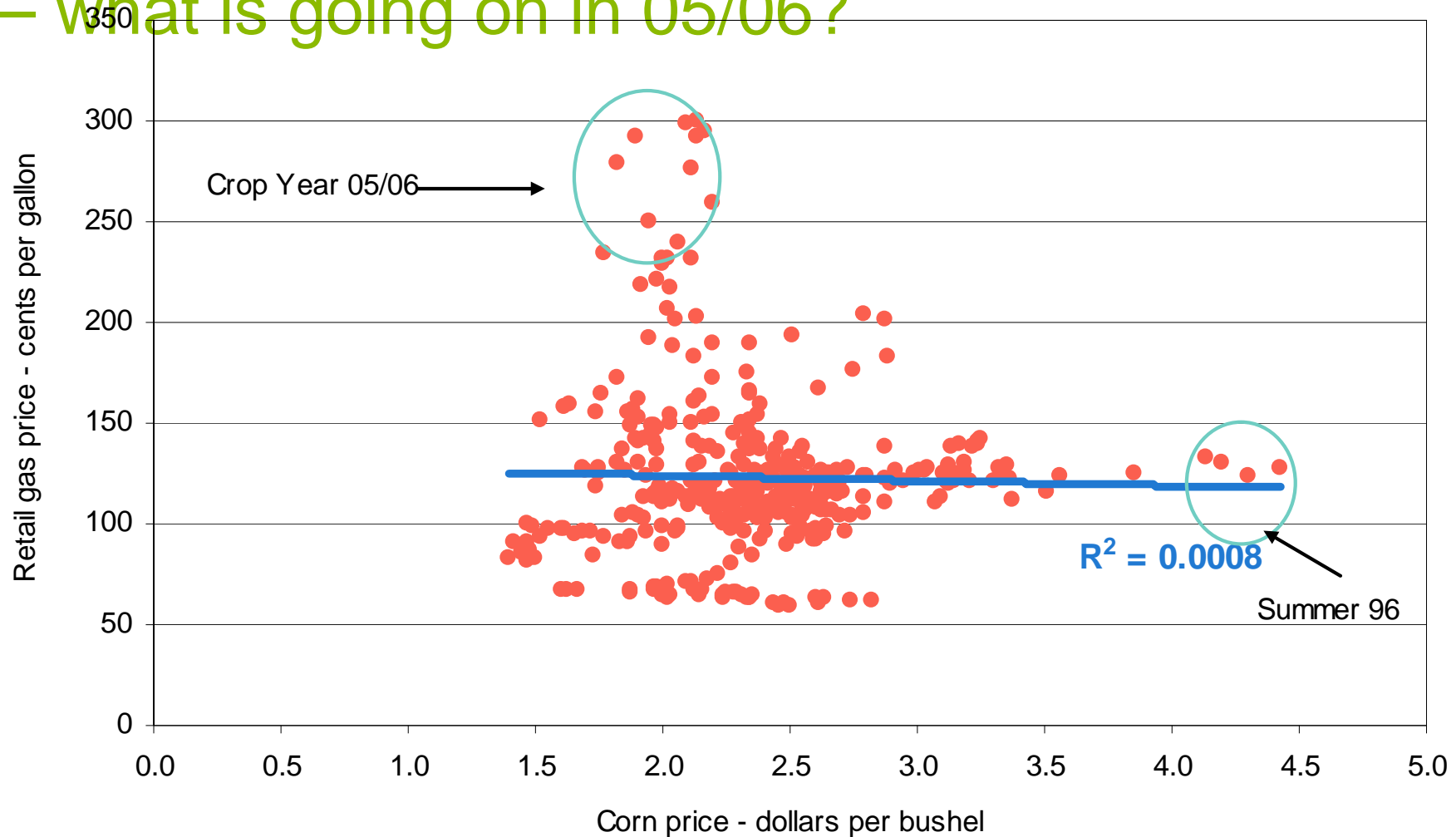
- US sugar policy keeps domestic sugar prices well above levels that would make it a competitive feedstock for ethanol
- Ethanol sector is dominated by corn based production
- ... and the Renewable Fuels Standard (RFS) sets the mandate for ethanol blending
- This has important implications for corn balance sheet (and *indirectly* for sugar)

RFS mandates 10.5 billion gallons of renewable biofuel in 2009 (equivalent to 3.9 bn bu corn or 1/3 of US output)



