Chains of Love: Global Production, Developing Country Firms and the Diffusion of Labor Standards

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How Can I Explain, When there are Few Words I Can Choose?

- Effects of multinational production on workers’ rights.

  - Country- vs. firm-level analysis

- Under what conditions do supply chain participants – or aspiring participants – have incentives to improve labor practices?
Do You Remember, There was a Time

• Directly owned MNCs, esp. HQ in rich countries, are only part of the story.

• MNCs employed 71 million worldwide in 2014
  • 1990: 21 million
  • Global supply chain employment involves ~ 20 percent of workers worldwide (ILO 2015, OECD et al 2014)
  • In developing countries, these workers are mostly employed in manufacturing.

• Little attention in CPE/IPE so far
  • But Johns and Wellhausen 2016, Jensen et al 2015, Manger 2012.
Were Walking Hand in Hand in Hand in Hand

• Supply chains: often includes multiple layers and numerous firms within each layer.
  • Example: Nike
  • Intermediate goods, final assembly

• To understand conditions for workers, look at firms at the bottom and in the middle of supply chains
  • Not lead firms
  • Many such firms are themselves “multinational”
Figure 1: Number of Firms from Each Country in Sample

All Firms

- Japan: 376
- South Korea: 351
- Taiwan: 219
- China: 115
- Singapore: 79
- United States: 71
- Malaysia: 30
- United Kingdom: 27
- France: 26
- Germany: 15
- Australia: 14
- Thailand: 13
- Netherlands: 12
- Indonesia: 8
- Denmark: 8
- Brunei: 8
- Samoa: 6
- India: 6
- Switzerland: 5
- Belgium: 5
- Canada: 4
- United Arab Emirates: 3
- Norway: 3
- Hong Kong - China: 3
- Virgin Islands: 2
- Seychelles: 2
- Philippines: 2
- New Zealand: 2
- Mauritius: 2
- Italy: 2
- Israel: 2
- Cayman Island: 2
- Sweden: 1
- Spain: 1
- Russia: 1
- Monaco: 1
- Ireland: 1
- Cyprus: 1
- Costa Rica: 1
- Austria: 1

Firms in Exporting Sectors

- Japan: 347
- South Korea: 308
- Taiwan: 203
- China: 105
- Singapore: 62
- United States: 61
- France: 26
- Malaysia: 25
- United Kingdom: 23
- Germany: 13
- Australia: 13
- Thailand: 11
- Netherlands: 11
- Indonesia: 7
- Denmark: 7
- Brunei: 7
- Samoa: 6
- India: 6
- Belgium: 5
- Switzerland: 4
- United Arab Emirates: 3
- Norway: 3
- Hong Kong - China: 3
- Virgin Islands: 2
- Seychelles: 2
- Philippines: 2
- Mauritius: 2
- Italy: 2
- Sweden: 1
- Spain: 1
- Russia: 1
- Cayman Island: 1
- Costa Rica: 1
- Canada: 1
- Austria: 1
We’ll Break these Chains

• To what extent are supply chain firms in developing countries influenced by (potential) partners abroad?
• When does supply chain participation provide incentives to upgrade labor standards?

• Method
  • Survey of foreign-invested firms in Vietnam
  • Contingent valuation analysis: willingness to spend on labor-related improvements, to gain access.
  • Experimental design: Europe vs. India
Foreign invested firms in Vietnam

• Most select Vietnam for labor-related factors
  • 96% cite low labor costs as a factor
  • 90% list high labor quality

• 2015 Vietnam Provincial Competitiveness Index survey
  • 1584 foreign-invested entities, from 14 provinces with significant FDI.
  • Sampled from 12,571 eligible foreign firms.
  • 912 (64% of firms) involved in manufacturing.

• 87% are wholly foreign owned.
  • Most common: S. Korea, Taiwan, Japan, China

• 31% are subsidiaries of a multinational; 158 of these firms export their main product to third countries.
  • Others export to their country of origin (234 firms)
  • Still others export to third countries (258 firms)

• Most firms are in assembly, last node in production chain.

