



# Global Agriculture Production Trends and Effects on Bio Energy

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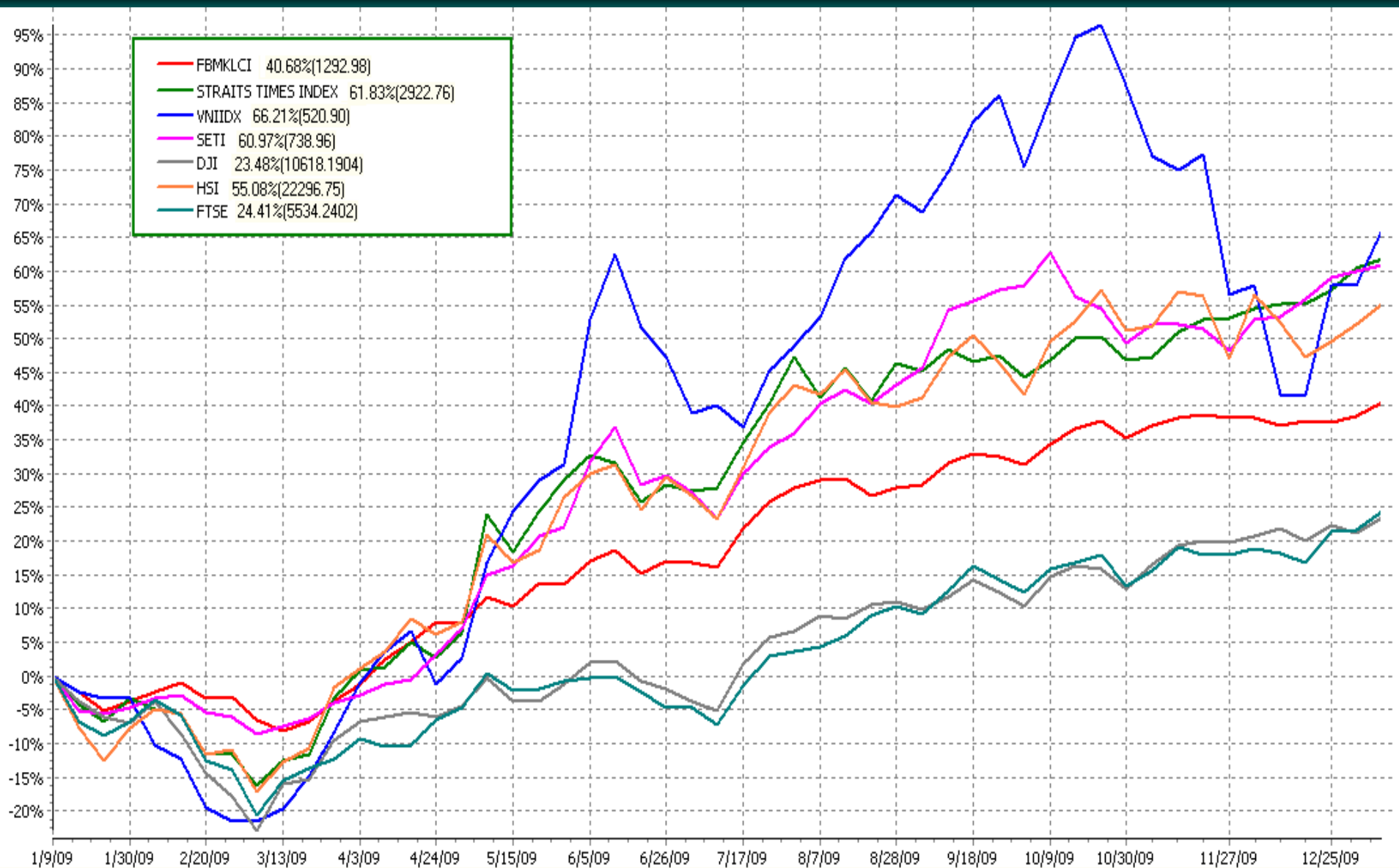
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# Global Agriculture Production Trends and Effects on Bio Energy

- How does Brazil, Russia and India, compete against China, who is the largest contributor of global growth and one of the world's top energy consuming nations?
- As Global economies expand, the need for energy and food commodities should grow.



# Global Equities Market Performances (12 Month weekly chart)



# CRB INDEX



CR-057: Crb Index Cont Liq. (Quarterly bars)

