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The recent change in the functioning of commodity exchanges

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Main point

Uncertainty in commodity markets has strongly increased and this increase has changed the functioning of commodity exchanges

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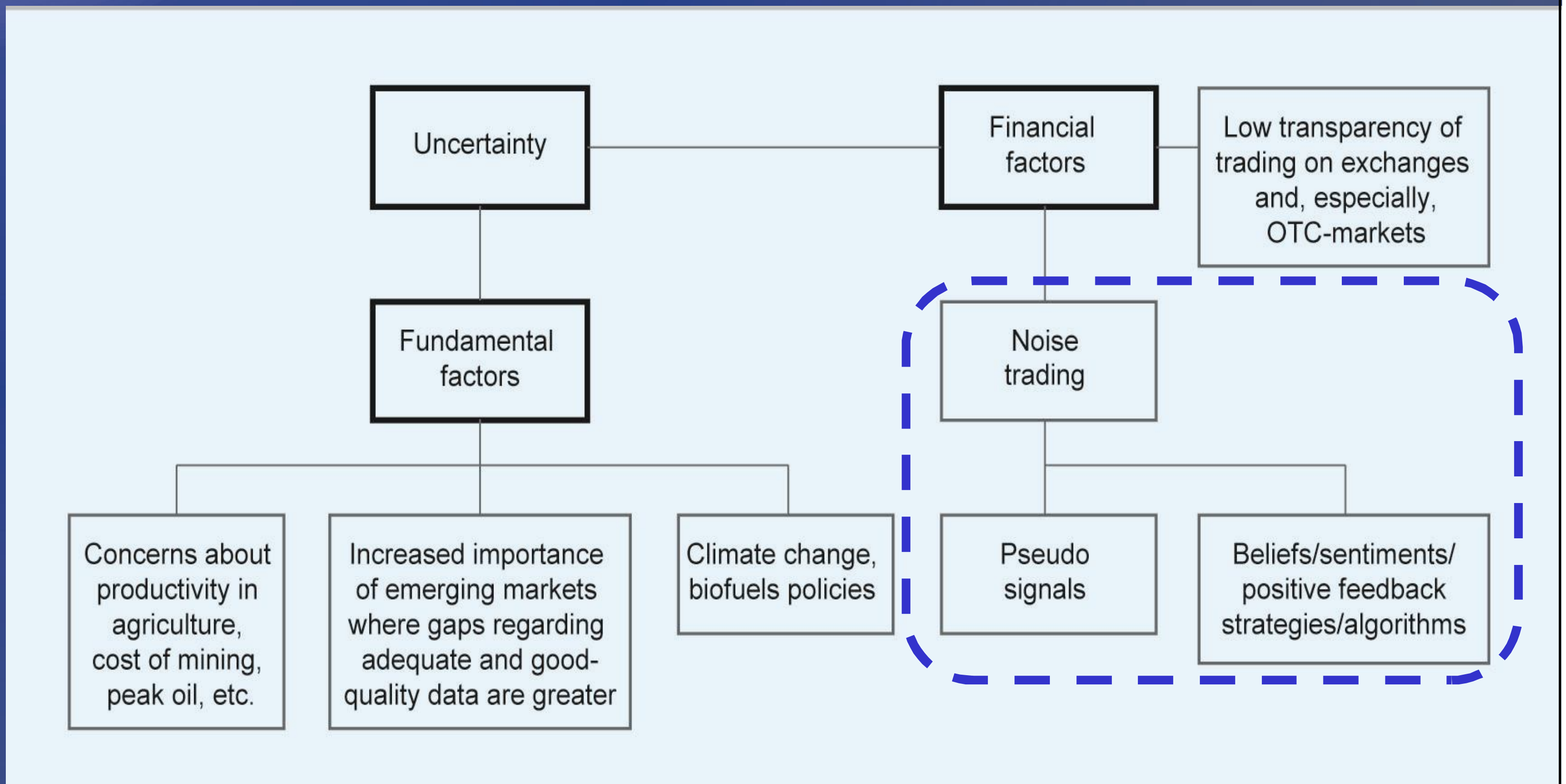
Uncertainty has always been a key characteristic of commodity trading, but it has increased for both fundamental and financial reasons



