Discussion of Collusive Action in the Copper Market: 1882-2016

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J.P. Morgan Center for Commodities Annual Symposium August 17, 2021

Introduction:

- This paper uses a structural VAR model to assess periods of collusion and business as usual in the copper market
- The five steps are:
 - Specify collusive and non-collusive periods
 - Estimate the structural VAR
 - Compute the counterfactual or `but-for' prices and output
 - Compute damages
 - Investigate the dynamics over the collusive periods
- It uses time-series econometrics to focus on an IO problem
- I will concentrate on the economics rather than the econometrics

The Literature

- The IO literature focuses on cartel formation, duration, and breakdown
- Many dynamic structural models endogenize cartel action
- Structural
 - Different meanings in time series and economics
 - TS: Identification of the of the underlying dynamic effects atheoretical
 - Econ: Identification of the `deep' parameters based on an economic model
- Endogenous cartel action
 - IO literature often focuses on detection don't know when cartel was active
 - Theory: Green and Porter(1984), Rotenberg and Saloner (1986), Slade (1989)
 - Empirical: Porter (1983), Slade (1992)

Questions:

- Why make comparisons to the `workhorse' (DiD?) model?
 - Could compare time series and structural econometric approaches
- Can we use economic theory to sign effects identify SVARs?
- Not always:
 - Example: the effect of a positive price shock on cartel action
 - Green and Porter: Cartels breakdown (output increases) when price is low
 - Rotemberg and Saloner: Cartels breakdown when prices are high but falling
 - This paper assumes the latter

Cartels versus corners

- Cartels usually consist of producers (or governments)
 - OPEC, CIPEC, etc.
- Corners are usually controlled by traders or (buyers)
 - Silver: the Hunt Brothers (traders), Tin: de Koning (buffer stock manager)
 - This paper looks at eight cartels and one corner: Secretan (a buyer)
- There was another copper corner not included
 - The Sumitomo Corner in the early 80s: Controlled by a trader (Hatanaka)
- This distinction has implications for sign restrictions

The y variables

- Cartel Output:
 - We transform the data such that it shows how world copper supply would have changed as a percentage change due to the change in the respective cartel's output alone
- Cartel Stocks:
 - The (percentage?) change in the cartel's stocks in relation to world copper output
- World Output:
 - Percentage change
- Prices (copper price and ocean freight rates
 - Levels

Sign restrictions:

- Crucial for identification
- I would like to see a supply and demand model with inventories that yields these signs

Table 2: Sign restrictions on impact responses in the structural VAR model. All structural shocks have been normalized to imply an increase in the real price of copper. Missing entries mean that no sign restriction is imposed.

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	Cartel Cu Stocks	Cartel Cu Output	World Cu Output	Real Activity	Real Cu Price
Cartel Stock Manip. Shock	+	7	(+)	(-)	+
Cartel Output Restr. Shock		-	-	-	+
Flow Supply Shock	-	+	-	-	+
Flow Demand Shock	-	+	+	+	+
Other Demand Shock	-	(+)	+	-	+

Policy Implications:

- This sort of TS model can be used to estimate damages both during and after the cartel episode
- Cannot be used for detection of collusion
 - The focus of much of the IO literature
 - Cartels and corners
 - Interest rate manipulations (LIBOR)