Food prices, food price volatility and the financialization of agricultural futures markets

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Instruments: futures

- Very many of the primary commodities traded between developing and developed countries are traded on futures markets – cocoa, coffee, sugar, crude oil, copper, rubber.
- Prices for commercial transactions are generally based off (nearby) futures market prices – “pricing at unknown”.
- Futures markets perform two functions
  1. Price discovery: The futures price comes to incorporate all available information.
  2. Risk transfer: Producers and stockholders (“commercials”) can transfer their exposure to price changes to financial agents (“non-commercials”, “speculators”) who hope to make money by taking on this risk.

Instruments: options

- A producers or stockholder who sells a future gains price certainty. He is hedged.
- Relative to the unhedged position, he loses money if the price rises but gains if it falls.
- Options give one-sided protection. A “put” gives the producer or stockholder a guaranteed floor but allows him to gain from upside movements. A “call” gives a purchaser a price ceiling.
- Options have a cost – like purchasing insurance. Futures do not imply any initial cost.

Instruments: swaps

- Futures and options are traded on exchanges and have relatively small nominal value – typically $20,000 - $50,000.
- Swaps are much larger transactions - $1m and upward – and so are traded between large financial actors.
- In a “plain vanilla” robusta coffee swap, I pay $1m (say) to a bank and broker and obtain back $1m multiplied by the relativity of the robusta coffee futures price at contract expiration to its current value. If coffee prices have risen by 20%, I get $1.2m.

Financialization: the major increase in the presence of financial agents on food commodity futures markets.

Total Commodity Futures and Swap Positions		
$bn	Nominal	2005 values
1998	137.8	246.6
2000	159.3	234.1
2002	271.5	438.4
2004	480.7	580.5
2006	2153.4	1709.7
2008	**7474.2**	**3626.4**
2010	1470.1	1015.6
2012	1595.9	942.1

Source: Gilbert and Pfuderer (2014, Table 1) based on BIS statistics.

Figures relate to the end of June. The reported figures are for total forwards and swaps and exclude gold and other precious metals. Column 2 deflates by the average of the IMF non-fuel commodity price and energy price indices (2005 = 100.)

Do these instruments help developing countries?

- We need to distinguish between governments, intermediaries and producers (farmers).
- Governments of exporting countries can hedge export revenues, and will generally do so using swaps. Mexico is notable in hedging its crude oil revenues. This makes a lot of sense if the government budget is highly dependent on the price-sensitive taxes.
- Governments of importing countries can do the same in relation to food import bills.
- Supply chain intermediaries benefit by hedging since they work on narrow margins. By hedging they can offer finer prices since they face less risk. Hedging should therefore lower intermediation costs.
- But … indigenous intermediaries will have difficulty obtaining the dollar finance to give them access to futures or options and may even not be legally allowed to undertake such actions. This gives multilaterals (or intermediaries linked to multilaterals a competitive advantage.

Farmers

- Even in the developed countries, only the largest farmers directly access futures and other markets.
- It is possible for buyers to pass some price protection through to farmers by, for example, offering a guaranteed floor but that the expense of offering a less attractive price in other circumstances.
- Contract enforcement is a major problem. A coffee farmer will be happy to take the guaranteed floor price if prices fall but will be tempted to ignore his contractual commitments and sell to the best buyer if the market is good.

Can financialization introduce distortions?

- Commercial (industry-based) traders complain that the commodity markets have been invaded by non-commercial financial firms who have little knowledge of actual market conditions.
- Many politicians lament that the activities of these financial actors can take prices away from their fundamental values.
- Some economists complain that financialized commodity markets tend to generate speculative bubbles. Was the oil price rise in 2007-08 a bubble? And similarly the grains price spike in 2008?

Index investors and the commodity asset class

- Index-based investors have been a major concern. Index investors invest in a portfolio of commodity futures aiming to track the returns on one or other major tradable commodity futures price index.
- They claim to be motivated by portfolio diversification concerns and regard commodity futures as an asset class similar to equities, bonds and real estate.
- They trade in a very different way from traditional non-commercials ("speculators").

Index investors	Traditional speculators
Hold all commodities in the index	Hold selected commodities
Almost always long	May be long or short
Long holding periods	Short holding periods
Roll as contracts approach expiration	Seldom roll

Did index trading move commodity futures prices?

