

# Trade and Inequality

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# Overview on Trade & Inequality

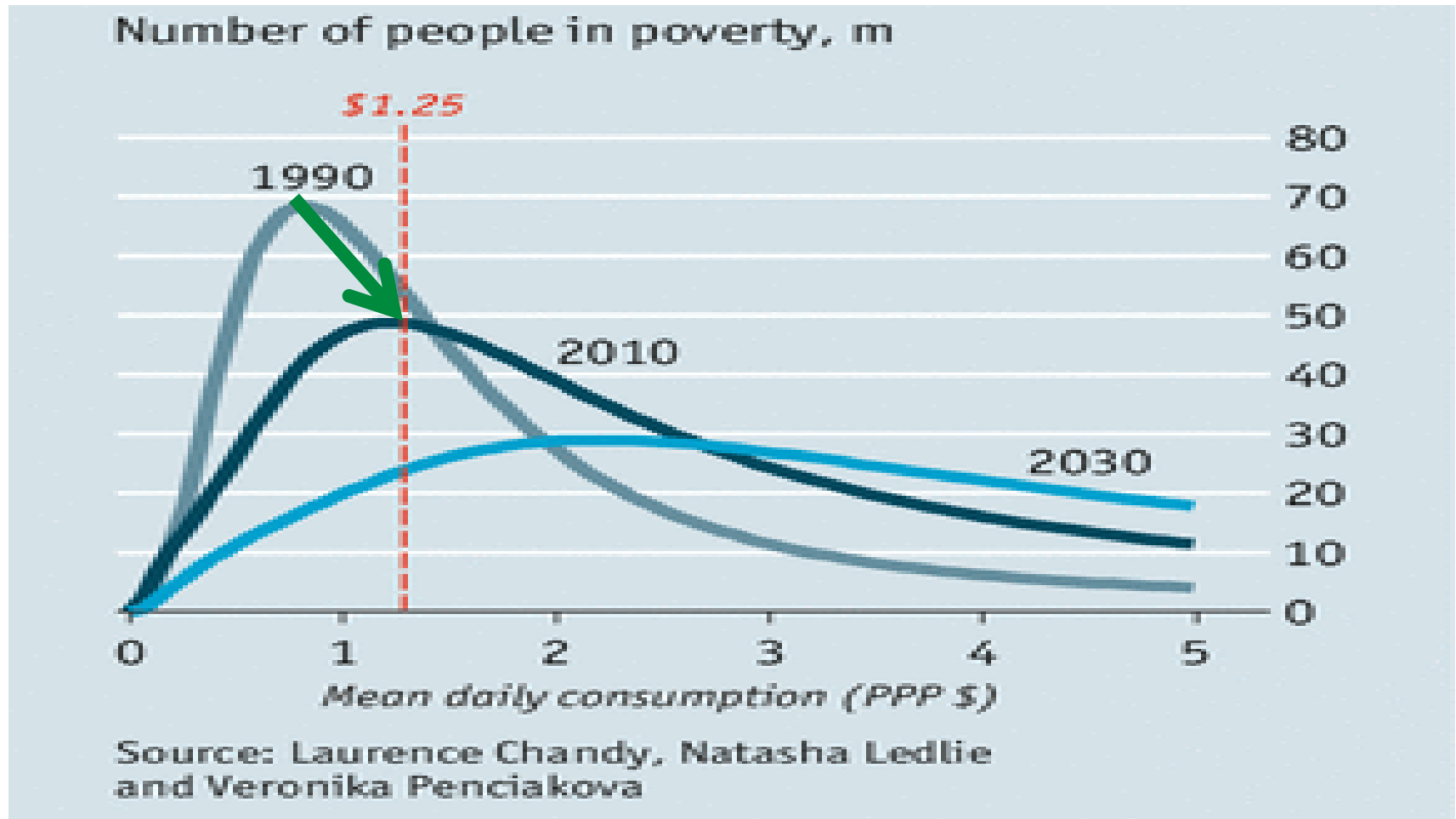
- The connection between trade and inequality received intense interest in this strange presidential election year.
  - Why did Trump's success catch elites so much by surprise?
  - The story: “we hadn't adequately realized how deep was the hardship and anger of those left behind by globalization...”
  - “Trade led to inequality, and inequality led to Trump.”
  - Analogous stories in Europe, e.g., Brexit.
- I will talk
  - first about trade,
  - then about inequality & its causes.

