

Discussion:

Macroeconomic Effects of Disruptions in Global Food Commodity Markets: Evidence for the United States

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Outline

- 1 Summary of Paper
- 2 Puzzle on Food Expenditures
- 3 Suggestions

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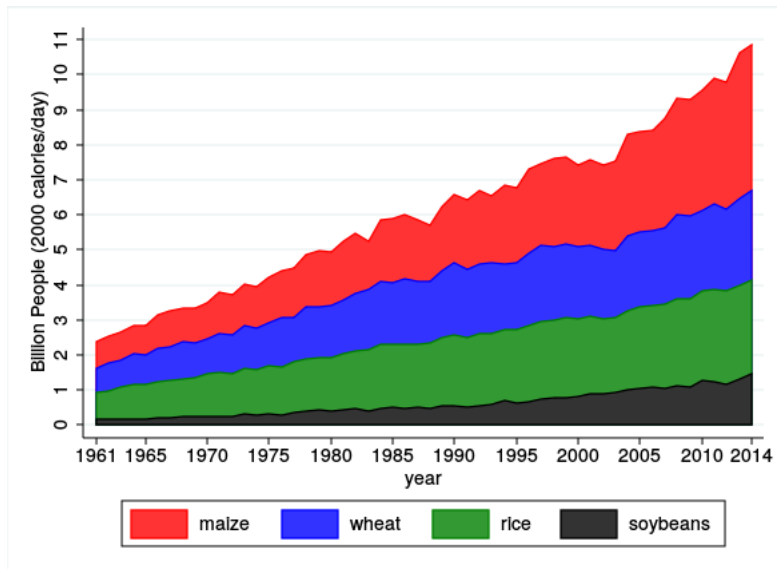
Motivation

- Paper looks at macro-economic effects of global food production shocks
 - Four staple commodities: maize, wheat, rice, and soybeans
 - 75% of calories we consume
 - Of those, 23% produced in the US
 - Clever idea behind exogenous food production shocks
 - Look at crop calendar: endogenous choices during quarter of planting
 - Unanticipated weather shocks in quarter of harvest
 - Only crops / countries where harvest quarter is after planting quarter

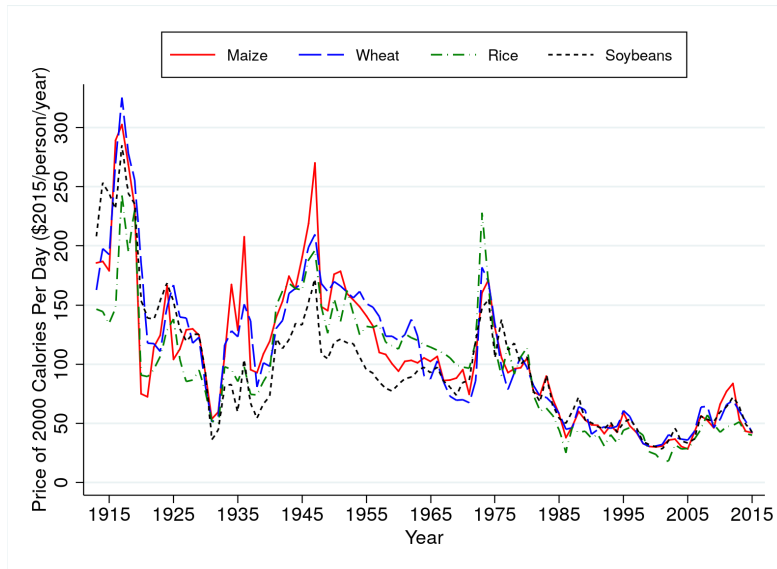
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 - Look at crop calendar: endogenous choices during quarter of planting
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 - Only crops / countries where harvest quarter is after planting quarter
- Demand for food is very inelastic
 - Small production shocks result in large swings of commodity prices
 - Production shocks $\pm 5\%$
 - Prices easily double / cut in half
 - Share of US expenditures on food is 17% over sample period
 - Slight decline over time
 - Possible for multiplier effect of price shocks

Global Production - Four Staples (FAO Data)



History of Prices - Four Staples (USDA Data)



Findings

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 - Vector Autoregression (VAR)
 - Careful study of 13 unexpected shocks
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 - Failed crop production / unexpectedly large production
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 - Large multiplier: personal consumption decreases significantly
 - Spillover on durables / investment
- Many careful sensitivity checks:
 - Weather might directly influence sectors beyond agriculture
 - Only include production shocks outside the US
 - Still: is weather correlated (US shocks with rest of World)
 - E.g., El Nino changes global weather patterns
 - Correlation statistically insignificant and small in magnitude
 - Endogenous response in harvest quarter
 - Authors argue that it is difficult
 - E.g., fertilizer use does not help much anymore