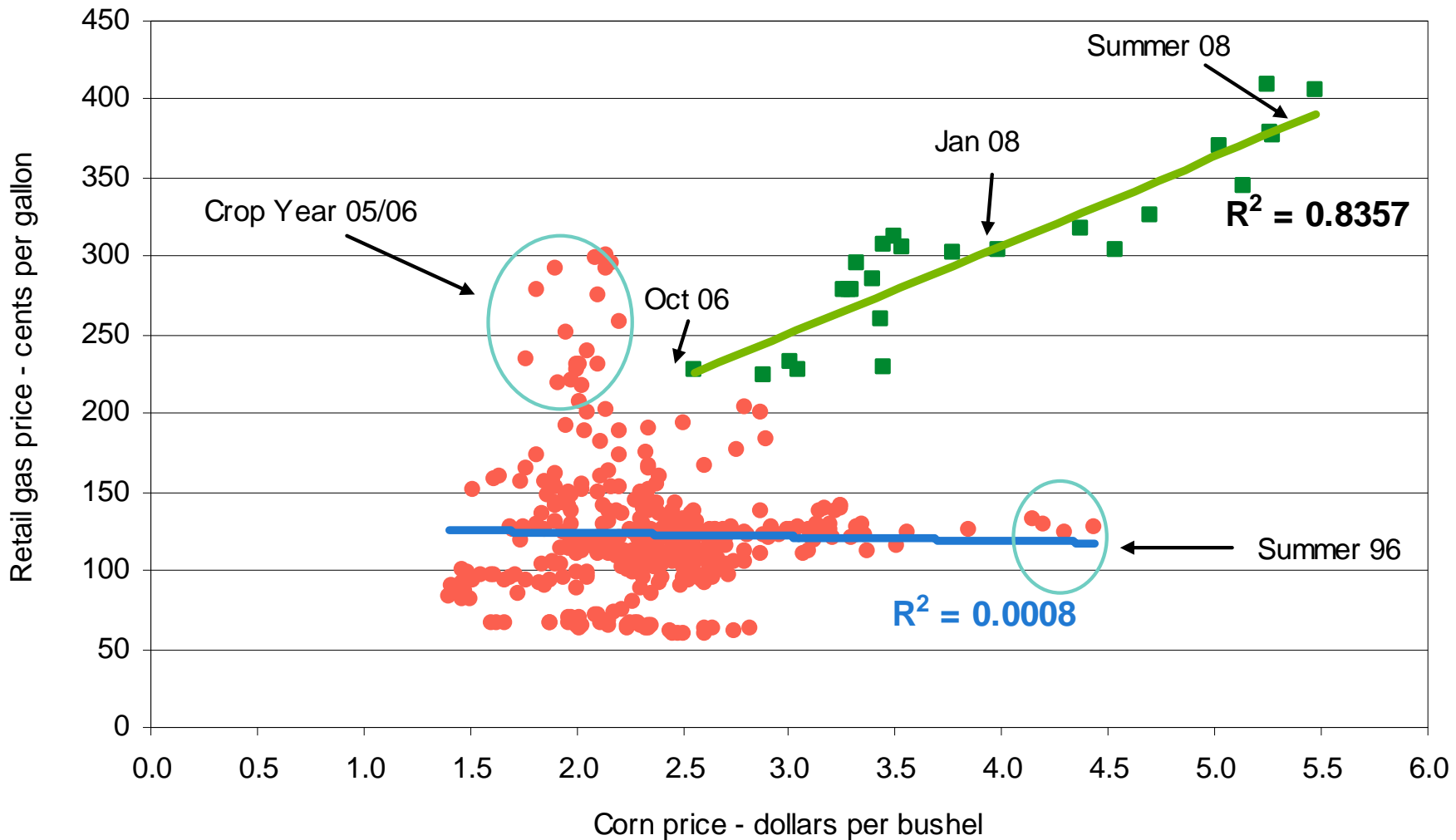
Prior to crop year 2006/07 correlation between US corn and gas prices was weak

— what is going on in 05/06?

