Impacts of the U.S.-China Trade War

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Introduction

- The US championed global economic integration in the post-war era.

- This approach dramatically changed in 2018
  - First, the U.S. raised tariffs on washing machines, solar panels, steel
  - Then, it increase tariffs on China across almost all sectors

- The main trade partners retaliated against these tariffs
  - Russia, Canada, Mexico, the EU,...
  - But mostly China

- Tariffs continued to raise until late 2019 and currently remain high
  - 60% of China-US trade is subject to tariffs of 20%
  - In contrast, US and China tariffs on rest of the world are 3% and 6%

- This was the largest and most sustained return to protectionism since ’30 Smoot-Hawley
# U.S. Tariffs

## Panel A: Tariffs on U.S. Imports Enacted by U.S.

<table>
<thead>
<tr>
<th>Tariff Wave</th>
<th>Date Enacted</th>
<th>Products (# HS-10)</th>
<th>2017 Imports (mil USD)</th>
<th>2017 Tariff (%)</th>
<th>Post-War Tariff (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar Panels</td>
<td>Feb 7, 2018</td>
<td>8</td>
<td>5,782</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Washing Machines</td>
<td>Feb 7, 2018</td>
<td>8</td>
<td>2,105</td>
<td>0.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Aluminum</td>
<td>Mar-Jun, 2018</td>
<td>93</td>
<td>17,685</td>
<td>0.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Iron and Steel</td>
<td>Mar-Jun, 2018</td>
<td>757</td>
<td>30,655</td>
<td>1.3</td>
<td>0.0</td>
</tr>
<tr>
<td>European Union</td>
<td>Oct 18, 2019</td>
<td>226</td>
<td>11,819</td>
<td>0.5</td>
<td>4.8</td>
</tr>
<tr>
<td>China</td>
<td>Jul ’18 - Sep ’19</td>
<td>16,403</td>
<td>352,563</td>
<td>14.7</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>17,495</strong></td>
<td><strong>420,608</strong></td>
<td><strong>17.6</strong></td>
<td><strong>3.7</strong></td>
</tr>
</tbody>
</table>
U.S. Tariffs across Sectors
# Retaliatory Tariffs

## Panel B: Retaliatory Tariffs on U.S. Exports Enacted by Trading Partners

<table>
<thead>
<tr>
<th>Retaliating Country</th>
<th>Date Enacted</th>
<th>Products (# HS-10)</th>
<th>2017 Exports (mil USD)</th>
<th>Tariff (%)</th>
<th>2017</th>
<th>Post-war</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>Jun 5, 2018</td>
<td>232</td>
<td>6,746</td>
<td>0.4</td>
<td>9.4</td>
<td>27.9</td>
</tr>
<tr>
<td>Turkey</td>
<td>Jun 21, 2018</td>
<td>248</td>
<td>1,554</td>
<td>0.1</td>
<td>8.8</td>
<td>31.6</td>
</tr>
<tr>
<td>European Union</td>
<td>Jun 22, 2018</td>
<td>303</td>
<td>8,244</td>
<td>0.5</td>
<td>4.4</td>
<td>28.9</td>
</tr>
<tr>
<td>Canada</td>
<td>Jul 1, 2018</td>
<td>325</td>
<td>17,818</td>
<td>1.2</td>
<td>2.1</td>
<td>20.2</td>
</tr>
<tr>
<td>Russia</td>
<td>Aug 6, 2018</td>
<td>165</td>
<td>268</td>
<td>0.0</td>
<td>5.2</td>
<td>37.2</td>
</tr>
<tr>
<td>India</td>
<td>Jun 16, 2019</td>
<td>65</td>
<td>1,280</td>
<td>0.1</td>
<td>13.2</td>
<td>27.5</td>
</tr>
<tr>
<td>China</td>
<td>Apr ’18 - Sep ’19</td>
<td>7,757</td>
<td>98,016</td>
<td>6.3</td>
<td>8.7</td>
<td>19.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>8,400</strong></td>
<td><strong>133,926</strong></td>
<td><strong>8.7</strong></td>
<td><strong>7.7</strong></td>
<td><strong>20.8</strong></td>
</tr>
</tbody>
</table>
This Talk

“The Return to Protectionism” (Quarterly Journal of Economics, 2020)

1. Aggregate effects U.S. real income

2. Regional effects across counties and political leaning
Tariffs: Brief Conceptual Review

- **Tariffs** = tax on imports

  - **Consumers: should be worse off...**
    - by the value of imports times increase in import prices
    - depends on whether import price (before tariff) falls

  - **Producers: should be better off...**
    - by the value of exports times increase in producer prices
    - depends on retaliations

- **+ Government revenue**
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- **U.S. gains if import prices (before-tariffs) fall relative to export prices**
  - Analogy: optimal behavior of a monopsonist/monopolist
Consumers: Total Imports Fell...
...but Import Prices (Before Tariffs) Did Not Fall!

