Multinational firms and the impact of trade disputes on investment decisions

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Rising global value chain participation

Source: World Development Report 2020 (p. 10). GVC participation corresponds to the share of world exports that flow through at least two borders.
Introduction

Motivation

↑ MNC involvement in trade

- MNCs benefit from trade liberalization (e.g. Baccini, Pinto Weymouth 2017)
- More MNC and GVC activity associated with fewer trade barriers (e.g. Jensen, Quinn & Weymouth 2015; Baccini, Dür & Elisg 2018, Blanchard, Bown & Johnson 2017; Zeng, Sebold & Lu 2020, Anderer, Dür & Lechner 2020)

Disputes and FDI

- Investment disputes affect investment decisions (e.g. Allee and Peinhardt 2011; Blake and Moschieri 2017; Jung, Owen, & Shim 2021; Wellhausen 2015)
- GVCs and trade dispute initiation (e.g. Yildirm et al 2018; Kim and Spilker 2019)
How do trade disputes influence greenfield FDI into respondents?

- Resolved disputes → lower trade costs
- Opportunity for MNCs to enter
- Effect of dispute on FDI depends on GVC activity
- Analysis of impact of WTO disputes on greenfield FDI at country-industry level, from 2003-2015
Introduction

Literature: Trade, FDI, & GVCs

- Conventional wisdom: Vertical FDI complements trade, horizontal FDI substitutes
- Rise of value chains: ↑ import to export; crossing multiple borders (Antras 2020)
- MNCs engage in FDI, intrafirm trade, arms length trade
- Impact disputes on trade flows (Chaudoin et al 2016, Peritz 2020)
Trade disputes affect market access

- Disputes resolved in favor of complainant (e.g. Guzman and Simmons 2005)
- Removal of barriers hurts domestic producers (Kucik and Pelc 2016)
- Makes imports cheaper
- MNCs see opportunity to enter industry
Trade disputes affect market access

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**H1:** Disputes lead to an increase in FDI in affected industry of respondent
Moderating effect of GVCs

- In GVCs, production activity crosses borders
  - Backward linkage: FVA intermediate imports, DVA imports back home
  - Forward linkage: DVA to intermediate exports
- Reduction in trade barriers has larger effect in industries utilize more imported inputs aka *backward linkages*
Moderating effect of GVCs

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H2: Dispute will lead to more FDI in respondent industries with greater backward linkages
Research design & data

DV

- \# greenfield FDI projects into country $j$ in sector $k$ at time $t$
- Source: 203,407 projects from top 98% of home countries in *fDi Markets*
- 21 goods producing industries (2- or 3 digit NAICS 2017)

Sample: 61 home and 41 host countries, 21 industries; 2003-2015
Research design

IV: WTO dispute

- Monadic: $= 1$ if dispute is resolved in host $j$ (respondent) in sector $k$ in last five years

- Source: Kucik and Pelc 2016, 2020 update
Research design

Independent variables

GVC position: Ratio Forward/Backward linkages in $jkt$

- Backward: domestic and foreign value added in intermediate imports
- Forward: value added by intermediate exports
- Source: UIBE Global Value Chain index
- Logged to account for skewness
Model Specification

\[ FDI_{jkt} = \beta_0 + \beta_1 WTO\text{dispute}_{jk,t-1} + \beta_2 Position_{jk,t-1} \]
\[ + \beta_3 WTO_{jk,t-1} * Position_{jk,t-1} + \beta X + \alpha_j + \gamma_t + u_{jkt}. \]

Estimation

- Poisson pseudo-maximum likelihood regression (PPML) estimation with host \( \alpha_j \) and year FE (\( \gamma_t \))
- Controls (\( X \)): host GDPPC, growth, population
# Results