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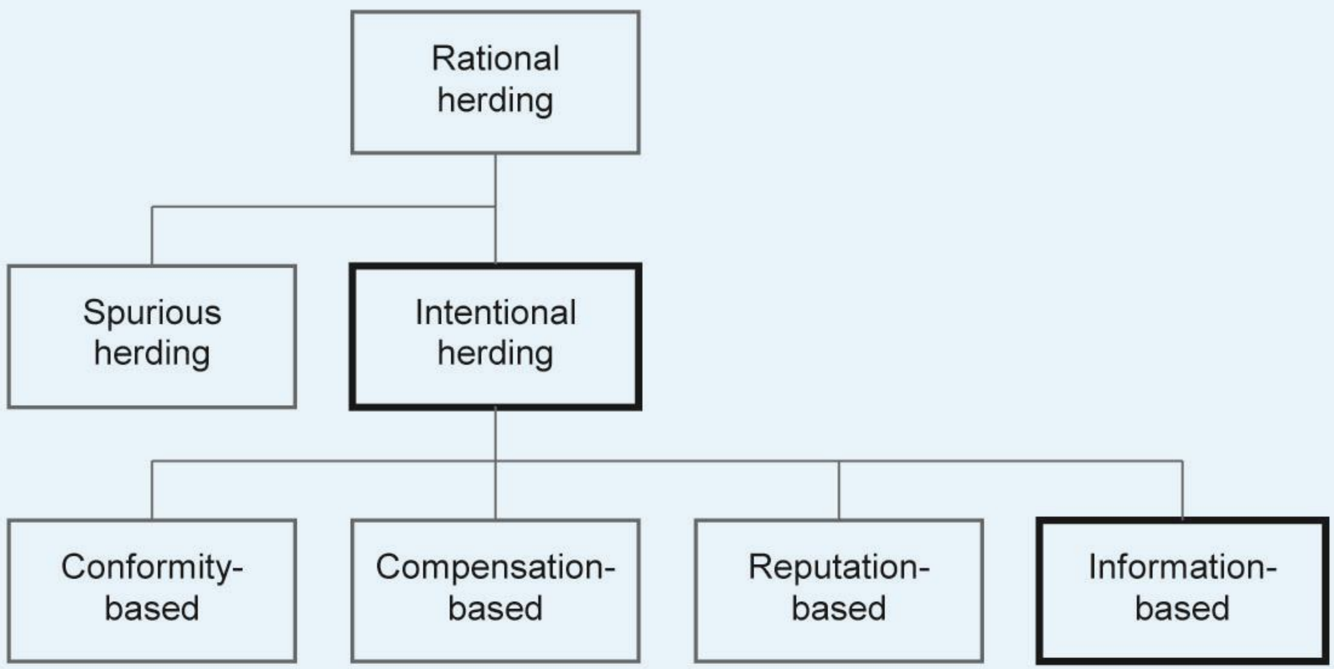
Greater uncertainty tends to cause rational herding, especially information-based herding



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Financial investment – impact on prices?

- A priori ambiguous: speculators are indispensable for functioning of exchanges (risk transfer, price discovery) but

  "a growing body of research supports the view that financial investors have affected price dynamics over short time horizons. Some episodes of large and sudden commodity price movements are consistent with the view that amplification mechanisms familiar from other financial markets … can also affect commodities futures markets" and that "large financial flows associated with herding behavior of financial investors can sometimes amplify commodity price movements and may sometimes cause prices to deviate temporarily from values consistent with physical supply and demand conditions" (G20, 2011: 31, 6)

- Understanding linkages between spot and futures prices
  - Cash prices often refer to futures prices (not to delivery process)
  - Low short-term price elasticity of supply causes lags in inventory accumulation and inventory data remain spotty
  - Many financial investors do not trade on basis of fundamentals (but algorithms, financial market signals) and informed traders have insufficient incentives to arbitrage
  - Financial investors tend to reduce positions in situations of financial stress, i.e. when liquidity is needed most, and amplify price changes