# Trade & GDP

- Widely agreed: trade is good *for economic growth*.
- Theory:  
from David Ricardo to Paul Krugman,  
says that trade allows real income  
to grow via specialization.
- Empirically: many econometric studies.
  - E.g., one estimate: every .01 increase in a country's trade/GDP ratio raises income 3 ½ % (over next 20 years).
- Most Americans seem to agree:
  - Polls show surprisingly high support for trade.
- What about effects of trade on *other* objectives? Inequality? ->



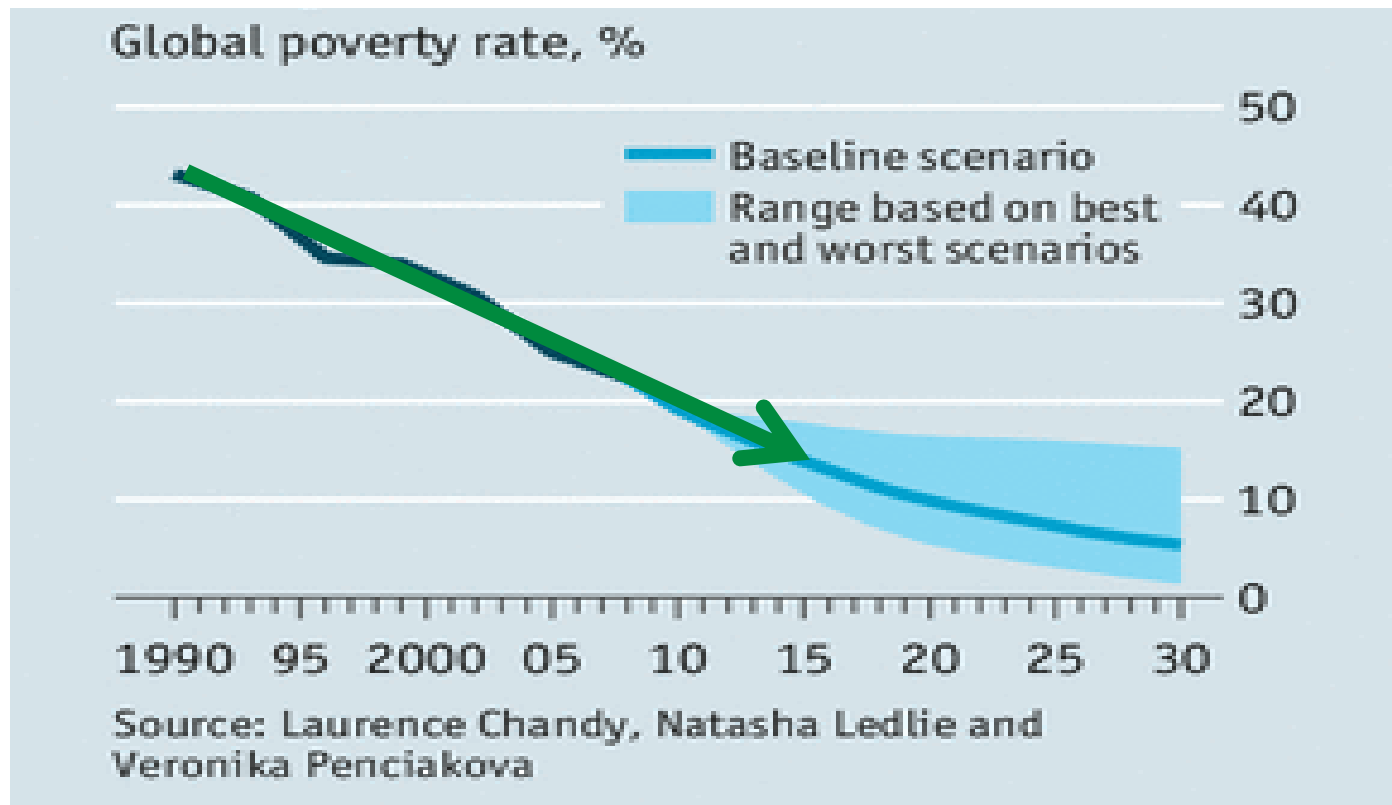
Trade has help shift *global* income distribution upward.