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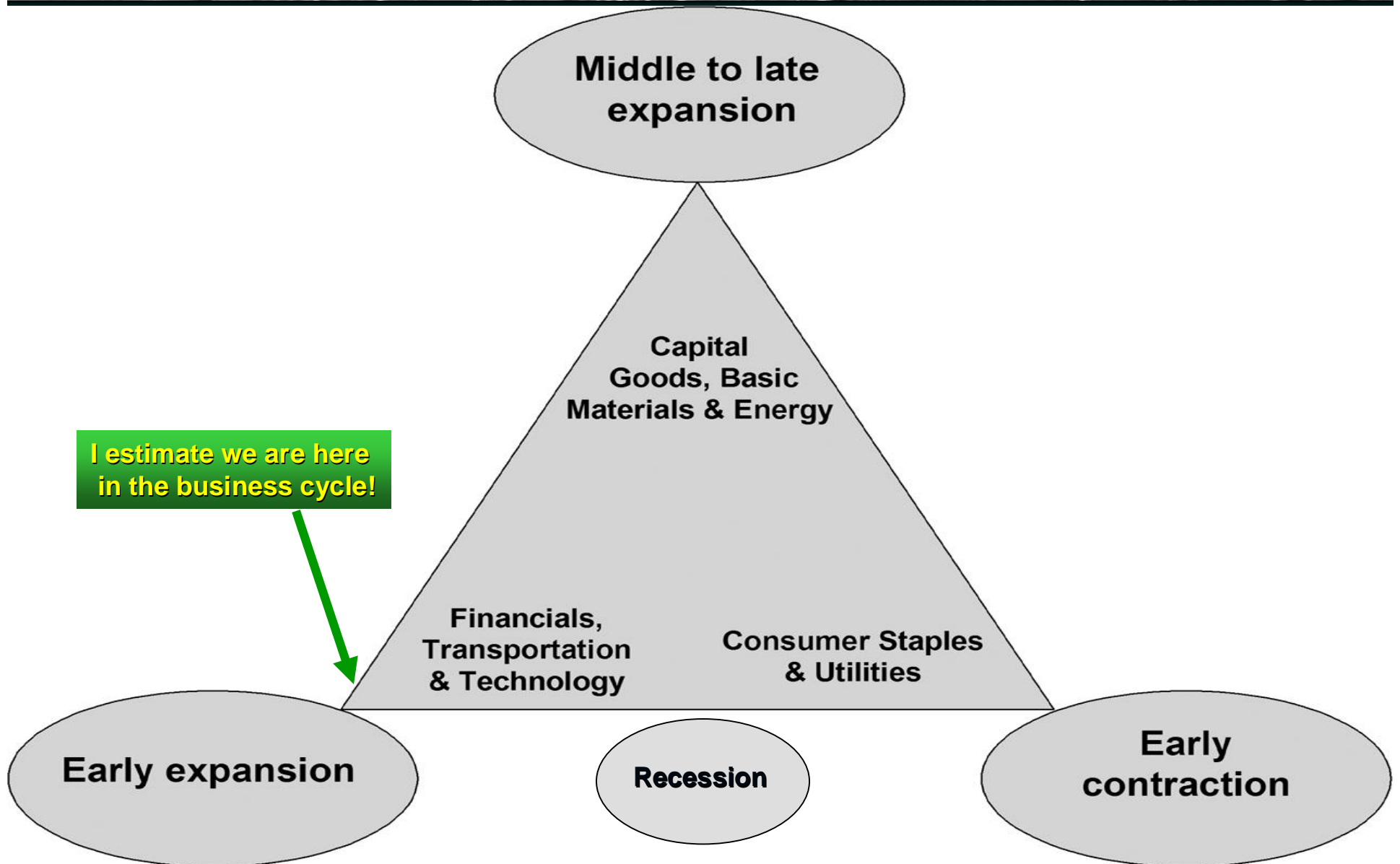




# The Business Cycle- The Big Picture

- Money flows into the equity markets go into “sector rotation” as the economy goes into expansion to contraction back to expansion.
- Technology stocks led the late 90’s: home builders led in 2003, oil led the way in 2007-2008.
- Commodities & Technology now lead the way in 2009-2010.
- Consumer staples, blue chips, and utilities were in vogue as the economy showed weakness.
- In early-mid 2009, we had a surge in Trans, Tech and Financials.
- Focus on the leaders in the strong sectors, here’s a tip how...

