Commerce, Coalitions, and Global Value Chains

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MIT

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Motivation

New political economy of trade:

Global production is the defining feature of the 21st century international economy (Kim and Rosendorff 2021). Global value chains (GVCs) connect firms in complex production networks (Antràs and Chor 2022). Specialization leads to “lock-in” effects for both buyers and sellers (Antràs 2016, Carnegie 2014). Common interests and collective action along GVCs:

Existing frameworks cannot explain pervasive coalitions along GVCs: Derive trade preferences based on producers’ own products; Need to incorporate production linkages; Recently reconceptualize trade policy as “private goods” for firms; Fail to predict political coordination among firms and industries.

My Paper: Bring back coalitions in this era of global production!

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Example

GVC Coalitions in US-China Trade War:

91.6% of apparel and 52.5% of footwear imports from China were hit with a 15% tariff in late 2019. Nike, Crocs, and more banded together against the tariff, "All through the supply chain, an increase in tariffs has quite a negative effect." Collective lobbying culminated through trade associations:

- Council of Fashion Designers of America
- American Apparel and Footwear Association (including manufacturers, importers, exporters, wholesalers)
- Footwear Distributors and Retailers of America

Lobbying through US Global Value Chain Coalition.
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Contribution

1. Develop a GVC-centered framework of trade politics

2. GVC Partners share common interests in trade liberalization

3. GVC Partners coordinate lobbying through GVC linkages

4. GVC Partners mobilize collective lobbying through trade associations

Empirics: Conduct first direct tests on GVCs and trade coalitions

- Collect 3 million+ records of firm-to-firm supply chain relationships
- Construct direct measures for all US publicly traded firms
- Merge with 82,000+ lobbying reports on trade and tariff (2004–2019)
- Identify all lobbying reports filed by trade associations and characterize collective lobbying across industries

Taken together, my paper:

- Provides new microfoundations for coalitional politics in trade
- Incorporates production linkages into firm-level theory
- Offers a GVC-centered approach to preferences and political behaviors
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- Theory: Develop a GVC-centered framework of trade politics

GVC Partners: Domestic firms with the same foreign business partner

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Theory of Trade Preferences

Consider the following general setup:

Lemma:

Upstream value added

Demand for liberalization
Theory of Trade Preferences

Consider the following general setup:
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Consider the following general setup:

- **HOME**
  - Upstream Producers
  - Midstream Producers
  - Downstream Producers
Theory of Trade Preferences

Consider the following general setup:

FOREIGN

Midstream Producers

HOME

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Examples of Value-Added Work:
- R&D, design, sourcing management, supply chain finance...
- Manufacture and assembly
- Customs service, logistical support, distribution, customer service...
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Consider the following general setup:

**Lemma:** Upstream value added $\sim$ Demand for liberalization
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Consider the following general setup:

**Lemma:** Downstream dependence $\sim$ Demand for liberalization
Theory of Trade Preferences

Consider the following general setup:

Proposition:

1. GVC participation $\sim$ “Vertical Convergence”
Theory of Trade Preferences

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Proposition:
1. GVC participation $\rightarrow$ “Vertical Convergence”
2. Product differentiation $\rightarrow$ “Horizontal Convergence”
Theory of Trade Preferences

Consider the following general setup:

Implications: Interdependent trade preferences among GVC Partners
Theory of Collective Action

GVC Partners and Coordinated Lobbying:

1. Specialization; Critical interdependence (Carnegie 2014, Milner 1987)
2. Repeated interactions in small groups; Cost of participation ↓ (Alfaro et al. 2022, World Bank 2020)
3. Pooled resources & large representation; Benefit of participation ↑ (Dwidar 2022, Lorenz 2020, Nelson and Yackee 2012); "Strategic Complementarity" in political participation

H1: GVC Partners engage in coordinated lobbying.

GVC Partners and Collective Lobbying:

Density of GVC Partners in an industry ↑; Preference convergence ↑ and political coordination ↑; Mobilization of collective platforms, e.g., trade associations (Barnett 2013, Osgood 2020)

H2: GVC Partners mobilize lobbying through trade associations.
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- Existing approaches: Input-output tables (Osgood 2018), confidential census (Jensen et al. 2015), and firm surveys (Johns and Wellhausen 2016).
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- Limitations: Rough approximation and small samples
- Solution: Firm-to-firm supply chain records (FactSet, 2003-2019)
Data and Model

- **Data:**
  - Match FactSet with LobbyView through multiple firm identifiers
  - Identify collective lobbying across industries based on infogroup

