The Information Content of Commodity Futures Markets

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Motivation

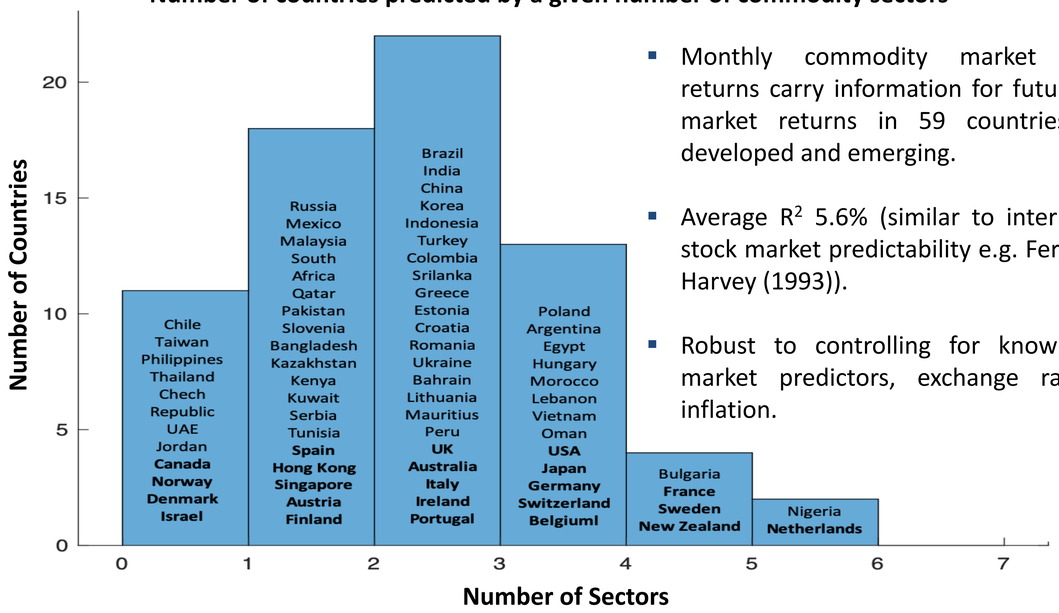
- Many countries are highly exposed to commodity trade.
  - 85% of least developed countries are severely commodity dependent: over 60% of export revenues tied to primary commodity trade.
  - 30% of GDP for developed countries such as Australia and Canada.
- Commodity markets are globalized and demand and supply information that is spread around the globe is aggregated in prices.
- Yet **we know little about the relation between commodity and stock markets around the world.**

Key Findings

- Explore 70 countries, 6 commodity sectors, 28 commodities; 37 years (1979 until 2016).
  - **59 stock markets (both emerging and developing) are predicted by different commodity sectors.**
  - **All sectors matter**: is not all about oil.
  - **All countries matter:** it is not all about large economies.
- Study **channels of information transmission** and find that:
  - Countries' dependence on commodity **trade plays a limited role**.
  - **Commodities aggregate dispersed information about macroeconomic fundamentals (inflation).**

Finding #1: Predictability from Commodities is Global

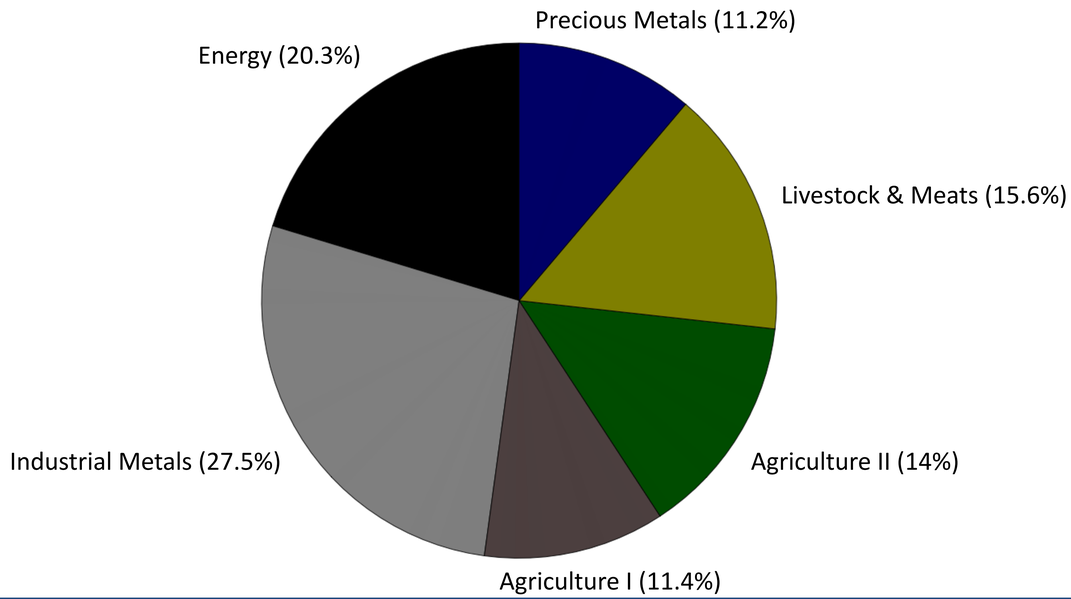
Number of countries predicted by a given number of commodity sectors



- Monthly commodity market futures returns carry information for future stock market returns in 59 countries, both developed and emerging.
- Average R^2 5.6% (similar to international stock market predictability e.g. Ferson and Harvey (1993)).
- Robust to controlling for known stock market predictors, exchange rate and inflation.

Finding #2: All Sectors Matter (It is not all about oil)

Share of global commodity shock attributed to each sector



Finding #3: Channels of Information Transmission

- **Channel 1: Trade Dependence**
  - Ability to predict is a function of how much a country trades a commodity.
  - **Direct Trade Dependence Effects**: terms of trade shocks for commodity dependent countries (Chen, Rogoff and Rossi, 2010).
  - **Indirect Trade Dependence Effects**: Countries have trade and financial links which lead to business cycle synchronization across countries (e.g. Frankel and Rose (1998), Kalemli-Ozcan et al.(2013)).
  - We find that **only direct trade dependence matters.**
- **Channel 2: Global Economy Channel**
  - Commodities aggregate **information about the state of the global economy** in a complex manner (eg. Sockin and Xiong, 2015).
  - Ability to predict depends on the extent to which **commodities have information about a country's macroeconomic fundamentals:**
    - **Inflation** (Garner (1989), Erb and Harvey (2006), Cologni and Manera (2008))
    - **Real Industrial Production Growth** (Kilian (2009), Socking and Xiong (2015))

	Energy	Industrial Metals	Agriculture I	Agriculture II	Livestock & Meats	Precious Metals	Pooled SFE
$\gamma_{0,s}$	0.00	0.10	0.02	-0.14	0.16	-0.01	-0.02
E_i	**0.02**	**0.03**	0.00	**0.03**	**0.03**	0.00	**0.02**
θ_i	0.00	-0.07	0.01	0.13	-0.11	0.05	0.01
Inflation	0.34	**1.34**	**1.05**	**1.02**	**1.43**	0.32	**0.96**
Production	**0.23**	0.33	0.06	0.04	0.04	0.04	0.07
$TD_{i,s}$	**0.09**	-0.16	**1.97**	**1.11**	**-2.40**	-0.08	**0.12**
R^2	38.28%	26.99%	21.63%	50.52%	34.95%	2.88%	26.48%
pF	0.00	0.00	0.02	0.00	0.00	0.89	0.00
No. Obs.	62	62	62	62	62	62	372