

Politics of Global Value Chains

Elsa Leromain & Julian Hinz

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“Multinationals are very nervous now, and they should be. [...] In the past, only some sectors—mining, oil and gas, commodity companies—had to worry about geopolitics. Now companies that make fizzy drinks or handbags or chocolate are finding their supply chains, their markets, their operations completely blown apart by geopolitical risks and unfavorable treatment.”

Mark Leonard, co-founder of the European Council on Foreign Relations

- GVCs make domestic production of goods increasingly dependent on intermediate inputs from non-domestic sources
 - Potential for hold-up problem due to political tensions
 - cost advantage for value chains between politically friendly countries
- Effect of political tensions might differ by products
 - Politics may matter more for key products

- Influence of political relations on trade: some works but little insights into channels
 - Democracies trade more (Yu, 2010)
 - Politically similar countries trade more (Umana, 2013)
 - Dalai-lama's visits deter trade with China (Fuchs and Klann, 2013)
 - Trade fosters peace, FTAs decreases probability of conflict (Martin et al, 2008, 2012)

Contribution is two-fold:

- ▷ Reassess the role of politics in gravity
 - Product analysis
 - New measure of *Dependence*
- ▷ Additional approach: exogenous shock to political relations
 - Ambassador summoned / recalled

We estimate a generic structural gravity estimation

$$X_{ij,k} = S_{i,k} \cdot M_{j,k} \cdot \phi_{ij} \quad (1)$$

where $S_{i,k}$ includes all things exporter-specific and $M_{j,k}$ importer-specific of industry k .

Bilateral trade costs ϕ_{ij} are assumed to take the form of

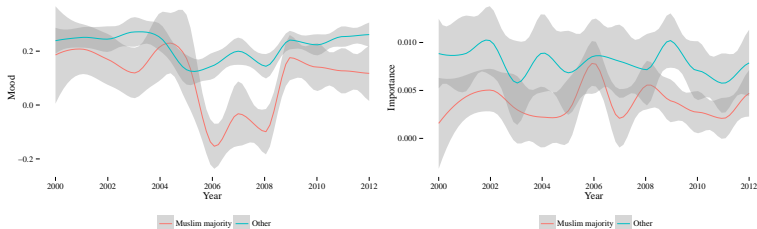
$$\phi_{ij} = \exp(\delta_1 \log(\text{Distance}_{ij}) + \delta_2 \log(\text{PoliticalRelations}_{ij}) + \delta_c \text{Controls}_{ij})$$

Easily estimated as

$$\log(X_{ij}) = F_i + F_j + \log(\phi_{ij}) \quad (2)$$

Politics: Mood and Importance

Political relations measured in terms of “mood” and “importance”:



Mean of political mood and importance of Muslim-majority countries and other countries towards Denmark using the data from Hinz (2014).

Defines as how much of an input a country j imports for its production:

$$Dep_j(input) = \sum_{out} w_{out} \left[B_j(in, out) \times \frac{A_{j, FOR}(in, out)}{A_{j, All}(in, out)} \right]$$

where

- $B_j(in, out)$ is the coefficient of the inverse Leontief matrix
- $A_{j, FOR}(in, out)$ is the foreign coefficient of the IO matrix
- w_{out} is the share of the respective output in overall production

Data: GTAP 8, 2007

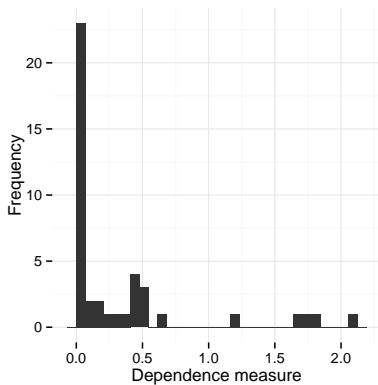


Figure: Histogram of dependence of GTAP Industries for USA

	GTAP Industry	Dependence
1	Electronic equipment	2.05
2	Machinery and equipment	1.82
3	Chemical, rubber, plastic products	1.77
4	Oil	1.64
5	Motor vehicles and parts	1.18
6	Petroleum, coal products	0.62
7	Transport equipment	0.52
8	Wood products	0.51
9	Metals	0.50
10	Paper products, publishing	0.45

