



# Session 7: Globalization and Trade

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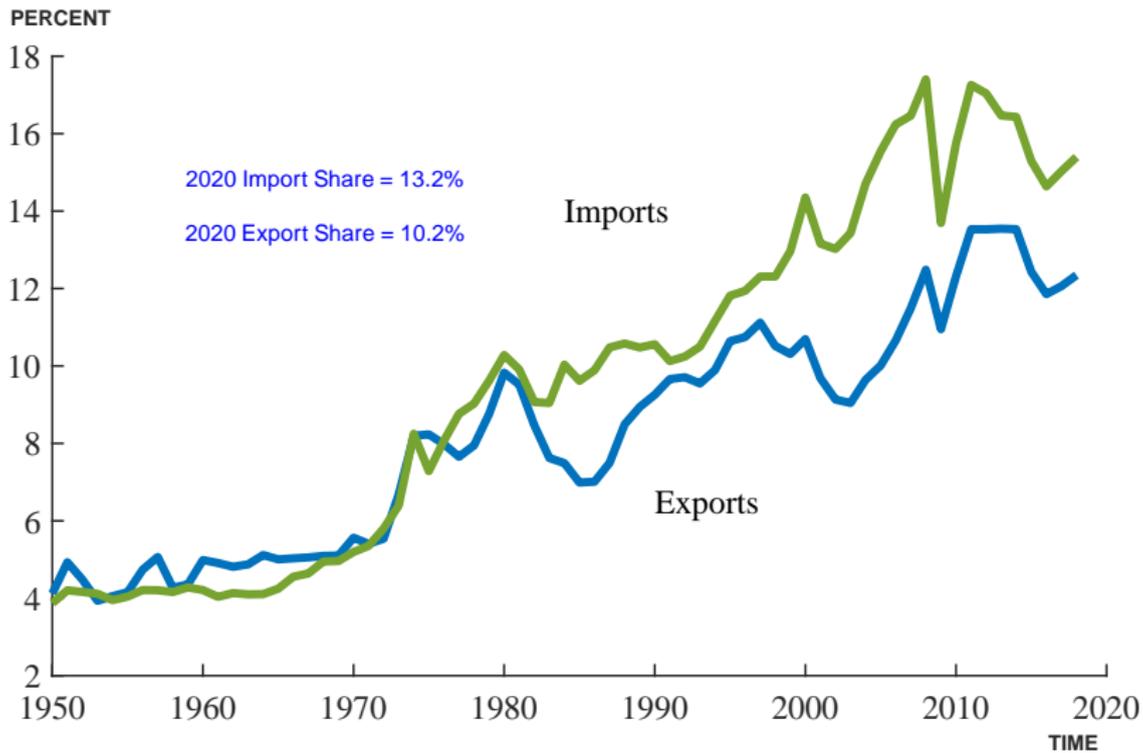
## Outline: Globalization and Trade

- Facts
- Why do countries trade?
  - Trade over time: risk sharing
  - Comparative advantage
  - Trade in inputs: migration
- The costs and benefits of trade
- Trade deficits and foreign debt

## Making Computers from Rice

- In what way is a new international trading opportunity like a new technology or idea?

## U.S. Import and Export Shares of GDP



## Questions

- What are trade shares in other countries?
  - China, Germany, and Mexico:

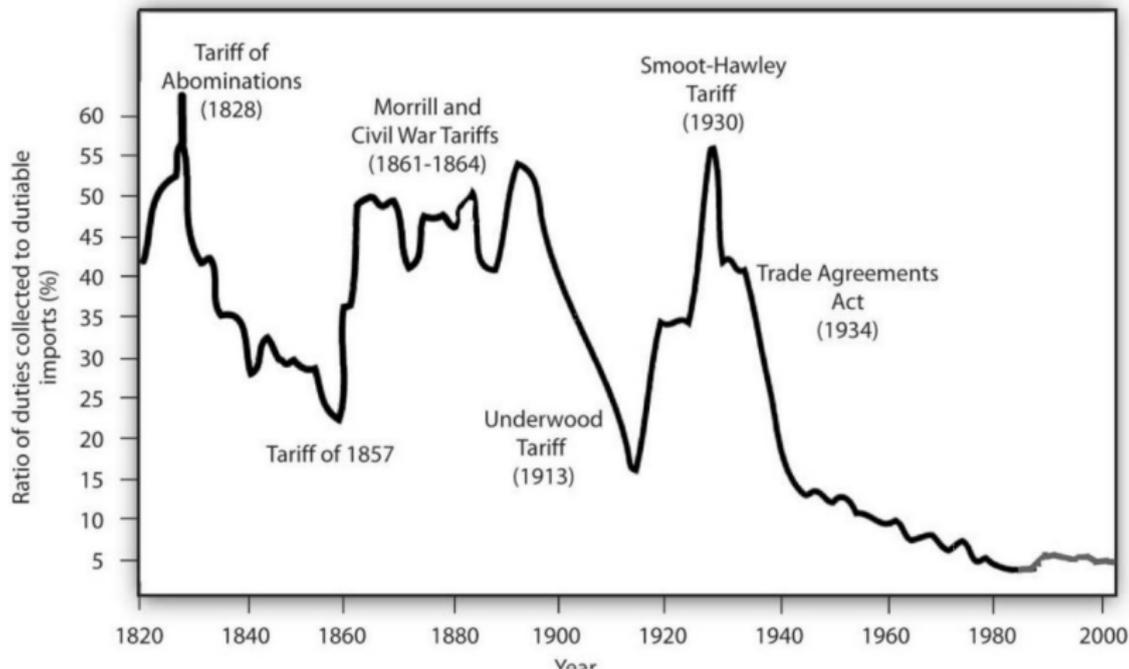
Exports+Imports > 60% of GDP

- Why has trade risen so much?

## Why has trade risen so much?

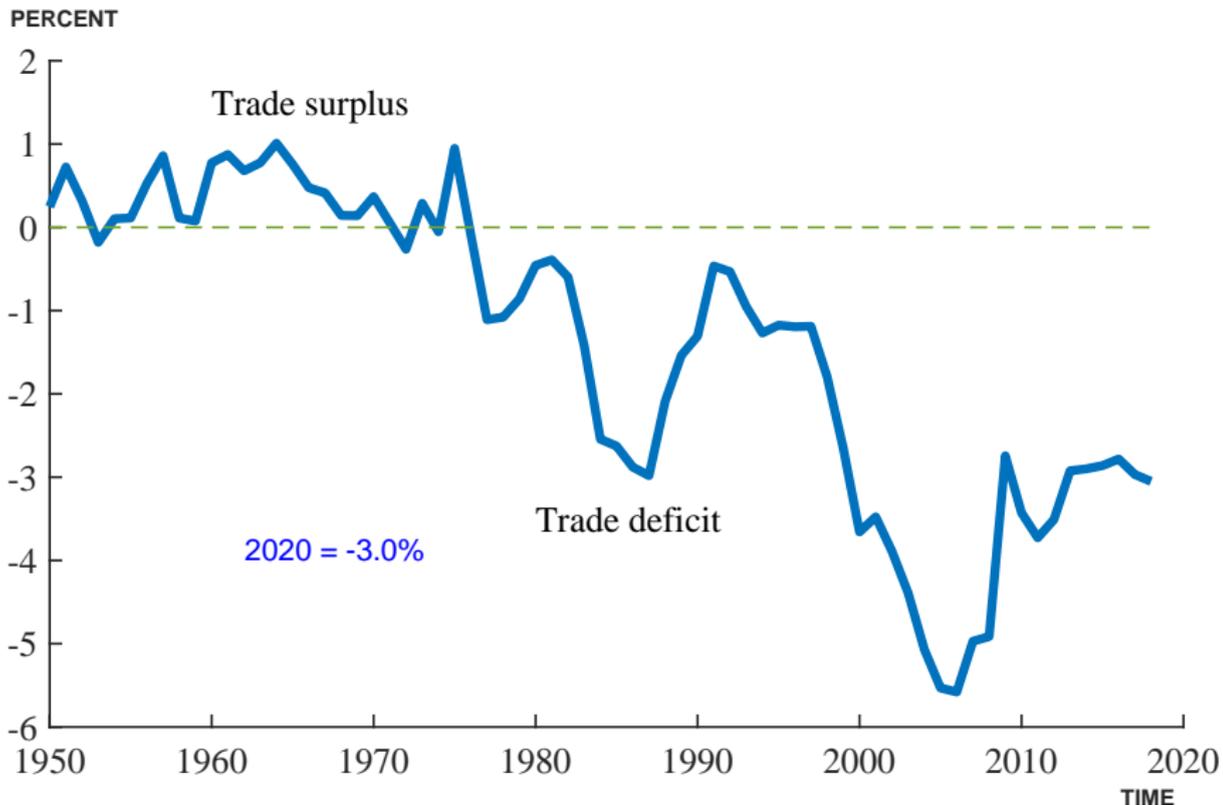
- Decline in transportation and communication costs
  - Ocean freight per short ton: \$95 in 1950 to \$29 in 1990
  - A sweater can now travel 3,000 miles for 2.5 cents
  - Airline transportation: Revenue per passenger mile:  
112 cents in 1930 to 11 cents in 2008
  - 3 minute phone call from New York to London:  
\$250 in 1930 to “free” today
- Decline in tariffs and quotas
  - After relatively high peaks at end of WWII, worldwide tariff rates are quite low on average (e.g. 4 percent)
  - Free trade agreements

