Commodity Futures Markets

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Readings

- L. Telser, Why there are organized futures markets? *Journal of Law and Economics*, vol.24, No.1, 1981
- H. Geman, Ch.1. Physical and Financial agricultural Markets, in: *Agricultural Finance*, John Wiley & Sons, 2015.
- L. Nijs, Ch.14. Commodities I: Derivatives Markets, in: *The Handbook of Global Agricultural Markets: The Business and Finance of Land water and Soft Commodities*, Palgrave MacMillan, 2014.

The actors in financial markets

- Hedgers
- Arbitragers
- Speculators
- Market makers

Actors in Agricultural Commodities Markets

1. Producers, consumers and processors
2. Trading companies
3. Brokerage houses
4. Managed funds and institutional investors

Why organized futures markets exist?

There are three arguments that have been proposed:

- The hedging or the insurance argument
- The speculative argument
- Liquidity argument

Insurance argument

- Assume spot and futures prices move in parallel
- A merchant holds inventory (long position)
- If the spot price falls the value of the inventory falls
- If the spot price rises the value of the invenotry rises
- If spot price falls futures price falls by assumption
- Merchant sells futures contract equal in quantity to inventory (promise to deliver in future at original price)
- Merchant is able to hedge and suffers no loss.

Insurance argument

- price movements must only be approximately parallel
- Merchant breaks even by taking an equal and opposite futures position
- Problem: Merchant makes no money
- Return on merchant's capital investment must be allowed for

Insurance argument

Sellers of insurance: buyers of futures contract

- Buyer of futures contract need not have an off-setting position
- therefore the buyer is exposed to risk by entering into the contract
- Risk is transferred from the seller to the buyer
- Assume the buyer is long, then the buyer is rewarded if futures prices are trending upward.
- downward bias in futures price compared with expected spot price the difference is a risk premium
- Conclusion: There cannot be a parallel movement of futures and spot prices (Think of this in terms of triangles)

Speculation

- Insurance theory assumes speculators are risk averse (they expect to be paid a premium to take on risk)
- Insurance theory assumes futures prices rise when speculators are short and futures prices fall when speculators are long
- Problems: speculators may not be risk averse
- Speculators may not take an opposite position to hedgers

How does an organized market work?

- Contract
- Verification
- Restricted to members
- Clearing house

Futures vs Forward contracts

- Futures analogous to money exchange
- Forward analogous to barter exchange

Physical markets

1. Small regional markets with limited storage capacity able to serve small areas
2. Auction markets that bring together many players in a centralized platform
3. The warehouses of exchanges where the physical commodity is delivered to the buyer of a futures contract who did not close his/her position prior to maturity.

Commodities exchanges

Exchange	Derivatives	Importance
Chicago board of trade (CBOT/CME)	Maize, soft red winter wheat (futures,options)	main exhange for soft red winter wheat and maize
Dalian commodity exhange (DCE)	Maize futures	Main exchange for maize in asia
Intercontinental exchange (ICE)	USA: cocoa, sugar, Europe: Brent, WTI, Canada: Barley OTC: crude oil swaps	Main exchange for sugar and cocoa futures
Kansas City Board of trade	Hard red winter wheat	Main exchange for hard red winter wheat
Minneapolis Gran exchange (MGEX)	Hard red spring wheat index (HRSI) Hard red winter wheat index (HRWI) Soft red winter wheat index (SRWI) National corn index (NCI)	Main exchange for hard red spring wheat
Multi-commodity exchange of India (MCX)	Brent, crude oil, barley, wheat, feed maize, white sugar	Leading crude oil exchange
New York Mercantile Exchange (NYMEX)	Cocoa, Raw sugar, WTI, Brent	leading exchange for light sweet crude oil, and other commodities
NYSE LIFFE	London: white sugar, cocoa, feed wheat, Paris: milling wheat, malting barley, maize	European exchange for agricultural commodities
Zhengzhou commodities Exchange	Hard white winter wheat strong gluten wheat, white sugar	Largest no. of white sugar contracts (20% of NYSE LIFFE)

Pricing

Task. Due: Wednesday

Telser's theory predicts that futures prices are asymptotically normally distributed. Is this a problem? Why or why not? What is Telser's defence.

Sources of data

- FAO
- World Bank
- UNCTAD
- WTO
- IMF
- OECD
- USDA
- Quandl
- Fred

Pricing

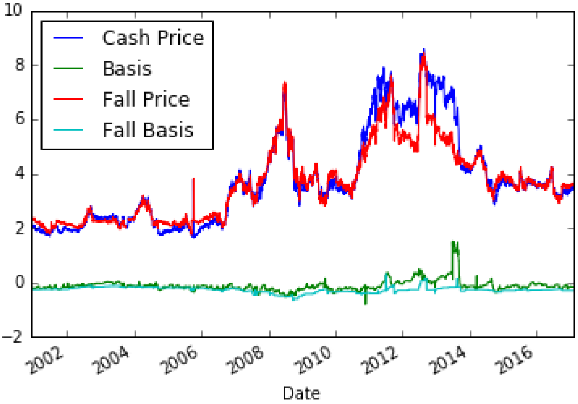

Figure: Corn prices

What we will cover in the course

- various commodity pricing models
- How to obtain commodities data
- how to price futures and derivative (options) contracts for commodities
- Necessary analytical tools for understanding commodities and futures

The End

Thanks for listening!