• Size: Employment and Investment
  • 3 times larger, on average, than domestic firms.
  • Median size: 125 employees; 74 percent < 300 employees.
  • 93 respondent firms employ >1,000 workers.
  • Median investment: $125,000 (Mean: $2.2 Million)
Figure 2: Number of Firms in Each Exporting Sector

Only includes firms responding to survey experiment; M: Denotes Manufacturing Sector.
Looking out for others, our sisters and our brothers?

• We predict that participation in global supply chains provides some firms with incentives to upgrade their labor-related practices.
  • Industrial upgrading via global value chains (Gereffi et al 2005)
  • Trade-based diffusion of rights (Greenhill et al 2009)
  • Corporate social responsibility (Locke 2013, Vogel 2009)
  • Domestic firms use international certification schemes as a signal (Berliner and Prakash 2014)

• Two (related) mechanisms:
  • Desire to participate in higher value added activities and to service foreign markets; may require more skilled workers from local labor force.
  • Response to (perceived demands) by developed country firms for ethical production. Reputational risk of violating core labor standards.
**G13: Imagine the following scenario:** Your business has been contacted by an international consulting company, whose primary job is to connect large multinational companies to suppliers in emerging markets. The consulting company would like to shortlist your company, along with two other companies in your region, as potential suppliers of your product to a large [European/Indian] company that sells primarily to the [European/Indian] market. To be eligible to be included on the shortlist, the consulting company requires that your firm adopt the multinational’s Labor Code of Conduct for Suppliers. This Code of Conduct includes greater representation for workers, limits on overtime work, and regulations to protect the health and safety of workers. Adopting the Code of Conduct will allow you the possibility of future orders from this multinational and others like it, but it also will increase your operating costs. Please tell us the maximum amount of adjustments - in terms of their financial costs - that you would be willing to make in order to be in compliance with the code of conduct and thereby eligible for the contract. To make this easier, we have listed the costs as a share of your current operating costs:

<table>
<thead>
<tr>
<th>Share of Operating Costs: (Please simply check the highest cost you would be willing to assume)</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ &lt;1%</td>
</tr>
<tr>
<td>□ 1%</td>
</tr>
<tr>
<td>□ 2%</td>
</tr>
<tr>
<td>□ 3%</td>
</tr>
<tr>
<td>□ 4%</td>
</tr>
<tr>
<td>□ 5%</td>
</tr>
</tbody>
</table>
Table 1: Item Non-Response and Balance of Confounders

