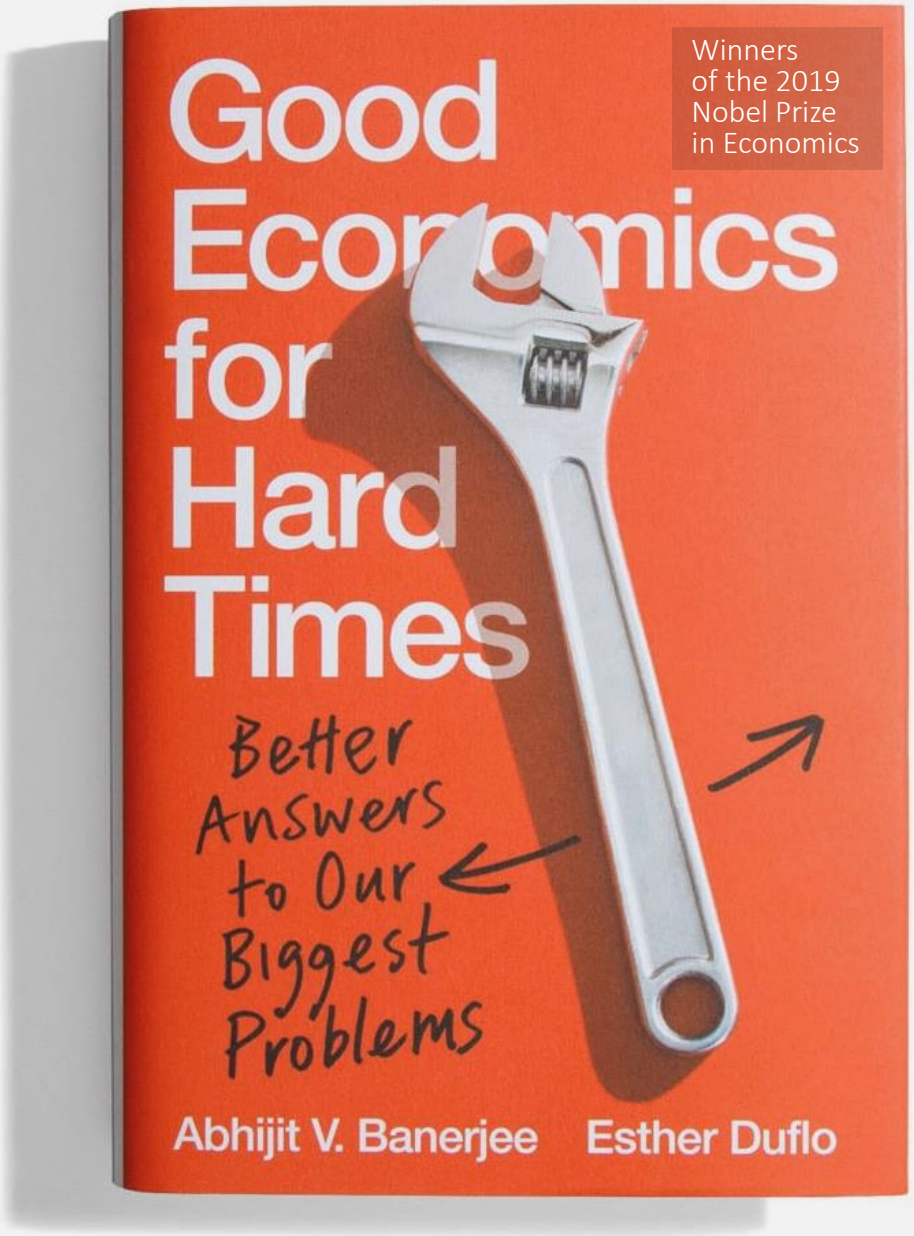
J-PAL
ABDUL LATIF JAMEEL POVERTY ACTION LAB

Massachusetts Institute of Technology

Good Economics For ~~Hard Times~~ ~~Harder Times~~ More Hopeful(?) Times

A course by Abhijit Banerjee and Esther Duflo



Lecture 4 and 5: Trade

The Pains from Trade

Welcome!
Trade has finally become a political issue again…

Brexit (no) deal	Trump Tariff	Trade war with China?
Fair Trade	Use Trade to push a climate agenda?	Use trade to push a worker agenda?
America First	Pandemic & supply chain disruptions	Build Back Better

Trade is where the contrast between economists' consensus and the view of the people is the starkest

Clinton and Bush about NAFTA

> NAFTA means more exports and more exports means more American jobs."
>
> —George H W Bush

> NAFTA will foster "more equality, better preservation of the environment, and a greater possibility of world peace"
>
> —William J. Clinton

Trump and Biden about trade

> I have visited the laid off factory workers and the communities crushed by our horrible and unfair trade deals. These are the forgotten men and women of our country and they are forgotten, but they're not gonna be forgotten long. These are people who work hard but no longer have a voice. I am your voice!"
>
> —Donald Trump

> If we invest in ourselves and our people, if we fight to ensure that American businesses are positioned to compete and win on the global stage, if the rules of international trade aren't stacked against us, if our workers and intellectual property are protected, then there's no country on Earth—not China or any other country on Earth—that can match us."
>
> —Joe Biden

A beautiful theory…

The pride of economics: Comparative advantage

Absolute advantage: What a country is better at doing than some other country.

- Grapes don't grow in Scotland
- You cannot make Scotch in France

Comparative advantage: What you comparatively better at doing.

- China may be better at everything
- But it cannot sell everything, otherwise the other countries will have nothing to pay with
- David Ricardo observed that once trade opens up, countries would specialize in goods where they have comparative advantage
- And the GNP of both countries would therefore go up.
- Another of those central results that almost every one learns in econ 101 and is an economist's Pavlovian's reflex: **There must be gains from Trade!**

The Stolper-Samuelson Theorem

Introduce labor and capital (machines)

- Some goods require more labor
- Other goods require more capital

A labor rich country will specialize in the labor-intensive technology

A capital rich country will specialize in the capital-intensive technology

Freeing trade should help the poor in poor countries

And the rich in rich countries

But because free trade raises GNP, the workers in rich countries can be compensated, as long as society taxes the winners and redistributes to the winners

Is there evidence for the Stolper-Samuelson theorem?

This has proven very hard to come by…

Until the IMF imposed trade liberalization in 1991, the only car you could drive in India

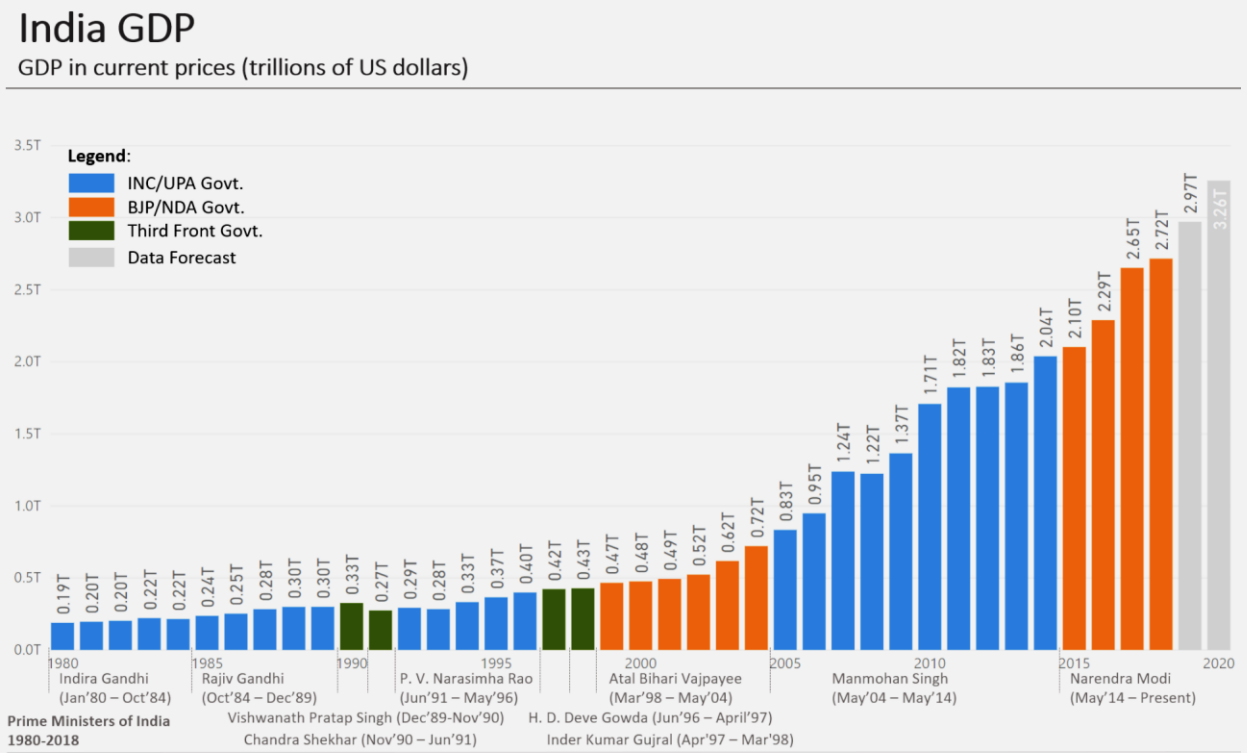


Photo: Steve Browne & John Verkleir from Chicago, United States, CC BY 2.0, via Wikimedia Commons

Does trade lead to faster growth in poor countries?