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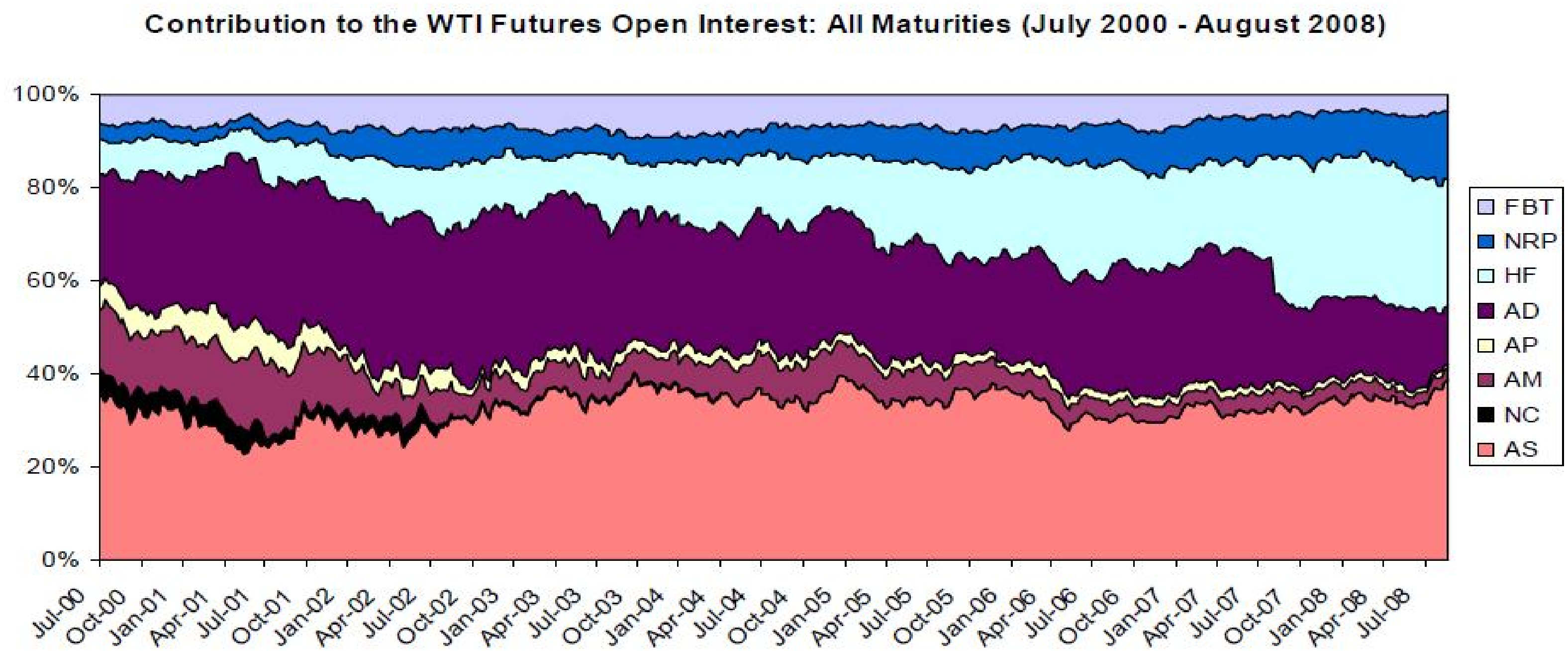
Growing importance of Hedge Funds on the WTI market (2000-2008)



Notes: **Figure 4** compares the contributions to the WTI futures open interest of eight types of large traders between July 5 2000 and August 26 2008. Commercial types include "Dealers/Merchants" (AD), "Manufacturers" (AM), "Producers" (AP), and "Commodity Swaps/Derivatives Dealers" (AS). Non-commercial types are "Hedge Funds" (HF), "Floor Brokers & Traders" (FBT), and "Non-Registered Participants" (NRP). Prior to August 2003, the "NC" category sums the positions of presently inactive commercial traders.

Source: Büyükşahin, Haigh, Harris, Overdahl and Robe (2008)