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispute ended</td>
<td>0.412***</td>
<td>0.356***</td>
</tr>
<tr>
<td></td>
<td>(0.089)</td>
<td>(0.093)</td>
</tr>
<tr>
<td>Forward/backward ratio</td>
<td>-0.087*</td>
<td>-0.060</td>
</tr>
<tr>
<td>(log)</td>
<td>(0.050)</td>
<td>(0.051)</td>
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<tr>
<td>Dispute×Ratio</td>
<td></td>
<td>-0.305**</td>
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<tr>
<td></td>
<td></td>
<td>(0.120)</td>
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<tr>
<td>GDPpc (log)</td>
<td>-1.034***</td>
<td>-1.027***</td>
</tr>
<tr>
<td></td>
<td>(0.144)</td>
<td>(0.143)</td>
</tr>
<tr>
<td>Population (log)</td>
<td>3.647***</td>
<td>3.883***</td>
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<tr>
<td></td>
<td>(0.819)</td>
<td>(0.813)</td>
</tr>
<tr>
<td>GDP growth</td>
<td>0.034***</td>
<td>0.033***</td>
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<tr>
<td></td>
<td>(0.006)</td>
<td>(0.006)</td>
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<tr>
<td>Constant</td>
<td>-55.536***</td>
<td>-59.967***</td>
</tr>
<tr>
<td></td>
<td>(15.413)</td>
<td>(15.326)</td>
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<tr>
<td>Observations</td>
<td>11357</td>
<td>11357</td>
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<tr>
<td>N_clust</td>
<td>874</td>
<td>874</td>
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<tr>
<td>Log likelihood</td>
<td>-54924.92</td>
<td>-54732.40</td>
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<tr>
<td>BIC</td>
<td>109905.86</td>
<td>109530.16</td>
</tr>
</tbody>
</table>

Cluster robust SEs. Country and year FE included

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Conditional effect

Marginal effect of dispute, conditional on forward/backward ratio

Forward/Backward ratio (log)

95% confidence interval
Results by subgroup

Note: 95% confidence intervals. Controls not shown.
Discussion and next steps

- Expand data to include more host countries
- Consider different aspects of disputes (e.g. initiation, ongoing)
- Analysis of all trade disputes in Latin America
- Explore dyadic dynamics (complainant, third parties, non-participants)
Appendix

Additional slides
Countries

Host: Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, India, Indonesia, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, US

Home: Argentina, Australia, Austria, Azerbaijan, Bahrain, Belgium, Brazil, Canada, Chile, China, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Kuwait, Lebanon, Lithuania, Luxembourg, Malaysia, Mauritius, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Philippines, Poland, Portugal, Qatar, Russia, Saudi Arabia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, UAE, UK, US, Venezuela, Vietnam
Decompositioning GDP and final goods production

(a) Forward linkage: Which types of GDP production are GVC activities?

(b) Backward linkage: Which part of final goods production belong to GVCs?

Source: UIBE
21 Sectors (NAICS), 2003-2015

Agriculture (11, except 113-4), Forestry and Logging (113), Fishing, Hunting and Trapping (114), Mining, Quarrying, and Oil and Gas Extraction(21), Construction (23), Food, Beverages and Tobacco (311-2), Textile, Apparel, and Leather Products (313-6), Wood Products (321), Paper (322), Printing and Related Support Activities (323), Petroleum and Coal Product (324), Chemical (325), Plastics and Rubber Products (326), Nonmetallic Mineral Product (327), Primary Metal (331), Fabricated Metal Product (332), Machinery (333), Computer and Electronic Product (334), Electrical Equipment, Appliance, and Component (335), Transportation Equipment (336), Furniture and Miscellaneous (337-9).
21 Sectors (NAICS), 2003-2015

- Agriculture (11, except 113-4)
- Forestry and Logging (113)
- Fishing, Hunting and Trapping (114)
- Mining, Quarrying, and Oil and Gas Extraction (21)
- Construction (23)
- Food, Beverages and Tobacco (311-312)
- Textile, Apparel, and Leather Products (313-6)
- Wood Products (321)
- Paper (322)
- Printing and Related Support Activities (323)
- Petroleum and Coal Product (324)
- Chemical (325)
- Plastics and Rubber Products (326)
- Nonmetallic Mineral Product (327)
- Primary Metal (331)
- Fabricated Metal Product (332)
- Machinery (333)
- Computer and Electronic Product (334)
- Electrical Equipment, Appliance, and Component (335)
- Transportation Equipment (336)
- Furniture and Miscellaneous (337-339)
Appendix

GVC participation Indexes, Country-Sector Level, 2000-2014

- Agriculture (11, except 113-4)
- Mining and Quarrying (21)
- Furniture and Miscellaneous Manufacturing (337-9)
- Computer and Electronic Product Manufacturing (334)