- **Model:**
  - \( H_1: \) GVC Partners' lobbying; Self lobbying
    - Strategic Complementarity
    - Local Aggregate Network Effect Model
    \[
    y_{it} = \rho W_{it} - 1 y_{t-1} + X'_{it} - 1 \beta + \alpha_i + \gamma_t + \epsilon_{it}
    \]
    - \( y_{it} \): firm \( i \)'s lobbying in year \( t \)
    - \( W_{it} \): GVC network
    - \( X_{it} \): # of GVC Partners, product differentiation, productivity, employment, capital expenditure, property of plant, cost of goods sold, value (Kim 2017)
  - \( H_2: \) Density of GVC Partners; Lobbying by trade associations
    \[
    y_{jt} \sim \text{Bernoulli}(\pi_{jt})
    \]
    \[
    \pi_{jt} = \text{logit}^{-1}(\beta I_{jt} - 1 + Z'_{jt} - 1 \theta + \eta_j + \gamma_t)
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    - \( I_{jt} \): "GVC interdependence"
    - \( Z_{jt} \): product differentiation, concentration, capital-labor ratio, average firm size (Bombardini and Trebbi 2012)
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  - Local Aggregate Network Effect
  \[ y_{it} = \rho W_{it} - 1 y_{t-1} + X_{it} - 1 \beta + \alpha_i + \gamma_t + \epsilon_{it} \]
  - \( y_{it} \): firm \( i \)'s lobbying in year \( t \)
  - \( W_{it} \): GVC network
  - \( X_{it} \): # of GVC Partners, product differentiation, productivity, employment, capital expenditure, property of plant, cost of goods sold, value (Kim 2017)
- H2: Density of GVC Partners; Lobbying by trade associations
  \[ y_{jt} \sim Bernoulli(\pi_{jt}) \]
  \[ \pi_{jt} = \text{logit}^{-1}(\beta I_{jt} - 1 + Z_{jt} - 1 \theta + \eta_j + \gamma_t) \]
  - \( y_{jt} \): industry \( j \)'s collective lobbying in year \( t \)
  - \( \pi_{jt} \): industry \( j \)'s probability of collective lobbying in year \( t \)
  - \( I_{jt} \): “GVC interdependence”
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Data and Model

- **Data:**
  - Match *FactSet* with *LobbyView* through multiple firm identifiers
  - Identify collective lobbying across industries based on *infogroup*

- **Model:**
  - **H1:** GVC Partners’ lobbying $\sim$ Self lobbying
    
    Strategic Complementarity $\sim$ Local Aggregate Network Effect Model
    
    $$y_{it} = \rho W'_{it-1}y_{t-1} + X'_{it-1}\beta + \alpha_i + \gamma_t + \epsilon_{it}$$

    $y_{it}$: firm $i$’s lobbying in year $t$; $W_{it}$: GVC network; $X_{it}$: # of GVC Partners, product differentiation, productivity, employment, capital expenditure, property of plant, cost of goods sold, value (Kim 2017)

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Table: **GVC Network Effect on Firms’ Lobbying Activities**

<table>
<thead>
<tr>
<th></th>
<th>Lobbying (1)</th>
<th>Lobbying (2)</th>
<th>Lobbying (3)</th>
<th>Lobbying (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVC Partner Lobby</td>
<td>0.011***</td>
<td>0.017***</td>
<td>0.184***</td>
<td>0.252***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td>(0.006)</td>
<td>(0.050)</td>
<td>(0.078)</td>
</tr>
<tr>
<td>Productivity × Differentiation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Firm Characteristics</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Firm Fixed Effect</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Year Fixed Effect</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Observations</td>
<td>59,533</td>
<td>29,978</td>
<td>59,533</td>
<td>29,978</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.668</td>
<td>0.685</td>
<td>0.724</td>
<td>0.741</td>
</tr>
</tbody>
</table>

*Note: Cluster robust standard errors at the firm level. * p<0.1; ** p<0.05; *** p<0.01.*

With one more GVC Partner lobbying, the number of lobbying firms increases by 100+ and total lobbying expenditure rises by $155+ million.

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With one more GVC Partner lobbying, the number of lobbying firms increases by **100+** and total lobbying expenditure rises by **$155+ million**.
Empirical Finding II: GVC Partners Hire the Same Lobbyist and Lobby on the Same Bill.

(a) Hiring of the Same Lobbyist

(b) Lobbying on the Same Bill

The effects of GVC Partners are mostly positive (orange or darker) and particularly large for retail (44-45), logistics (48-49), and finance (52).
Conclusion

1. Theoretical Contribution

- GVCs foster common preferences among their stakeholders
- GVCs forge expansive coalitions across factors, industries, and firms
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   ▶ Create a comprehensive GVC network database at the firm level
   ▶ Compile all reports of collective lobbying through trade associations
   ▶ Show GVCs have led to:
     ⋆ Coordinated lobbying between GVC Partners
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     ⋆ PTA formation and depth (see my other papers)

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Bring Back Coalitions to Trade Politics
If you have any questions:

hzhang3@mit.edu

More information about this and other research on GVCs, Firm and State, Political Networks, US and China:

http://www.haocharliezhang.com/