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Deutsches Institut für
Entwicklungspolitik

German Development
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THE EFFECT OF GLOBAL LIQUIDITY ON COMMODITY AND FOOD PRICES

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Overview



1. Introduction

2. Previous research

3. Preliminary findings

4. Conclusions

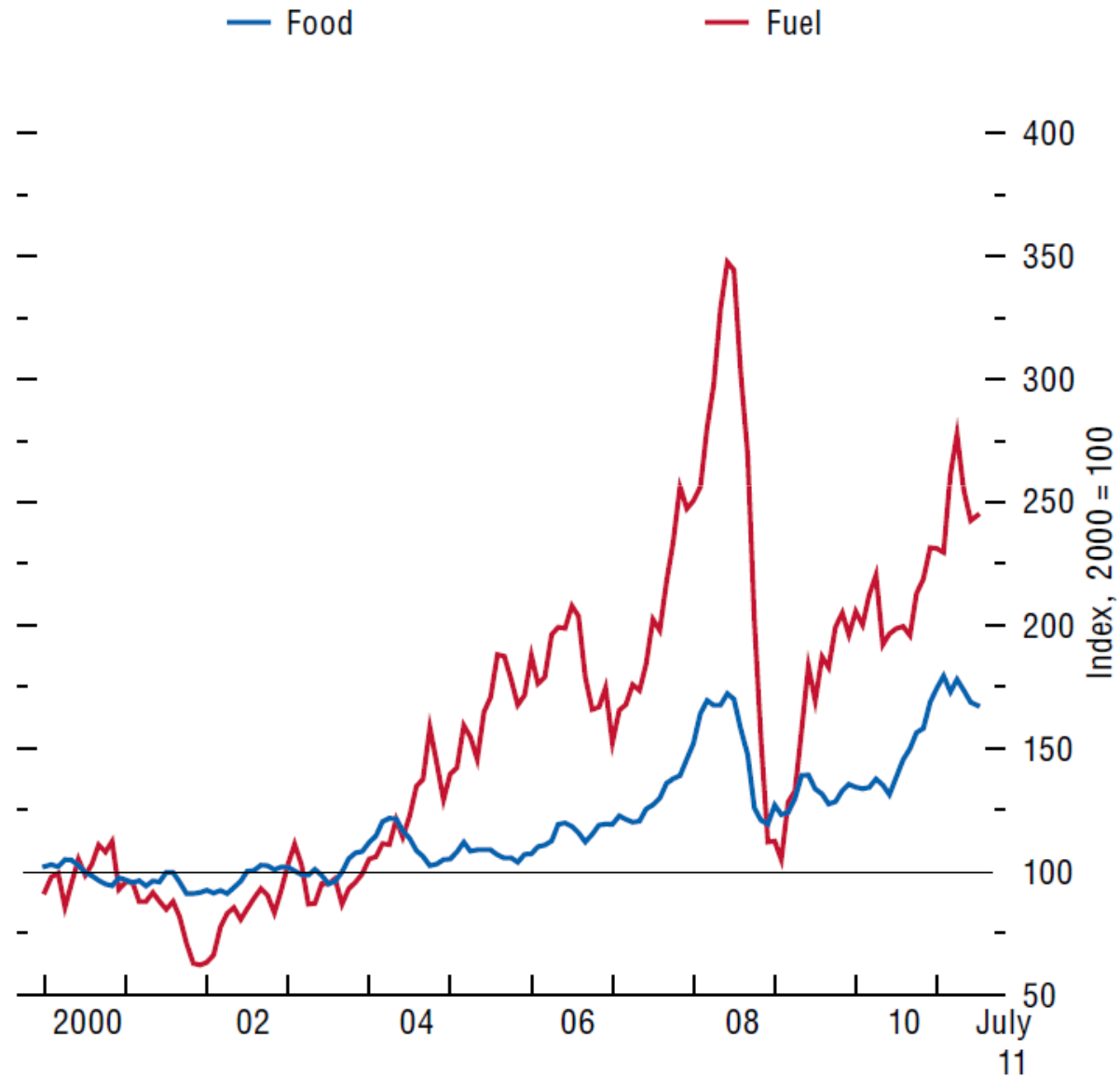


- **Commodity and food prices have increased dramatically since 2000**
 - Food and fuel prices peaked in 2008 at levels 80% and 250% above the levels in 2000
 - Current prices are 75% and 150% above 2000 levels

