

# 14.54 International Trade

## — Lecture 16: Trade and Inequality —

# Today's Plan

- ① Trade and Wage Inequality
- ② Trade and Regional Inequality

# 1. Trade and Wage Inequality

# Rising Wage Inequality in U.S.

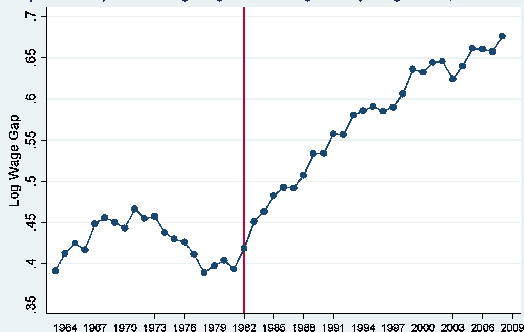
Figure 5: Overall U.S. Wage Inequality, 1940-98



Courtesy of Lawrence F. Katz. Used with permission.

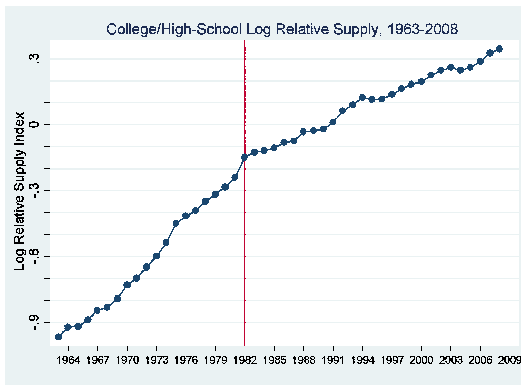
# Rising Wage Inequality in U.S.: College Premium

Composition Adjusted College/High-School Log Weekly Wage Ratio, 1963-2008



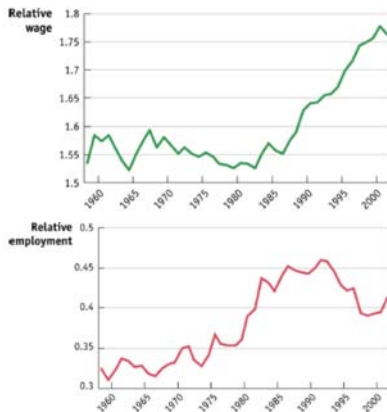
Courtesy of Elsevier, Inc., <http://www.sciencedirect.com>. Used with permission.

# Why Has U.S. Wage Inequality Risen: Supply or Demand?



Courtesy of Elsevier, Inc., <http://www.sciencedirect.com>. Used with permission.

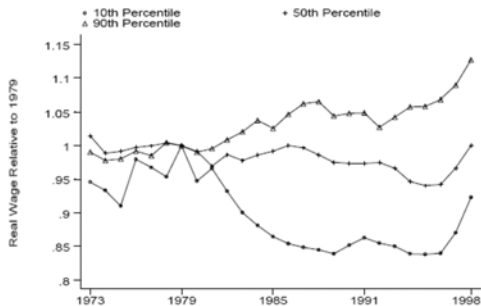
# Similar Pattern for the Relative Wages and Employment of Nonproduction/Production Workers



© Source unknown. All rights reserved.  
This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>.

# U.S. Wage Inequality and Welfare

Figure 3: Indexed Real Hourly Wage by Percentile, 1973-98 (1979=1)

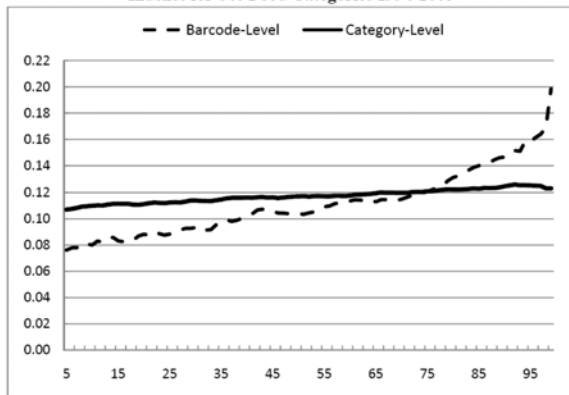


Courtesy of Lawrence F. Katz. Used with permission.