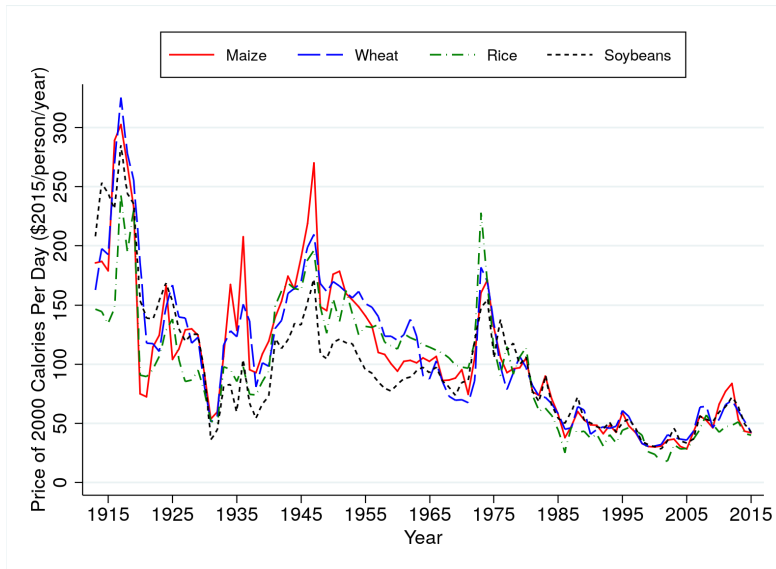
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Cost of Food

- US spends 17% on food
 - Most of these are processing and distribution
 - Basic caloric cost for 2000 calories/day diet < 100 dollars per year
 - More if significant share comes from meat
 - Even if prices triple, is it a big deal?

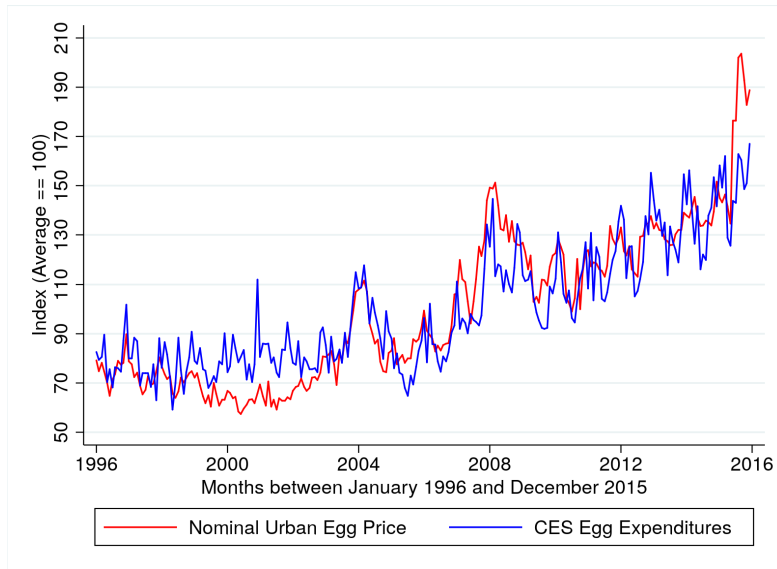
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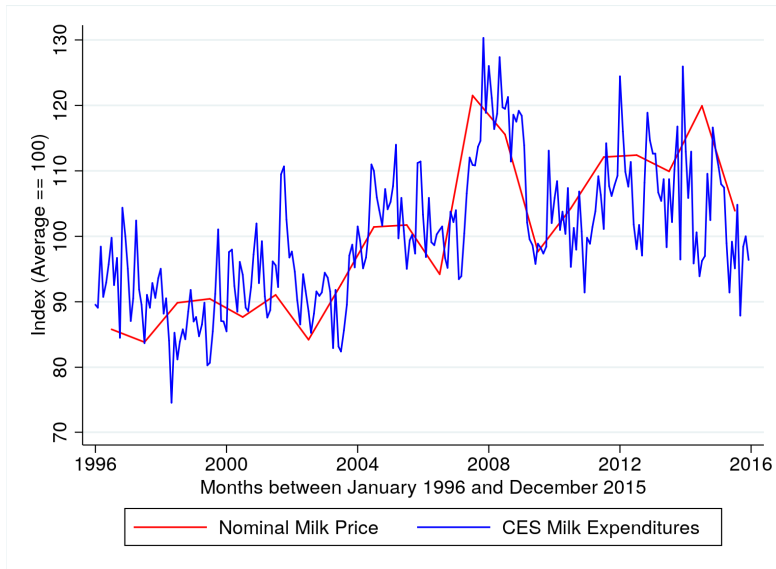
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- Consumer Expenditure Survey
 - Diary file: weekly expenditures (downloaded 1996-2015)
 - Do expenditures track prices?