We won't know…

1. Trade liberalization does not happen to random countries

2. What else is happening at the same time in the country?

3. How do we quantify trade liberalization?

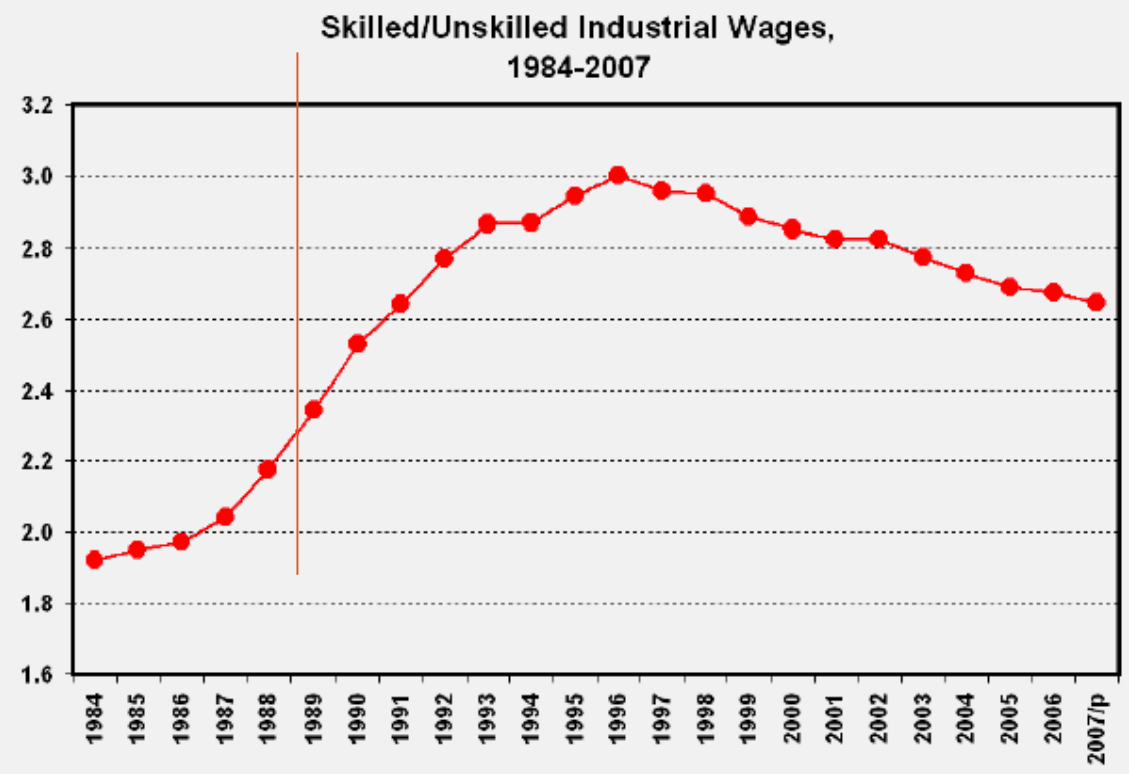
Does trade lead to inequality reduction in poor countries?

Some thing similar happened in Columbia, Brazil, India, Argentina, Chile, China: unilateral trade liberalization in late 1980s or early 1990s followed by steep rise in inequality

Mexico, unilateral trade liberalization in 1987

Blue collar workers lost 15% of their real wage between 1987 and 1990.

White collars workers gained 15%...



Can we find out more by looking within countries?

- This cross-country exercise is a bit frustrating.
- If only we could look within countries, comparing regions, then we would be good to go!!
- Wait…. But we cannot. In Economistan, there is ONE low-skilled wage and ONE interest rate on capital and ONE high-skilled wage
- The reason is that if someone loses their job in Tijuana because their firm shuts down as a result of trade, they can always get another one in Cancun. And if they lose their job in auto-manufacturing they can always become security guards. So all low-wages workers are competing with other low-wage workers, and there is one wage that clears the market.
- If you believe in the theory, you cannot test it!

The impact on trade exposure to district in India

A seminal paper by Petia Topalova chose to **assume** no mobility across districts

1991 Trade liberalization did not affect all sectors equally

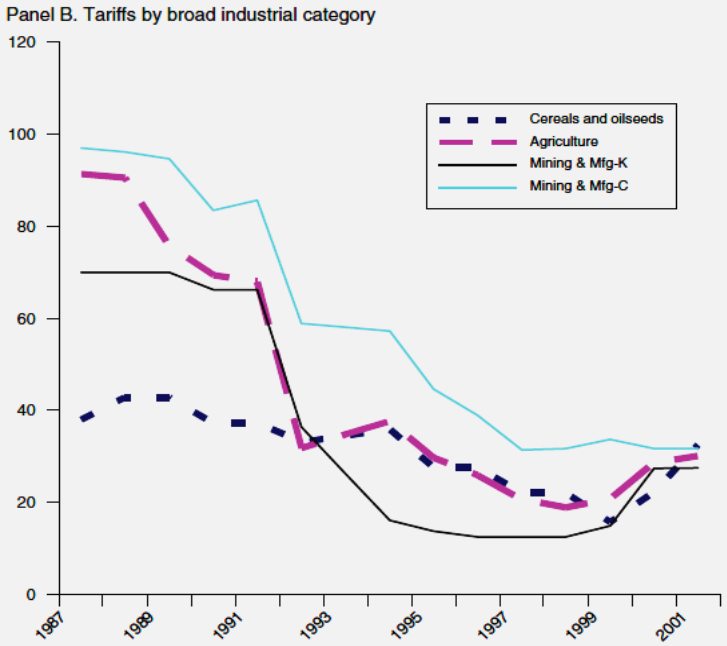


FIGURE 1. EVOLUTION OF INDIA'S TARIFF AND NTBS (*Continued*)

Topalova estimate "exposure" as a function of the pre-liberalization industrial composition

$$Tariff_{dt} = \frac{\sum_i \text{Worker}_{d,i,1991}\, Tariff_{i,t}}{\text{Total Worker}_{d,1991}}.$$

Higher tariffs, less poverty

The empirical strategy is then simple: compare poverty before and after 1991 in district that were more or less liberalized

Poverty decreased more in places where tariff stayed high

TABLE 3A—TRADE LIBERALIZATION, POVERTY, AND AVERAGE CONSUMPTION IN RURAL INDIA

Data	Pre & post (1)	Pre & post (2)	Pre & post (3)	Pre & post (4)	Pre only (5)	Pre & post (6)	Pre & post (7)	Pre & post (8)
Panel A. Dependent variable: poverty rate								
Tariff	−0.242*		−0.710***	−0.467*	0.038	−0.479**	−0.424*	−0.381***
	[0.122]		[0.250]	[0.247]	[1.000]	[0.236]	[0.229]	[0.139]
Traded tariff		−0.223**						
		[0.084]						
NTB (share of free HS codes)						0.073		
						[0.202]		
Panel B. Dependent variable: log average per capita consumption								
Tariff	−0.055		0.512	0.677*	−0.085	0.683*	0.657*	0.583**
	[0.353]		[0.639]	[0.400]	[0.463]	[0.373]	[0.333]	[0.216]
Traded tariff		0.161						
		[0.207]						
NTB (share of free HS codes)						−0.036		
						[0.248]		
IV with traded tariff	No	No	Yes	Yes	Yes	Yes	Yes	Yes
IV with traded tariff and initial traded tariff	No	No	No	No	No	No	No	Yes
District indicators	Yes	Yes	Yes	Yes	NA	Yes	Yes	Yes
Initial district conditions × post	No	No	No	Yes	NA	Yes	Yes	Yes
Region indicators	NA	NA	NA	NA	Yes	NA	NA	NA
Initial region indicators × post	NA	NA	NA	NA	Yes	NA	NA	NA
Other reforms controls	No	No	No	No	No	No	Yes	Yes
N	728	728	728	728	128	728	728	728

An important paper

A bit like the David Card migration paper, this paper turned out both controversial and very influential, both for its findings and for its methods.

Substantively, it flew in the face of the Stolper-Samuelson results: how could trade reduce poverty

Of course, we are only comparing districts to each other: it is possible that the tide lifted all boats, the most affected more than others.

Methodologically, it was the first in a long list of papers using geographic variation in initial "trade exposure" and typically finding very similar results in Colombia, Brazil, and finally the US.

The Sticky Economy

Perhaps the most important result implied by that literature: The very result that we can find anything using geographic exposure has to mean people and the economy **do not fully adjust to trade** by reallocating resources

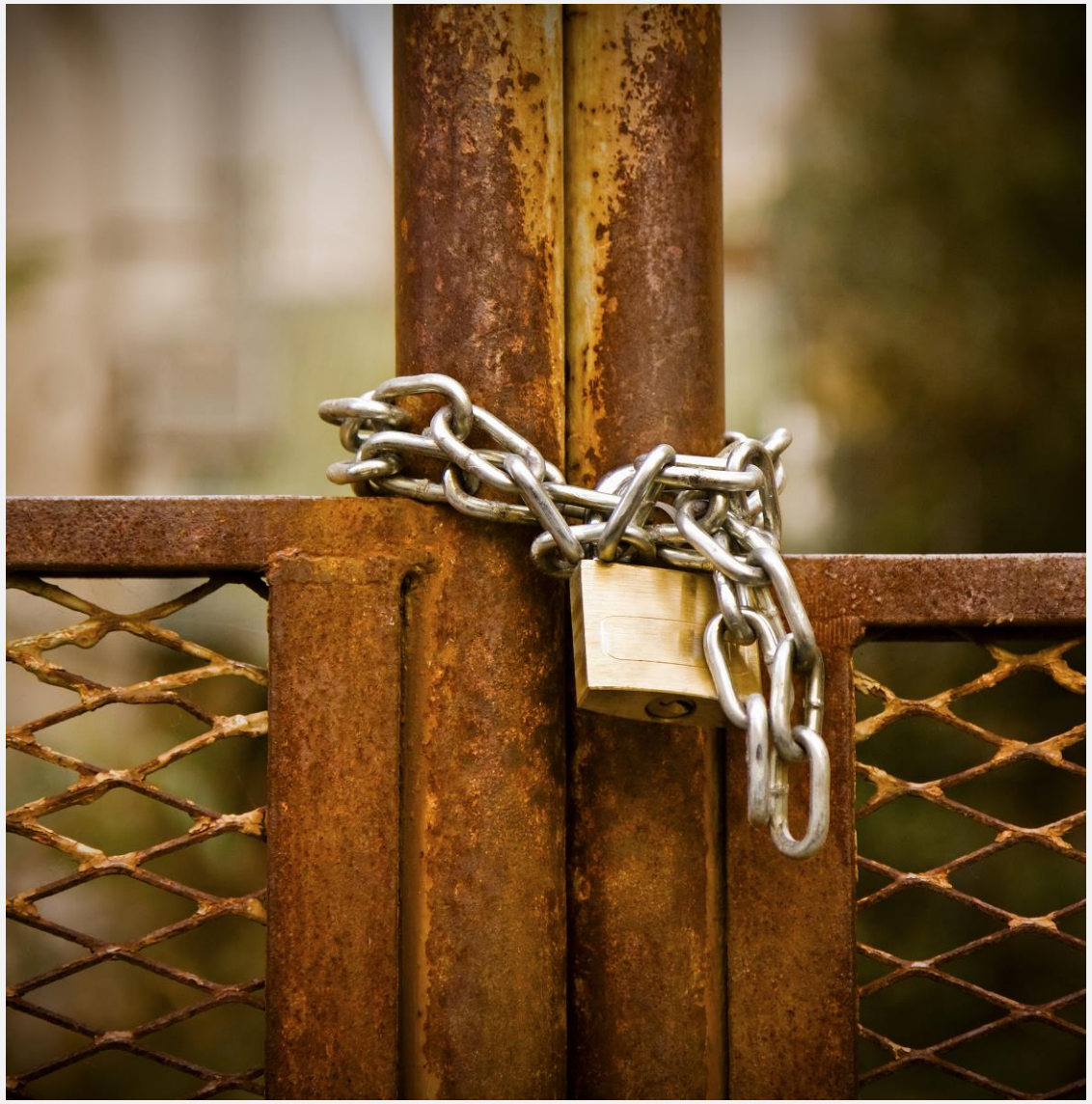
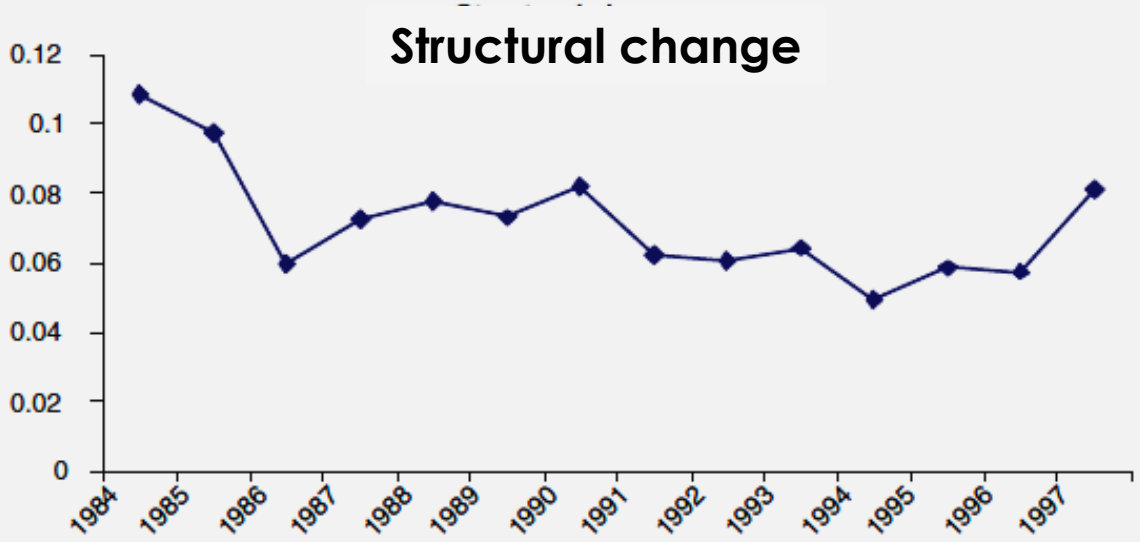