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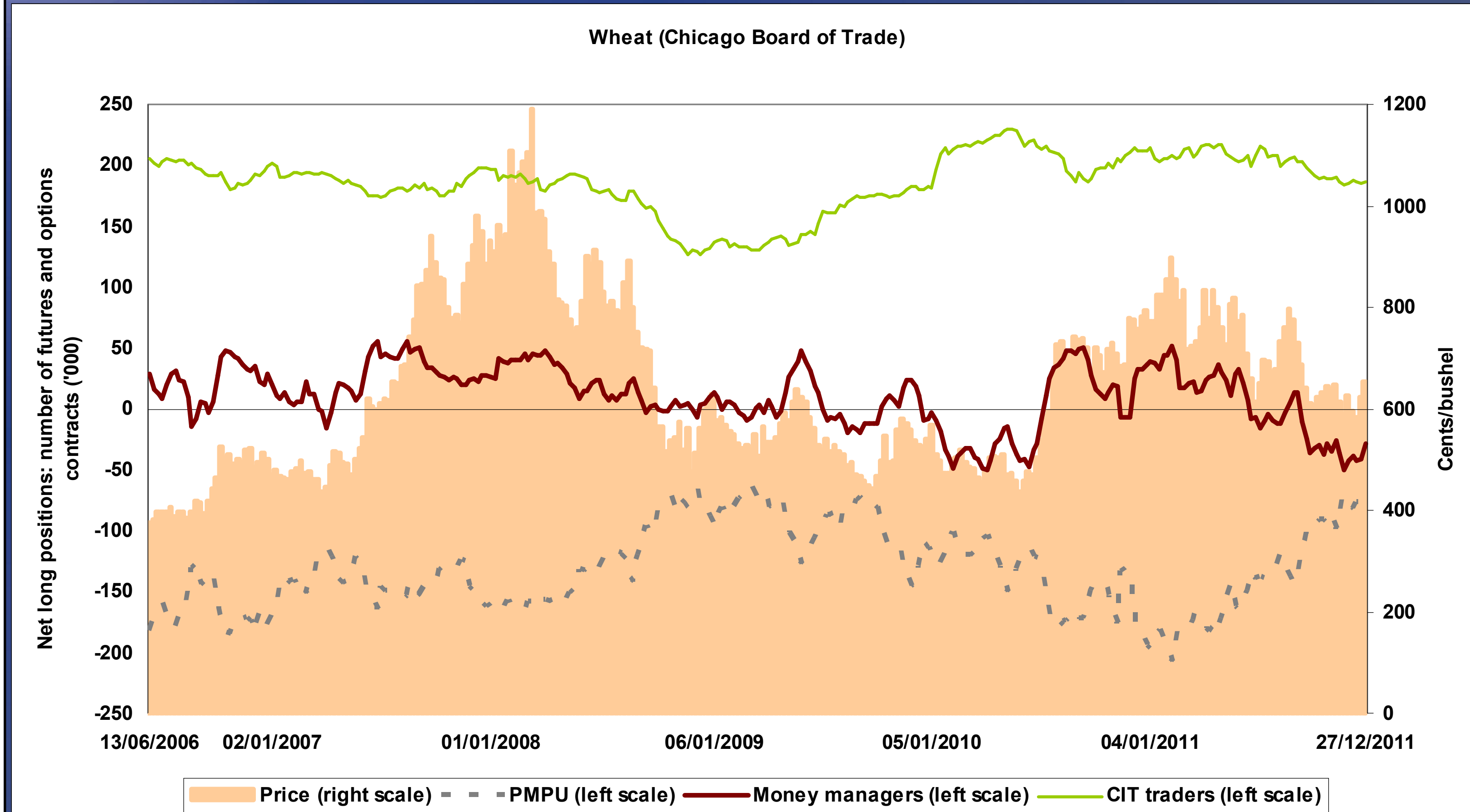
Composition of financial investment has changed

Index-based positions may have impacted prices until 2008 but since spring 2009 high correlation between prices and money manager positions