# Global poverty has been cut more than ½ in the last 25 years

In 1990, **43%** of the population of developing countries lived in extreme poverty (then defined as \$1 a day) = **1.9 billion people**.

**By 2010 it was down to 21% = 1.2 billion.**



# Inequality & anti-globalization.

Elections are domestic, of course.

Typical explanation for the surprise Trump nomination:

Globalization

- ⇒ US inequality.
- ⇒ Anger from those left behind
- ⇒ who then support radical changes.

“We should have seen it coming, but were out of touch.”

To summarize my take:

- Inequality has unquestionably risen, esp. in US.
- Trade & immigration probably play roles,
  - along with a long list of other factors.
- I don't see the inequality issue logically leading to Trump.
- There *are* some clear answers to the question: How can we address the wellbeing of workers who have been left behind?

# Needless to say, trade creates both winners & losers.

- So does *every* change.
  - E.g., putting up tariffs would create both winners and losers (many).
- “Pareto superiority” would require that *everyone* wins.

If we economists require that before recommending one policy over another, then we can never make any recommendations. Someone always loses.
- Economists *can* make win-win policy recommendations if we express the distributional consideration in terms of a desired measure of overall inequality.
  - We can approve a policy that, while raising total income, also reduces measures of inequality,
  - lowers the poverty rate,
  - or raises median income.

# Does trade worsen inequality?

- The “Second Welfare Theorem of Economics” suggests free trade increases the size of the pie by enough that the winners could compensate the losers, so that everyone comes out ahead, in theory.
- But, we need to consider, first:  
are the losers from trade concentrated in the lower segments of the income distribution?
- A simple encapsulation includes three effects --
  - (+) Consumption: the opportunity to import at lower prices and with greater variety works to raise real income for all. This helps lower-income families.
  - (-) Imports tend to hurt those in import-competing sectors.
  - (+) Those losses are offset by the gains for exporting sectors.
    - Export jobs pay an estimate 18% more.



# What about NAFTA? Didn't it devastate workers?

- No.
- Listening to claims that NAFTA hurt American workers, one would never guess that the half-decade after it went into effect
  - featured the most job creation in the last 40 years.
- In 1996-2000 GDP growth averaged 4.3%,
  - productivity growth = 2.5%
- Unemployment < 4% by end-2000.
- It's the one period since the 1970s when
  - lower-income workers shared fully in the gains:
    - real compensation/hour rose 2.2%,
  - median family income rose strongly:
    - from \$26,000 in 1993 to \$35,000 in 2000 [in real \$2002],
  - and the poverty rate declined steadily
    - from 33.1% in 1993 to 22.5% in 2000.
- Needless to say, lots of factors underlay those achievements.



# Recent research on job loss in import-competing sectors

- David Autor, David Dorn & Gordon Hanson (2013, 2016) have found evidence that
  - a portion of lost US manufacturing jobs can indeed be associated with imports,
    - especially from China.
  - Employment & income in towns hit by such job losses can stay depressed for a much longer time than some had imagined.



# Rising US inequality:

Since 1980, almost all gains have gone to people at the top.