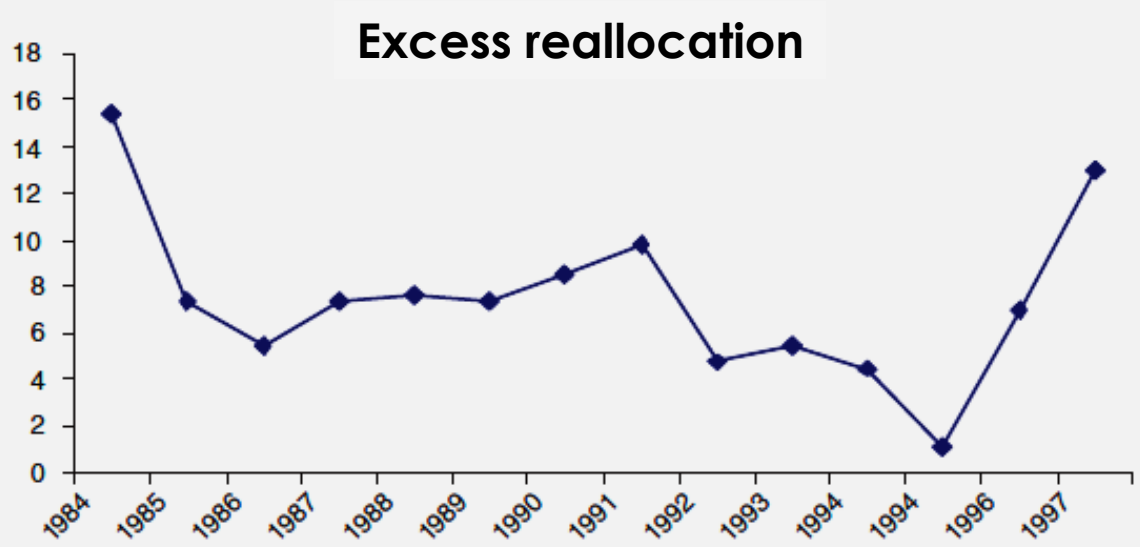
Photo: Shutterstock.com

The sticky economy

Evidence from India

No sign of an increased mobility of workers in different sectors around the trade liberalization in India





1. People did not migrate out of negatively affected regions

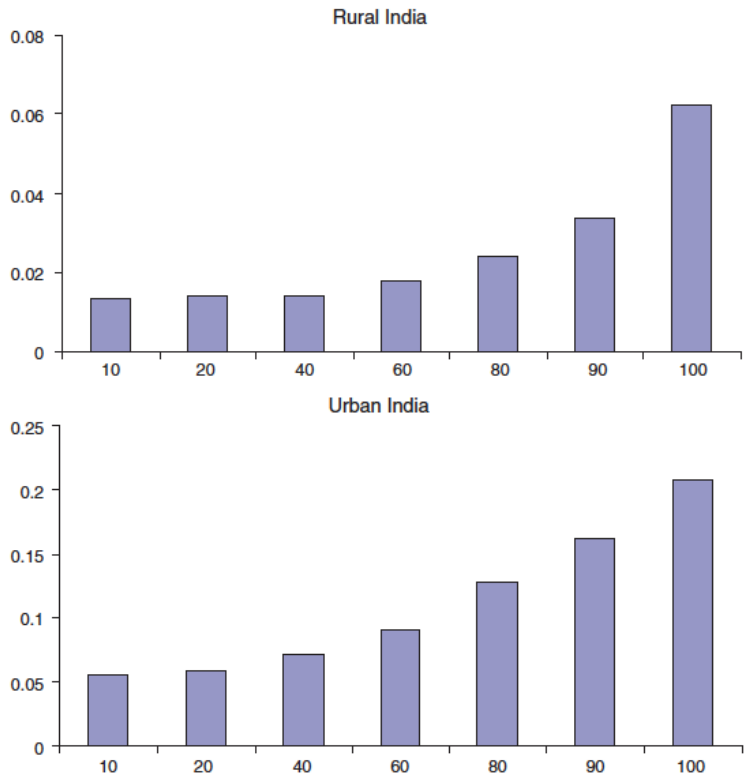


FIGURE 2. PROBABILITY OF HAVING MOVED WITHIN THE PAST 10 YEARS BY PERCENTILES OF PER CAPITA CONSUMPTION
(*excluding migration within the same district and within the same sector*)

Migration, Population, and Tariffs in Rural India

	All (1)	Men (2)
Panel A. Dependent variable: share of in-migrants from outside district/sector		
Tariff	0.066	0.059
	[0.071]	[0.091]
Panel B. Dependent variable: log population		
Tariff	−0.006	−0.014
	[0.152]	[0.158]
N	728	728

Source: Topalova

2. Strict Labor Laws made it hard to reallocate workers

Impact of trade on poverty and labor laws

TABLE 8—TRADE LIBERALIZATION, LABOR LAWS, AND POVERTY IN RURAL INDIA

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Dependent variable: poverty rate						
Tariff	−0.633**	−0.784***	−0.731***	−0.575***	−0.891***	−0.869***
	[0.307]	[0.224]	[0.206]	[0.167]	[0.216]	[0.196]
Tariff × flexible labor law	0.637	0.901	0.923	0.634	0.659	0.667
	[0.709]	[0.982]	[0.894]	[0.447]	[0.441]	[0.410]
Panel B. Dependent variable: log average per capita consumption						
Tariff	1.126**	1.037***	0.949***	0.975***	1.126***	1.049***
	[0.545]	[0.361]	[0.323]	[0.341]	[0.365]	[0.332]
Tariff × flexible labor law	−1.719*	−1.619	−1.409	−1.367***	−1.194**	−1.042**
	[0.922]	[0.986]	[0.885]	[0.496]	[0.474]	[0.442]
IV with traded tariff	Yes	Yes	Yes	No	No	No
IV with traded tariff and initial traded tariff	No	No	No	Yes	Yes	Yes
Pre-reform trend × post	No	Yes	Yes	No	Yes	Yes
Other reforms controls	No	No	Yes	No	No	Yes
N	728	728	728	728	728	728

Notes: Standard errors (in brackets) are clustered at the state-year level. Regressions are weighted by the number of households in a region. All regressions include contols for district and year fixed effects, and initial district conditions that are interacted with the post-reform indicator (see notes to Table 3 for details).

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

3. Indian banks do not efficiently reallocate capital to good firms

Bank credit decisions have nothing to do with firm performance!!!

TABLE 3

Changes in working capital limits, by firm characteristics

	Proportion	Propoportion of cases where: Limit was increased	Propoportion of cases where: Limit was not changed	Mean of: log(current limit) –log(past limit)	Proportion of cases where limit was changed: Client<=5 years	Proportion of cases where limit was changed: Client>5 years
	(1)	(2)	(3)	(4)	(5)	(6)
A-Has past utilization reached maximum?						
Yes	0.72	0.34	0.60	0.16	0.55	0.67
No	0.28	0.30	0.66	0.12	0.61	0.69
Difference		0.05	–0.05	0.03	–0.05	–0.02
		(0.054)	(0.056)	(0.04)	(0.081)	(0.059)
B-Have projected sales increased?						
Yes	0.71	0.43	0.52	0.19	0.54	0.56
No	0.29	0.25	0.61	0.06	0.50	0.73
Difference		0.18	–0.09	0.13	0.04	–0.17
		(0.076)	(0.079)	(0.053)	(0.114)	(0.083)
C-Have actual sales increased?						
Yes	0.71	0.33	0.62	0.13	0.61	0.68
No	0.29	0.25	0.69	0.12	0.70	0.74
Difference		0.08	–0.06	0.02	–0.09	–0.06
		(0.041)	(0.043)	(0.029)	(0.059)	(0.04)
D-Has profit over sale increased?						
Yes	0.56	0.29	0.67	0.11	0.64	0.71
No	0.44	0.35	0.61	0.16	0.61	0.70
Difference		–0.06	0.06	–0.05	0.03	0.01
		(0.042)	(0.044)	(0.028)	(0.059)	(0.043)
E-Has current ratio increased?						
Yes	0.53	0.32	0.62	0.12	0.61	0.70
No	0.47	0.29	0.67	0.14	0.67	0.72
Difference		0.03	–0.05	–0.02	–0.06	–0.03
		(0.038)	(0.04)	(0.027)	(0.052)	(0.039)

Source: Banerjee and Duflo, 2013

Results: not enough creative destruction

Even **WITHIN** firms!