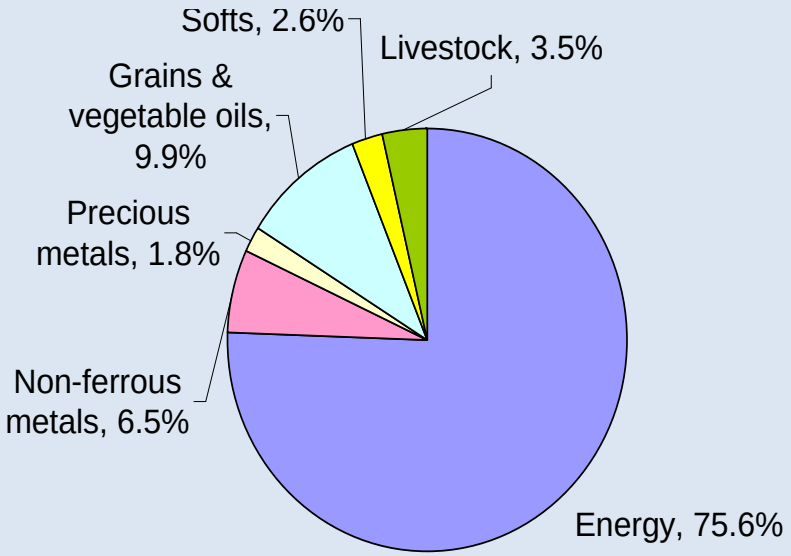
In US Senate testimony, hedge fund manager *Michael Masters* argued that they were driving commodity prices in 2008:

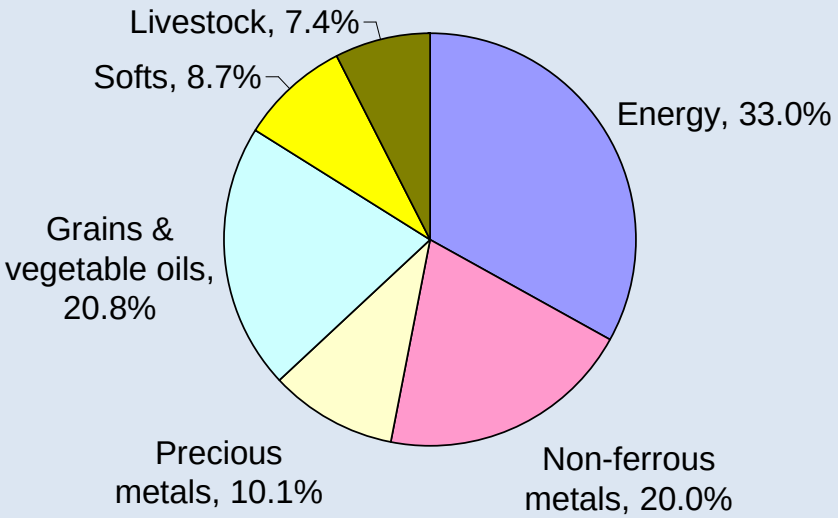
"You have asked the question are Institutional Investors contributing to food and energy price inflation? And my unequivocal answer is YES".

He added that they "eat" rather than provide liquidity suggesting that they would tend to increase volatility.

The current academic consensus (Irwin, Sanders, Stoll , Whaley), is index investors had a negligible impact on agricultural futures prices. I have taken a different view.