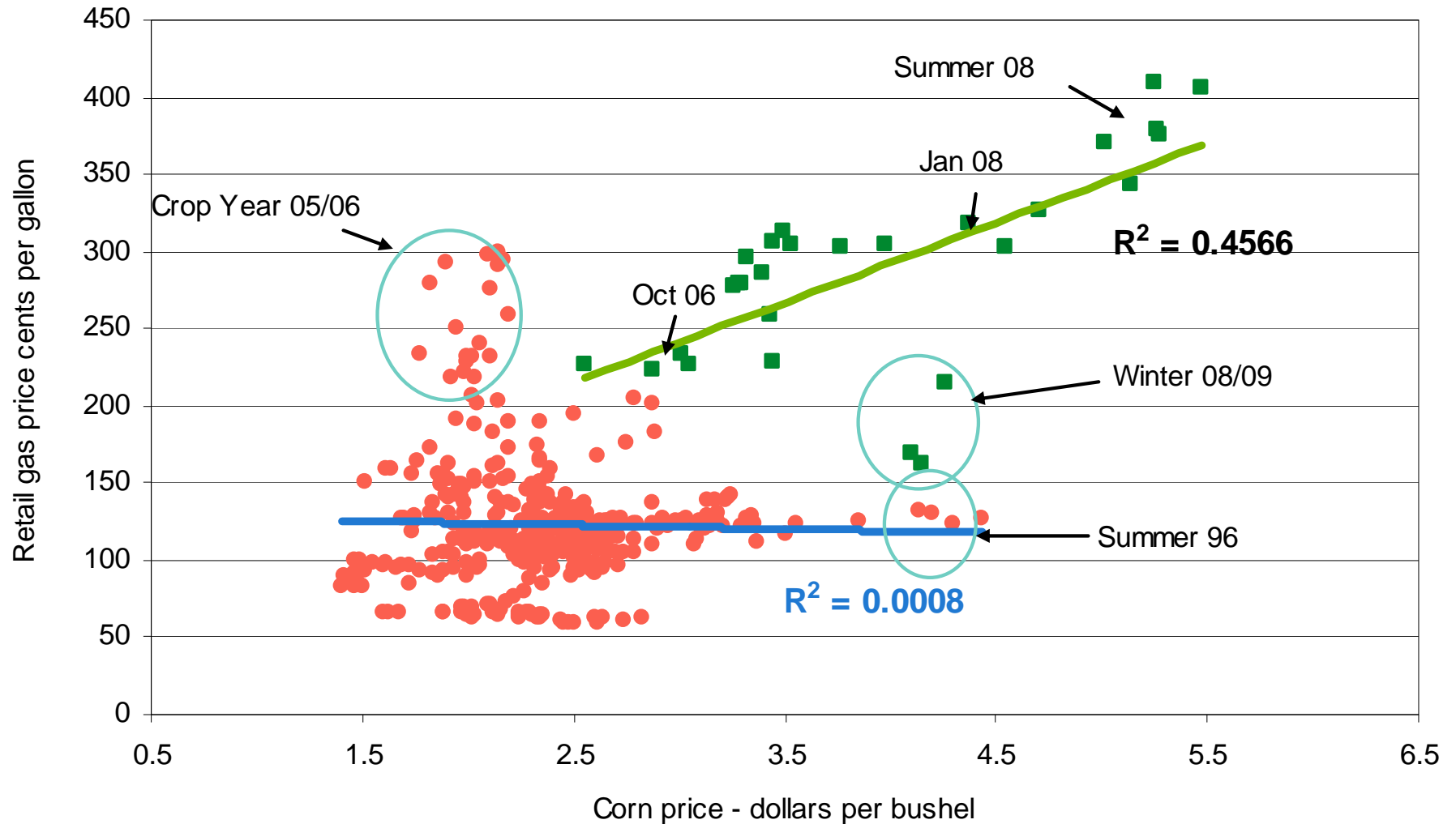


Beginning 06/07 crop year, corn prices and oil prices move upward

- Are corn and oil prices linked?



The corn/fuel price relationship doesn't always hold



When are corn and gas prices correlated?

\$150 Oil

- 1) High gas price
- 2) High ethanol price
- 3) Profitable ethanol blending margin
- 4) Ethanol use in excess of mandate
- 5) Increased corn grind
- 6) **Higher corn price**

Oil/ethanol prices affect NAFTA sweetener markets in several ways

- **When high oil prices inflate corn prices, they can affect sweetener markets:**

Increased corn prices raise corn margins and can make it a competitor for beet acreage (2008)