## Average U.S. Tariff Rates

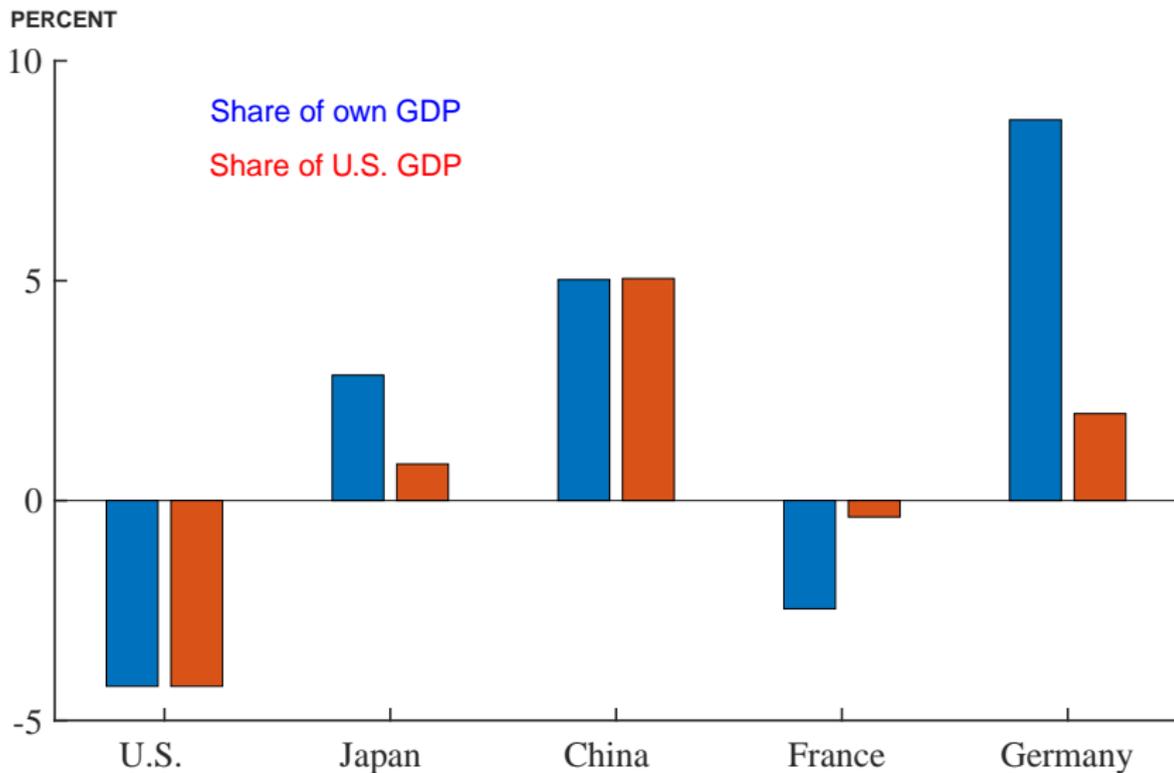


Rittenberg and Trethgarten (2015)

## The U.S. Trade Balance as a Share of GDP



## The Trade Balance around the World, 2017





# Why Do Countries Trade?

## Why do countries trade?

- ① Trade across countries is much like trade **within** countries
- ② Trade over time: risk sharing
- ③ Comparative advantage

## Why do people trade within a country?

- A **huge** amount of trade among people!
- Why?

## Why do people trade within a country?

- A **huge** amount of trade among people!
- Why?

Specialization vs. Robinson Crusoe

## Reading: Leonard Read, “I, Pencil”

- What do we learn from this autobiography of the pencil?
- What does it have to do with trade?



## Trade over Time: Smoothing and Risk Sharing

Year	1	2	3	4	5	6	
			<i>Mango harvest</i>				
Oddtopia	100	0	100	0	100	0	
Eventopia	0	100	0	100	0	100	
			<i>Trade balance</i>				
Oddtopia	+50	-50	+50	-50	+50	-50	
Eventopia	-50	+50	-50	+50	-50	+50	
			<i>Consumption</i>				
Oddtopia	50	50	50	50	50	50	
Eventopia	50	50	50	50	50	50	

- Commitment, trust, and the future

## Trade Deficits and Budget Constraints

- In the long run, trade must be balanced
  - This is true in the present discounted value sense
- Trade deficits are a way to **borrow** from the rest of the world
- Recall:  $Y = C + I + G + (EX - IM)$
- Trade deficits today must be repaid with trade surpluses in the future
  - $IM > EX \implies C + I + G > Y$
  - $EX > IM \implies C + I + G < Y$

(China and U.S.)

## Absolute and Comparative Advantage

- How much can one worker produce per week?

	U.S.	India
Designer jeans	100 pair	50 pair
Hi-end computer chips	100 chips	25 chips

- Assume 2 workers in India and 2 workers in the U.S., 1 in each sector
- How should they trade? Why?

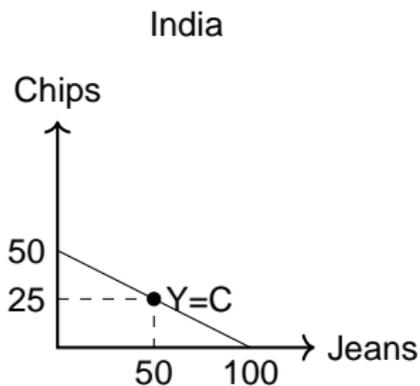
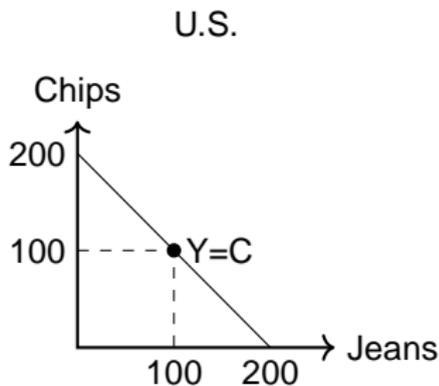
## Absolute and Comparative Advantage

