

# Distributional Consequences of Trade and Technology

Gordon Hanson

UC San Diego and NBER

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## Political Opposition to International Trade

*“America is being absolutely devastated with bad trade deals.”*

*“China is robbing us blind in trade deficits and stealing our jobs.”*

*President Donald Trump*

# How Did We Get Here?

In the 1990s, freer trade was seen as bringing prosperity for all

- President Bill Clinton, NAFTA signing, 1993

*“We have made a decision now that will... promote more growth, more equality, better preservation of the environment, and a greater possibility of world peace.”*

- GE analyses show that globalization has raised US living standards but the nature of trade's distributional impacts has been surprising

# The Economic Consequences of Trade

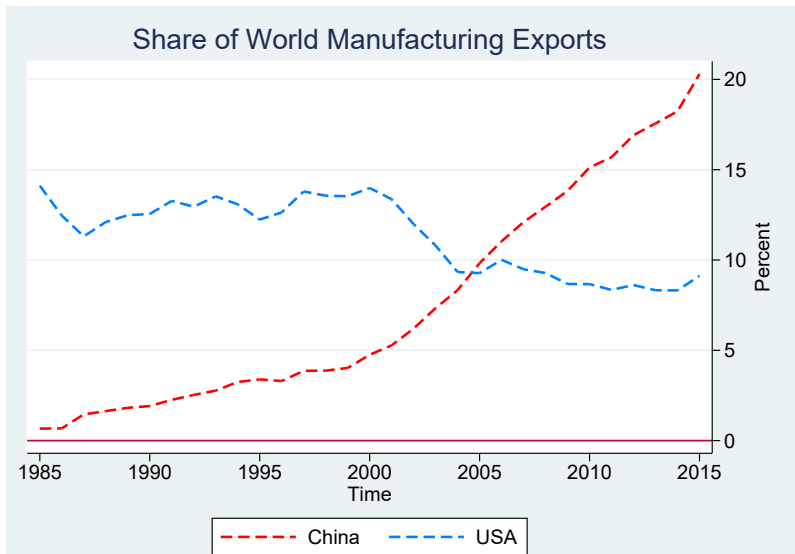
Economists have long known that international trade, while generating net welfare gains, also creates winners and losers

- Paul Krugman and Maurice Obstfeld (1988)

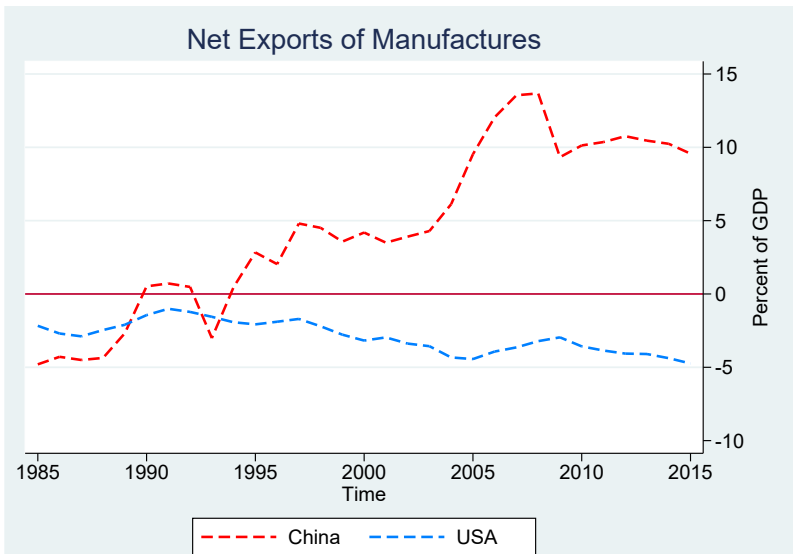
*“Owners of a country’s abundant factors gain from trade, but owners of a country’s scarce factors lose.”*

- Until this decade, consensus was that trade had only modestly affected the US labor market — *China’s rise has amended this view*

# China Trade Shock I: Sudden Opening of a Large Economy



# China Trade Shock II: Extreme Comparative Advantage



# Localized Consequences of Greater International Competition

## Economic Impacts of Trade with China

(Bernard Redding & Schott, Autor Dorn & Hanson, Pierce & Schott, Many Others)

- Industries/regions producing goods that China exports
  - Plant closure, job loss, LF exit, income declines, eroded tax base
- Industries/regions producing goods/services that China imports
  - Growth in employment, housing prices, tax revenues
  - US gains may have primarily been in services, gone to owners of IP

# Localized Consequences of Technological Change

## Economic Impacts of Exposure to New Technology

(Autor & Dorn, Goos & Manning, Michaels et al., Acemoglu & Restrepo, Others)

- US regions more specialized in activities subject to automation and (or) the use of industrial robots have seen...
  - Polarization in employment outcomes (loss of routine jobs)
  - Greater earnings inequality
  - Lower employment, earnings decline, labor force exit