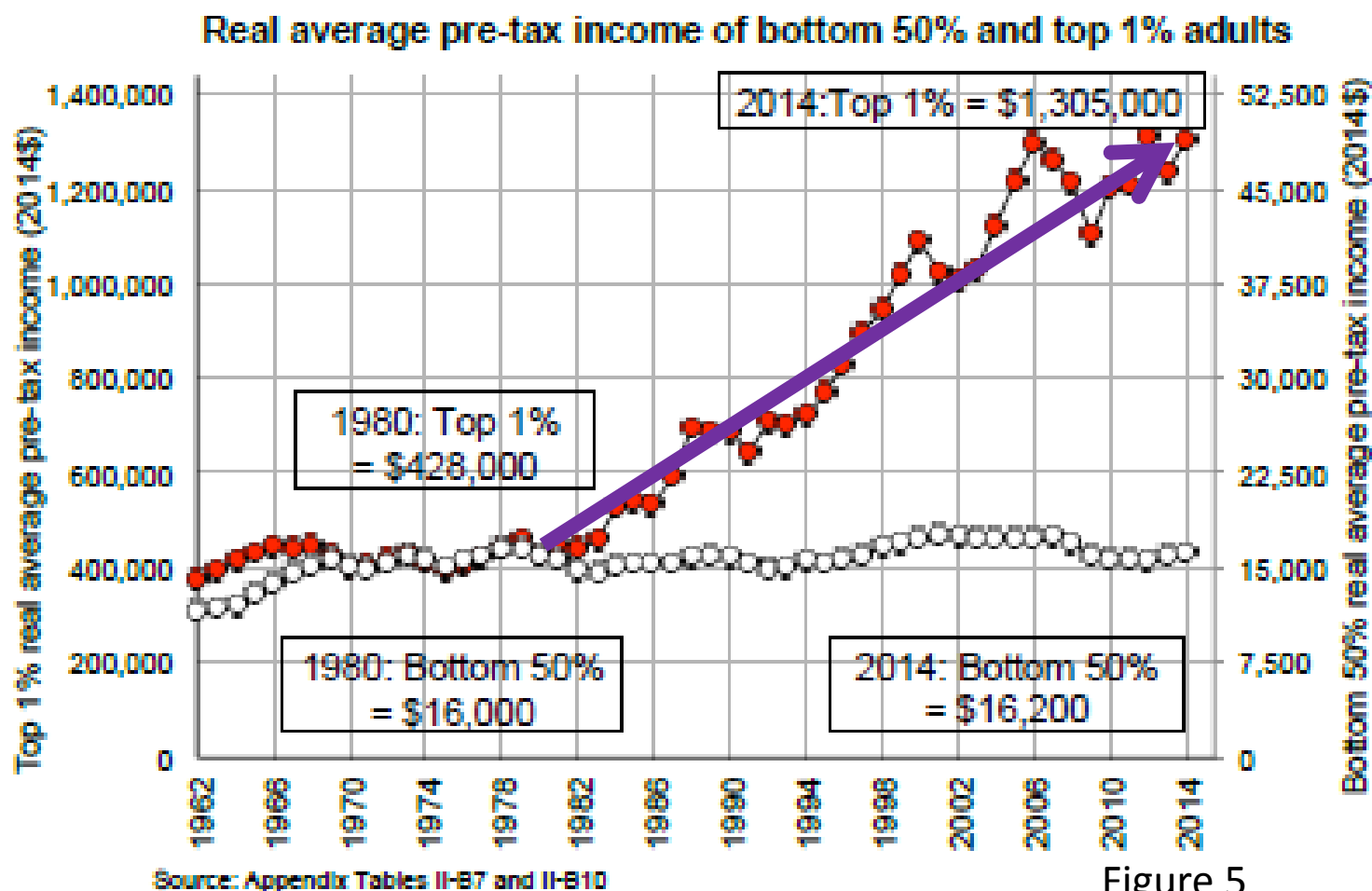