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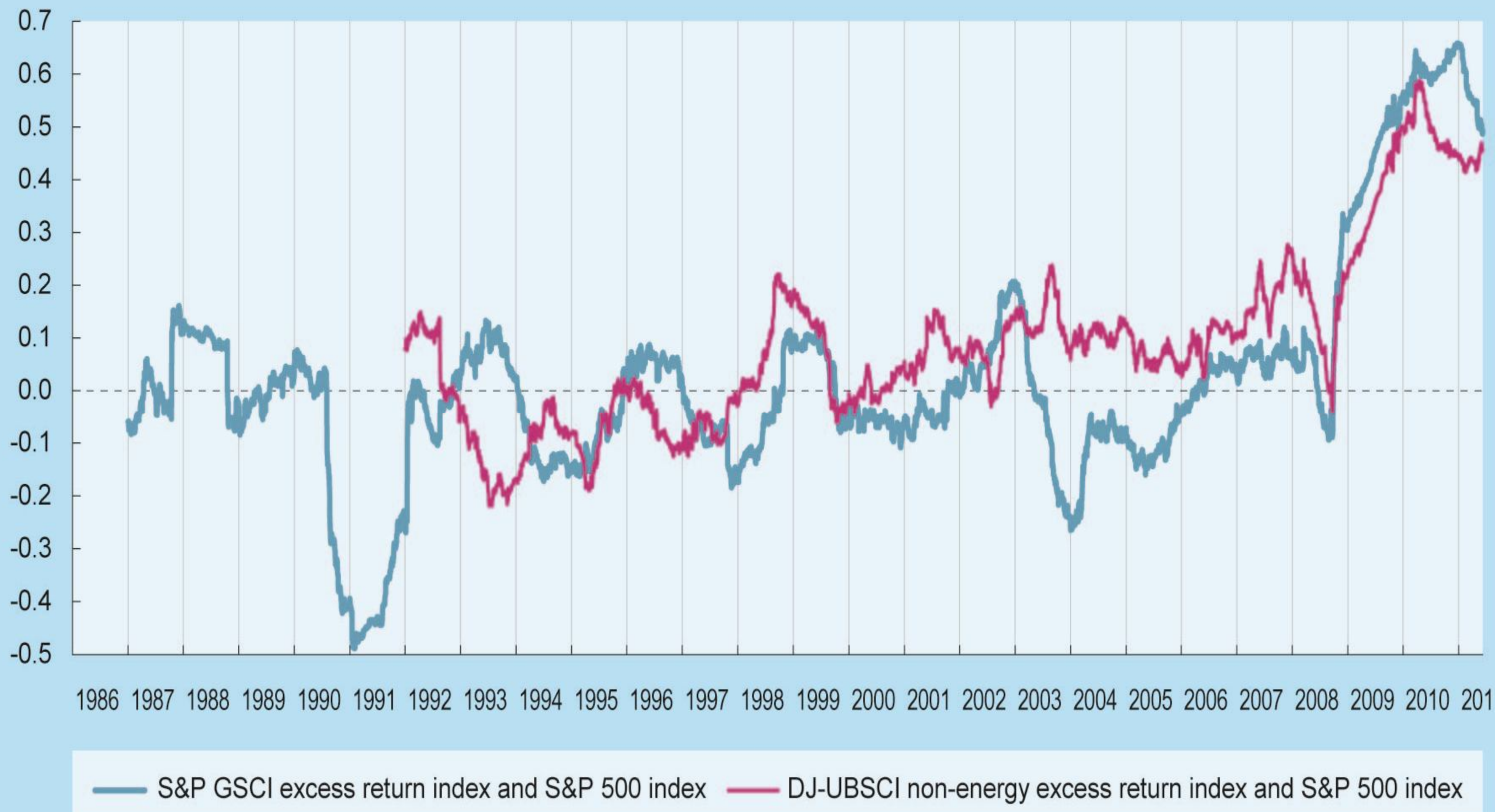
Correlation between commodity and equity indexes, 1986–2011



Source: UNCTAD, *Trade and Development Report, 2011*
Note: The data reflect one-year rolling correlations of daily returns on the respective indexes.