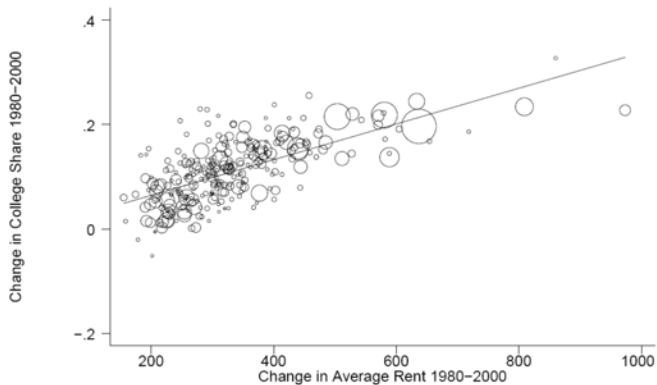
# U.S. Wage Inequality and Welfare

**Figure 12: Food Price Inflation by Percentile Applying Income-Specific Weights to Price Indexes for 640 Food Categories 1994-2005**



Courtesy of Enrico Moretti and the American Economic Association Used with permission.

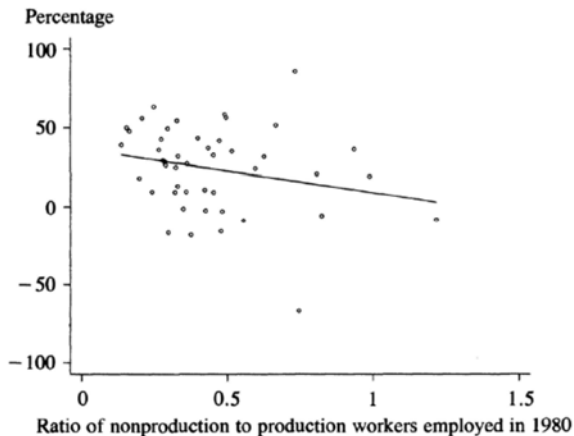
# U.S. Wage Inequality and Welfare



Courtesy of David H. Autor, David Dorn, and Gordon H. Hanson. Used with permission.

# Problem (I): Absence of Relative Price Changes

**Figure 9. Percentage changes in the 1980s of Export Prices by Industry Versus the Nonproduction-Worker Intensity of Industries**



Courtesy of Robert Z. Lawrence and Matthew J. Slaughter. Used with permission.

# Problem (II): Within vs. Between Demand Shifts

TABLE II  
PROPORTION OF INCREASED USE OF SKILLS "WITHIN" INDUSTRIES

Country	1970-1980			1980-1990			Note
	Change in % non- production (annualized)	% within	Change in wage ratio (%)	Change in % nonpro- duction (annualized)	% within	Change in wage ratio (%)	
U. S.	0.20	81	-2	0.30	73	7	
Norway	0.34	81	-3	—	—	—	1970,80,n/a
Luxembourg	0.57	90	6	0.30	144	12	
Sweden	0.26	70	3	0.12	60	-3	
Australia	0.40	89	-17	0.36	92	2	1970,80,87
Japan	—	—	—	0.06	123	3	n/a*,81,90
Denmark	0.44	86	-11	0.41	87	7	1973,80,89
Finland	0.42	83	-11	0.64	79	-2	
W. Germany	0.48	93	5	—	—	—	1970,79,n/a
Austria	0.46	89	7	0.16	68	7	1970,81,90
U. K.	0.41	91	-3	0.29	93	14	
Belgium	0.45	74	6	0.16	96	-5	1973,80,85
Average	0.40	84.3	-1.8	0.28	91.5	4.2	

© Oxford University Press. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>.