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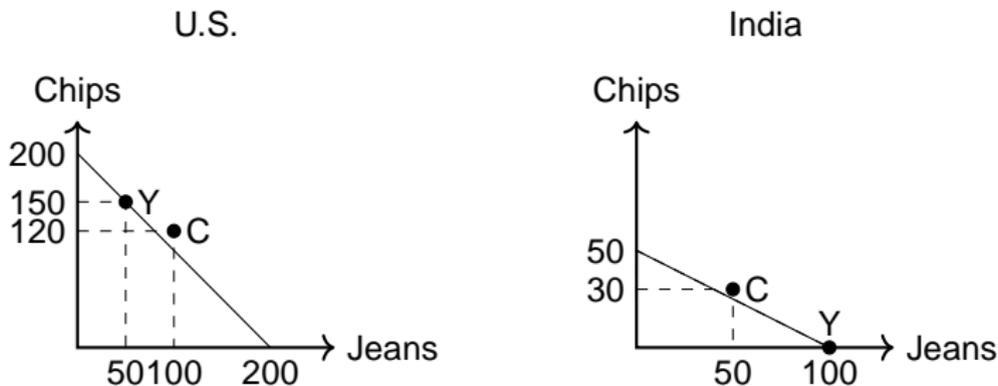
- Assume 2 workers in India and 2 workers in the U.S., 1 in each sector
- How should they trade? Why?
  - Under autarky, jeans are **cheap** in India and computer chips are cheap in the U.S.
  - What would an entrepreneur do? Buy low and sell high...
  - The U.S. has an **absolute advantage** in both goods, but a **comparative advantage** in computer chips.

## Production Possibility Frontiers: Autarky



- Proposed feasible strategy: 1 worker in each sector in each country
- Autarky means consumption = production in each country

## Production Possibility Frontiers: Trade and Output



- Proposed feasible production strategy: US 50J, 150C. India 100J, 0C
- Proposed feasible trade strategy: Send 30C from US to India for 50J
- Resulting consumption: US: 100J, 120C; India: 50J, 30C
- Both countries consume above their PPF!

## Example: Gains from Trade

- World output under autarky:
  - 150 pairs of jeans and 125 computer chips
- Consider an alternative with trade:
  - Suppose India specializes in jeans: 100 jeans, 0 chips
  - Suppose U.S. moves 50% of jeans to chips: 50 jeans, 150 chips
  - Trade 30 chips for 50 jeans
- World output under trade:
  - 150 pairs of jeans and 150 computer chips (25 more!)
  - Same jean consumption as under autarky
  - But both countries consume more computer chips!

## Summary of Comparative Advantage

- Trade is about comparative advantage, not absolute advantage
- Under free trade, countries produce the goods in which they have a comparative advantage
  - These are the goods that would be cheap under autarky
  - Both countries benefit from free trade. This is seen by the fact that both can now buy the imported good more cheaply than before
- World output is higher under free trade



Is free trade good or bad?

## Trade: Efficiency and Welfare

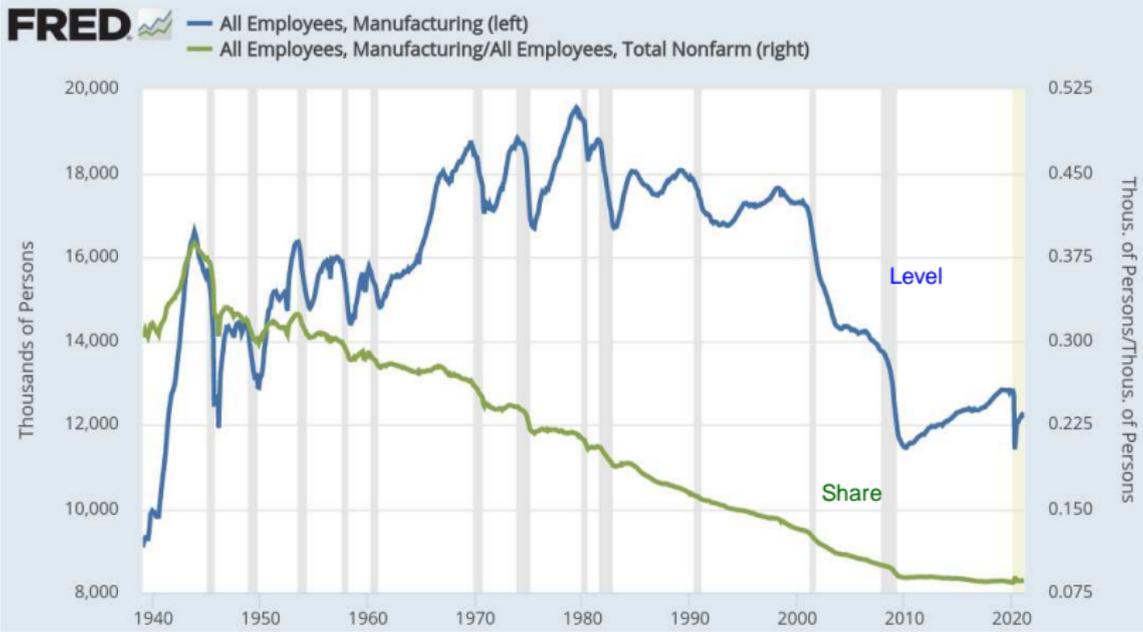
- Is free trade good or bad, and why?