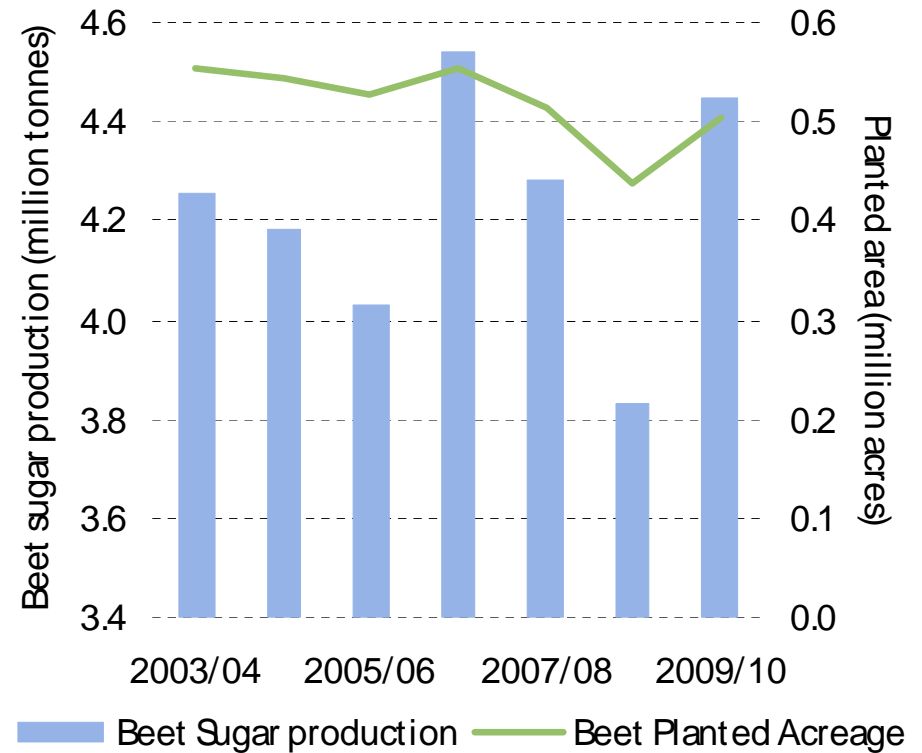
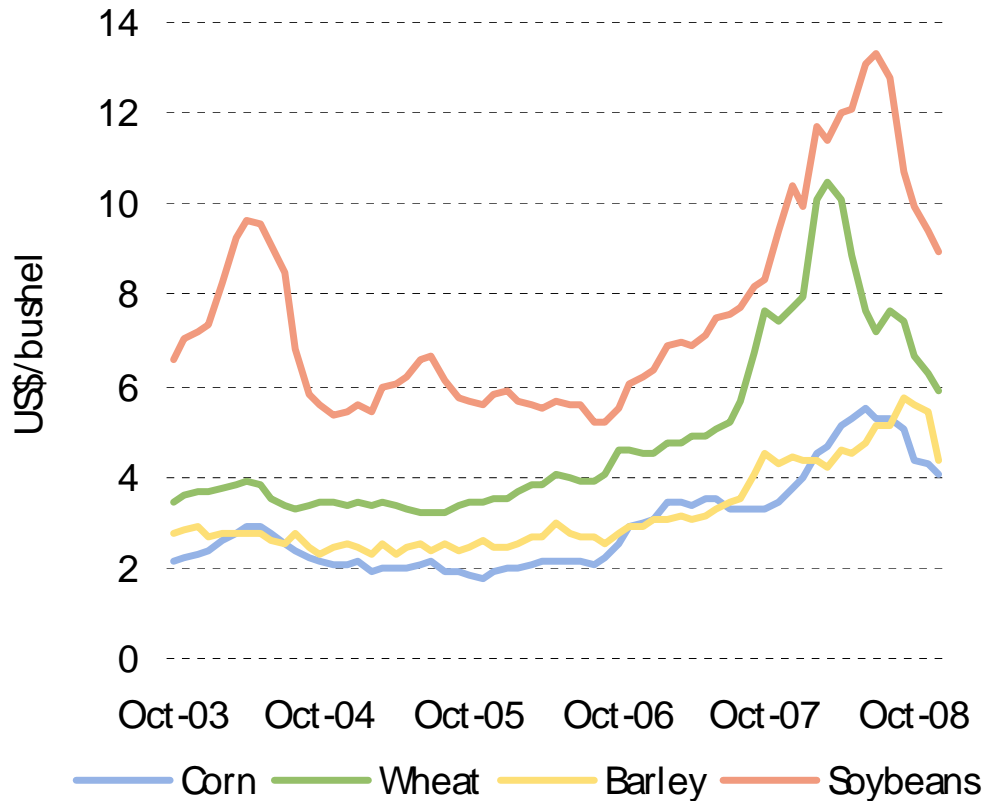
High corn prices persist, HFCS loses competitiveness vs. sugar

- **If ethanol prices are low, they can encourage wet millers to move swing capacity to HFCS**

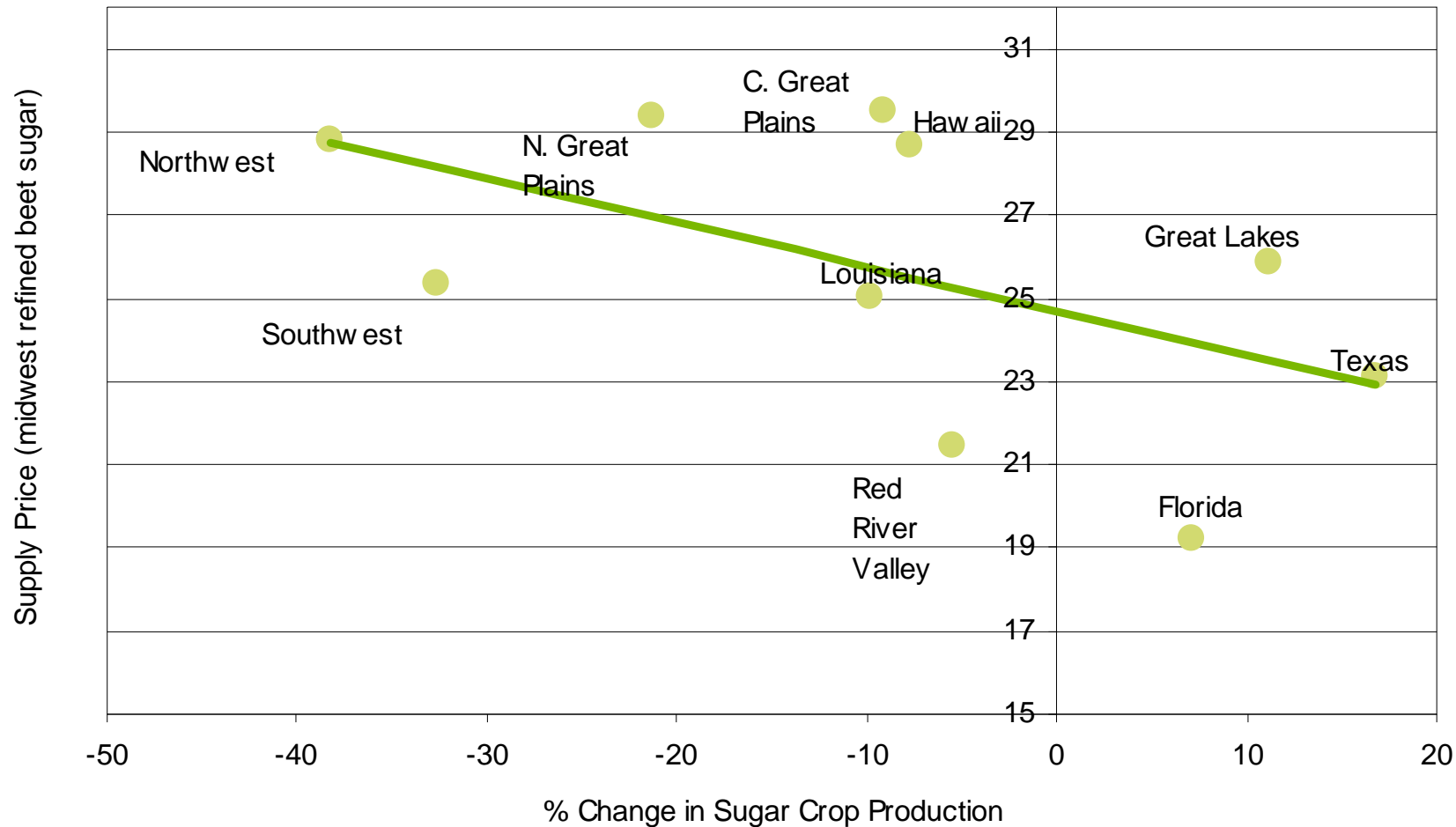
Increased HFCS production could depress prices, boosting competitiveness relative to sugar in the US and Mexico