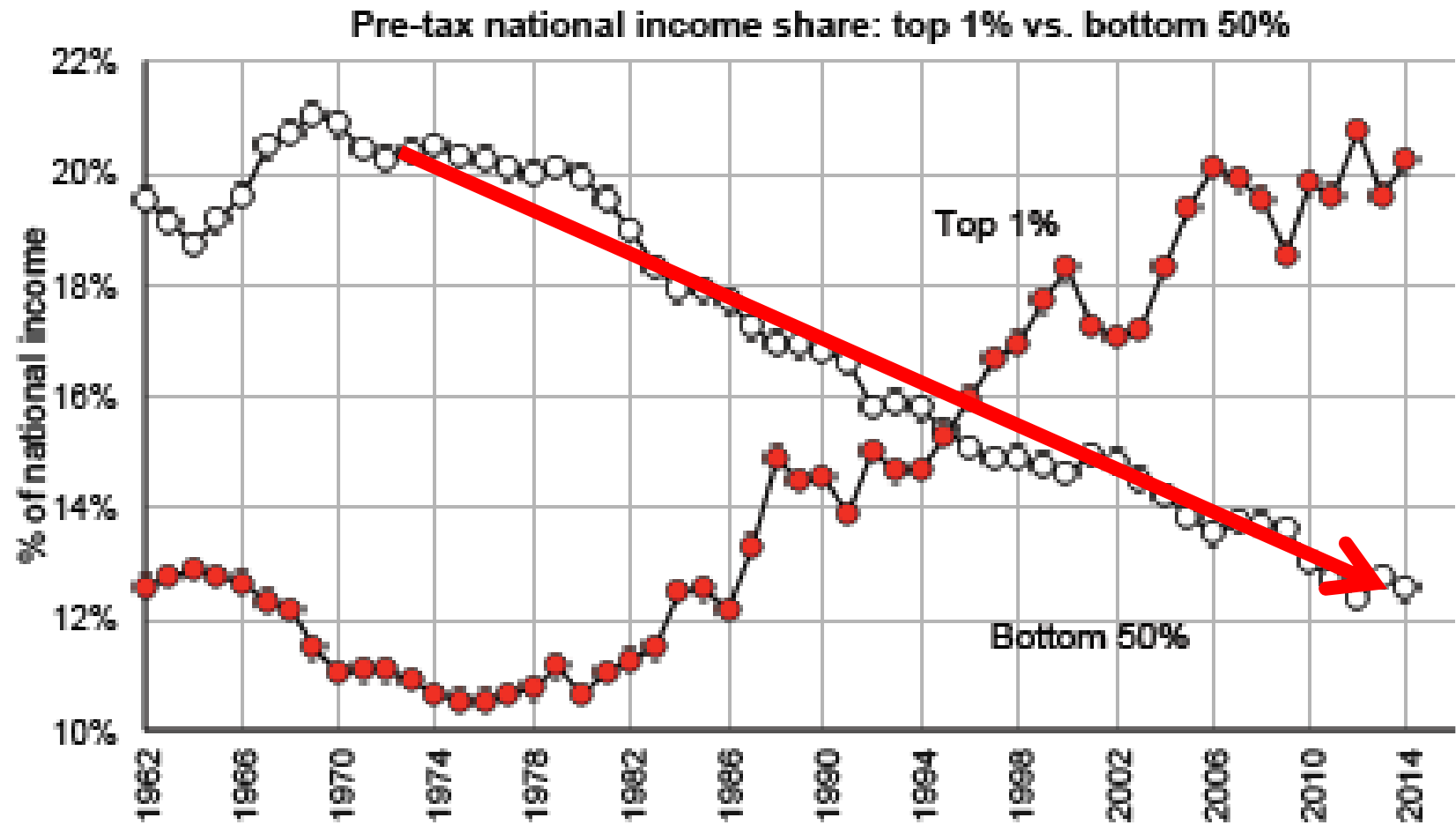