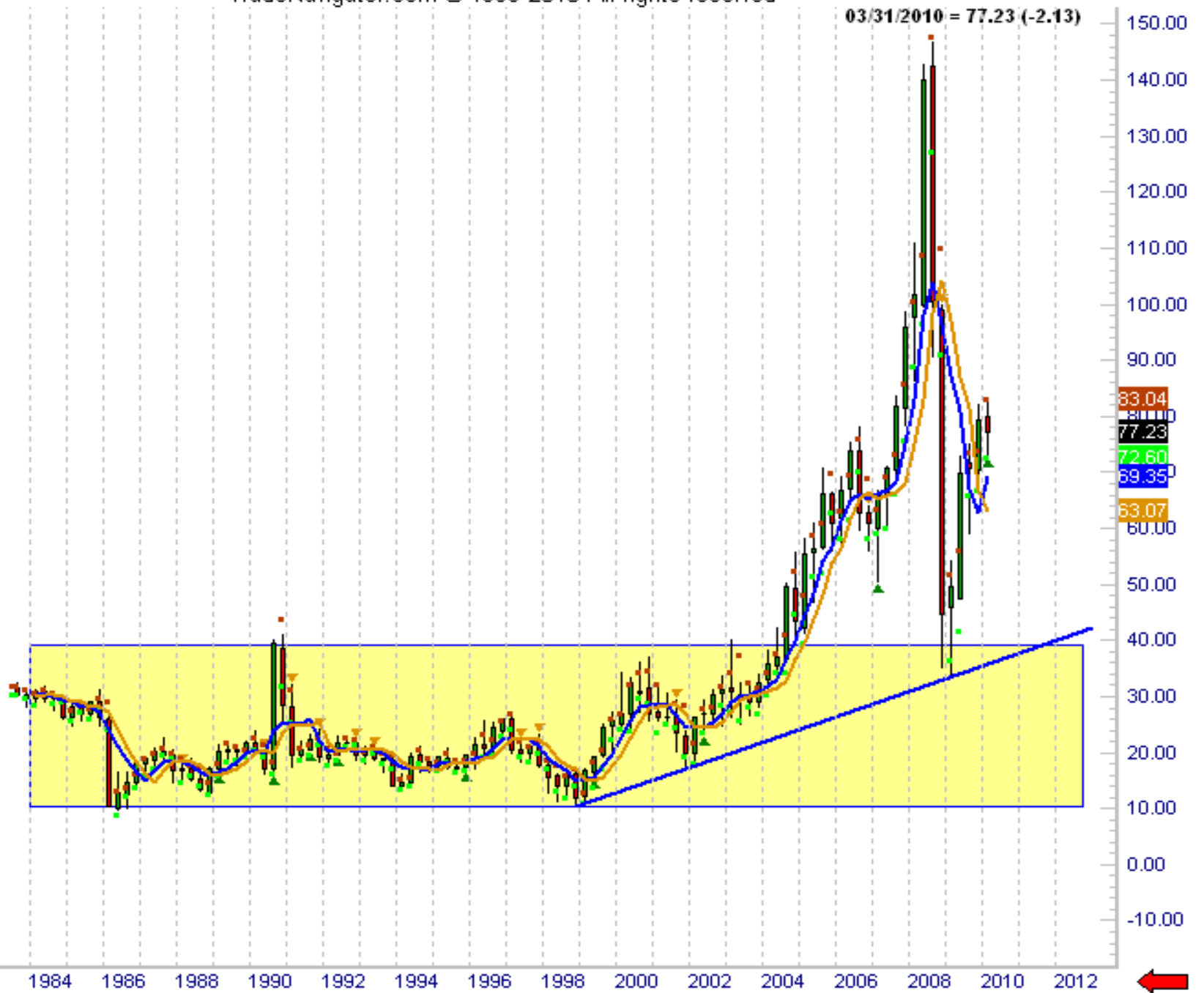
# The Business Cycle- The Big Picture





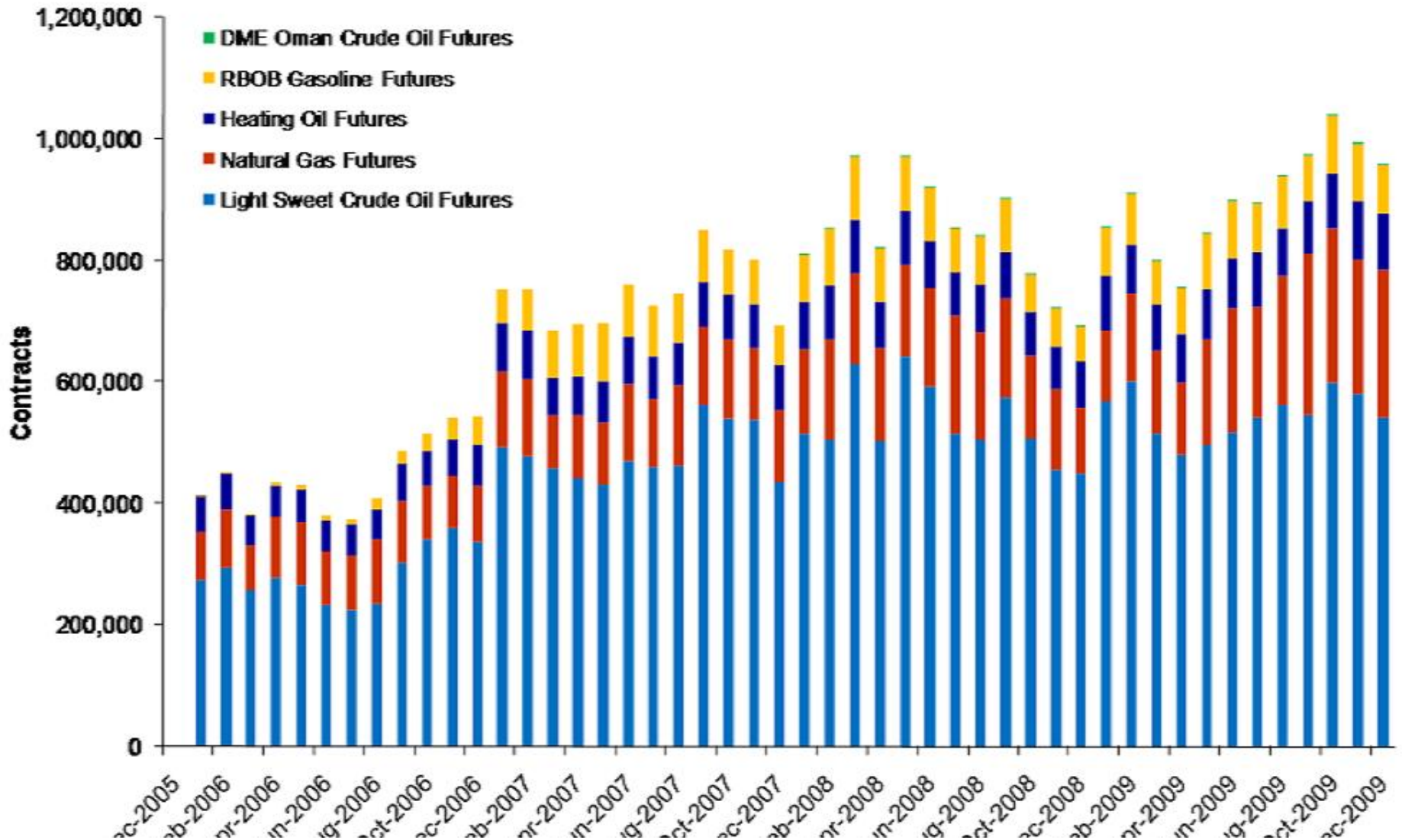
# CL-057: Crude Oil NY (Pit) Cont Liq (Quarterly bars)

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# Energy Trading Volume

## Futures - Average Daily Volumes





# Political Changes

- “Send me legislation that places a market-based cap on carbon pollution and drives the production of more renewable energy in America.”
- President Barak Obama’s first major speech to Congress last February



# Political Changes

- Obama Administration is beginning to talk more about clean energy legislation and tying it to job creation.
- At Wednesday's clean energy forum, White House energy and climate adviser Carole Browner stressed the need for legislation to eliminate dependence on foreign oil, put a **price signal on carbon emissions and** mandate an increase in electricity from renewable sources.
- She said this is about creating a new generation of clean energy jobs that will position the U.S. in a global market, and legislation is needed to do that.