<table>
<thead>
<tr>
<th>Confounders</th>
<th>Europe Mean</th>
<th>Europe SE</th>
<th>India Mean</th>
<th>India SE</th>
<th>Difference</th>
<th>India-Europe SE</th>
<th>p-value</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Non-Response=1</td>
<td>0.346</td>
<td>(0.018)</td>
<td>0.364</td>
<td>(0.018)</td>
<td>0.018</td>
<td>(0.491)</td>
<td>1,413</td>
<td></td>
</tr>
<tr>
<td>CEO is male=1</td>
<td>0.921</td>
<td>(0.013)</td>
<td>0.926</td>
<td>(0.013)</td>
<td>0.005</td>
<td>(0.777)</td>
<td>836</td>
<td></td>
</tr>
<tr>
<td>Years since registration (ln)</td>
<td>8.725</td>
<td>(0.234)</td>
<td>8.280</td>
<td>(0.245)</td>
<td>-0.445</td>
<td>(0.189)</td>
<td>905</td>
<td></td>
</tr>
<tr>
<td>Capital size ($1000s USD)</td>
<td>4.032</td>
<td>(447.9)</td>
<td>4.308</td>
<td>(485.3)</td>
<td>275.9</td>
<td>(0.676)</td>
<td>637</td>
<td></td>
</tr>
<tr>
<td>100% Foreign Owned=1</td>
<td>0.860</td>
<td>(0.015)</td>
<td>0.903</td>
<td>(0.016)</td>
<td>0.043**</td>
<td>(0.044)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Multinational Corp.=1</td>
<td>0.308</td>
<td>(0.022)</td>
<td>0.312</td>
<td>(0.023)</td>
<td>0.004</td>
<td>(0.901)</td>
<td>869</td>
<td></td>
</tr>
<tr>
<td>Entry through M&amp;A=1</td>
<td>0.072</td>
<td>(0.013)</td>
<td>0.071</td>
<td>(0.013)</td>
<td>-0.001</td>
<td>(0.955)</td>
<td>806</td>
<td></td>
</tr>
<tr>
<td>Union in firm=1</td>
<td>0.662</td>
<td>(0.022)</td>
<td>0.637</td>
<td>(0.023)</td>
<td>-0.025</td>
<td>(0.446)</td>
<td>868</td>
<td></td>
</tr>
<tr>
<td>Workers under contract (%)</td>
<td>87.512</td>
<td>(1.204)</td>
<td>86.323</td>
<td>(1.250)</td>
<td>-1.189</td>
<td>(0.493)</td>
<td>877</td>
<td></td>
</tr>
<tr>
<td>Number of employees</td>
<td>208.763</td>
<td>(16.164)</td>
<td>231.967</td>
<td>(17.013)</td>
<td>23.204</td>
<td>(0.323)</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td>Profitable firm=1</td>
<td>0.547</td>
<td>(0.024)</td>
<td>0.547</td>
<td>(0.025)</td>
<td>0.000</td>
<td>(0.992)</td>
<td>817</td>
<td></td>
</tr>
<tr>
<td>Loss Making firm=1</td>
<td>0.397</td>
<td>(0.024)</td>
<td>0.363</td>
<td>(0.025)</td>
<td>-0.034</td>
<td>(0.325)</td>
<td>817</td>
<td></td>
</tr>
<tr>
<td>Plan to expand business =1</td>
<td>0.481</td>
<td>(0.023)</td>
<td>0.498</td>
<td>(0.024)</td>
<td>0.017</td>
<td>(0.619)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Export at all=1</td>
<td>0.619</td>
<td>(0.022)</td>
<td>0.638</td>
<td>(0.023)</td>
<td>0.019</td>
<td>(0.554)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Customer is SOE=1</td>
<td>0.169</td>
<td>(0.016)</td>
<td>0.118</td>
<td>(0.017)</td>
<td>-0.052**</td>
<td>(0.026)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Customer is government=1</td>
<td>0.046</td>
<td>(0.009)</td>
<td>0.025</td>
<td>(0.009)</td>
<td>-0.021*</td>
<td>(0.095)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Customer is private firm=1</td>
<td>0.431</td>
<td>(0.023)</td>
<td>0.408</td>
<td>(0.024)</td>
<td>-0.023</td>
<td>(0.480)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Customer is foreign firm=1</td>
<td>0.515</td>
<td>(0.023)</td>
<td>0.502</td>
<td>(0.024)</td>
<td>-0.012</td>
<td>(0.710)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Export to home country=1</td>
<td>0.460</td>
<td>(0.023)</td>
<td>0.461</td>
<td>(0.024)</td>
<td>0.001</td>
<td>(0.986)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Export to third country=1</td>
<td>0.372</td>
<td>(0.022)</td>
<td>0.376</td>
<td>(0.023)</td>
<td>0.003</td>
<td>(0.921)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Vendor is SOE=1</td>
<td>0.136</td>
<td>(0.015)</td>
<td>0.104</td>
<td>(0.016)</td>
<td>-0.032</td>
<td>(0.135)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Vendor is private firm=1</td>
<td>0.699</td>
<td>(0.021)</td>
<td>0.680</td>
<td>(0.022)</td>
<td>-0.019</td>
<td>(0.536)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Vendor is household=1</td>
<td>0.228</td>
<td>(0.018)</td>
<td>0.177</td>
<td>(0.019)</td>
<td>-0.051*</td>
<td>(0.058)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Inputs from in house=1</td>
<td>0.090</td>
<td>(0.012)</td>
<td>0.071</td>
<td>(0.013)</td>
<td>-0.019</td>
<td>(0.307)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Import from Home country=1</td>
<td>0.598</td>
<td>(0.022)</td>
<td>0.641</td>
<td>(0.023)</td>
<td>0.042</td>
<td>(0.190)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Import from Third country=1</td>
<td>0.412</td>
<td>(0.023)</td>
<td>0.415</td>
<td>(0.024)</td>
<td>0.003</td>
<td>(0.936)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Company from Europe=1</td>
<td>0.067</td>
<td>(0.012)</td>
<td>0.078</td>
<td>(0.012)</td>
<td>0.011</td>
<td>(0.508)</td>
<td>912</td>
<td></td>
</tr>
<tr>
<td>Company from India=1</td>
<td>0.004</td>
<td>(0.003)</td>
<td>0.005</td>
<td>(0.003)</td>
<td>0.000</td>
<td>(0.923)</td>
<td>912</td>
<td></td>
</tr>
</tbody>
</table>