Figure 5

Thomas Piketty, Emmanuel Saez, & Gabriel Zucman, Dec. 2, 2016, "Distributional National Accounts: Methods and Estimates for the United States." <http://gabriel-zucman.eu/files/PSZ2016.pdf>

As a share of national income, the bottom 50% have been losing out since the 1970s.



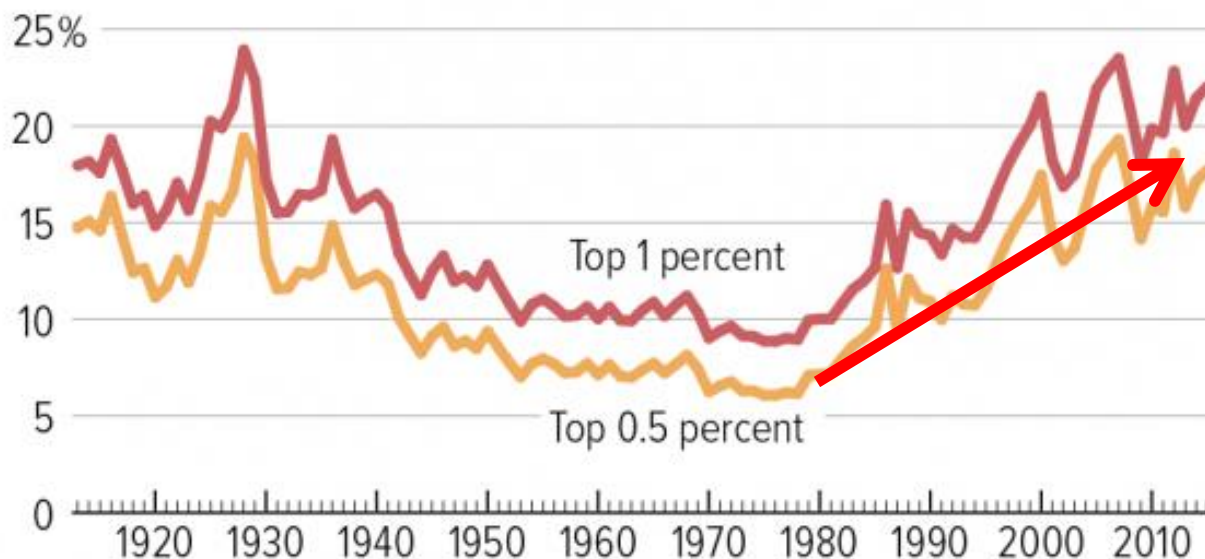
Source: Appendix Table II-B1

Notes: The figure contrasts the evolution of the top 1% vs. the bottom 50%. The top panel plots the top 1% pre-tax income share and the bottom 50% pre-tax income share since 1962. The bottom panel plots the top 1% real average pre-tax income (on the left y-axis) and the bottom 50% real average pre-tax income (on the right x-axis). The unit is the individual adult and incomes within married couples are split equally.

# The share of US income going to the top is now back to what it was in the 1920s.

## Income Concentration at the Top Has Risen Sharply Since the 1970s

Share of total before-tax income flowing to the highest income households (including capital gains), 1913-2015