Product lines almost never disappear in multiproduct firms…

Photos: Cineberg | Shutterstock.com

Firm Extensive Product Margin and Tariffs

TABLE 6.—FIRM EXTENSIVE PRODUCT MARGIN AND TARIFFS

	Scope	Scope	Scope	Scope	Add	Drop	Scope	Drop	Scope	Scope
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lagged Tariffs	−0.033	−0.028	0.032		−0.016	0.006			−0.034	0.024
	0.038	0.037	0.122		0.023	0.017			0.035	0.046
Post-1991 × Large Tariff Decline Indicator				−0.032						
				0.025						
Firm-Specific Lagged Tariff							−0.017			
							0.027			
Lagged Tariff of Smallest Product								−0.018		
								0.015		
Lagged Delicensed									−0.037	
									0.025	
Lagged Tariff × Delicensed by 1988										−0.081*
										0.046
Year FEs	yes	no	yes	yes	yes	yes	yes	yes	yes	yes
NIC2 × Year FEs	no	yes	no	no	no	no	no	no	no	no
Firm FEs	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R^2	0.90	0.90	0.94	0.89	0.27	0.25	0.90	0.26	0.90	0.9
Observations	14,864	14,864	4,115	14,596	11,615	11,615	14,819	11,569	13,435	13,435

The dependent variable for each regression reported in the column heading. Scope is log number of products produced by a firm. Add and drop are indicators for whether a firm adds (drops) a product. Column 3 uses pre-and postliberalization year of data, 1990 and 2001; for 2001, the 1997 tariff is assigned. Column 4 reports a specification where "post-1991" is an indicator that is 1 in 1991–97 and "Large Tariff Decline" indicator is 1 for NIC4 industries with above-average (greater that 59 percentage points) decline in tariffs between 1989 and 1997. The post-1991 indicator and the "Large Tariff Decline" indicator are itself not identified because of the included year and fixed effects. Column 7 uses firm-specific tariffs based on the firm's initial product weights. Column 8 uses the tariff of the smallest (initial) product of the firm. Column 10 interacts lagged tariffs with an indicator for if the industry was delicensed by 1988 (the main effect of the delicensed in 88 variable is not identified because of the firm effect). Standard errors clustered at the industry level except column 3, which clusters at the industry-year level. Significance: *10%.

Source: Topaloval et al.

Take-away

Although the evidence here is from India, these kinds of barriers are to be found in most places.

This means that we cannot think about "labor" as aggregate quantities does not really work: the people whose jobs get destroyed are not in the same position as similar workers: the distributional impacts of trade are going to be first order on the people that it directly hits.

This does not mean that trade cannot do a lot of good to an economy. The next question however is whether in today's word, a new developing countries could decide to compete with China to trade?

Getting a piece of the action

Why opening borders is not all there is to it…

Can Egypt be the next China?

Researchers partnered with Aid to Artisan to generate demand for Egyptian rugs in Egypt

Photo: Shutterstock.com

Source: Atkin et al.

Generating Export Orders

ATA teamed up with Hamis carpets, a local intermediary

Hamis and ATA agreed on designs

Found an Italian consultant to design samples

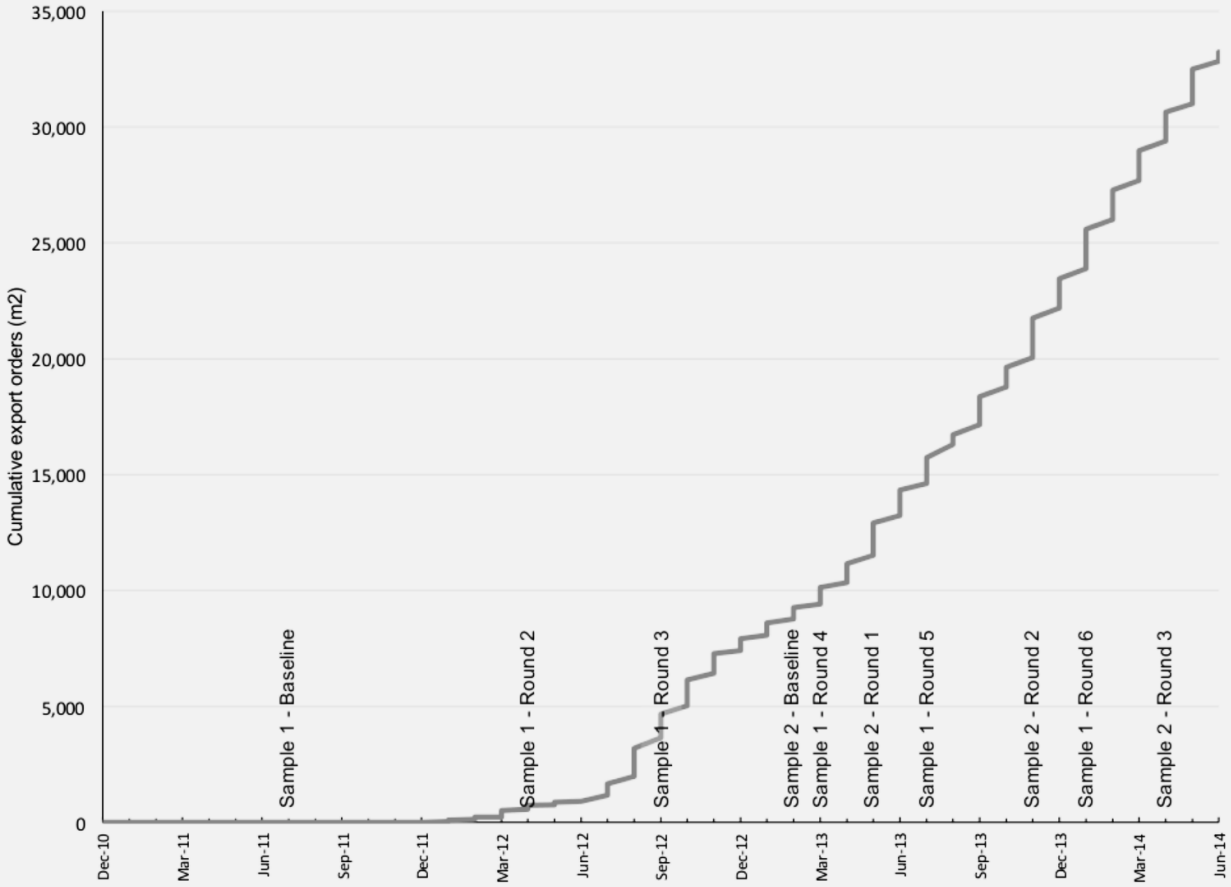
ATA exhibited at trade shows to generate orders.

Photo: Haitham Fahmy | J-PAL

Generating Export Orders

Generating export orders was slow and difficult

- 1/7 attempts lead to sustained exports
- Orders come from high-income markets (US/Europe)



Why was it so difficult?

Foreign buyers want

- Quality
- Consistency
- Timelines

Across dimensions that are had to codify and demand firm skills

And cannot easily be made up by lower prices

Photo: Haitham Fahmy | J-PAL

Egyptian Firms given a chance improve quality

The Researchers organized a unique **Randomized Controlled Trial**

Among carpets manufacturers, they randomly selected some firms to get an order from Hamis.

Then they compared quality by grading the carpets

But who will give them a chance?

Panel A: Quality Metrics

	Control Mean	ITT (1)	TOT (2)
Corners	2.98	1.11 ***	1.70 ***
		(0.12)	(0.11)
Waviness	2.99	1.10 ***	1.68 ***
		(0.12)	(0.10)
Weight	3.08	1.07 ***	1.63 ***
		(0.11)	(0.11)
Touch	3.12	0.40 ***	0.66 ***
		(0.06)	(0.07)
Packedness	3.11	0.89 ***	1.59 ***
		(0.11)	(0.12)
Warp Thread Tightness	3.05	0.83 ***	1.49 ***
		(0.10)	(0.12)
Firmness	2.98	0.87 ***	1.60 ***
		(0.11)	(0.12)
Design Accuracy	3.17	0.79 ***	1.41 ***
		(0.10)	(0.12)
Warp Thread Packedness	3.05	1.07 ***	1.65 ***
		(0.11)	(0.11)
Inputs	3.07	0.89 ***	1.62 ***
		(0.10)	(0.12)
Loom	2.02	0.03	0.05
		(0.02)	(0.04)
R-squared		0.44	0.60
Observations		6,885	6,885

Reputation as a barrier to entry

Even with firms have the competence, they don't necessarily have the **reputation**

Customized software industry: low barriers to entry

But customized software leaves a lot to be determined as the project develops…. Who pays for the overrun?

