IFS Annual Lecture 2017
Professor David Autor:
Economic and Political Consequences of China’s Rise for the United States: Lessons from the China Shock

22 June 2017
The Royal Society, London
Economic and Political Consequences of China’s Rise for the United States: Lessons from the China Shock

David Autor
Ford Professor and Associate Head, MIT Economics
IFS Annual Lecture, June 2017
China’s Historic Rise as a World Manufacturing Power

Shares of world manufacturing exports

- China
- USA
- Other emerging economies
- Germany

Autor, Dorn, Hanson 2016
China’s Historic Rise as a World Manufacturing Power

Deng Xiaoping, 1904–1997

- Chairman of the Central Advisory Commission of the Communist Party of China
- Chairman of the Central Military Commission
- Chairman of the National Committee of the Chinese People's Political Consultative Conference
China’s Special Economic Zones (SEZs)
The Case for Free Trade

Ricardo’s Big Idea

• Trade allows countries to specialize in the goods in which they are most productive – comparative advantage

• Free trade among consenting nations raises GDP in all of them
But Here’s the Rub

Winners and Losers

• What is true for the welfare of a country in aggregate does not necessarily apply for all citizens in a country
• Trade normally creates winners and losers
• Diffuse benefits, concentrated costs

Drew Barrymore as Hamlet in 1922
1. Trade necessitates reallocation of workers and jobs
   - Workers displaced from career jobs
   - May require new location, new occupation
   - Often leaves economic – and psychological – scars
Why Is Free Trade Not a Free Lunch?

1. Trade mandates reallocation of workers/jobs

2. Trade permanently alters skills demands
   - Typically raises demand for high-skill workers in industrialized countries
   - Reduces demand for low-skill workers
   - Even as trade grows pie modestly, can shrink some slices substantially
Why Is Free Trade Not a Free Lunch?

1. Trade mandates reallocation of workers/jobs
2. Trade permanently alters skill demands
3. **Textbook scenario**...
   - Displaced workers move quickly to new opportunities
   - New businesses open, taking advantage of slack
   - New jobs created are about as good as the old ones
   - Concentrated local impacts diffuse nationally
     - A small decline in *aggregate* demand for production workers
     - But no *local* crater where manufacturing once stood
Why is Free Trade Not a Free Lunch?

1. Trade mandates reallocation of workers/jobs
2. Trade permanently alters skill demands
3. Textbook scenario
4. The bad scenario...
   - If workers are not geographically mobile...
   - If they have trouble acquiring new skills...
   - If firms do not enter declining locales...
   - If public benefits programs induce workers to withdraw from labor market...
   - Then economic costs will fall heavily on a few
Trade Disruption: The Case of Textiles


- 490K in 1994
- 380K in 2000
- 165K in 2007
- 112K in 2017
Trade Disruption: The Case of Textiles

- 400K textile jobs is tiny in market of 150M workers
- But textile and apparel jobs geographically concentrated
  - 50% of all textile jobs were in 8 Southern states
  - 57 counties > 15% of jobs
  - Southeastern non-metro counties – Highest U.S. rates of rural poverty
  - 25% of workers high school dropouts
- Diffuse benefits, concentrated costs

In 2000, half of U.S. textile and apparel employment was located in eight southeastern States

Learning from Labor-Market Adjustment to Seismic Changes in International Trade

Evidence from the China Shock

1. Do workers quickly find reemployment?
2. Do new businesses pick up the slack?
3. Are new jobs about as good as old ones?

Beyond employment

4. How trade shock have affected U.S. politics
5. Manufacturing as a hub of innovation

Looking ahead

Figure 1.

Left scale: Chinese goods as a share of U.S. goods expenditure

Right scale: Share of U.S. working-age population employed in manufacturing

U.S. Manufacturing Employment, 1939 - 2016 (1,000s)

- 1943, 16.6 mil
- 1979, 19.7 mil
- 1999, 17.3 mil
- 2007, 13.8 mil
- 2010, 11.9 mil
- 2016, 12.4 mil

DAVID AUTOR | LESSONS FROM THE CHINA SHOCK
Learning from Labor-Market Adjustment to Seismic Changes in International Trade

Evidence from the China Shock

1. Do workers quickly find reemployment?
2. Do new businesses pick up the slack?
3. Are new jobs about as good as old ones?