Source: Emmanuel Saez, based on IRS data

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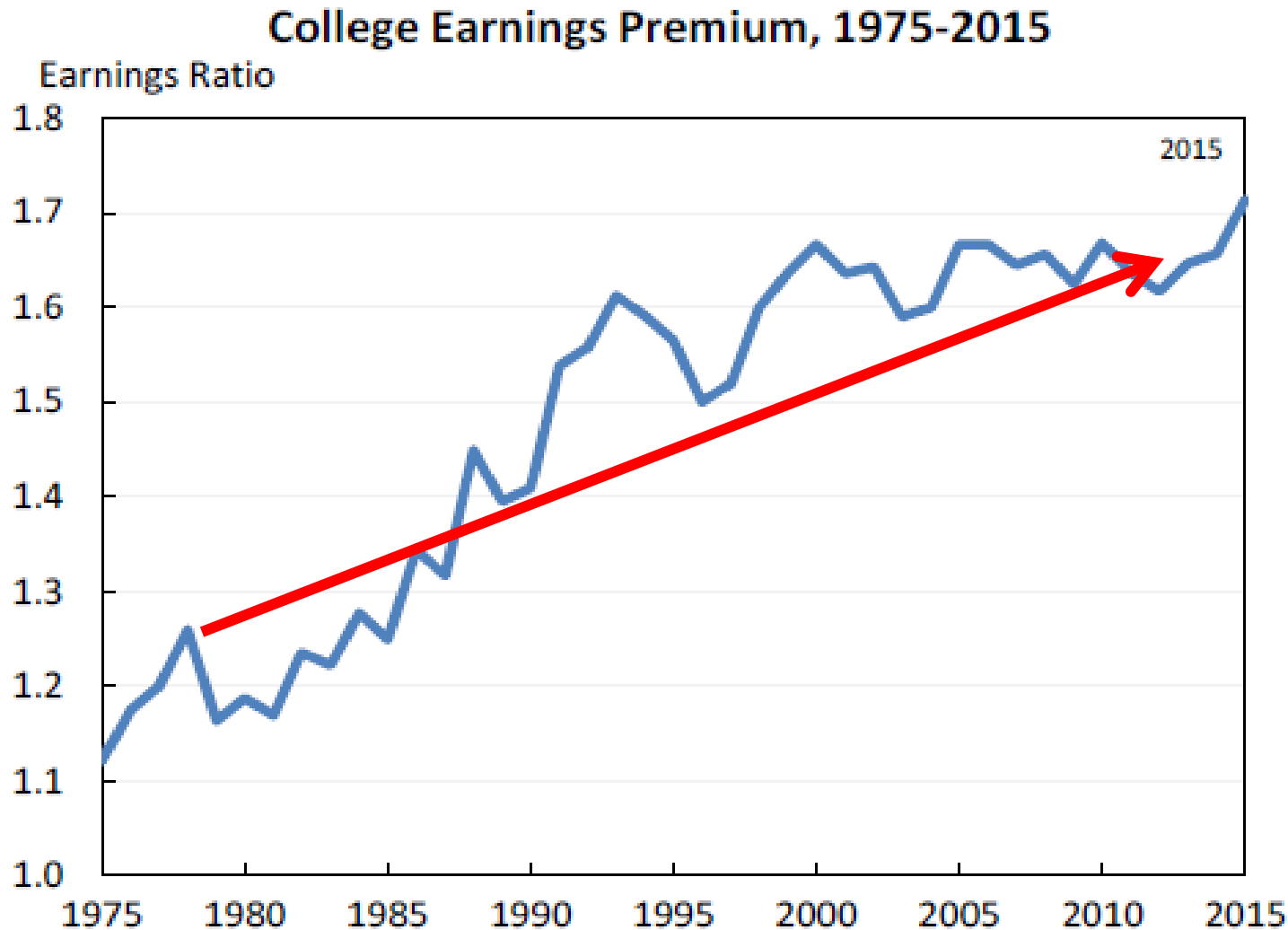
# Why has inequality risen in the US?

1. Trade probably does play a role, alongside other factors:
2. technological change raising demand for skilled workers,
3. outpacing education that raises the supply;
4. “winner-take-all” labor markets,
5. “assortative mating,”
6. reduced corporate competition & higher rents,
7. excessive executive compensation;
8. and Thomas Piketty’s wealth accumulation.