Young firms are more likely to have a fixed cost contract

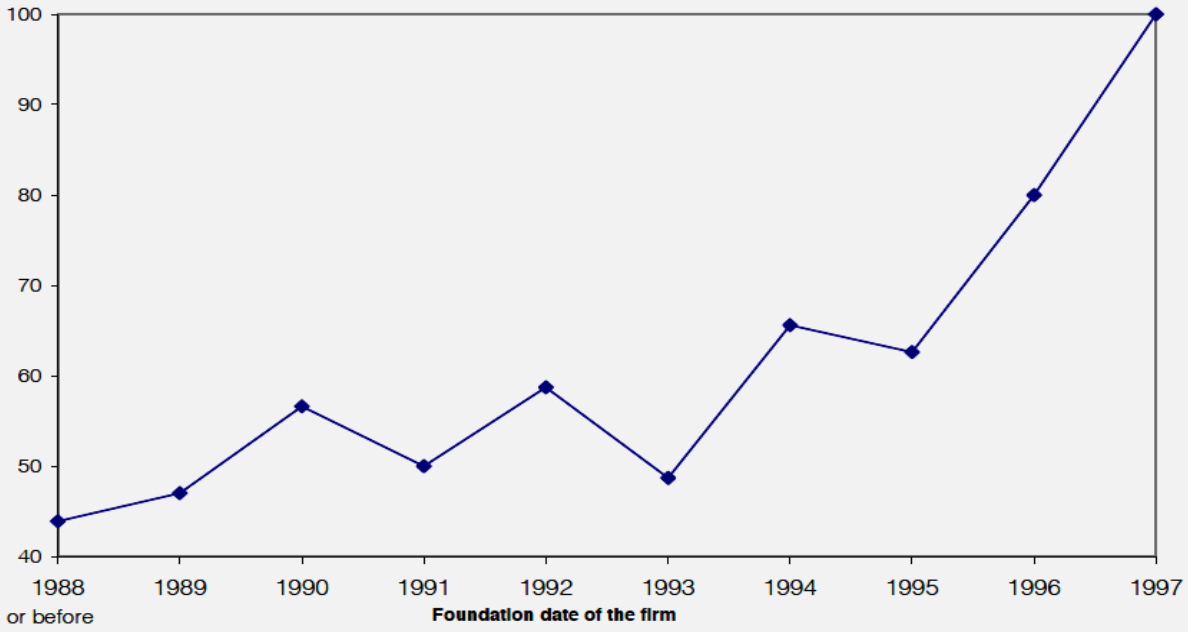


Figure II
Share of overrun paid for by the firm

Source: Banerjee and Duflo

Reputation as a barrier to entry

Even with firms have the competence, they don't necessarily have the **reputation**

Customized software industry: low barriers to entry

But customized software leaves a lot to be determined as the project goes…. Who pays the overrun?

And they end up paying a larger share of the overrun
Unless they are known to the client (repeat business) or they have a brand name: hard to establish a business without deep pockets…

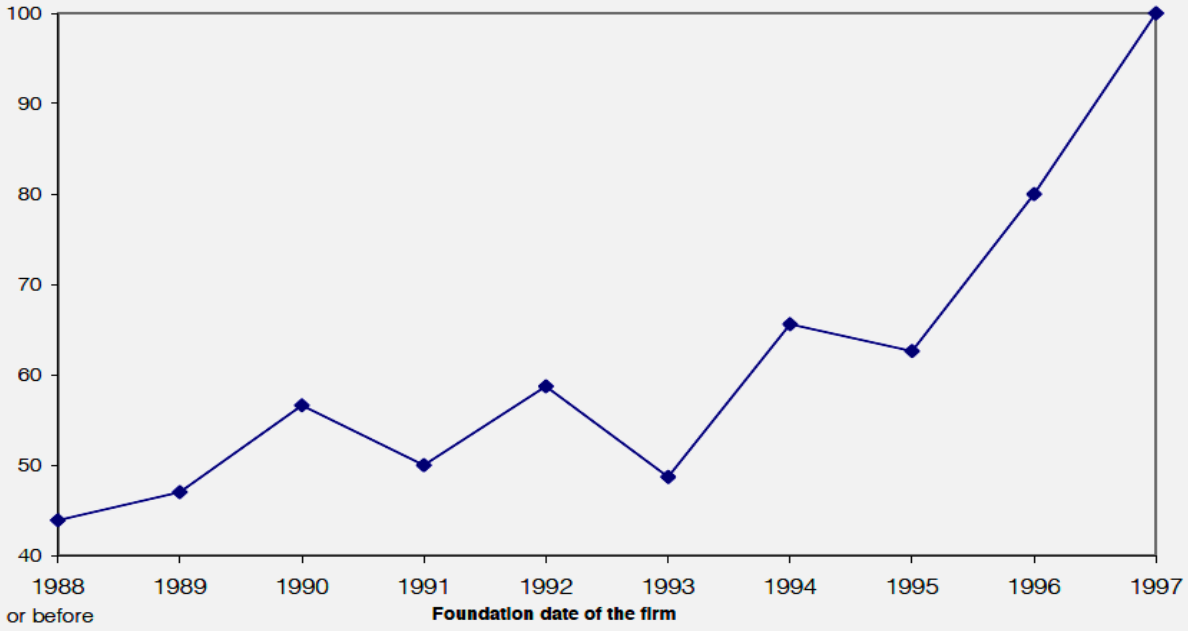


Figure II
Share of overrun paid for by the firm

Source: Banerjee and Duflo

Collective reputation and clustering

To establish a reputation, firms can rely on networks (hence the role of the diaspora in starting industry)

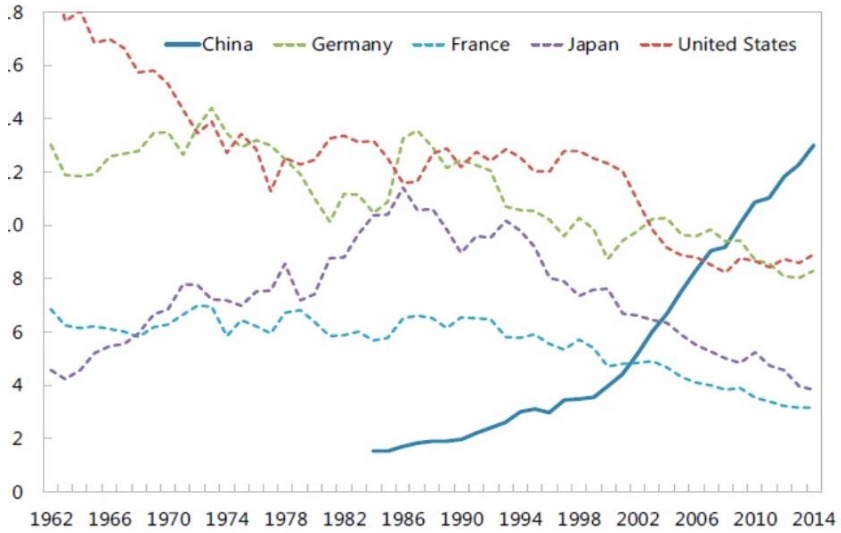
Entire towns can acquire a reputation for being good at something

This is one of the reasons for **clustering:** the tendency for industries to concentrate in some places

Photo: Paul Prescott | Shutterstock.com

Can anyone displace China as the world's warehouse?

Global export market share, top 5 exporters



Sources: UN Comtrade; and IMF staff calculations.

- Cost of production is only 10-15 of final retail costs for many goods
- So even cutting manufacturing cost by 50% for a new country (e.g. Vietnam of Ethiopia) would hardly make a dent on the price of the final product (7.5% reduction of cost of manufacturing went down by 50%).
- Most people will not gamble with a new producer for that much little money…
- China spent **2.4 trillion** on manipulating its currency for promoting exports.

Is COVID-19 an opportunity?

- The world discovered the danger of supply chains that are too heavily dependent on highly specialized clusters
- But who will invest in diversifying their supply chain?

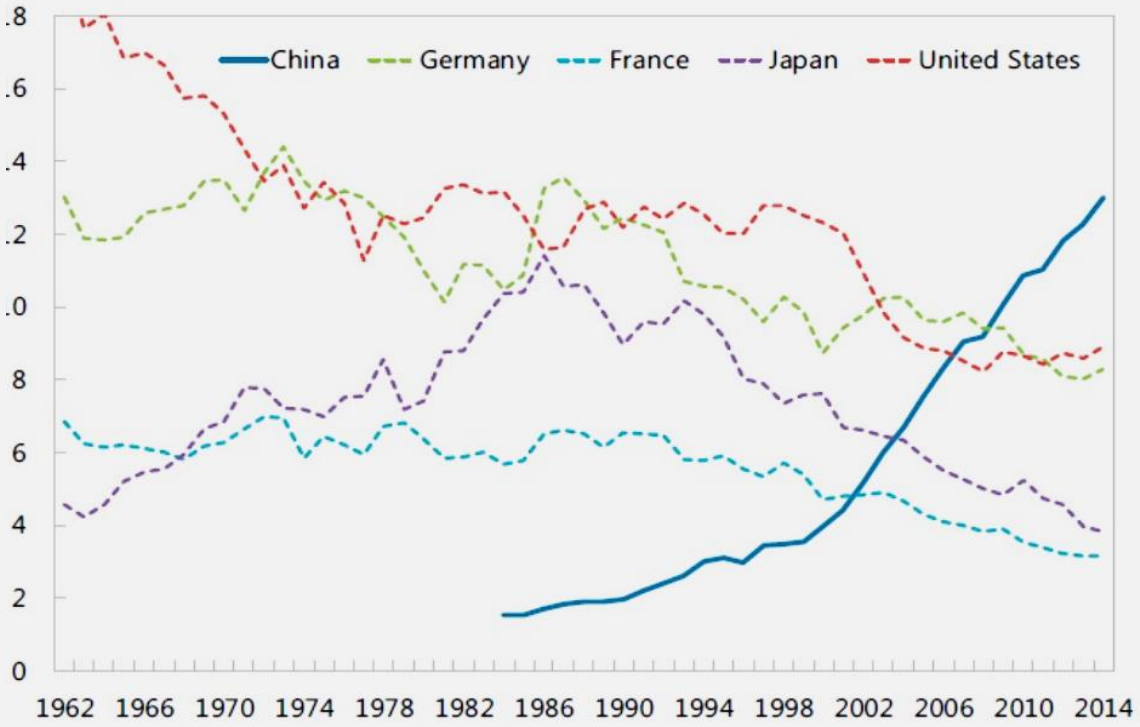
The US story

Chinese Assent and US decline in export market

Between 1990 and 2015, China's share of global manufacturing export rose from 2.8 % to 18.5%

US share dropped from 14% to 8.6% between 2000 and 2011. 600,000 manufacturing jobs disappeared.

Global export market share, top 5 exporters



Sources: UN Comtrade; and IMF staff calculations.

The China Shock

Autor, Dorn and Hanson reproduced the Topalova strategy for the US.