## Trade: Efficiency and Welfare

- In what sense is trade good for an economy?
  - **Classic answer:** A new trading opportunity is like a new technology
  - **Growth answer:** Flow of new ideas, technologies, competition
- In what sense is trade bad for an economy?
  - There are winners and losers
    - Autor, Dorn, and Hanson (2013): Rising imports from China → 1/4 of loss of US mfg jobs since 1990
    - Losses concentrated, gains spread thinly, retraining costly
  - Infant industry protection???
  - Risks to specialization (e.g., Medical Products/COVID-19, Russia/Europe Energy)

Pareto improvements exist: gains to winners exceed losses to the losers.  
How to share the gains?

# U.S. Employment in Manufacturing



## Trade in Inputs: Free Migration

- Back to the U.S.-India Example

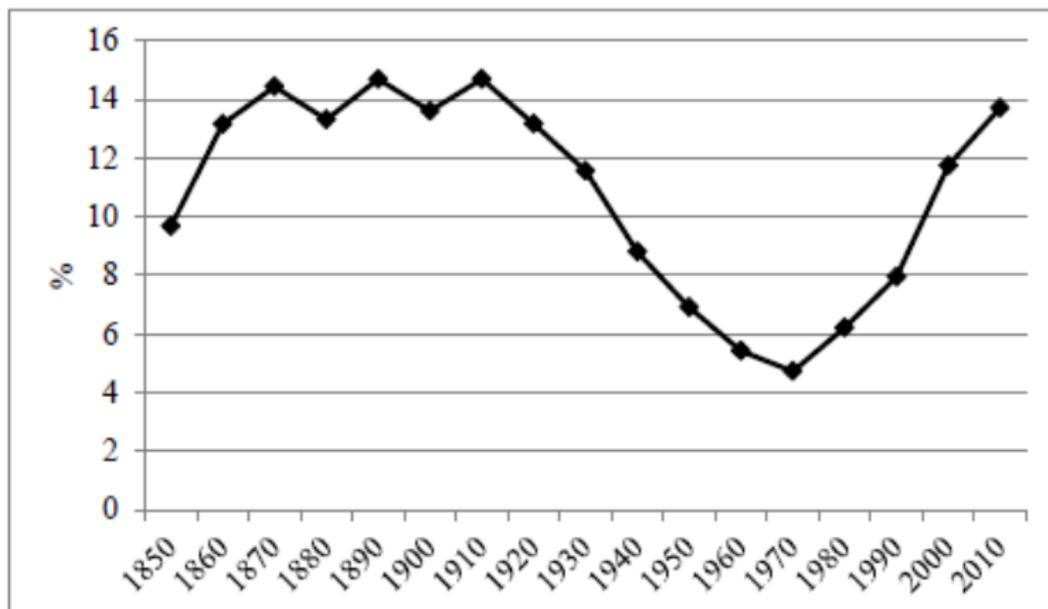
	U.S.	India
Designer jeans	100 pair	50 pair
Hi-end computer chips	100 chips	25 chips