Beyond employment

4. How trade shock have affected U.S. politics
5. Manufacturing as a hub of innovation

Looking ahead
Trade-Exposed Workers do a Lot of ‘Transitioning’

Excess Firm-to-Firm and Employment-to-Non-Employment Transitions
Workers Employed at Trade-Exposed Plants in 1991
Cumulatively, they Lose About $\frac{1}{2}$ Year of Expected Annual Income Over the Next 16 Years

Workers Employed at Trade-Exposed Plants in 1991

Cumulative Earnings Losses (% pts) over 1992 - 2007

Stuck in a Rut: Workers Move From One Trade-Exposed Sector to Another

Persistence of Trade Exposure at the Worker Level
Workers Employed at Trade-Exposed Plants in 1991

Correlation Between Initial and Subsequent Trade Exposure (1992 = 1.0)

- Blue dots: Correlation between initial exposure and subsequent exposure
- Green dots: Counterfactual with zero trade exposure after job change
Learning from Labor-Market Adjustment to Seismic Changes in International Trade

Evidence from the China Shock

1. Do workers quickly find reemployment?

2. **Do new businesses pick up the slack?**

3. Are new jobs about as good as old ones?

Beyond employment

4. How trade shock have affected U.S. politics

5. Manufacturing as a hub of innovation

Looking ahead
Concentrated Impact of China Trade Shock: South Atlantic, South Central, Northeast, Great Lakes

Most-affected areas of the U.S.

Colors show which areas were most affected by China’s rise, based on the increase in Chinese imports per worker in each area from 1990 to 2007. Hovering over each area on the map will show a demographic breakdown of that area, below, and its most-affected industries, at right.

Most-affected industries

<table>
<thead>
<tr>
<th>Most-affected industries, based on number of areas*</th>
<th>Impact per worker†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture and fixtures</td>
<td>196 areas $44k</td>
</tr>
<tr>
<td>Games, toys, and children’s vehicles</td>
<td>114 areas $488k</td>
</tr>
<tr>
<td>Sporting and athletic goods</td>
<td>106 areas $82k</td>
</tr>
<tr>
<td>Electronic components</td>
<td>87 areas $65k</td>
</tr>
<tr>
<td>Plastics products</td>
<td>84 areas $11k</td>
</tr>
<tr>
<td>Motor-vehicle parts and accessories</td>
<td>79 areas $12k</td>
</tr>
<tr>
<td>Electronic computers</td>
<td>68 areas $207k</td>
</tr>
</tbody>
</table>

Autor, Dorn, Hanson & Wall Street Journal, 2016

Effect of an $1000 Per Worker Increase in Imports from China during 1990-2007 on the Change in Manufacturing Employment as a Percentage of the Working age Population

1990-2000
-0.9 %

2000-2007
-0.7 %
Loss of Manufacturing Employment Not Primarily Offset by Rising Non-Manufacturing Employment

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

- Manufacturing
- Non-Manufacturing
- Unemployment
- Not in Labor Force
Effects Much More Severe for Non-College Adults

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

<table>
<thead>
<tr>
<th>College Educated</th>
<th>No College Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>0.2%</td>
</tr>
<tr>
<td>Non-Manufacturing</td>
<td>0.1%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>0.3%</td>
</tr>
<tr>
<td>Not in Labor Force</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

-6.0% to 0.8%
Induced Rise in Public Transfer Benefits – But Mostly Not Unemployment and Trade Adjustment Assistance

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

- Unemployment and TAA Benefits: $3.65
- SSA Disability Benefits: $8.40
- SSA Retirement Benefits: $10.00
- Other Government Income Assistance: $15.04
- Govt Medical Benefits: $18.27
Learning from Labor-Market Adjustment to Seismic Changes in International Trade

Evidence from the China Shock

1. Do workers quickly find reemployment?
2. Do new businesses pick up the slack?
3. **Are new jobs about as good as old ones?**

Beyond employment

4. How trade shock have affected U.S. politics
5. Manufacturing as a hub of innovation

Looking ahead
Across Local Labor Markets: Male-Female Annual Earnings Gap Rises w/Manufacturing Share

Autor, Dorn and Hanson 2017
M-F Earnings Gap: Uncorrelated w/Non-Manufacturing Employment, Positively Correlated w/Non-Employment

- 722 Commuting Zones (in 20 bins of equal population size)
- Fraction of pop age 18-39 employed in non-manufacturing or not employed
- Gap between unconditional male and female median earnings in the CZ

Autor, Dorn and Hanson 2017
Marriage Among Women Ages 18 – 39 Positively Correlated with Manufacturing Employment Share

Autor, Dorn and Hanson 2017
Impact of a One-Unit Trade Shock on Male-Female Annual Earnings Gap @ P25, P50, and P75

The China trade shock differentially reduces male relative to female earnings in the bottom quartile of the annual earnings distribution.
Proportionate Effect of Unit Trade Shock on Male-Female Annual $ Gap: % of Initial Male Annual Earnings

Proportionate losses for men are much larger below the 40th percentile of the annual earnings distribution.
Trade Shocks Raise Incidence of Drug and Alcohol Deaths among Men: Mortality per 100K Adults Ages 20 – 39
Trade Shocks Raise Incidence of Poverty: Impact of a Unit Trade Shock on Fraction of Children <18 Living In Poverty

![Graph showing the impact of trade shocks on poverty for different household types.]

- **All Poor Household Types:** 2.17%
- **Poor: Parent Head/Spouse Present:** 0.99%
- **Poor: Parent Head/Spouse Absent:** 0.89%
- **Poor: Grandparent Head:** 0.19%
- **Poor: Other Arrangement:** 0.10%

*David Autor | Lessons From The China Shock*
Learning from Labor-Market Adjustment to Seismic Changes in International Trade

Evidence from the China Shock

1. Do workers quickly find reemployment?
2. Do new businesses pick up the slack?
3. Are new jobs about as good as old ones?

