INDEX FUNDS DO IMPACT AGRICULTURAL PRICES

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Index Funds Do Impact Agricultural Prices

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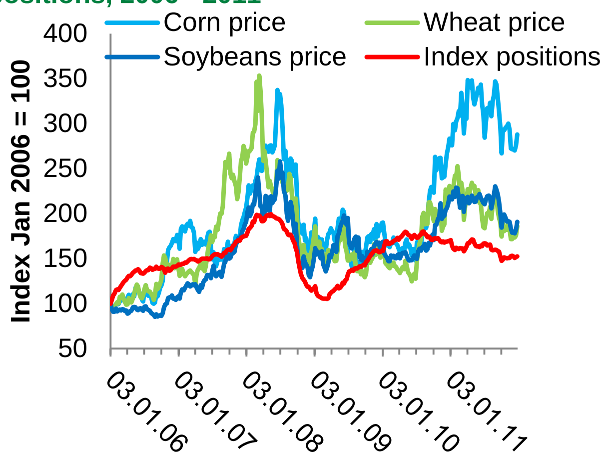
1 Introduction

Index investors, a new type of financial player, became important during 2000s.

Fig. 1. Grains prices and commodity index positions, 2006 - 2011



Sources: Norma's Historical Database and CFTC

Contemporaneous correlations between prices and index positions is generally positive but direction of causality is unclear.

2 Hypotheses

- Market microstructure theory suggests instantaneous impact of trading
- Academic literature mainly relies on Granger-causality tests with little evidence that index investors are causing price movements
- Granger-causality analyses rely on lagged effects and thus lack power
- Contemporaneous causality tests have more power in this context
- Effect more likely to be evident in more illiquid markets

3 Method

Contemporaneous causality tests using IVs

$$r_{jt} = \kappa + \alpha r_{j,t-1} + \beta x_{j,t} + u_{jt}$$

$r_{j,t}$ is a measure of agricultural prices
$x_{j,t}$ is a measure of index investment, instrumented with a vector of lagged variables z_{t-1} (including returns and positions of related markets, logarithmic own price, a commodity price index and a volatility index).

Null Hypothesis of no causal effect

H_0: $\beta = 0$ tested against H_1: $\beta > 0$

4 Data

- $x_{j,t}$: Tuesday to Tuesday change in the net long positions held by index investors
- $r_{j,t}$: Logarithm of the percentage price change from Tuesday to Tuesday
- Data sources: Quandl.com, Norma's Historical Data and Commodity Futures Trading Commission.

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5 Results

Table 1. Contemporaneous causality test results (sample 3 Jan 2006 to 27 Dec 2011)

Causality from index positions to price returns*	
Feeder cattle	Yes (10% sig)
Wheat (Kansas)	Yes (1% sig)
Cocoa	Yes (5% sig)
Coffee	No
Lean hogs	No
Cotton	No
Soybean oil	Yes (1% sig)
Live cattle	Yes (5% sig)
Wheat (Chicago)	No
Soybeans	Yes (5% sig)
Sugar	No
Corn	No
* Markets ordered by increasing liquidity	

Source: Own results

The probability of finding five rejections at the 95% when there is no effect is effectively zero.

Results are suggestive of a link to market liquidity.

6 Conclusions

- Unlike results based on Granger-causality tests, contemporaneous test results suggest that index investors do move agricultural prices
- Markets where contemporary causality is found tend to be less liquid
- Causality might be present in other markets but not detectable
- The method does not allow to quantify the effect
- Nothing can be said about whether or not the price movements are fundamentally based