1. High corn prices increase the competitiveness of corn relative to beet

#1: increased gross margins in competing crops can decrease beet acreage



#1 Areas with the highest Supply Price of Sugar tended to lose the most beet acres



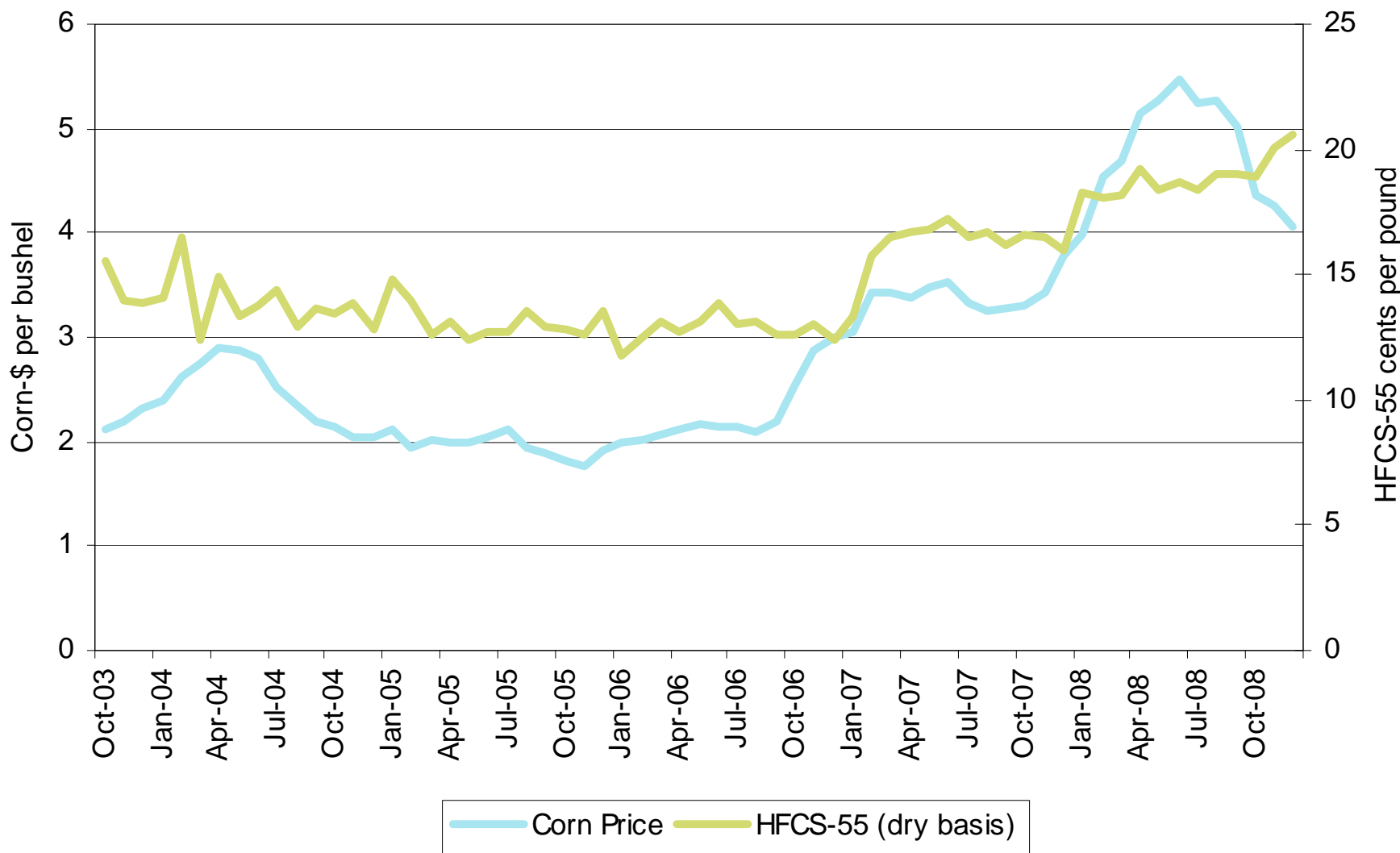
**Supply Price = Break Even Price +
Gross Margin of Next Best Crop**