# Political Changes

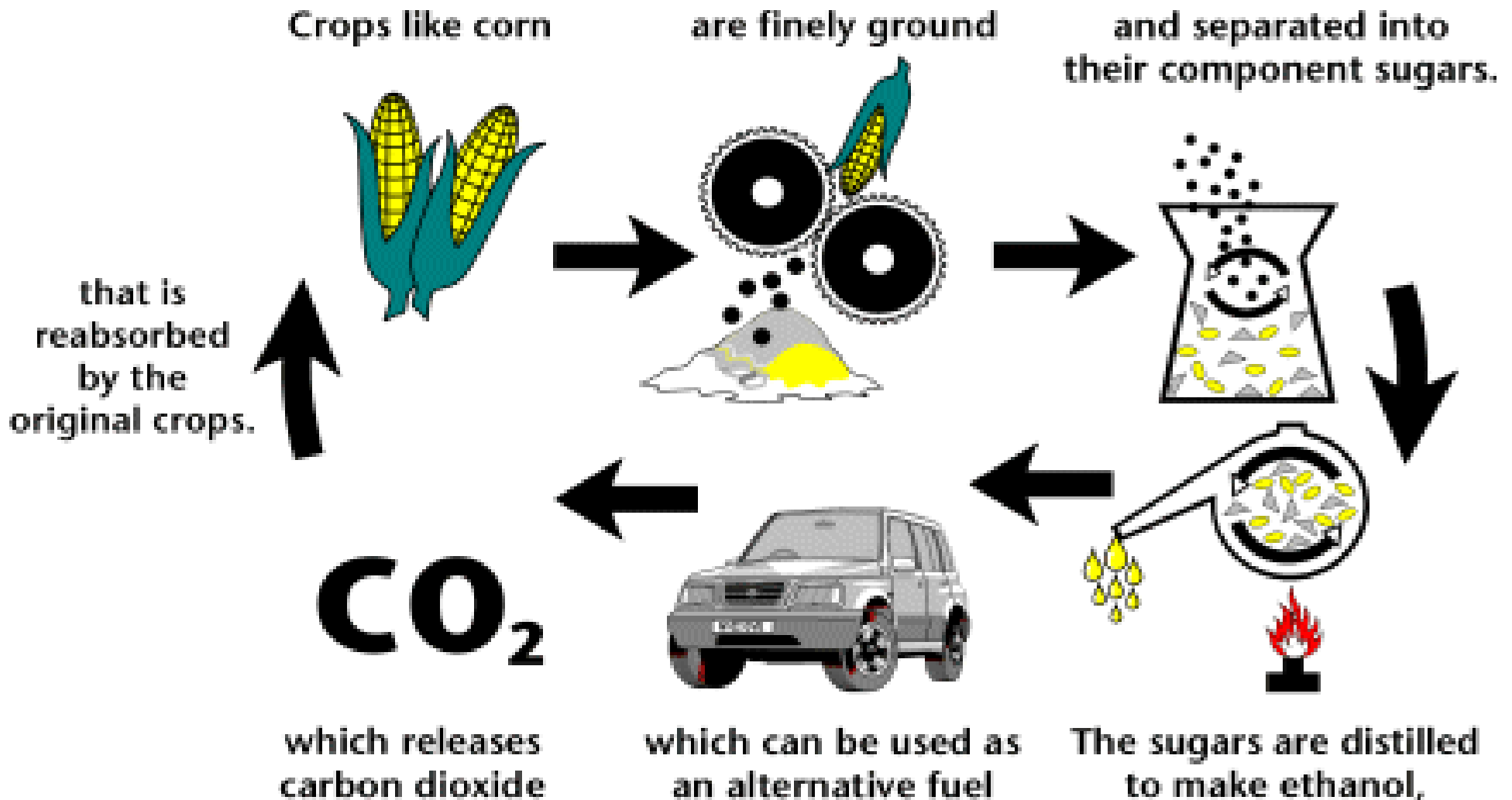
- The White House is willing to spend political capital on a sputtering effort to limit greenhouse gas emissions.
- Senators leading efforts to write a bipartisan climate bill have signaled they will keep pushing hard for legislation that would curb emissions of greenhouse gases and boost development of alternative energy.
- Democrats nervously eye the midterm elections.
- The struggling biofuels industry is concerned that the Obama administration will **move too quickly away from ethanol, which is mostly made from corn, to more difficult techniques using wood chips and other biomass.**



# Political Changes

- Under a 2007 energy law, ethanol made from corn must emit less of the main greenhouse gas, carbon dioxide, than gasoline over the life cycle of the fuel, from production to being burned.
- Cellulosic fuels, made from crop waste and the woody bits of nonfood crops, would have to be even cleaner.

# The Carbon Cycle





# Historical Yield Trends

- Higher crop prices combined with lower input costs will buoy fertilizer consumption in 2010.
- Last year potash prices exceeded \$1,000 a ton in some regions.
- Now back down to \$350 a ton, dealers and farmers see potash as attractively priced.
- Demand should increase as farmers will use applications to revitalize soils.



# Historical Yield Trends

- From 1950 to 2005, corn yields have increased by an average of 1.1 percent per year. This linear trend has come to a halt in the most recent half decade.
- Between 1930 and 2003, average corn yields jumped nearly sevenfold, from 20.5 bushels per acre to 142.2 bushels per acre.