Figure: Top 10 USA GTAP Industries by Dependence (Imported value in USD by industry per 100 USD GDP)

Gravity: Results GTAP level

	<i>Dependent variable:</i>			
	log(imports)			
	(1)	(2)	(3)	(4)
log(distwces)	-1.075*** (0.004)		-1.227*** (0.003)	
log(pol_relations)	0.691*** (0.005)	0.398*** (0.005)	0.467*** (0.004)	0.115*** (0.005)
log(dependence)	0.664*** (0.004)	0.701*** (0.004)		
log(pol_relations):log(dependence)	0.066*** (0.001)	0.073*** (0.001)	0.019*** (0.001)	0.021*** (0.001)
rta	0.410*** (0.008)	0.080*** (0.017)	0.453*** (0.006)	0.073*** (0.013)
comcur	-0.080*** (0.014)	0.287*** (0.049)	0.023** (0.011)	0.296*** (0.037)
Fixed effects	ctry-yr,ind	ctry-yr,ind,ctry-pair	ctry-ind-yr	ctry-ind-yr,ctry-pair
Observations	1,507,536	1,507,536	1,507,536	1,507,536
R ²	0.483	0.528	0.712	0.757
Adjusted R ²	0.482	0.524	0.692	0.738

Note:

* p<0.1; ** p<0.05; *** p<0.01

Events: Diplomat summoned/ recalled

- ★ High-level decision
- ★ Official declaration
- ★ Public dispute
- ★ Beginning of the tensions
- ★ Exogeneous to trade levels

Data: collected from Ministry of Foreign Office of 5 major countries (France, Germany, Japan, Russia, and the UK)

Examples of Events

Origin	Destination	Event type	Comments
France	Israel	summ CA	murder of a Hamas member in Dubai
Russia	Estonia	summ Amb	unfriendly action by authorities
Russia	United States	summ Amb	protest apprehension of Russian citizen abrd
Russia	Thailand	summ Amb	extradition of citizen to USA
UK	Kenya	summ HC	about Prst of Sudan's visit to Kenya

Data:

- Monthly imports from UN Comtrade
- Importers: France, Germany, Japan, Russia, UK
- Jan 2010 to Dec 2014

Baseline Equation:

$$\log(X_{ijt}) = \alpha + \beta_1 \text{Prd}_t + \beta_2 \text{Treatd}_j + \beta_3 \text{Prd}_t \times \text{Treatd}_j + F_{event}$$

For each event:

- ▷ Treated Group: Country-pair for which the event occurred
- ▷ Control Group: Imports in the P7 of interest from all other countries (but the ones treated during the period)

Diff in Diff: Results

	<i>Dependent variable</i>				
	log(imports)				
	(1)	(2)	(3)	(4)	(5)
period	0.00327 (0.0142)	− 0.0156*** (0.00488)	0.00653 (0.00689)	−0.0109 (0.00690)	− 0.00304 (0.00695)
treated_group	3.574*** (0.0690)	4.743*** (0.186)	-	-	-
period:treated_group	−1.407*** (0.0969)	− 0.672*** (0.0376)	− 0.185** (0.0851)	− 0.172** (0.0850)	− 0.169** (0.0849)
constant	14.42*** (0.0501)	12.40 (703.2)	14.86*** (0.0205)	14.87*** (0.0204)	14.84*** (0.0207)
Fixed Effects	date	date, ctry-pair	orig-yr, mth	orig-yr, mth, dest	orig-yr, date, dest
Observations	944,629	944,629	944,629	944,629	944,629
R ²	0.008	0.883	0.763	0.764	0.764

Note:

* p<0.1; ** p<0.05; *** p<0.01

- Gravity:
 - Political relations matter
 - Even more for dependent products
- Event Study:
 - Negative and significant effect of the shock
 - Small in Magnitude

- Diff Diff Product-level estimation including dependence measure