2. High corn prices reduce the competitiveness of HFCS relative to sugar

#2: persistent high corn prices could cause wet miller to increase HFCS price to cover variable cost

- In October 2008, HFCS producers cited the need to increase prices because of increased input costs
- Theoretical limit to the commercial price of HFCS-55 is 77% * refined sugar price although it tends to sell lower than this. In Mexico, the limit could be lower because many end users are readily equipped to use sugar
- The economic rationale of the relative pricing of HFCS vs sugar can become obscured by consumer preference

#2: persistent high corn prices could cause wet miller to increase HFCS price to cover variable cost – but they are bound by an upper limit relative to sugar



3. If ethanol prices are low, they can encourage wet millers to move swing capacity to HFCS

#3: wet miller decisions can be influenced by the relative margins of HFCS vs. alternative such as ethanol

- There is some swing capacity between HFCS and alcohols (including ethanol), because they use the same parent material – corn starch
- Wet mill is a huge fixed cost
- The motivation is therefore to maximize starch throughput in the most efficient way possible depending on relative margins of end products
- But, the ability to swing starch is a function of technical constraints of a given wet mill

Ethanol margins are currently poor



12.8 billion gallons of ethanol processing capacity

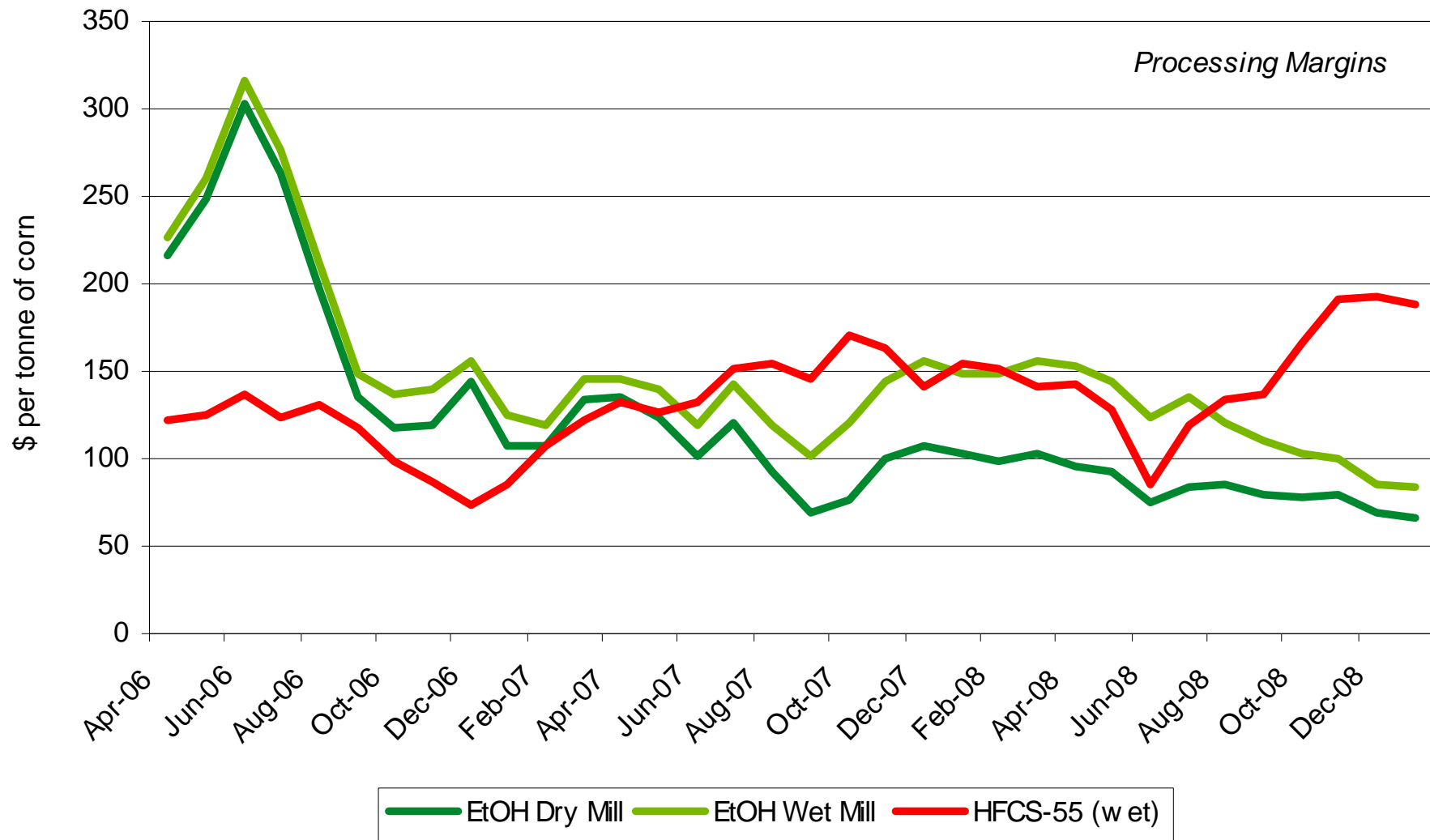
- 10.5 billion gallons of mandated use in 2009 (RFS)
- 82% capacity utilization