# Historical Yield Trends

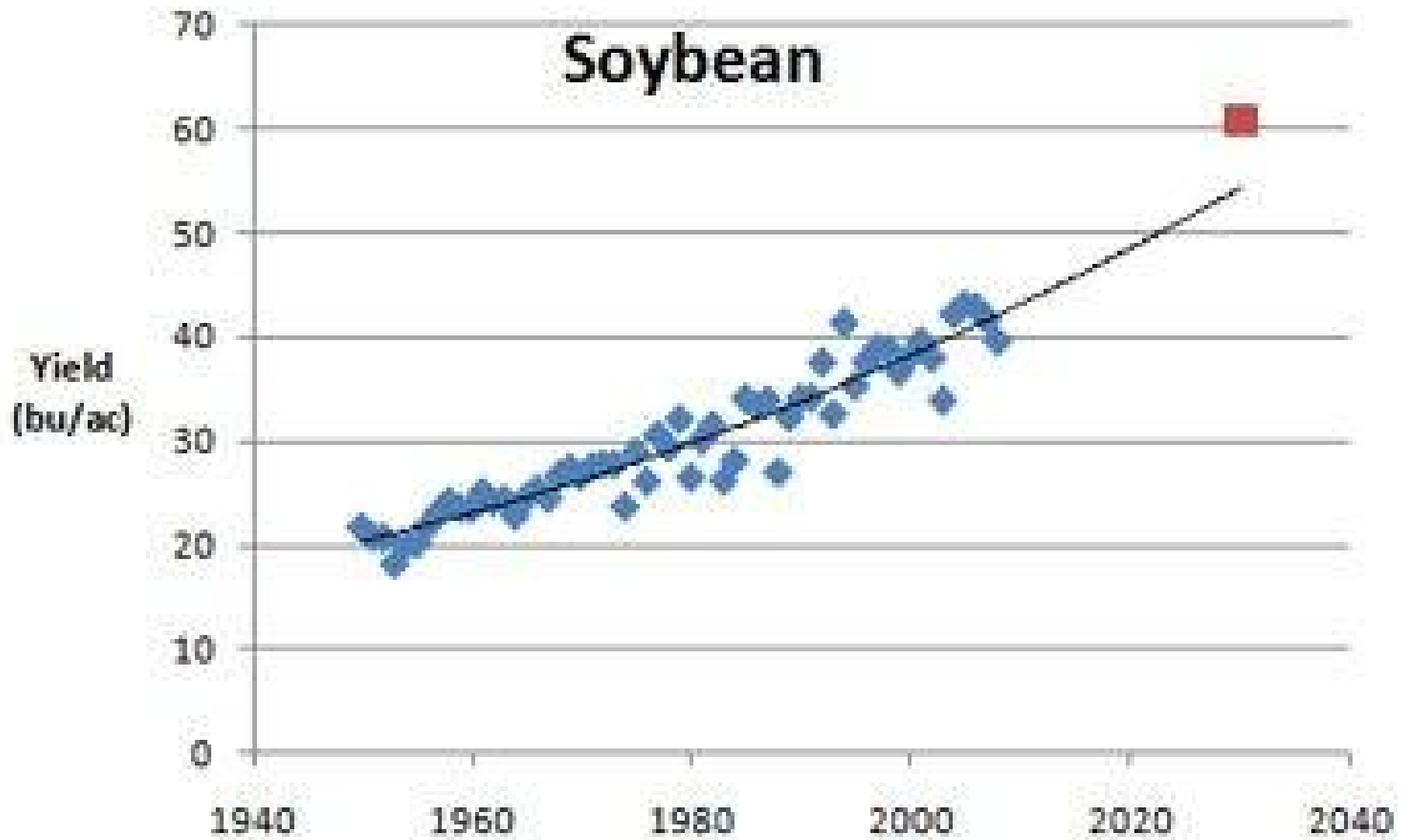
- In that same period, average soybean yields more than doubled, from 13 bushels per acre to 33.4 bushels per acre.
- National soybean yields have hovered around 40 bushels per acre for about a decade.
- Genetic differences between the two crops and greater attention paid to corn research has hindered soybean yield growth.



# Historical Yield Trends

- Soybeans have about half the DNA of corn, yet soybeans are much more difficult to cross than corn genes.
- Corn is more efficient than soybeans at turning sunlight into energy.
- Soybean plants generally handle environmental stresses better than corn, but soybeans tend to lose more grain under heat stress.