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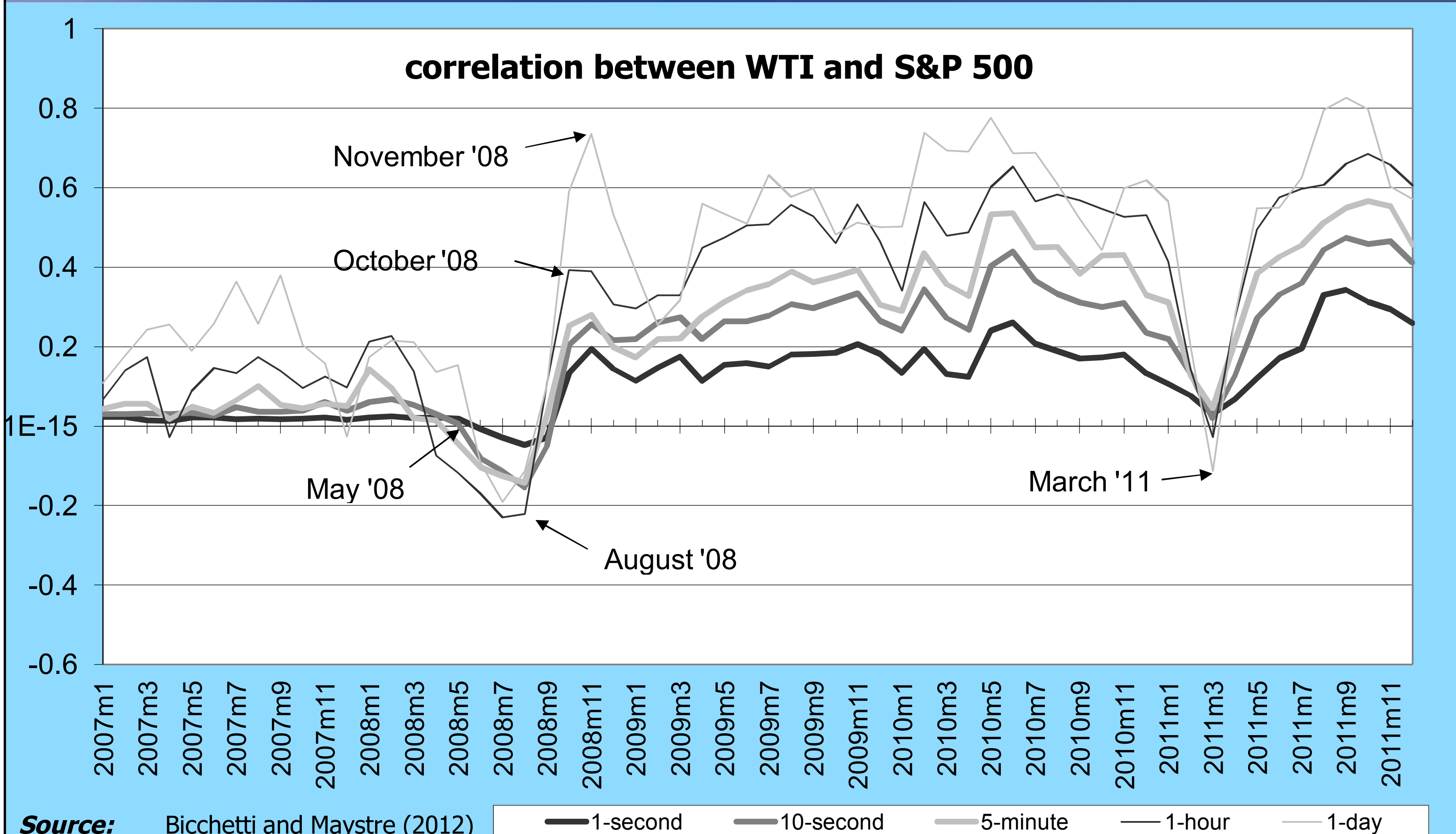
More recently cross-market correlations have also increased at higher-frequency (up to 1-second!)



Source: Bicchetti and Maystre (2012)

Note: The data reflect dynamic conditional correlations between S&P500 and WTI at selected frequencies.

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Reactions to Bicchetti & Maystre (2012)

HFT fund in NY:

> "HFT can refer to any of a very broad range of strategies, most of which are faster versions of non-fundamental value strategies which have been employed in the markets for decades"

HFT fund in Hong Kong:

> "Yes, you are probably right that the increase in short term correlation is caused by HFT! I do think that also there, there is some kind of a herd behaviour or trend following. In my opinion, due to some trigger (maybe the introduction of electronic exchanges, like u mentioned) commodities start to be more correlated, so some HFT try to take advantage, because of that there is more correlation which attracts more HFT, this again drives up correlation and draws in more HFT etc etc"

