WTO Trade Dialogues Lectures Series: Re-Assessing the Labor Market Impacts of Trade

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Does Trade Make Everyone Better Off?

- Trade *can* make everyone better off!
  - Standard trade theory suggests that gains to winners are large enough to more than compensate the losers

- Why can there be losers?
  - Krugman and Obstfeld (2008): *Owners of a country’s abundant factors gain from trade, but owners of a country’s scarce factors lose... Compared with the rest of the world the United States is abundantly endowed with highly skilled labor and (...) low-skilled labor is correspondingly scarce. This means that international trade tends to make low-skilled workers in the United States worse off—not just temporarily, but on a sustained basis.*
During the 1990s, many researchers studied whether trade is responsible for rising wage inequality in the U.S.

Eventually, a consensus emerged on the following observations:

1. Trade had not been a major contributor to manufacturing decline or rising wage inequality in developed countries (and took place mostly between such countries)

2. Workers in import-competing sectors and regions could readily relocate to other sectors or regions if displaced by trade

3. Due to the law of one price for skill, any labor market impact of trade would be felt by low-skill workers generally, not by trade-exposed workers specifically
Since 90s: Emergence of China as World-Leading Exporter
The China Shock

- The China shock—an epochal shift in patterns of world trade

  - Economic distortions during the Maoist era limited growth; its GDP p.c. rank fell from 59th to 134th from 1952 to 1978
  - Economic reforms in the 1980s and early 1990s ignited a phase of transitional growth, GDP p.c. rank improved to 126th by 1991, and to 77th by 2011
  - The rapid rise of China as an exporting power was not necessarily expected—in 1989, the Wall Street Journal predicted stagnation for the next 25 years
What Was Special about the China Shock?

1. China is the most populous country in the world; its opening to international trade can thus have particularly large impacts.

2. Largely due to China, trade with low-wage countries accounts for an increasing fraction of high-wage countries’ trade.

3. In the U.S., growing trade with China was associated with a rapidly growing trade deficit (by contrast, Chinese trade with Germany was quite balanced).
Chinese import competition in the U.S. and other high-wage countries varies by industry, and across geographic regions that are specialized in different industries.

In the presence of any labor market frictions, the impacts of trade will be concentrated in exposed industries and regions instead of immediately dispersing across the nation.

I analyzed the impacts of Chinese import competition on U.S. industries and regions in a series of research papers with David Autor, Gordon Hanson, and other colleagues.
The Consensus of the Early 2000s
The China Shock
Labor Market Impacts of Chinese Import Competition
Concluding Remarks

Growth of (Gross and Net) U.S. Imports from China

Trade Flows: China ↔ US, Other High Income Countries
(Billions of 2007 US Dollars)

Comparison countries: Austria, Denmark, Finland, Germany, Japan, New Zealand, Spain, Switzerland

Imports

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Eight Other Developed Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>$26\text{bil}$</td>
<td>$330\text{bil}$</td>
</tr>
<tr>
<td>2000</td>
<td>$122\text{bil}$</td>
<td>$94\text{bil}$</td>
</tr>
<tr>
<td>2007</td>
<td>$28\text{bil}$</td>
<td>$68\text{bil}$</td>
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<tr>
<td>1991</td>
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Variation of Import Competition across Industries
Variation of Import Competition across Regions

Trade Exposure by Commuting Zone, 1990-2007

- Lowest Quartile (least exposed)
- 2nd Quartile
- 3rd Quartile
- Highest Quartile (most exposed)
Analysis at the Local Labor Market Level (ADH, AER 2013)

- Estimate trade impacts in 722 Commuting Zones (clusters of counties that approximate local labor markets)
  - exposure to Chinese imports varies due to differential initial specialization across 397 manufacturing industries
- Isolate the supply shock component of U.S. imports from China using growth of Chinese imports in other high-wage countries as an instrumental variable
Imports from China and Employment Status of Working Age Population within Commuting Zones (1990-2007)

Effect of an $1000 Per Worker Increase in Imports from China during 1990-2007 on Share of Population in Employment Categories

- Manufacturing
- Non-Manufacturing

Source: Autor, Dorn and Hanson (2013)
Effect of an $1000 Per Worker Increase in Imports from China during 1990-2007 on Share of Population in Employment Categories

- Unemployment
- Not in Labor Force

Source: Autor, Dorn and Hanson (2013)
## Wages

### Imports from China and Wage Changes within Commuting Zones (1990-2007)

*Effect of an $1000 Per Worker Increase in Imports from China during 1990-2007 on Percent Change in Weekly Wages*

<table>
<thead>
<tr>
<th>All Education Levels</th>
<th>College Education</th>
<th>No College Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td></td>
</tr>
<tr>
<td>-0.9%</td>
<td>-0.6%</td>
<td>-0.7%</td>
</tr>
<tr>
<td>-1.0%</td>
<td>-1.0%</td>
<td>-1.1%</td>
</tr>
</tbody>
</table>

Source: Chetverikov, Larsen and Palmer (2015)
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Government Transfers

Imports from China and Change of Government Transfer Receipts in Commuting Zones (1990-2007)

Effect of an $1000 Per Worker Increase in Imports from China during 1990-2007 on Dollar Change of Annual Transfer Receipts per Capita

Source: Autor, Dorn and Hanson (2013)
Comparing regions at the 75th and 25th percentile of exposure, the former experiences