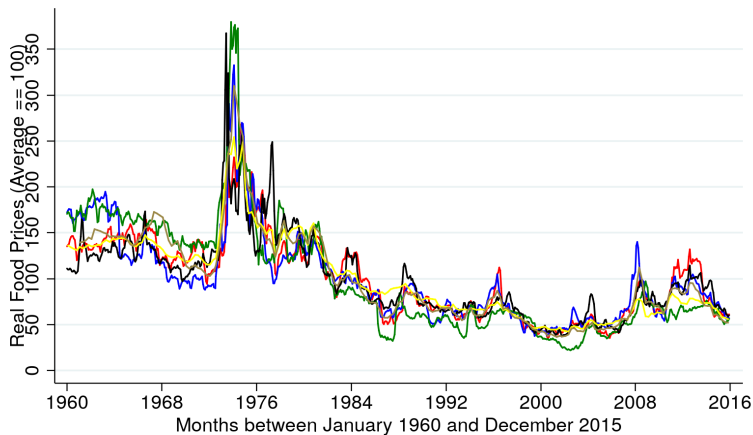
Monthly Price of Eggs vs Egg Expenditures



Annual Price of Milk vs Monthly Milk Expenditures

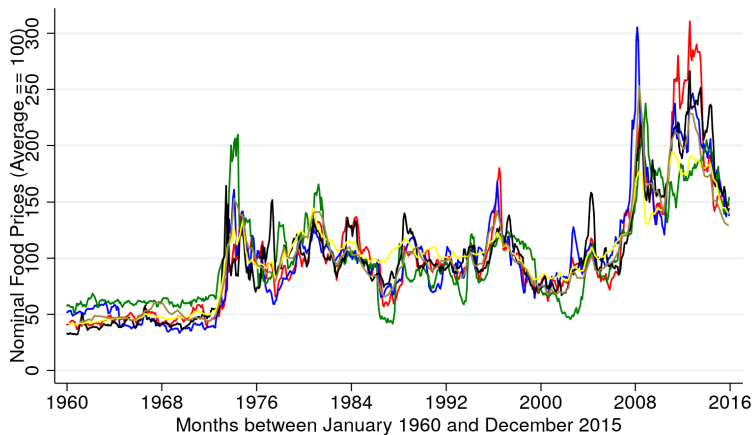


Quarterly vs Monthly Commodity Prices - Real Prices



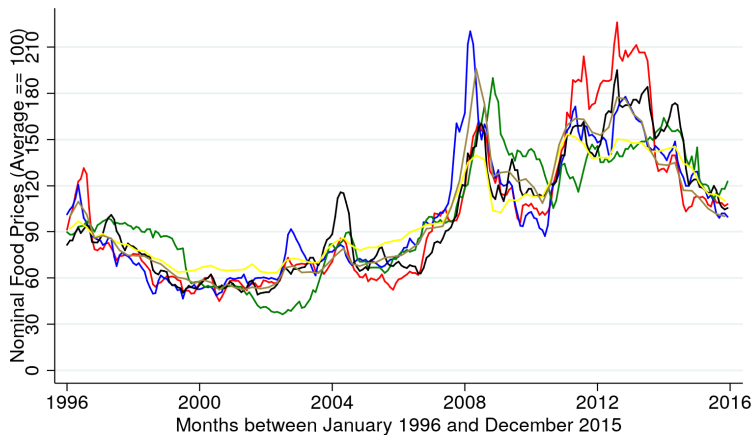
USDA Food Prices: — Maize — Wheat — Rice — Soybeans
Data in Paper: — Cereal — Food

Quarterly vs Monthly Commodity Prices - Nominal Prices



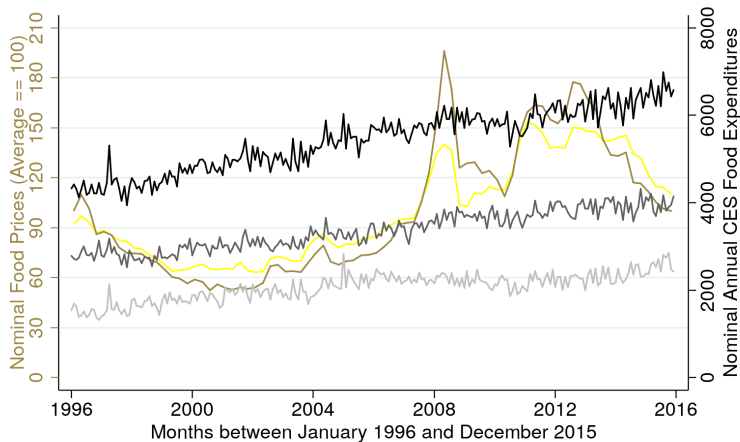
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Quarterly vs Monthly Commodity Prices - Last 20 Years



USDA Food Prices: — Maize — Wheat — Rice — Soybeans
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Commodity Prices versus Food Expenditures



CES Food Expenditures: — Home — Away — Total
Price Data in Paper: — Cereal — Food

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- Paper focuses on US
 - Same approach (shocks) could be used for other countries
 - Would expect that effect is even larger in less developed countries
 - Share of food expenditures is higher
 - Quarterly GDP data should be available

Suggestion 2: Mechanism - Weather?

- If change in commodity prices has small effect of food expenditures
 - What is mechanism of spill-over on durables / other expenditures?
 - Is it really food prices or is it just weather in a linked economy?

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 - Weather impacts both agricultural and other sectors
 - Dell, Jones and Olken (AEJ-Macro 2012)
 - Burke, Hsiang and Miguel (Nature 2015)
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- Papers on weather shocks and global conflicts
 - Hsiang, Burke and Miguel (Science 2013)
 - Weather shocks impact stability around world
 - Global conflict has spill-overs on US?