Trade exposure with China is a function of the manufacturing mix before China's accession to the WTO

Table 3: Industry-Level Changes in Chinese Import Exposure and U.S. Manufacturing Employment, 1991 - 2011

	Stacked First Differences		
	1991-2011		1991-2007
	(1)	(2)	(3)
100 x Annual Δ in U.S. Exposure to Chinese Imports	-0.81***	-1.30***	-1.24***
	(0.16)	(0.41)	(0.37)
1{1991-1999}	-0.08	0.05	0.04
	(0.36)	(0.36)	(0.36)
1{1999-2011}	-3.79***	-3.46***	
	(0.33)	(0.33)	
1{1999-2007}			-2.58***
			(0.38)
Estimation Method	OLS	2SLS	2SLS

N = 784 (392 4-digit manufacturing industries x 2 periods 1991-1999 and 1999-2011 or 1999-2007). Employment changes are computed in the County Business Patterns and are expressed as 100 x annual log changes. Observations are weighted by 1991 employment. Standard errors in parentheses are clustered on 135 3-digit industries. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

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

A. Δ Fraction of Working Age Population in Manufacturing, Unemployment, NILF

Employed in Manufacturing (1)	Employed in Non-Manufacturing (2)	Unemployed (3)	Not in Labor Force (4)
-0.60***	-0.18	0.22***	0.55***
(0.10)	(0.14)	(0.06)	(0.15)

B. Δ Log Population, Log Wages, Annual Wage and Transfer Income

Δ Log CZ Population (log pts) (5)	Δ Avg Log Weekly Wage (log pts) (6)	Δ Annual Wage/Salary Inc per Adult (US$) (7)	Δ Transfers per Capita (US$) (8)
-0.05	-0.76***	-549.3***	57.7***
(0.75)	(0.25)	(169.4)	(18.4)

N=1444 (722 commuting zones x 2 time periods 1990-2000 and 2000-2007). Employment, population and income data is

Clustering and the pains from Trade

Photo: Sabrina Janelle | Shutterstock.com

Consider Martinsville

In 1990, 41% of the working age population in Martinsville worked in manufacturing, **half in furniture and knitwear.**

Photo: Shutterstock.com

Consider Martinsville

By 2018, 12% of adults worked in furniture.

As people lost their jobs and their pay check, they stopped spending locally, sending the economy in a downward spiral

Between 1990 and 2015, the proportion of working age population with a job went from 73% to 53%.

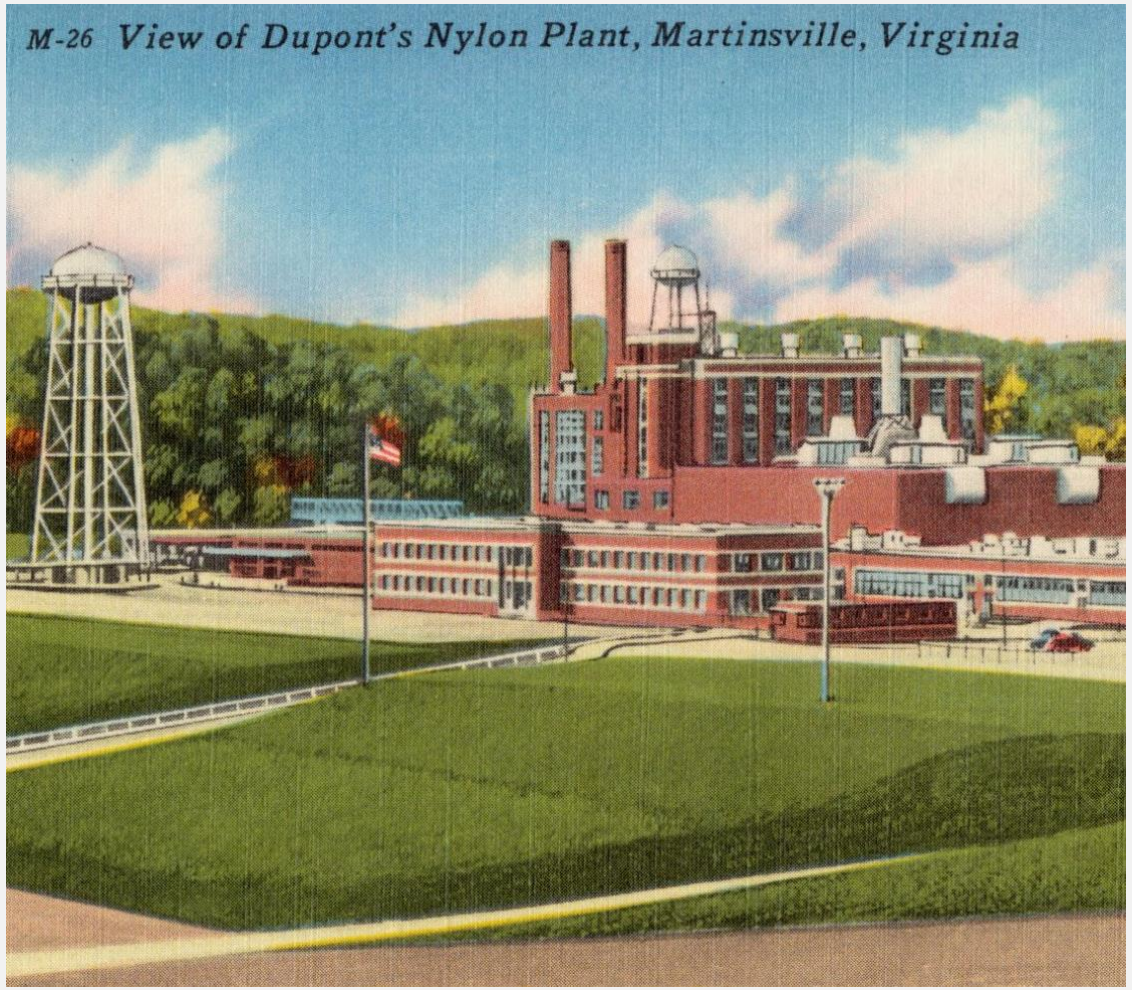


Photo: "View of Dupont's Nylon Plant, Martinsville, Virginia." Card. Pub. by The Asheville Post Card Co., Asheville, N. C., 1930. Digital Commonwealth, https://ark.digitalcommonwealth.org/ark:/50959/th83m765g

Consider Martinsville

Clinicians in Martinsville, home to fewer than 13,500 people, prescribed almost 4,090 morphine milligram equivalents per person.

More than anywhere in the US.

The national average was 640 milligram equivalents per person.

An abandoned lumber mill in Martinsville. Many residents depended on furniture and textile manufacturing jobs to provide for themselves and their families.

Photo: Jared Soares

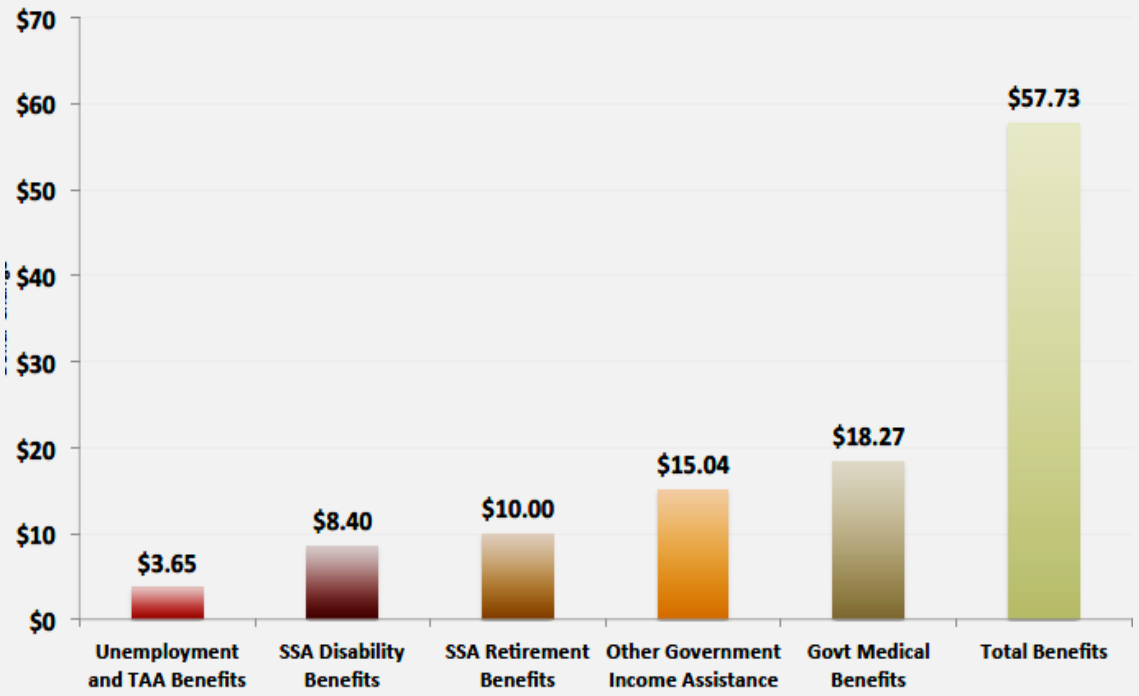
But what about compensation?

The US has a program to support people who lose their jobs because of trade: the Trade Adjustment Assistance program

There is even evidence that it might work!

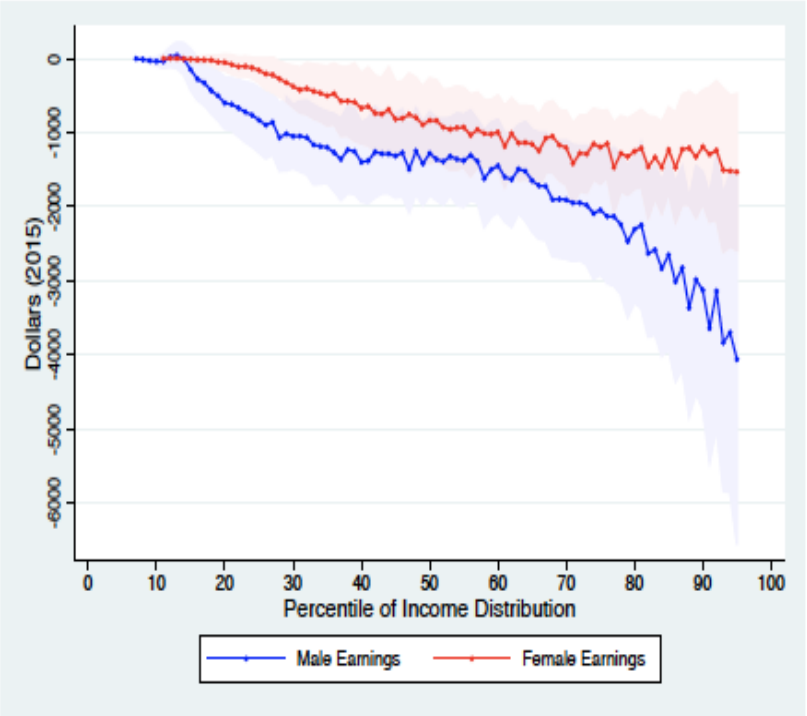
But it is ridiculously tiny, compared to the losses experiences by workers.