→ China did not lower export prices to US
So, Tariff-Inclusive Import Prices Increased 1-1 with Tariffs

→ US imports buyers worse off
Cost to Consumers

Import GDP share (15%) X Targeted imports (17%) X Tariff increase (25%) = 0.61% GDP
Benefit to Producers

- Use a model of the full economy to estimate producer effects
  - Multiple sectors and regions
  - Input-output linkages

- Benefit to producers:

  \[
  \text{Export GDP share (13\%) } \times \text{Increase in Producer Prices (1\%) } = 0.13\% \text{ GDP}
  \]
Tariff Revenue

USD Billion

2016m1 to 2019m12
Total Effect

- Consumers: -114b, 0.61%
- U.S. Producers: 24b, 0.13%
- Govt Revenue: -25b, -0.13%
- All Tariffs: 65b, 0.35%

Total: -114b
Producers: Exports fell due to Retaliation
Regional Impacts in the News: Imports

The New York Times

‘How Long Can We Last?’ Trump’s Tariffs Hit Home in the U.S.

Chicago Tribune

As tariffs begin, Northwest Indiana auto workers and farmers share concerns

THE WALL STREET JOURNAL

In a Pennsylvania Steel Town, Donald Trump’s Tariff Is a Winner

U.S. Steel to Expand Under Tariffs

Metal maker to restart construction at Alabama plant as higher profit

Swing State Steel
States with the biggest number of metal-refining furnace operators and tenders

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiana</td>
<td>2,050.0</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1,640.0</td>
</tr>
<tr>
<td>Alabama</td>
<td>1,200.0</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,200.0</td>
</tr>
<tr>
<td>Michigan</td>
<td>1,020.0</td>
</tr>
</tbody>
</table>

Bloomberg Businessweek

You can’t find a clearer example of the steel industry’s disagreement over the Trump tariffs than in Canton, Ohio, where the tariffs are pitting Timken against Timken. TimkenSteel Corp., which makes steel...
Regional Impacts in the News: Exports

The New York Times
A Farmer’s Tough Year on the Trade War’s Kansas Front
From planning to harvest, the grain belt’s rhythms and prospects have been disrupted by the government’s tariff battle with China.

The Washington Post
North Dakota soybean farmers, caught in the trade war, watch the season run out on their crop

Des Moines Register
Iowa farming’s $2.2 billion trade loss could ripple through state’s economy

The Wall Street Journal
Take Our Cheese, Please: American Cheese Makers Suffer Under New Tariffs
Chinese, Mexican tariffs on U.S. cheese and whey are hurting farmers and driving up stockpiles
Panel A: Tariff Increase on US Imports, 2017-2018
Weighted by Variety-Level US Import Share and County-Level 2016 Tradeable Sector Employee Wage Bill

Mean = 1.11 p.p., std = 0.91

2.37 – 11.78
1.97 – 2.37
1.66 – 1.97
1.25 – 1.66
0.86 – 1.25
0.59 – 0.86
0.44 – 0.59
0.35 – 0.44
0.00 – 0.35
Panel B: Tariff Increase on US Exports, 2017-2018
Weighted by Variety-Level US Export Share and County-Level 2016 Tradeable Sector Employee Wage Bill

Mean = 4.17 p.p., std = 2.67
U.S. Tariffs, Retaliation, and 2016 GOP Presidential Vote Share

The graph illustrates the relationship between county retaliatory tariff changes and county import tariff changes, as well as the 2016 GOP presidential vote share. The x-axis represents the 2016 GOP presidential vote share, with values ranging from 0 to 1. The y-axes show the change in tariffs and retaliatory tariffs, with values ranging from 0.01 to 0.035. The graph includes two lines: one for import tariffs and another for retaliatory tariffs, with shaded areas indicating the range of data points. The title of the graph is "U.S. Tariffs, Retaliation, and 2016 GOP Presidential Vote Share."
Real wage decline across counties: avg. 1.0% (s.d. 0.5%).
Tradeable Wages and 2016 GOP Vote Share

Δ Real Tradeable Wage (%) vs 2016 GOP Presidential Vote Share

- Full War
- Without Retaliations
Conclusion

1. Large and sustained declines in imports and exports
2. No before-tariff import price decline
   ▶ Complete pass-through of tariff to tariff-inclusive prices
3. Small negative aggregate effect
   ▶ But larger consumer loss
4. Higher import protection provided to electorally competitive counties
   ▶ but...Republican counties most negatively affected due to retaliation

Caveats
▶ dynamic effects, uncertainty and investment