Beyond employment

4. How trade shock have affected U.S. politics
5. Manufacturing as a hub of innovation

Looking ahead
Political Polarization: Distribution of Republicans and Democrats on a 10-item scale of political values

As partisans have moved to the left and the right, the share of Americans with mixed views has declined. Across the 10 ideological values questions in the scale, 39% of Americans currently take a roughly equal number of liberal and conservative positions. That is down from nearly half (49%) of the public in surveys conducted in 1994 and 2004. As noted, the proportion of Americans who are now more uniformly ideological has doubled over the last decade: About one in five Americans.

Source: 2014 Political Polarization in the American Public
Notes: Ideological consistency based on a scale of 10 political values questions (see Appendix A). Republicans include Republican-leaning independents; Democrats include Democratic-leaning independents (see Appendix B).

Pew Research Center, 2016
Political Polarization: Republican and Democratic Worldviews Diverging

Poor people today have it easy because they can get government benefits without doing anything in return

Immigrants today are a burden on our country because they take our jobs, housing and health care

Most corporations make a fair and reasonable amount of profit

Stricter environmental laws and regulations cost too many jobs and hurt the economy

Source: Pew Research Center (2014)

Pew Research Center, 2016
Gerrymandering: North Carolina District 12: “Most Gerrymandered” Distinct in America

Mickey Micheaux, Member of the North Carolina House of Representatives

If you drove down the interstate with both car doors open, you’d kill most of the people in the district!
Effect of Dialing Back Trade Shock by 50% on Composition of House of Representatives, 2002 – 2010

**What Would The House Look Like If We Had Less Trade?**

If imports from China had grown half as fast between 2002 and 2010 as they actually did, Congress probably would have fewer conservatives and liberals and more moderates, according to a new study by a group of economists.

Source: Autor, Dorn, Hanson and Majlesi. “Importing Political Polarization? The Electoral Consequences of Rising Trade Exposure”

*New York Times, 4/26/2016*
What about the Rise of Donald J. Trump?

David Autor, David Dorn, and Gordon Hanson, economists at M.I.T., the University of Zurich, and the University of California-San Diego respectively, found that

In their January 2019 paper, “The China Shock,” David Autor, David Dorn and Gordon Hanson, economists at M.I.T., the University of Zurich and the University of California-San Diego respectively, found that...

The New York Times

Why Trump Now?

In their January 2019 paper, “The China Shock,” David Autor, David Dorn and Gordon Hanson, economists at M.I.T., the University of Zurich and the University of California-San Diego respectively, found that...

The Washington Post

This may be the most important chart for understanding politics today.

New type of nationalism a worldwide problem

Winnipeg Free Press

Economic populism at the primaries

Slate

Could This Map Make Donald Trump President?

The image is from a recent paper by economists David Autor, David Dorn, and Gordon Hanson, and shows how badly different regions of the country were exposed to economic competition from China during the rise in manufacturing dismissals (the...
Effect of Dialing Back the China Trade Shock on Trump’s Vote Share in Swing States in 2016

Wall Street Journal, 11/22/2016
Learning from Labor-Market Adjustment to Seismic Changes in International Trade

Evidence from the China Shock

1. Do workers quickly find reemployment?
2. Do new businesses pick up the slack?
3. Are new jobs about as good as old ones?

Beyond employment

4. How trade shock have affected U.S. politics
5. Manufacturing as a hub of innovation

Looking ahead
Sharp Fall in Successful Patent Applications by Import-Competing U.S. Firms After 2001

U.S. Innovation and Imports from China

Corporate patents awarded to U.S.-based firms (000s) vs. U.S. imports from China, billions of 2007 U.S. dollars

China joins the WTO

Source: Researchers’ calculations using the U.S. Patent and Inventor Database and the UN Comtrade Database
Learning from Labor-Market Adjustment to Seismic Changes in International Trade

What have we learned?

1. Labor market adjustment is slow and costly
2. Manufacturing employment is ‘different’ and important
3. Trade shock has affected U.S. politics
   - Contributed to polarization of House of Representatives 2000 – 2010
   - Contributed to Donald J. Trump electoral victory in 2016
4. More than just ‘about jobs’ – impacts innovative capacity over longer term
Prospects and Policies

1. China’s rise has been fabulous for global welfare
2. For U.S., a challenge—but there’s no going back
   – In part, China Shock just accelerated the inevitable
   – Not likely to recur —China has developed
3. Shock has laid bare our labor market challenges
   – Declining labor force participation and earnings of non-college adults
   – Lost appetite for globalization
4. We were too sanguine about ‘free trade = free lunch’ story
   – And woefully unprepared accordingly
5. Will the next big shock emanate from Silicon Valley not China?
   – And can we be bettered prepare next time...?
Thank you