- What happens under free migration of labor?
- Is this better or worse than free trade? For who?
- What about idea production? (Brain Drain vs. Diffusion)

40 percent of Fortune 500 companies founded by immigrants or their children

## Huge Long-run Variation in Foreign Born U.S. Population

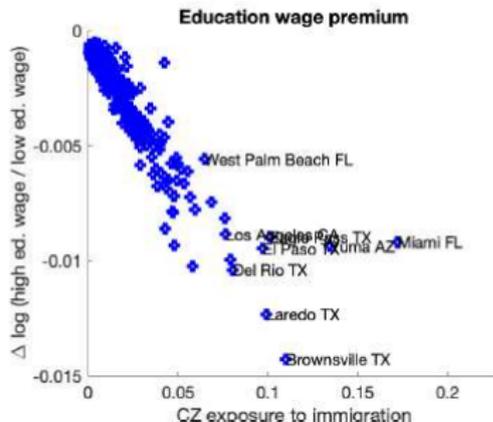
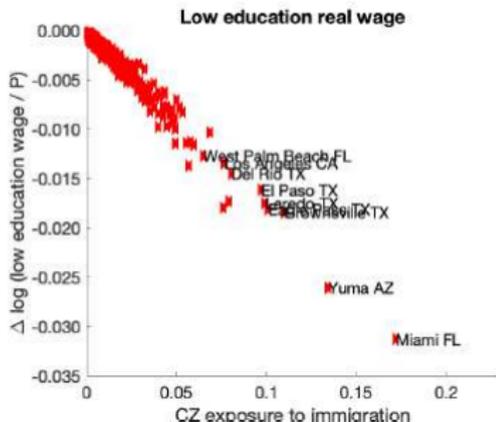
Panel B: Foreign born stock as percentage of the US population (1850-2010)



Abramitzky-Boustan (JEL 2017)

## Wage Effects of Immigrants on Local Residents

Model Prediction for a 50 percent reduction of Latin American immigrants

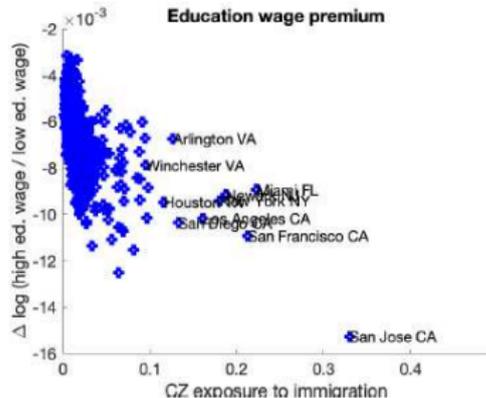
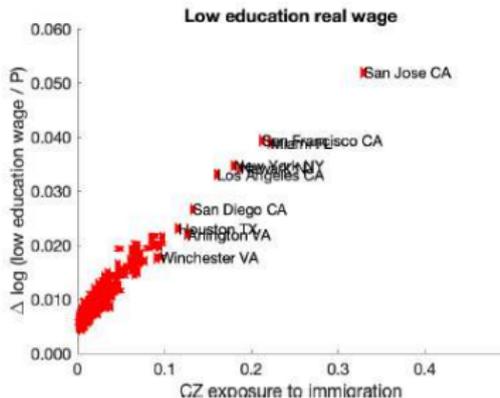


Burstein-Hanson-Tian-Vogel (ECMA 2019)

- Note: Not settled science - active academic debate
- See Card vs. Borjas
- Also, employment levels vs. wages

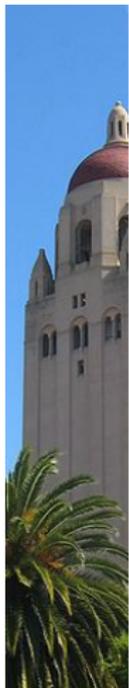
## Wage Effects of Immigrants on Local Residents

Model Prediction for a doubling of college-educated immigrants



Burstein-Hanson-Tian-Vogel (ECMA 2019)