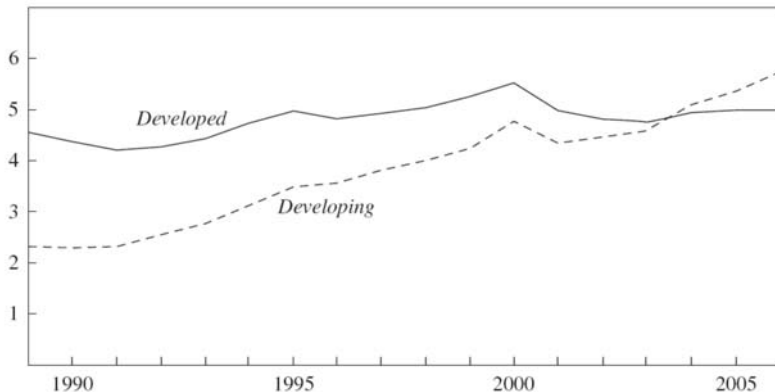
# Early Conclusion on Trade and Wage Inequality

- Stolper-Samuelson mechanism unlikely to have contributed to increase inequality in the United States in the 90s
- Most likely candidate: Skill-Biased Technological Change
- Other possible candidate: trade in Intermediate Goods/Offshoring (see Feenstra and Hanson)

# Is It Still True Today?

**Figure 1.** Imports of Manufactures from Developed and Developing Countries, 1989–2006

Percent of GDP



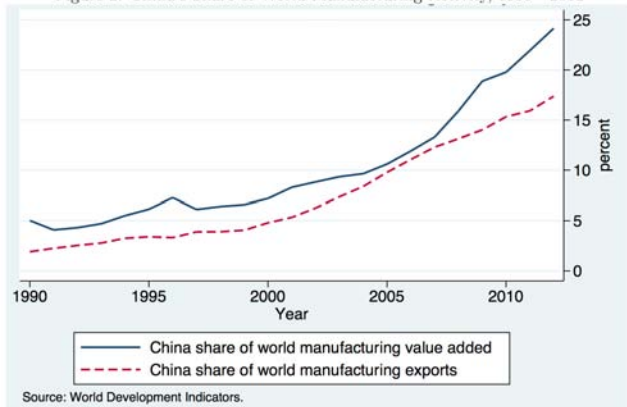
Sources: U.S. International Trade Commission DataWeb and author's calculations.

© Brookings Institution. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

# Trade and Regional Inequality

# The China Shock

Figure 2: China's Share of World Manufacturing Activity, 1990 - 2012



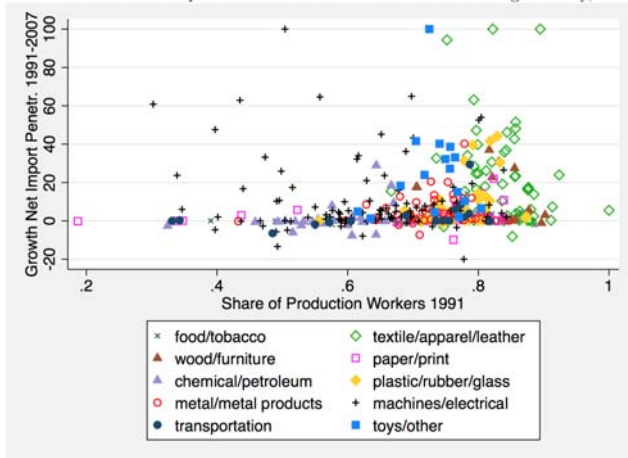
Courtesy of David H. Autor, David Dorn, and Gordon H. Hanson. Used with permission.



# The China Shock

but shock varies across industries...

Figure 4:  $\Delta$ China-U.S. Net Import Penetration in Detailed Manufacturing Industry, 1991 - 2007



Courtesy of David H. Autor, David Dorn, and Gordon H. Hanson. Used with permission.

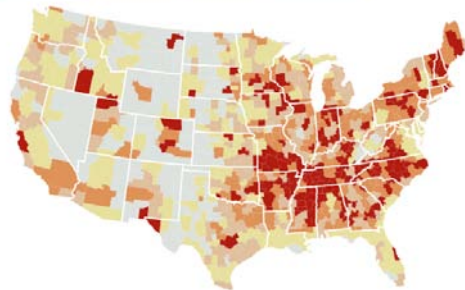
# The China Shock

and hence across local labor markets...

## 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 20%   Second-highest 20%   Middle 20%   Second-lowest 20%   Least-affected 20%

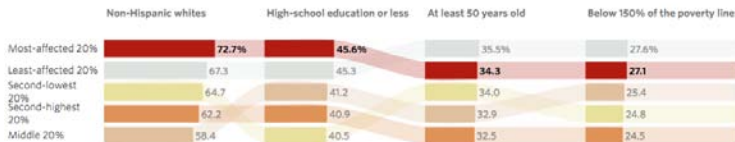


© The Wall Street Journal. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>.