- **Are commodity prices driven by demand and supply factors?**
 - According to Krugman (2008), Hamilton (2009) and Kilian (2009), the rapid growth of emerging economies such as China propelled the quick increase in world demand and caused commodity prices to soar before the summer of 2008
 - Prices later fell sharply as the world recession caused demand to fade

- **“Financialisation of commodities” (Tang&Xiong 2010, UNCTAD 2011)**
 - Large flow of investment into commodity markets, esp. indices
 - Synchronised boom and bust of seemingly unrelated commodity prices in 2006-08 and 2009-11

Introduction



Source: IMF
WEO Sep2011



- **Commodity and food price inflation and volatility has become a major concern for central bankers in developing and advanced countries alike**
 - How should monetary policy respond to such price shocks?
 - IMF's World Economic Outlook from September 2011 dedicated a chapter to "Commodity Price Swings and Monetary Policy", finding that commodity prices tend to have stronger and longer-lasting effects on inflation in economies with high food shares in the consumption basket and in economies with less firmly anchored inflation expectations

- **Against this backdrop, this presentation discusses the effects of "global liquidity" on food and commodity prices**
 - Does monetary easing fuel food and commodity price inflation?

- **Present preliminary results of current research with Ansgar Belke and Ingo Bordon**

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- **Research by Fisher (1932), Kindleberger (1978), Borio and Lowe (2002), Giese and Tuxen (2008), Gerdesmeier, Reimers and Roffia (2009) and others suggests that, historically, boom and bust cycles in asset markets have been closely associated with large movements in money and credit aggregates**
- **IMF's Global Financial Stability Report from April 2010 investigates effects of global liquidity expansion**
 - Finds strong links between global liquidity expansion and asset prices, such as equity returns, in “liquidity-receiving” economies, as well as official reserve accumulation and portfolio inflows



- **Belke, Bordon and Hendricks (2010a) examine the interactions between money, consumer prices and commodity prices at the global level for 1970-2008**
 - Use aggregated data for major OECD countries and a CVAR framework
 - Establish long- and short-run relationships among these variables with the process being mainly driven by global liquidity
 - Different price elasticities in commodity and consumer goods markets can explain overshooting of commodity over consumer prices

- **Belke et al. (2010b) look the interactions between money, interest rates, goods and commodity prices at a global level**
 - When controlling for interest rate changes and thus different monetary policy stances, global liquidity is still a key factor to determine the long-run homogeneity of commodity prices and goods prices movements
 - Monetary aggregates convey useful information about commodity prices

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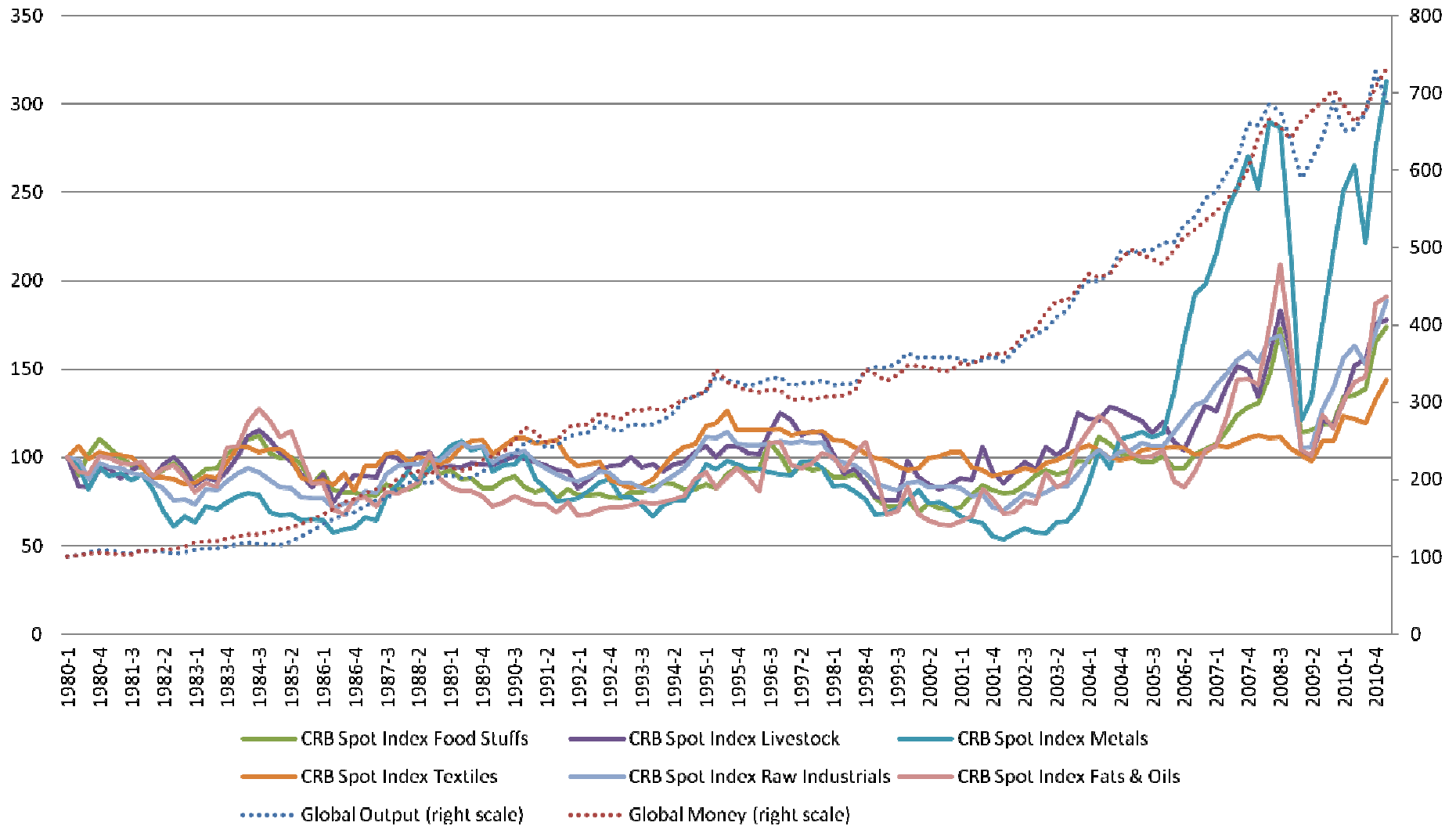
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Preliminary findings