# Historical Yield Trends

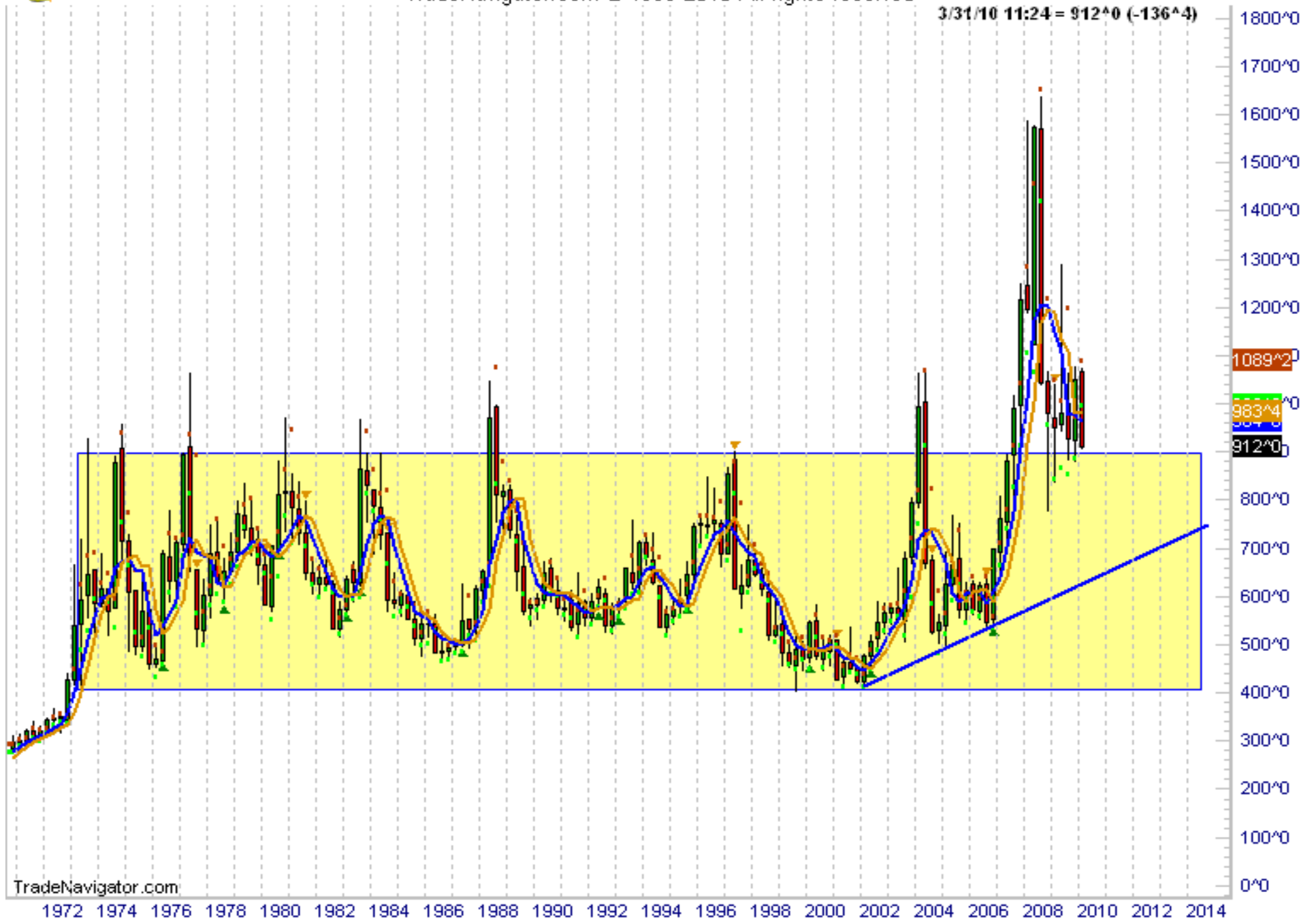




# S-057: Soybeans CBT (Pit) Cont Liq. (Quarterly bars)

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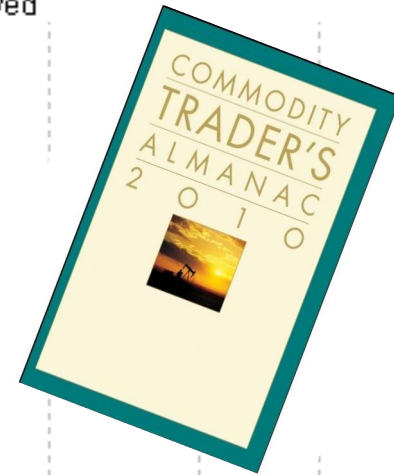
3/31/10 11:24 = 912^0 (-136^4)