Current low oil prices provide no incentive to exceed RFS

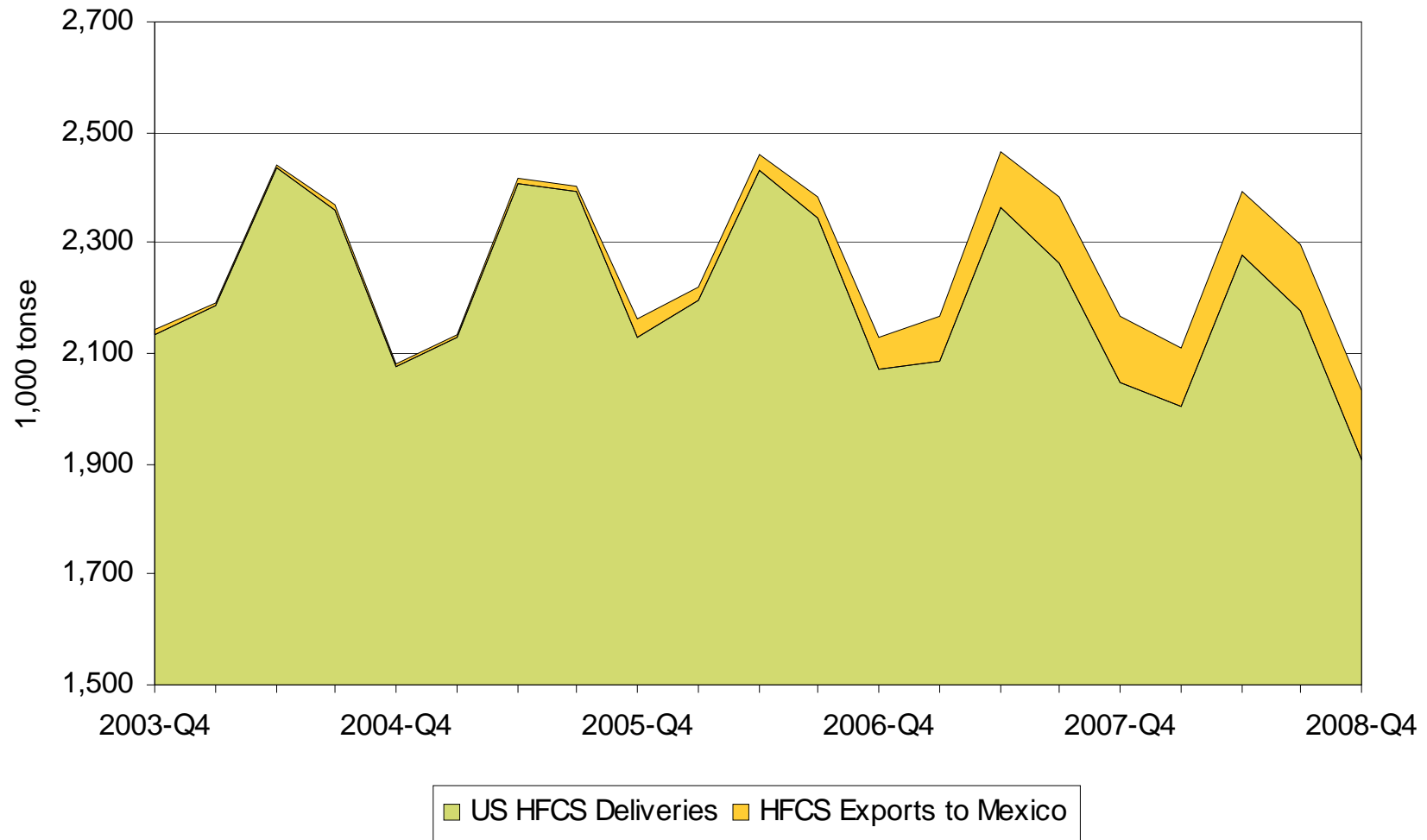
Excess supply puts market power in blenders' hands