- **Empirical investigation of global liquidity on food and commodity prices**
 - Cointegrated VAR framework
 - Quarterly data, 1980Q1-2011Q1
 - Data Sources: IMF (IFS), EABCN database, Thomson Financial

- **Global liquidity (M_G)**
 - The ratio of global nominal money to nominal world GDP (Rüffer and Stracca 2006)
 - Monetary aggregates (M2/M3/M4) and GDP of the world's major economies (OECD and non-OECD)

- **Commodity indices (CP_F [food], CP_RI [raw industrials])**
 - Thomson Reuters/Jefferies CRB Index

- **Other variables**
 - Global Output (Y_G), weighted by market rates
 - Nominal effective exchange rate of the USD (USD_EER)
 - Export data of emerging and developing economies to ROW (EC_EX)



▪ **Model specification**

- CVAR (4)
- $x'_t = [M_G, Y_G, USD_EER, CP_F, CP_RI, c]_t$
- Lag length of 4 chosen by information criteria and LM-test
- Cointegration rank of 2 determined by trace statistic
- Residual analysis indicate no autocorrelation and no ARCH effects (by Ljung-Box, LM(1), LM(2) statistics)
- Overall normality is not given yet, as corrections for outliers by dummy inclusion needed and to be specified accounting for CP peaks similarly

Preliminary findings



- **Testing restrictions and identifying the long-run structure**
 - Stationary linear combinations (t-values of original form in brackets)

$$\hat{\beta}'_1: Y_G + 1.191 [-35.069] M_G + 0.185 [-1.478] CP_F - 0.293 [2.475] CP_{RI} + 52.613 [2.368] c \sim I(0)$$

$$\hat{\beta}'_2: 0.03 [-3.216] USD_{EER} + 0.003 [-6.977] CP_{RI} - 0.001 [8.141] EC_{EX} + c \sim I(0)$$

$$\chi^2(3) = 3.673 [0.229]$$

- Adjustment to cointegrating relations

	ΔY_G	ΔM_G	ΔUSD_{EER}	ΔCP_F	ΔCP_{RI}	ΔEC_{EX}
$\hat{\alpha}'_1$	0.152 [4.901]	0.112 [3.994]	0.004 [0.465]	-0.036 [-0.722]	-0.021 [-0.465]	0.091 [0.772]
$\hat{\alpha}'_2$	33.214 [5.993]	27.632 [5.521]	-3.277 [-1.916]	7.394 [0.834]	29.904 [3.681]	101.100 [4.784]