For each $1000 per worker increase in imports from China during 1990-2007 workers lost $549 in income and got..



Especially for young males

Figure 1: Impact of Manufacturing Trade Shock on Earnings of Males and Females Age 18-39, 1990-2014

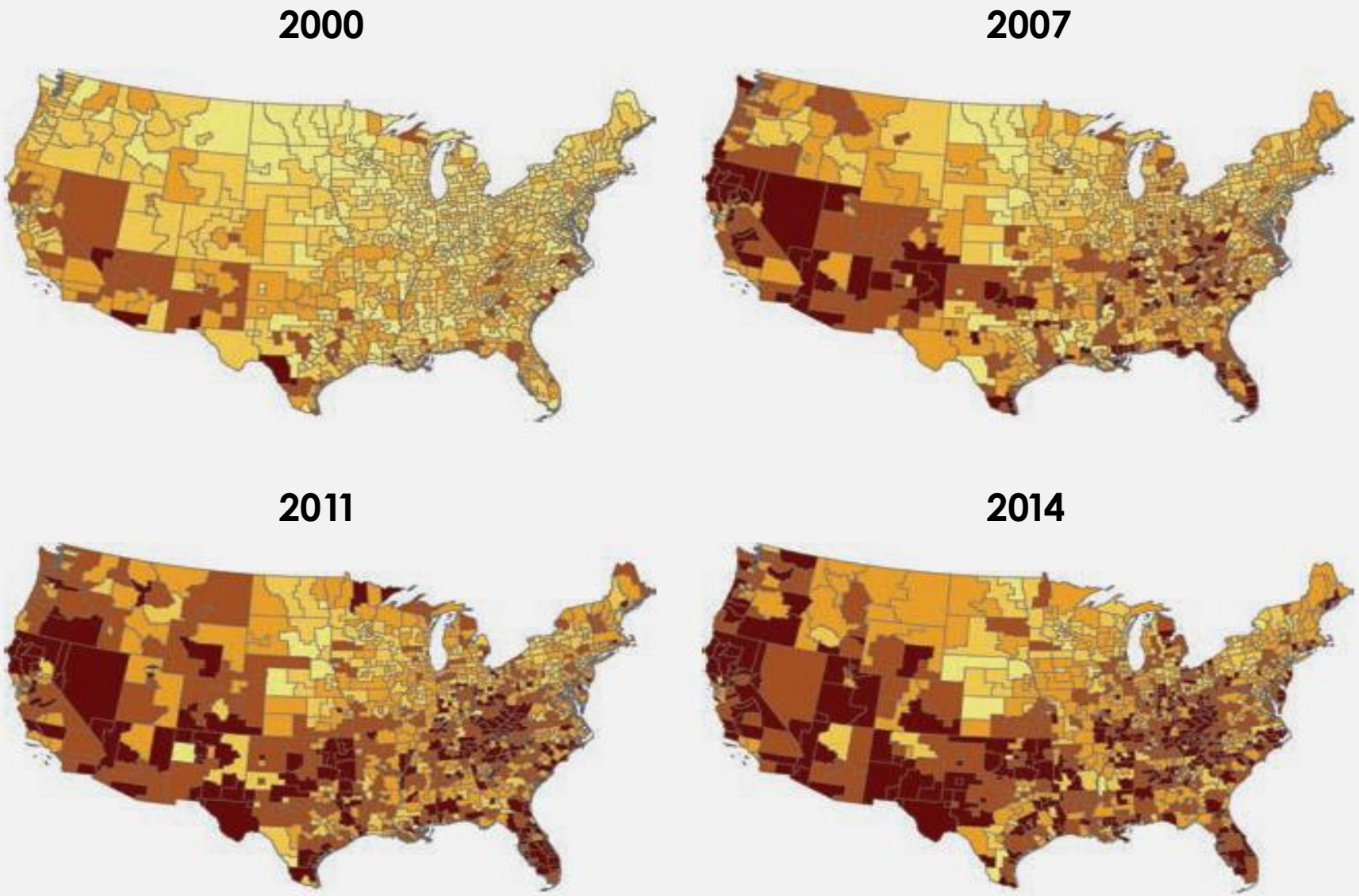


Fewer marriages

	A. Women's Marital Status			*B. Fertility and Maternity*			*C. % of Children in HH < Poverty Line*
	Married	Widowed Divorced Separated	Never Married	Births per 1,000 Women	% of Women w/ Children	% Mothers Unmarried	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				I. Overall Trade Shock			
Δ Import Penetration	-0.95 **	-0.21 *	1.16 **	-1.54 **	-0.66 **	0.52 ~	0.61 *
	(0.30)	(0.11)	(0.33)	(0.37)	(0.23)	(0.31)	(0.26)

	D. Women's Household Type			*E. Children's Household Type*			
	Living w/ Spouse	Living w/ Partner	Other HH Structure	Married Couple	Parent + Unmarried Partner	Single Parent, No Partner	Grand-parent or Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				I. Overall Trade Shock			
Δ Import Penetration	-0.81 **	-0.22 ~	1.03 **	-0.35 ~	-0.11	0.30 **	0.15
	(0.27)	(0.12)	(0.30)	(0.19)	(0.07)	(0.11)	(0.16)

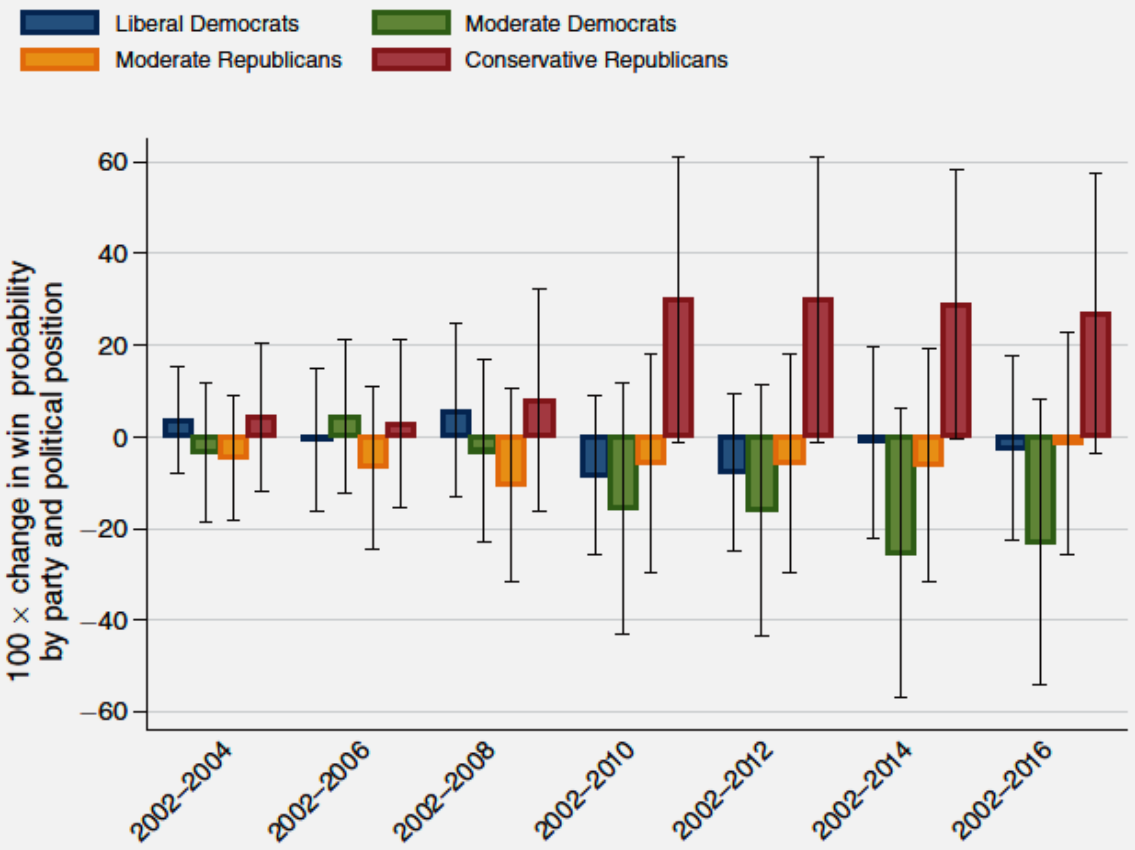
Deaths of despair for white non-Hispanics
Age 45-54,
by *Couma*, 2000-14[a]



- 0 to 25
- 25 to 50
- 50 to 75
- 75 to 100
- 100 to 311

Importing political polarization

Exposure to Chinese import and win probability by exposure to Chinese exports



Was it worth it?

How large are the gains from trade?

Trade: a 2% bonus?

Arnaud Costinot and Andres Rodriguez-Clare share an uncomfortable insight: the gains of trade may not be that large for the US

Simple logic

- Imagine we only eat Apples (produced home) and Bananas (imported)
- Look at what share of Bananas are imported, and what is the cross-price elasticity with apples
- The gains from trade are a function of (1) the share of banana in consumption and (2) the cross-price elasticity with apples

At the level of the economy

- Share of import in US consumption: 8%
- Imports used as Inputs for US production: 3.4% of consumption

If import are easily substitutable: gain from trade=1% of GDP. If they are hard to substitute : 4%

To trade or not to trade…

- This logic could be carried out too far…
- The US is a special case: it is a very large, very diversified economy
- Smaller countries, without trade, would be in a bad situation:
  - Import represents 30% of Belgium consumption
- Think about what happened to masks and ventilators in the COVID-19 crisis
  - After COVID-19, temptation to "re-localize" production: but it is in the end the fact that masks and ventilators continued to be produced in China that saved us.
- Pushing the logic to its extreme, what about producing locally?
  - The logic of Gandhi… and the Great Leap Forward.

So what is to be done?