Index weights



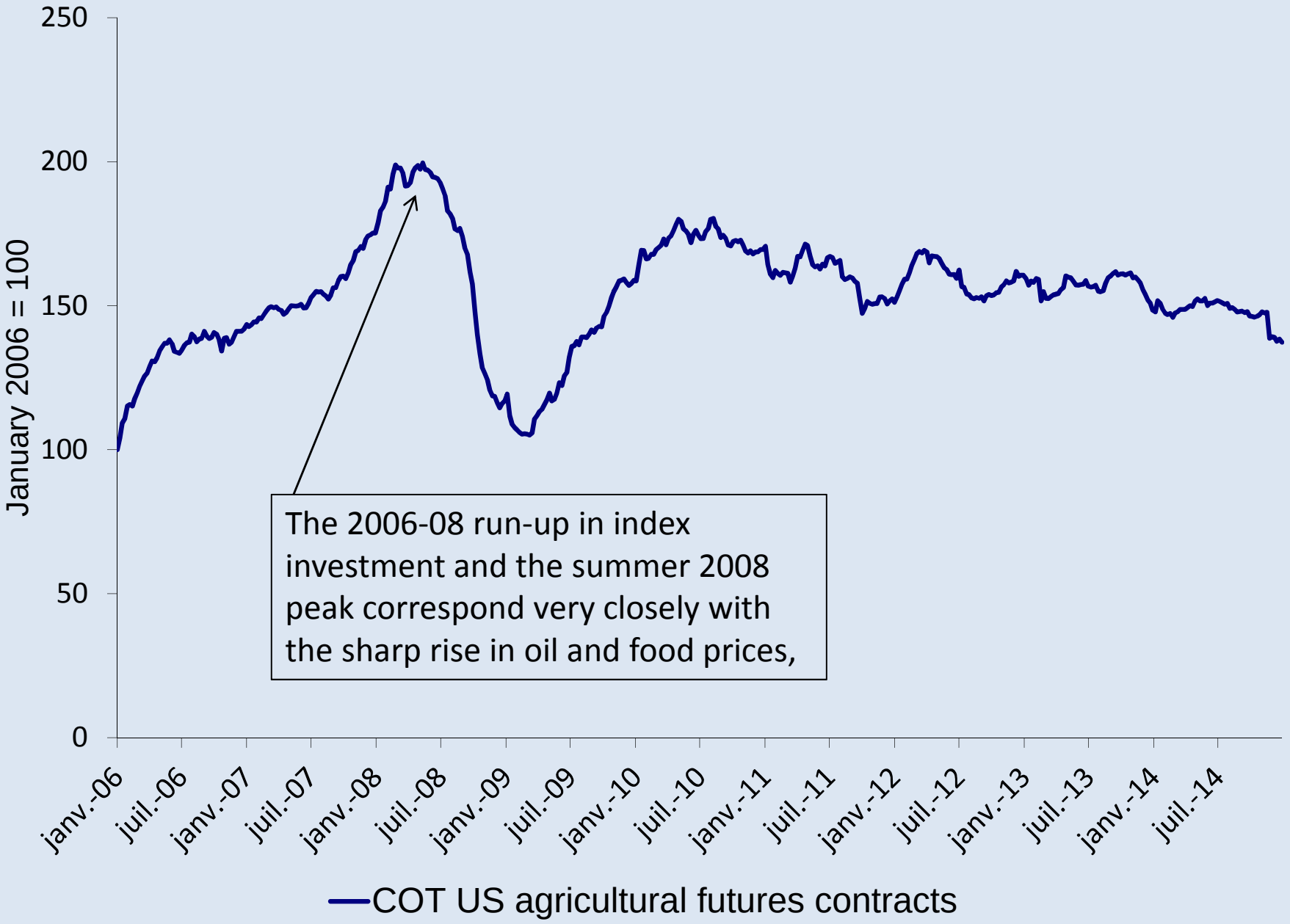


The two major tradable commodity price indices give a relatively low weight to agricultural futures.

These weights change over time:

- In September 2008, the S&P GSCI index (top) gave grains and oilseeds a 10% weight;
- the Dow Jones UBS index gave them a 21% weight.

This suggests that the impact of index trading is likely to be more apparent in energy futures (76% and 33% respectively).


250
200
150
100
50
0
January 2006 = 100
The 2006-08 run-up in index investment and the summer 2008 peak correspond very closely with the sharp rise in oil and food prices,
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COT US agricultural futures contracts

Conclusions

1. Financial instruments can offer governments and supply chain intermediaries the possibility of reducing price exposure. This will increase the efficiency of the supply chain.
2. This gives intermediaries connected with multilaterals a competitive advantage relative to domestic intermediaries.
3. Developing country farmers are seldom able to benefit directly from these instruments.
4. Financialization can also introduce speculative noise into commodity prices. It sometimes moves prices away from fundamental values.
5. My view is that index investment amplified price movements in foods, metals and crude oil in 2007-08.

Thank you for your attention