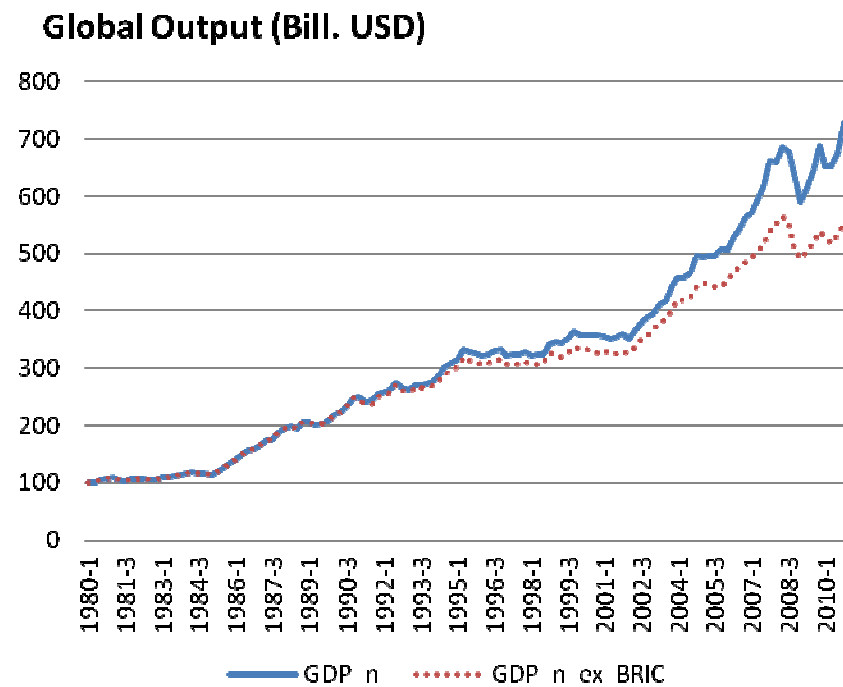
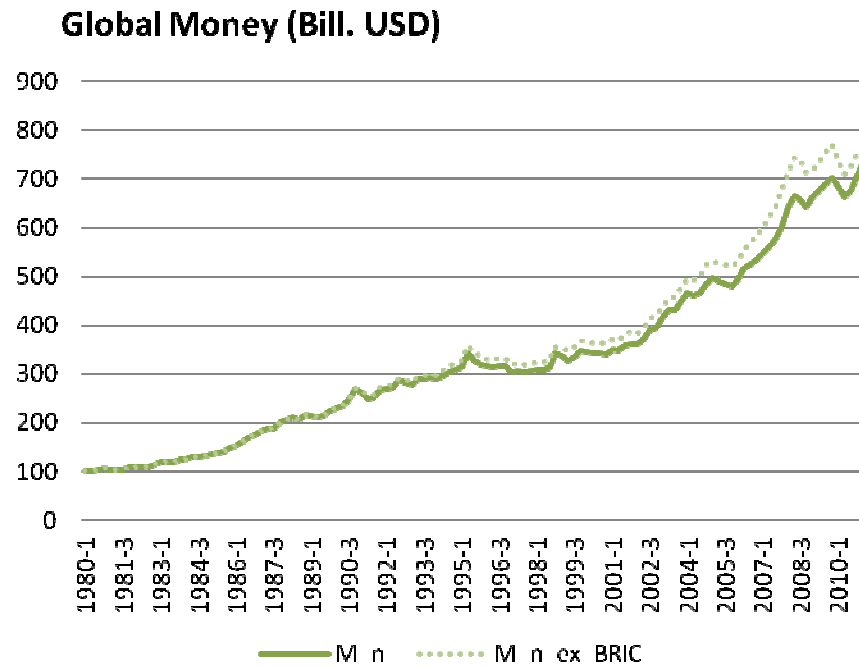


- **Empirical findings underscore long-run relation between global money aggregate and development of food and commodity prices**
 - Food and commodity prices adjust significantly to cointegrating relation
 - Global liquidity does not adjust, it drives the relationship

- **Exports of emerging and developing economies and effective exchange rate of USD have significant impact on the long-run path of commodity price dynamics**

- **Further aspects to be investigated**
 - Real vs. nominal aggregates
 - Robustness checks with ppp-weighted aggregates
 - Accounting for dynamics in aftermath of commodity price peaks
 - Inclusion of future prices
 - BRIC effects on system dynamics

Preliminary findings



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- **These are preliminary results**
 - We need to be cautious with interpretation

- **Results support the hypothesis that there is a positive long-run relation between global liquidity and the development of food and commodity prices**
 - Relationship driven by global liquidity

- **Monetary authorities ought to have long-run effects of expansionary monetary policies in mind when fighting the current crisis**

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