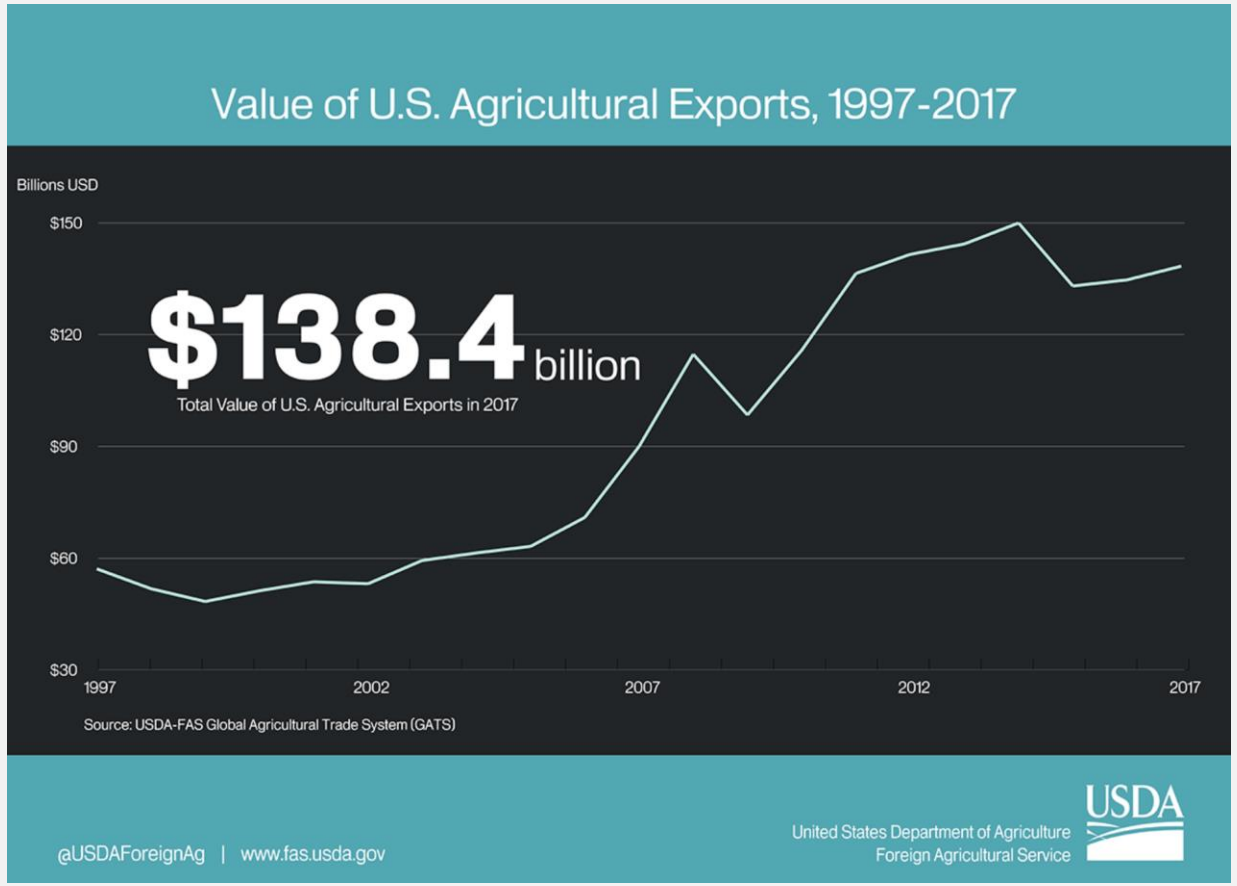
Shall we start a trade war?

The main difficulty is **transition**

Shutting trade with China now will not bring back industrial jobs (Vietnam and Bangladesh are waiting in the wings)

But it will hurt agriculture: China alone buys 16% of US agricultural exports

Largest agricultural states are California, Iowa, Louisiana, Alabama and Florida



Help mobility

36 Months of educational benefits.

$2,000 towards tuition at university of technical training

Stipend toward housing

Moving subsidies (child care, housing, insurance, pay off bills) for those who take or search for a job elsewhere

Make it more generous in labor markets that have been more affected by trade shocks (can also be expanded to automation)

A GI bill for veterans of trade

The benefits of national integration

Between 1835 and 1930 the British built 22,000 miles of railways in India

Transportation cost per miles travelled was 2.5 higher on roads than railroad

Many previously cut regions were integrated

The value of agricultural production was 16% higher in places that got a rail lines, than in those that did not

Photo: John Bartholomew and Company/Edinburgh Geographical Institute, Public domain, via Wikimedia Commons

National integration affect the gains from trade

Prices are much higher in places that are far away from ports or producing town

Trade costs due to distance are 4 times larger in Nigeria than the US

Source: Atkin and Donaldson

Figure 1: Maps of sample locations

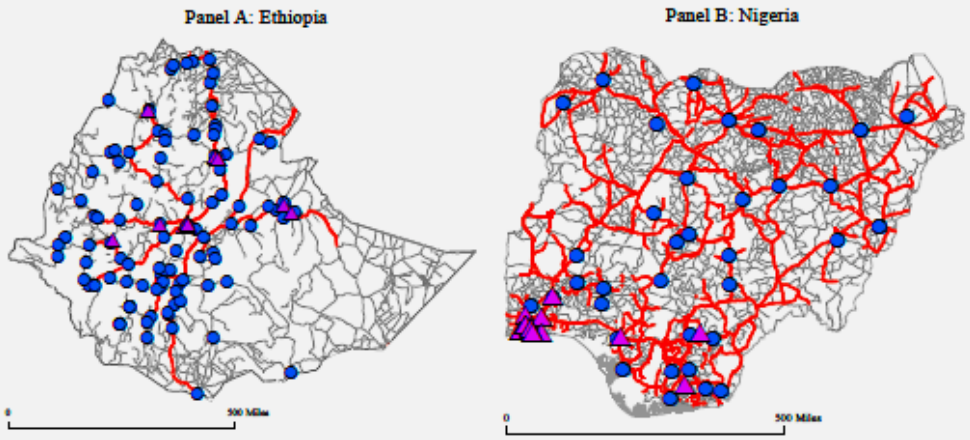
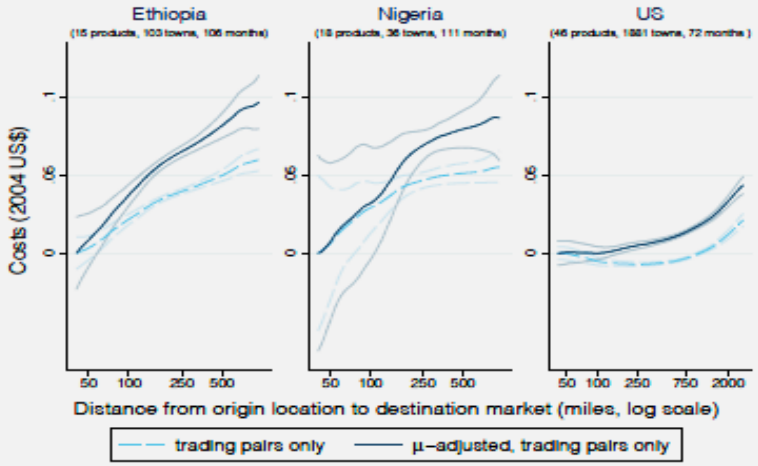


Figure 3: The effect of distance on intra-national trade costs



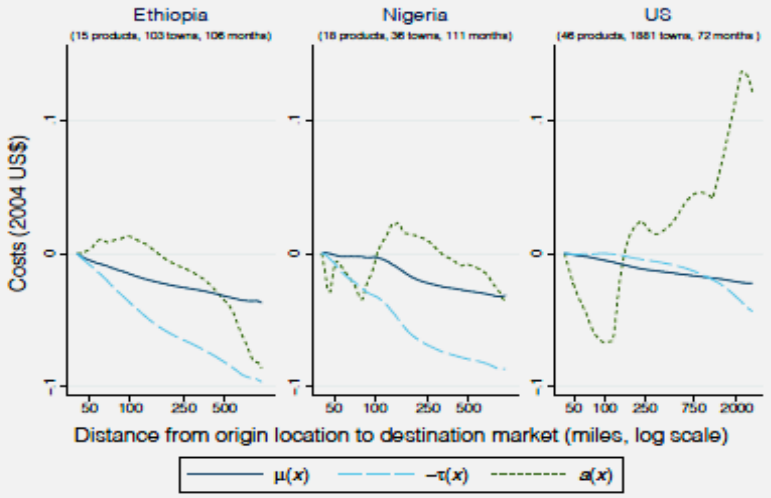
Notes: Locally weighted polynomial (Epanechnikov kernel, bandwidth=0.5). 95% confidence intervals shown (block bootstrapped at product-destination level). All plots control for product-time fixed effects. Markup-adjusted ("μ-adjusted") plot controls for interactions between pass-through and fixed effects as described in text. US plot uses compressed x-axis scale.

National integration affect the gains from trade

Mark ups are not higher far away from the ports: the higher trade costs are not due to less competition

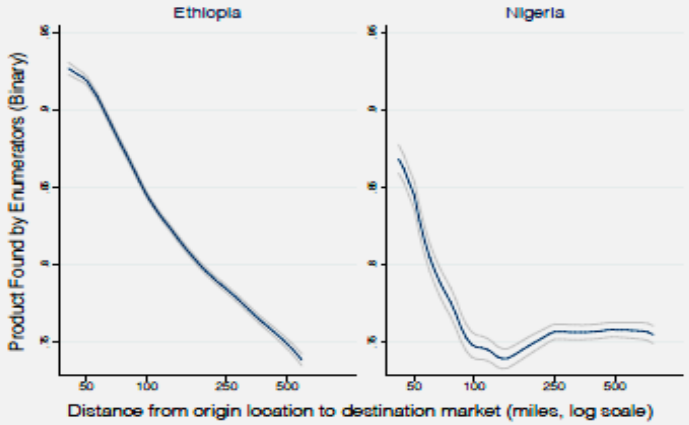
And many goods are not even available!

Figure 4: Variation in mark-ups across space



Notes: Locally weighted polynomial (Epanechnikov kernel, bandwidth=0.5). Semiparametric plots of demand shifters and trade costs from the adjusted price gap regression (i.e. equation 15). US plot uses compressed x-axis scale.

Figure 5: Product availability



Notes: Locally weighted polynomial (Epanechnikov kernel, bandwidth=0.5). 95% confidence intervals shown. Linear probability model. Sample restricted to time-product pairs where product found in at least one location.

Accept immobility

Some workers will not move, or it would be too costly for them to do so

A radical proposal: subsidize employment of older workers of affected firms, to avoid downward spiral of the region.

And perhaps make these town attractive to new migrants, with special visa offers.

A post office in Martinsville.