- A few large buyers and many smaller competing sellers

#3: ethanol processing margins have been tanking, while HFCS has been relatively stable

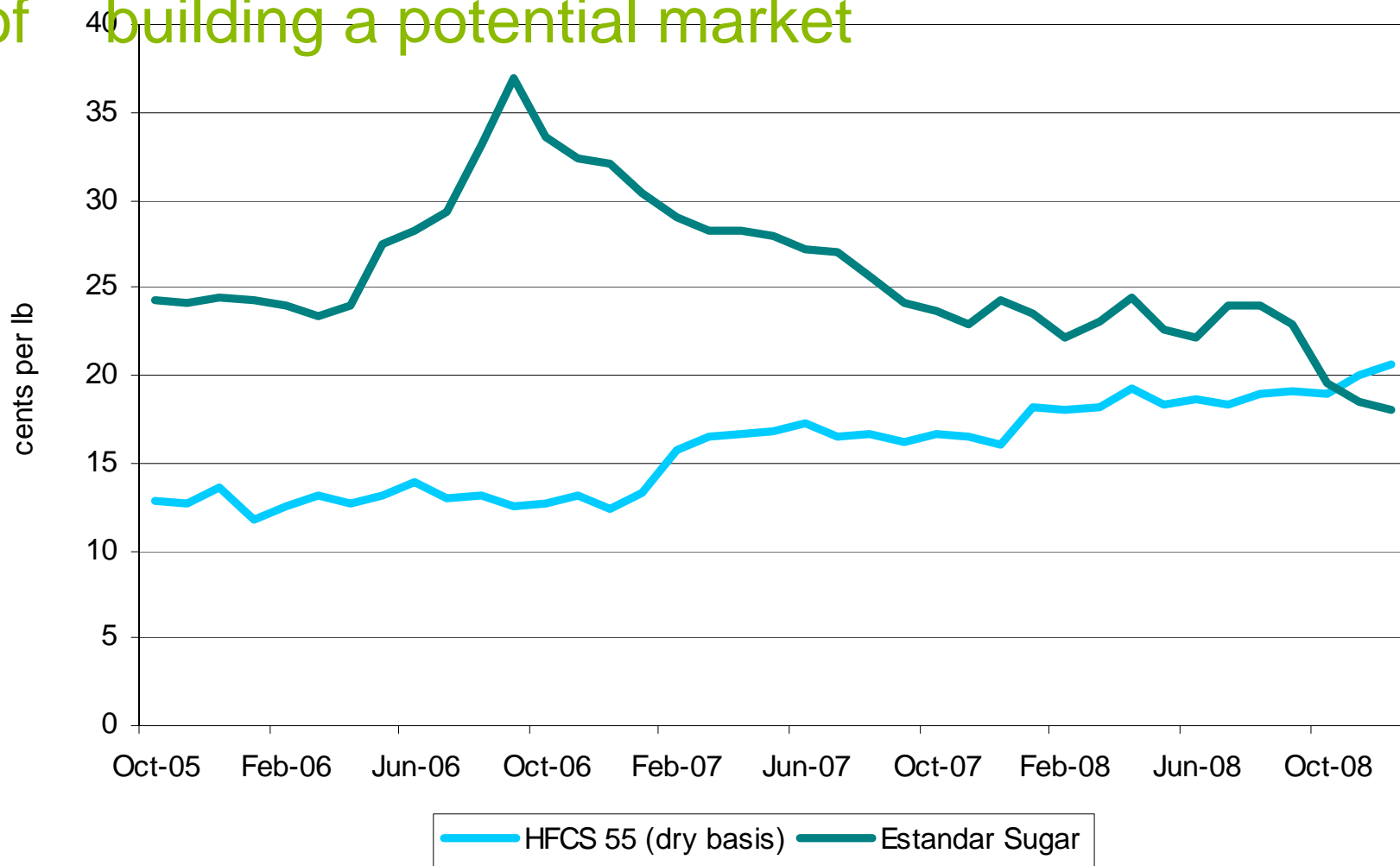


#3: HFCS consumption is declining in the US, though Mexico offers a market



#3: but, will Mexico remain a viable outlet?

- Exporting to Mexico with slim margin may be better than producing ethanol at zero margin
- Also, exporting to Mexico has the advantage of building a potential market



#3: poor margins in ethanol are pushing available wet milling swing capacity into HFCS

- This is making it difficult to talk about increasing HFCS contract prices **DESPITE high US refined sugar prices**
- Poor ethanol margins can force down the price of HFCS, making it more competitive

Conclusions

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- **Strong link between world sugar and ethanol prices via the Brazilian FFV fleet**

Relationship between world sugar and oil is complex because Brazilian gas prices are set by the government

- **In the NAFTA sweetener markets, there is a link between oil and sweeteners prices via corn**

Conclusions

High corn prices:

- Can cut HFCS competitiveness
- Can pinch the planting of sugar crops, particularly sugarbeets

Low ethanol prices:

- Can encourage HFCS production
- This can dampen HFCS price and increase its competitiveness in the US and Mexico

Questions?

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