Row 1 includes all firms in exporting sectors. Thereafter balance tests are restricted to firms in exportable sectors that responded to the survey experiment.
Figure 3: Results of Survey Experiment

Observed Operating Costs

Difference in Operating Costs

Red marks in right panel denote 95% Confidence Intervals
Figure 4: Results of Survey Experiment

Observed Operating Costs

<table>
<thead>
<tr>
<th>Predicted Adjustment/Operating Costs (%)</th>
<th>Share of Observations (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>20</td>
</tr>
<tr>
<td>5-9</td>
<td>30</td>
</tr>
<tr>
<td>10-14</td>
<td>15</td>
</tr>
<tr>
<td>&gt;15</td>
<td>10</td>
</tr>
</tbody>
</table>

Different in Operating Costs

Rejection p-value calculated with Wild Cluster Bootstrap SEs

<table>
<thead>
<tr>
<th>India Treatment - Europe Treatment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.268</td>
<td></td>
</tr>
<tr>
<td>-1.65 03</td>
<td></td>
</tr>
</tbody>
</table>

Red marks in right panel denote 95% Confidence Intervals; n=912; India 434; Europe 478
What’s the Mechanism?

(1) Value added mechanism will operate in sectors where the typical markup for product is high, and developing country firms thereby anticipate being able to capture greater value via supply chain participation.

(2) Ethical production mechanism operates when lead firms are in developed countries (esp. w/ strong labor institutions), with strong demands for CSR, and with a capacity to observe conditions through the supply chain
<table>
<thead>
<tr>
<th>Low Treatment Effect (i.e. Plastics, Commodities)</th>
<th>Moderate Treatment Effect (i.e. Automobiles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate Treatment Effect (i.e. Apparel/Garments)</td>
<td>Large Treatment Effect (i.e. Jewelry, Watches)</td>
</tr>
</tbody>
</table>
Don’t Give Up, Don’t Give Up

Figure 5: Test of Mechanism

Wearing Apparel (n=64)

<table>
<thead>
<tr>
<th></th>
<th>Average Change in Operation Costs (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Rubber and Plastic (n=70)

<table>
<thead>
<tr>
<th></th>
<th>Average Change in Operation Costs (%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>6.8</td>
<td></td>
</tr>
</tbody>
</table>

Rejection p-value

Operating Costs Difference (India Treatment - Europe Treatment)

-6.18  2.33
-0.34  2.01
Making Plans Together

• Other distinctions among firms
  • Intermediate vs. final goods

• Vary the country of origin of the supply chain partner
  • China
  • United States

• Ask the same question of domestic firms.