1. loss of about 5% of its manufacturing jobs
2. no offsetting employment gains outside of manufacturing
3. decline in avg. household wage income per adult of $550 p.a.
4. increase in gov’t transfers by about 10-15% of wage loss

For the whole U.S., estimated 2m-2.4m net job loss due to Chinese import competition in 1999-2011 (AADHP, JOLE 2016)
Analysis at the Individual Worker Level (ADHS, QJE 2014)

- Analyze over 500k person records from the U.S. Social Security Agency to follow the careers of individuals over time
  - compare workers whose industries of employment in 1991 subsequently became differentially exposed to import competition
- The longitudinal perspective allows to study how workers adjust their careers to the China shock
Cumulative Churning

Cumulative Firm-Firm and Emp-NonEmp Transitions since 1991

Year
Coefficient

Year
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

Coefficient
0
0.5
1
1.5
2
2.5
3
3.5

Dorn
Trade and Labor

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Cumulative Earnings since 1991

Coefficient vs Year

Year: 1988 to 2007

Coefficient values range from -11 to 0.
Comparing manufacturing workers at the 75th and 25th percentile of exposure, the former

1. cumulatively earns about half an annual salary less in 1991-2007
2. works about half a year less at the initial firm, but more at other firms outside the initial industry
3. is not more likely to move to another region for work
Beyond Labor Market Effects

- Disruptions to employment and income in local labor markets can have broad impacts on the social fabric of these locations.
- Greater local exposure to import shocks is associated with:
  1. higher crime rates (Feler and Senses, 2016)
  2. higher mortality rates (Pierce and Schott, 2016; Autor, Dorn and Hanson, 2016)
  3. higher rates of single motherhood and child poverty (Autor, Dorn and Hanson, 2016)
Political Repercussions

- U.S. locations that were exposed to larger import shocks have
  - representatives in Congress that became more likely to vote in a protectionist way on trade bills (Feigenbaum and Hall, 2015)
  - become more likely to elect representatives from the extreme right and extreme left (Autor, Dorn, Hanson and Majlesi, 2016)
  - contributed to the election of Donald Trump in 2016 (Autor, Dorn, Hanson and Majlesi, 2016)
Similar Effects in Europe?

- Negative impact of Chinese import competition on local employment and wages
  - Germany (Dauth, Findeisen, Südekum, 2014), Norway (Balsvik, Jensen, Salvanes, 2015), Spain (Donoso, Martin, Minondo, 2014)

- Lower career earnings for workers in exposed industries
  - U.K. (Pessoa, 2016), Denmark (Ashournia, Munch, Nguyen, 2014; Utar 2015)

- Shift in voting patterns favoring
  - Front National in France (Malgouyres, 2014), extreme-right parties in Germany (Dippel, Gold and Helblich, 2015)
  - Brexit in the United Kingdom (Colantone and Stanig, 2016)
Similar Effects in Europe?

- A major difference between Germany and the U.S. (Dauth, Findeisen and Südekum, 2014)
  - dramatic increase in German exports to China (and to Eastern Europe) roughly matches growth in imports
  - local labor markets with specialization in exporting industries gain employment
  - export effect appears large enough to more than offset import-related employment losses
Similar Effects for Technology Adoption?

- Technological change is widely seen as a cause of
  - rising wage inequality (e.g., Katz and Autor, 1999)
  - labor market polarization (e.g., Autor and Dorn, 2013)
- U.S. local labor markets with greater exposure to computer adoption experience (Autor, Dorn and Hanson, 2015)
  - greater declines in routine occupation employment
  - greater declines in manufacturing employment
  - but offsetting employment gains in non-routine occupations
Where Does Evidence Deviate from Standard Theory?

- Bilateral trade between countries can be unbalanced
  - the U.S. experienced rapidly rising import competition from China but did not expand its exports equally strongly
- Labor markets are not frictionless
  - trade shocks can generate unemployment, not just changes in equilibrium wages
  - workers relocate only slowly across industries and geographic locations
  - income losses are thus concentrated among workers in exposed industries and regions
Where Does Evidence Deviate from Standard Theory?

- Depression of trade-exposed local labor markets spills over into non-work outcomes
  - increases in crime, mortality, single motherhood
- Government transfers provide incomplete compensation for financial losses (at least in the U.S.)
  - compensation comes mostly from Medicaid/Medicare and disability insurance, not from Trade Adjustment Assistance
Benefits and Costs of Import Competition: Timing

- **Gains**
  - lower consumer prices (short-term and long-term)
  - greater variety of goods (short-term and long-term)
  - dynamic gains? (long-run)

- **Costs**
  - adjustment costs due to labor market disruptions (short-term)
  - lower wage levels for groups of workers (long-term)

- Adjustment costs can weigh heavily against gains from trade during a transition period following a trade shock
The consumer benefits from trade accrue to many/all consumers.

The costs of labor market adjustment are concentrated on workers in trade-exposed industries and localities.

*Losses from trade may be more salient than gains*
What Can Policy Do?

- A reversal of past trade integration through imposition of high tariffs is not the solution
  - creates another labor market disruption with adjustment costs
- Strategies to reduce burden for the losers
  - phasing in trade liberalization more gradually (lower adjustment costs)
  - extending/improving transfer programs that compensate the losers and ease their labor market adjustment (TAA, EGF)
- Extend analysis and discussion of costs and gains from trade