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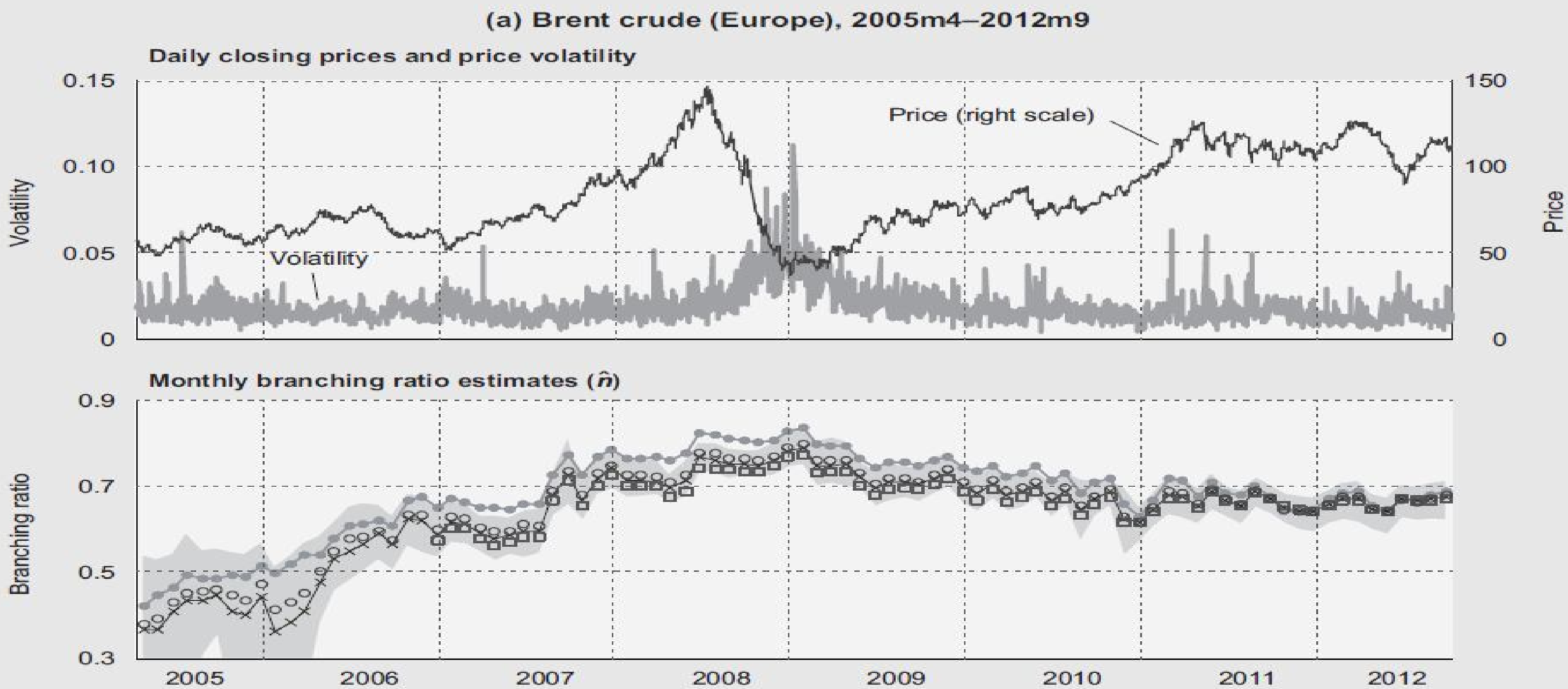
Endogeneity on commodity futures markets has also increased



Source: Filimonov, Bicchetti, Maystre and Sornette (2013) 'Quantification of the High Level of Endogeneity and of Structural Regime Shifts in Commodity Markets'

Notes: Branching ratio estimates reflect the average ratio of the number of price moves that are due to endogenous interactions* to the total number of all price changes, which also include exogenous events, such as news. Values of 0.6-0.7 imply that at least 60–70 per cent of commodity price changes are now due to self-generated activities rather than novel information. *Endogenous interactions refer to all price changes that are triggered by preceding price changes as the result of internal feedback mechanisms.

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Summary of main points

- Uncertainty has increased because of (i) shifts in fundamentals and (ii) presence of financial investors
- The size of financial investment in commodities has strongly increased in nominal terms, as well as relative to global GDP and physical commodity production
- Resulting greater uncertainty risks causing herd behaviour
- Several pieces of empirical evidence point to financial investors' price impact
- Three-pronged policy recommendations:
  - Greater transparency across physical, futures and OTC markets
  - Tighter regulation (debate on: clearing for standardized OTC-contracts, speculative position limits, provisions regarding HFT)
  - Big question is desirability and effectiveness of occasional direct intervention by market authorities

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Some relevant references to UNCTAD work:

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- Filimonov V, Bicchetti D, Maystre N and Sornette D (2013) 'Quantification of the High Level of Endogeneity and of Structural Regime Shifts in Commodity Markets'. *Journal of International Money and Finance* (forthcoming).