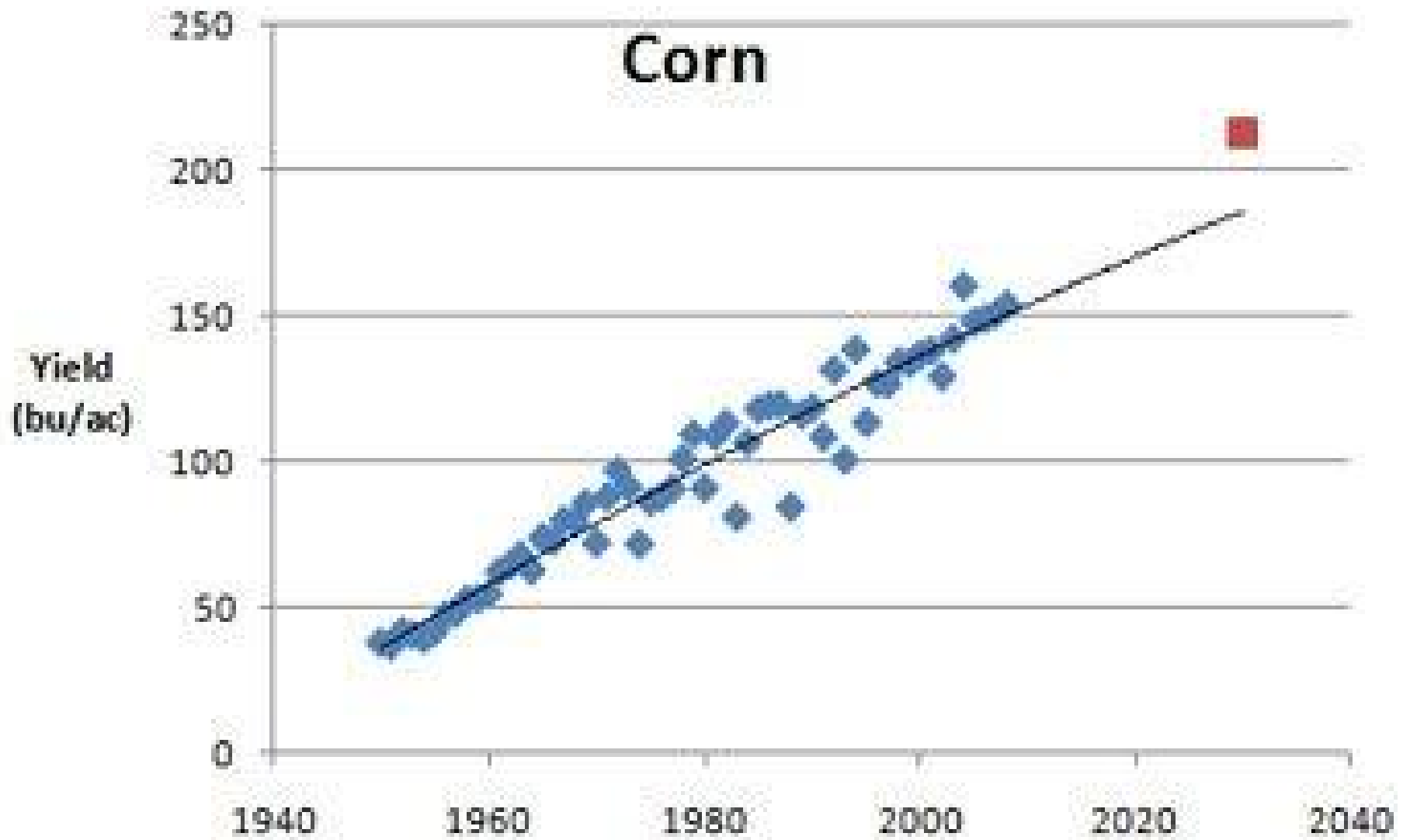


# S-057: Soybeans CBT (Pit) Cont Liq. (Weekly bars)

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# Historical Yield Trends

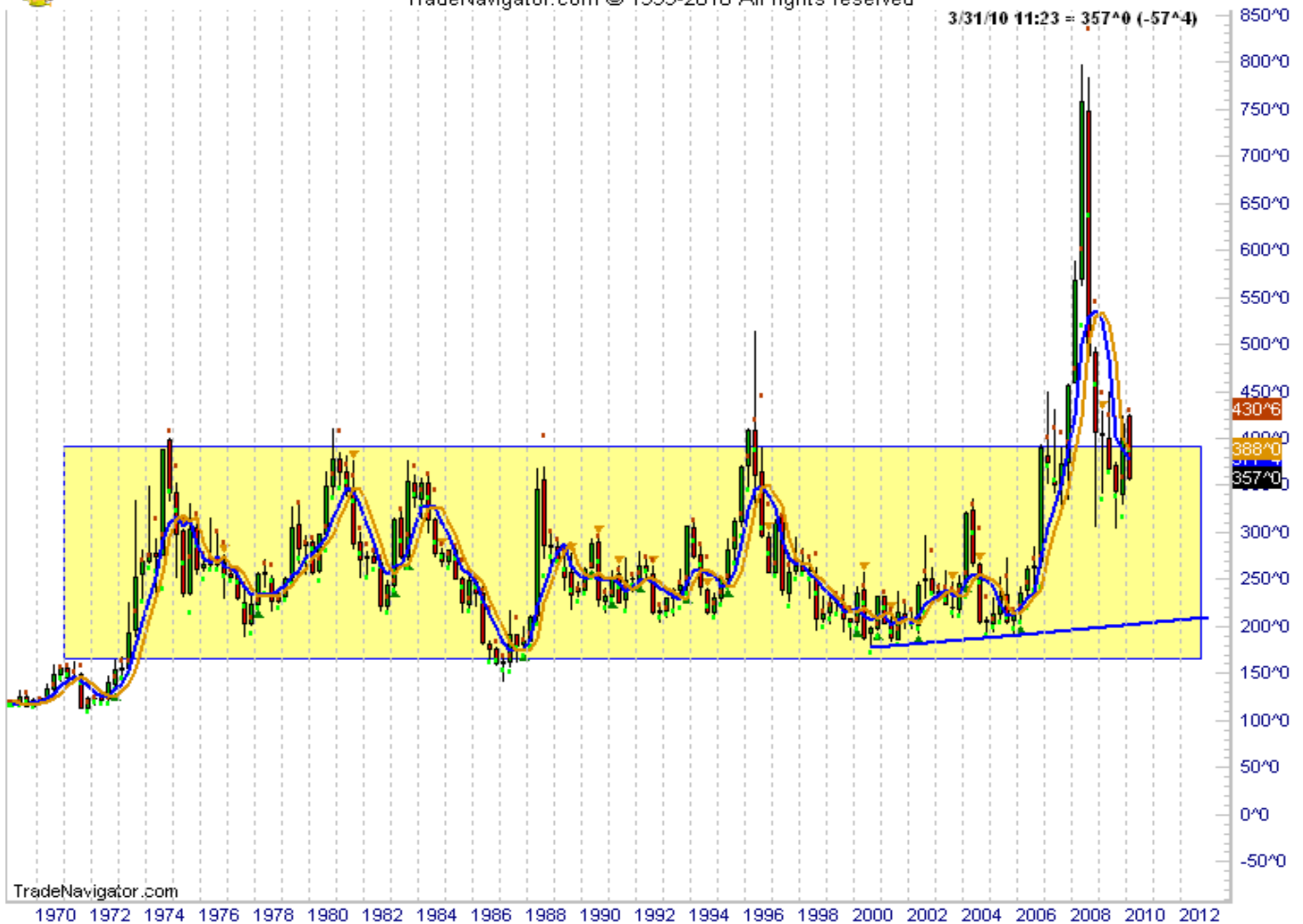




# C-057: Corn CBT (Pit) Cont Liq. (Quarterly bars)

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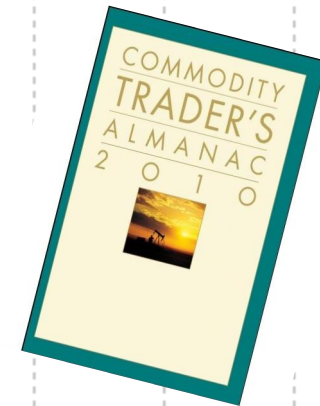
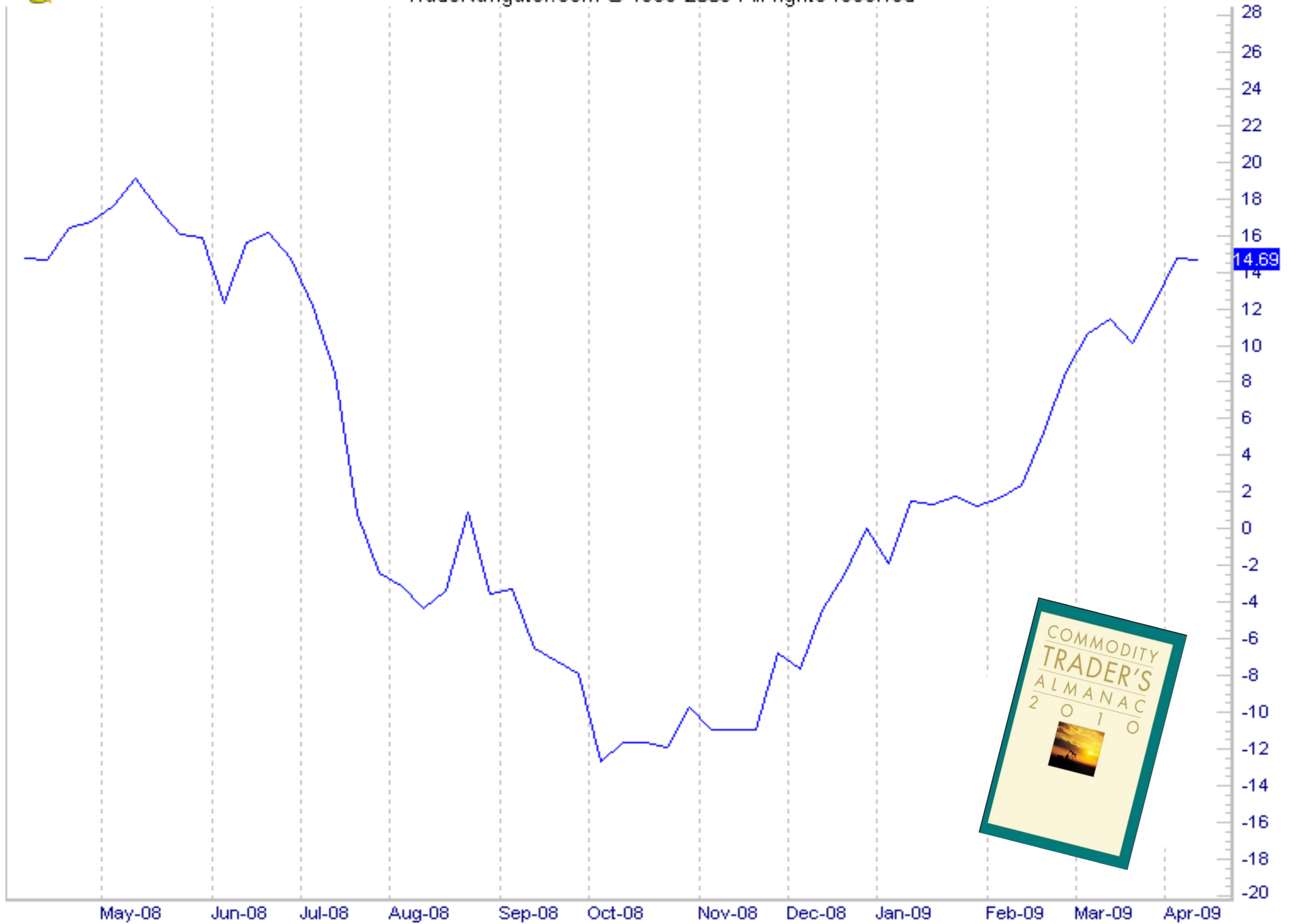
3/31/10 11:23 = 357^0 (-57^4)





# C2-057: Corn CBT (Comb) Cont Liq (Weekly bars)

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# CFTC REGULATION OF ENERGY DERIVATIVES

- Attention is now focused on certain energy and agricultural products that hold futures contracts.
- Several funds have stopped issuing new shares in anticipation of CFTC limits. That has been enough to cause the funds to drift from their net asset values.
- Position limits are one of the major regulations involved, and they help support the integrity of the market.



# Break Through Discoveries

- The recent discovery *Gliocladium roseum* fungus points toward the production of so-called **myco-diesel** from cellulose.
- This organism was recently discovered in the rainforests of northern Patagonia and has the unique capability of converting cellulose into medium length hydrocarbons typically found in diesel fuel.
- Scientists also work on experimental recombinant DNA genetic engineering organisms that could increase biofuel potential.
- Scientists working in New Zealand have developed a technology to use industrial waste gases from steel mills as a feedstock for a microbial fermentation process to produce ethanol

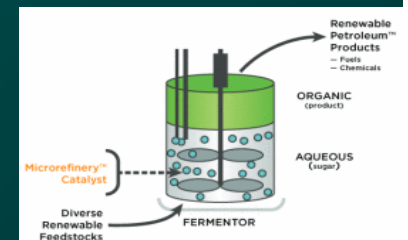
A close-up, grayscale image of several coins, likely quarters, showing their intricate designs and textures. The coins are slightly out of focus, creating a sense of depth.

# Break Through Discoveries

- The University of California at Berkeley and the U.S. Department of Energy's Joint Bio-Energy Institute (JBEI), announced on 2-3-10 a step toward lowering the cost of making biodiesel from wood chips, corn stover, and other residual agricultural products.