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# The Trade Deficit and Foreign Debt

## Trade and Capital Flows

- Manipulating the National Income Identity:

$$Y = C + I + G + (EX - IM)$$

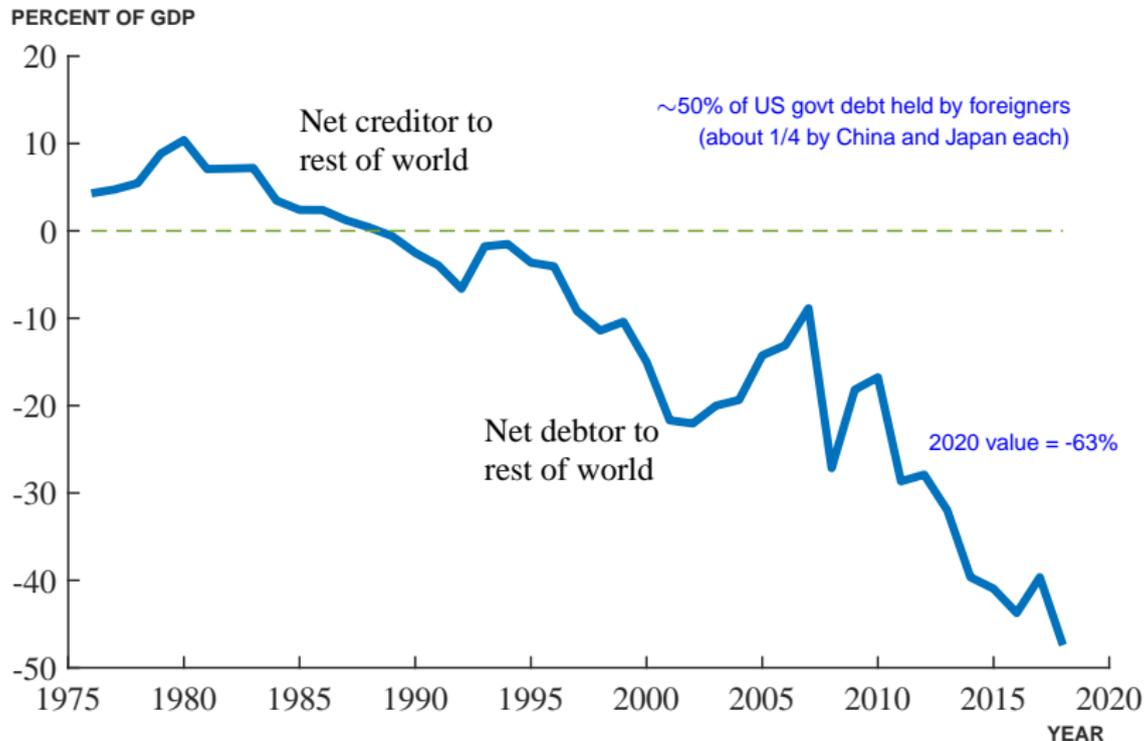
$$\underbrace{(Y - T - C)}_{\text{Private Saving}} + \underbrace{(T - G)}_{\text{Gov't Saving}} + \underbrace{(IM - EX)}_{\text{Foreign Saving}} = I$$

- Let **domestic saving**  $S = \text{Private} + \text{Govt Saving}$ . Then

$$\underbrace{NX}_{\text{Trade Balance}} = \underbrace{S - I}_{\text{Net Capital Outflow}}$$

- Note: The **trade balance** and the **current account balance** are nearly the same thing (current account includes interest payments on foreign debt)

## Net International Investment Position of the United States





## Discussion Question:

Do trade deficits signal serious  
macroeconomic problems?

(Blinder reading)

## Questions for Review

- In what sense does a trade deficit represent borrowing?
- Why do countries trade?
- If one country is better at producing every good than another, will the two countries trade? Why or why not?
- What is comparative advantage?
- What are the costs and benefits of trade?
- To what extent are the U.S. trade deficit and net foreign debt serious economic problems?