# The China Shock and demographic groups...

## Demographics of the most-affected areas

*They were whiter, less educated, older and poorer than most of the rest of America. The bars below show those demographics by percentage of the population.*



© The Wall Street Journal. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <https://ocw.mit.edu/help/faq-fair-use/>.

# Labor Market Consequences across Regions

Table 4: Import Competition and Outcomes in U.S. Local Labor Markets, 1990 - 2007

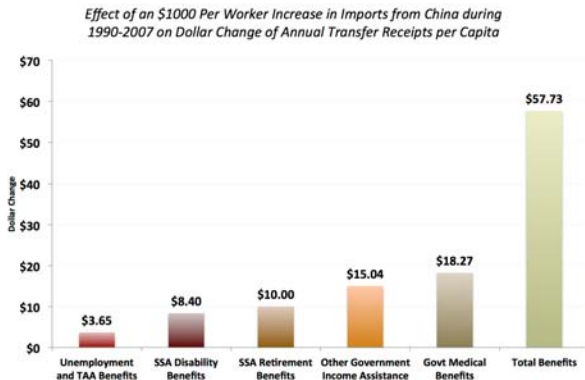
<u>A. <math>\Delta</math> Fraction of Working Age Population in Manufacturing, Unemployment, NILF</u>			
Employed in Manufacturing (1)	Employed in Non-Manufacturing (2)	Unemployed (3)	Not in Labor Force (4)
-0.60*** (0.10)	-0.18 (0.14)	0.22*** (0.06)	0.55*** (0.15)
<u>B. <math>\Delta</math> Log Population, Log Wages, Annual Wage and Transfer Income</u>			
$\Delta$ Log CZ Population (log pts) (5)	$\Delta$ Avg Log Weekly Wage (log pts) (6)	$\Delta$ Annual Wage/Salary Inc per Adult (US\$) (7)	$\Delta$ Transfers per Capita (US\$) (8)
-0.05 (0.75)	-0.76*** (0.25)	-549.3*** (169.4)	57.7*** (18.4)

N=1444 (722 commuting zones x 2 time periods 1990-2000 and 2000-2007). Employment, population and income data is based on U.S. Census and American Community Survey data, while transfer payments are based on BEA Regional Economic Accounts. All regressions control for the start of period percentage of employment in manufacturing, college-educated population, foreign-born population, employment among women, employment in routine occupations, average offshorability index of occupations, and Census division and time dummies. Models are weighted by start of period commuting zone share of national population. Robust standard errors in parentheses are clustered on state. \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01.

Courtesy of David H. Autor, David Dorn, and Gordon H. Hanson. Used with permission.

# Government Transfers

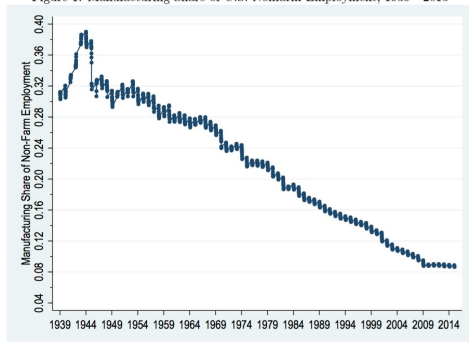
Figure 7: Imports from China and Induced Government Transfer Receipts in Commuting Zones, 1990 - 2007



Courtesy of David H. Autor, David Dorn, and Gordon H. Hanson. Used with permission.

# But What About the Aggregate Effects of China?

Figure 1: Manufacturing Share of U.S. Nonfarm Employment, 1939 - 2015



Source: FRED Economic Data <https://research.stlouisfed.org/fred2/graph/?g=1Gor>

Courtesy of David H. Autor, David Dorn, and Gordon H. Hanson. Used with permission.

MIT OpenCourseWare  
<https://ocw.mit.edu>

## 14.54 International Trade

Fall 2016

For information about citing these materials or our Terms of Use, visit: <https://ocw.mit.edu/terms>.