# Break Through Discoveries

- Biofuel start-up LS9 and California researchers on Wednesday claimed a breakthrough in converting non-food biomass into biodiesel using a genetically modified form of e. coli bacteria.
- LS9 is one of a handful of U.S. synthetic biology companies that are manipulating microorganisms to convert plants into liquid fuels or plastics.





# Break Through Discoveries

- Researchers are using another strain of e. coli that can work with different feed stocks, such as straw or wood.
- Those cellulosic feed stocks are typically harder to convert into fuel through fermentation than sugar cane or corn, but offer the potential of lower overall greenhouse gas emissions.

# Third-generation

- *Algae fuel, also called oilgae or third generation biofuel, is a biofuel from algae.*
- *Algae can produce up to 30 times more energy per acre than land crops such as soybeans, but these yields have yet to be produced commercially.*
- *The United States Department of Energy estimates that if algae fuel replaced all the petroleum fuel in the United States, it would require 15,000 square miles.*
- *Algae, such as *Chlorella vulgaris*, are relatively easy to grow, but the algal oil is hard to extract. There are several approaches, some of which work better than others.*



## CONCLUSION:

- Regulatory changes in the U.S. Futures markets could hinder current price discovery mechanisms in the marketing of corn and soybean production to foreign exchanges.
- Political changes on energy reform could hurt grain prices.



## CONCLUSION:

- Regulatory changes in the U.S. Futures markets could hinder price discovery mechanisms in of corn and soybean production to foreign exchanges.
- Political changes on energy reform and new discoveries could help moderate rising grain prices.



# CONCLUSION:

- Higher demand will exist for fertilizer, these companies should perform well:

Potash (POT), Mosaic (MOS), C.F. Industries (CF), Terra Industries (TRA).

- China Green Agriculture (CGA).
- Trade corn & soybeans from Seasonal perspective.