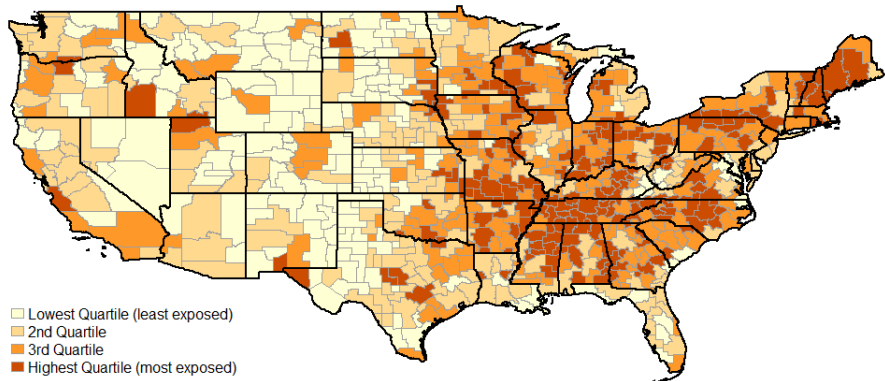
# Separating Local Impacts of Trade and Technology

*(after controlling for industry skill, capital, computer intensity)*

- Whereas new technology leads *plants to renovate*, competition from Chinese imports leads *plants to close*
  - Most of job loss due to the China shock results from plant closure (Bernard et al., Acemoglu et al., Asquith et al.)
  - Among surviving plants, China shock leads to reduced investment (Pierce & Schott)
- Whereas tech  $\Delta$  has hit regions specialized in routine jobs, China shock hit regions specialized in less automatable jobs
  - Correlation between exposure to China shock, automation  $\approx 0$  (Autor Dorn & Hanson)

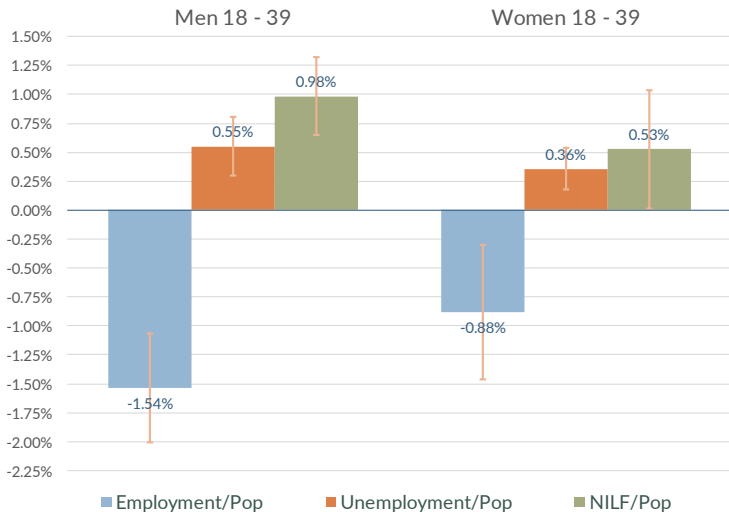
# Local Exposure to Rising Import Competition in the US

Trade Exposure by Commuting Zone, 1990-2007



# Local Labor Market Impacts of Import Competition

## *Declines in Employment, Participation in Labor Force*



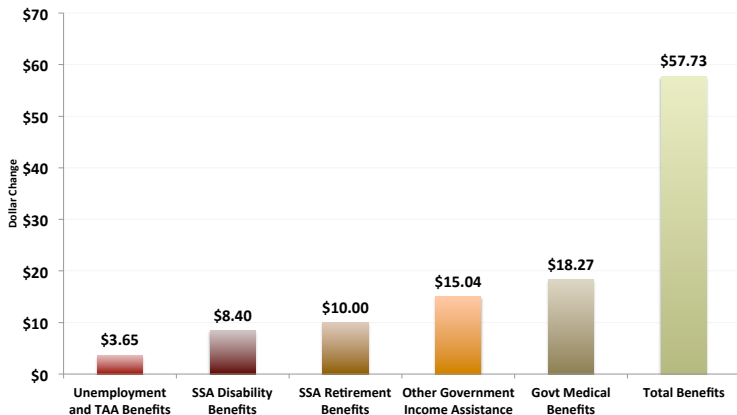
# Why Are Scarring Effects of Manuf. Job Loss So Severe?

- Manufacturing is unique in paying less-educated males high wages
  - Job loss adversely affects marriage, family structure, mortality
- Most job loss is due to plant closure and therefore permanent
  - Impact on communities is like an extended local recession
- Mobility response of less-skilled workers to job loss is weak
  - Due to social policies, housing markets, family structure

# Do Government Benefits Replace Lost Income?

*No and uptake of benefits is not in programs we'd have expected*

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



# Will Tariffs Bring Back US Manufacturing Jobs?

- Tariffs may lead US consumers to substitute Chinese imports with imports from other countries, rather than with US goods
  - US consumers may be more likely to switch to buying from Bangladesh or Vietnam than from Ohio or North Carolina
- Even if manuf. production returns to US, previous plant deaths mean this production would occur in new, modern facilities
  - Such 21<sup>st</sup> century factories tend to be much less labor intensive than the 20<sup>th</sup> centuries factories that shut down in 1990s and 2000s