Other suggested factors:

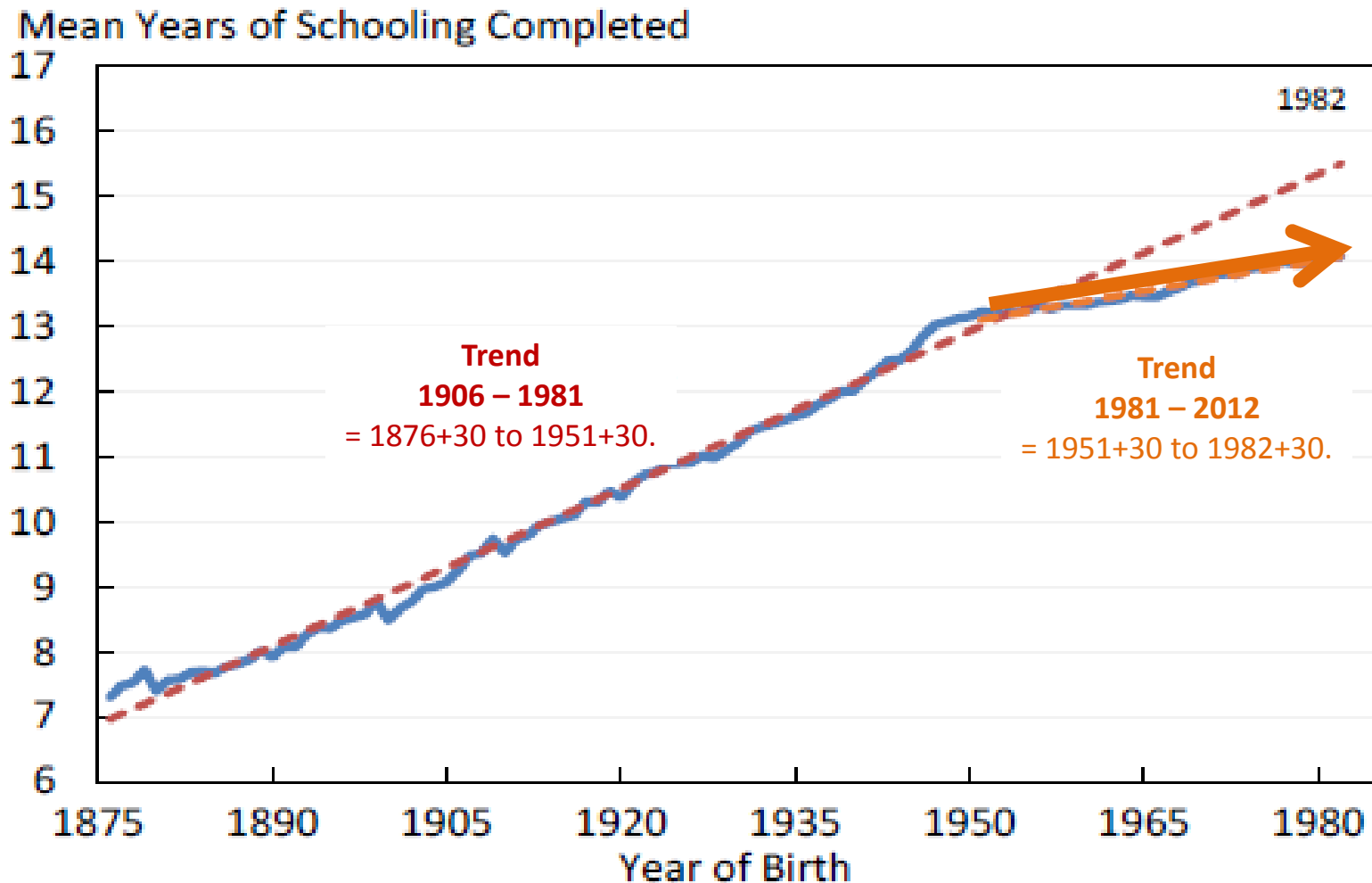
declining roles of unions, minimum wage, & progressive taxation.

## 2. Widening gap between “skilled” & “unskilled” workers, defined by college graduation.



### 3. Trend in years of education slowed during 1981-2012.

Mean Years of Schooling at Age 30, U.S. Native-Born, by Year of Birth, 1876-1982





#### 4. “Winner take all” labor markets



Taylor Swift earned \$170 million last year, making her the world’s highest paid celebrity (according to *Forbes*).

## 5. “Assortative mating”

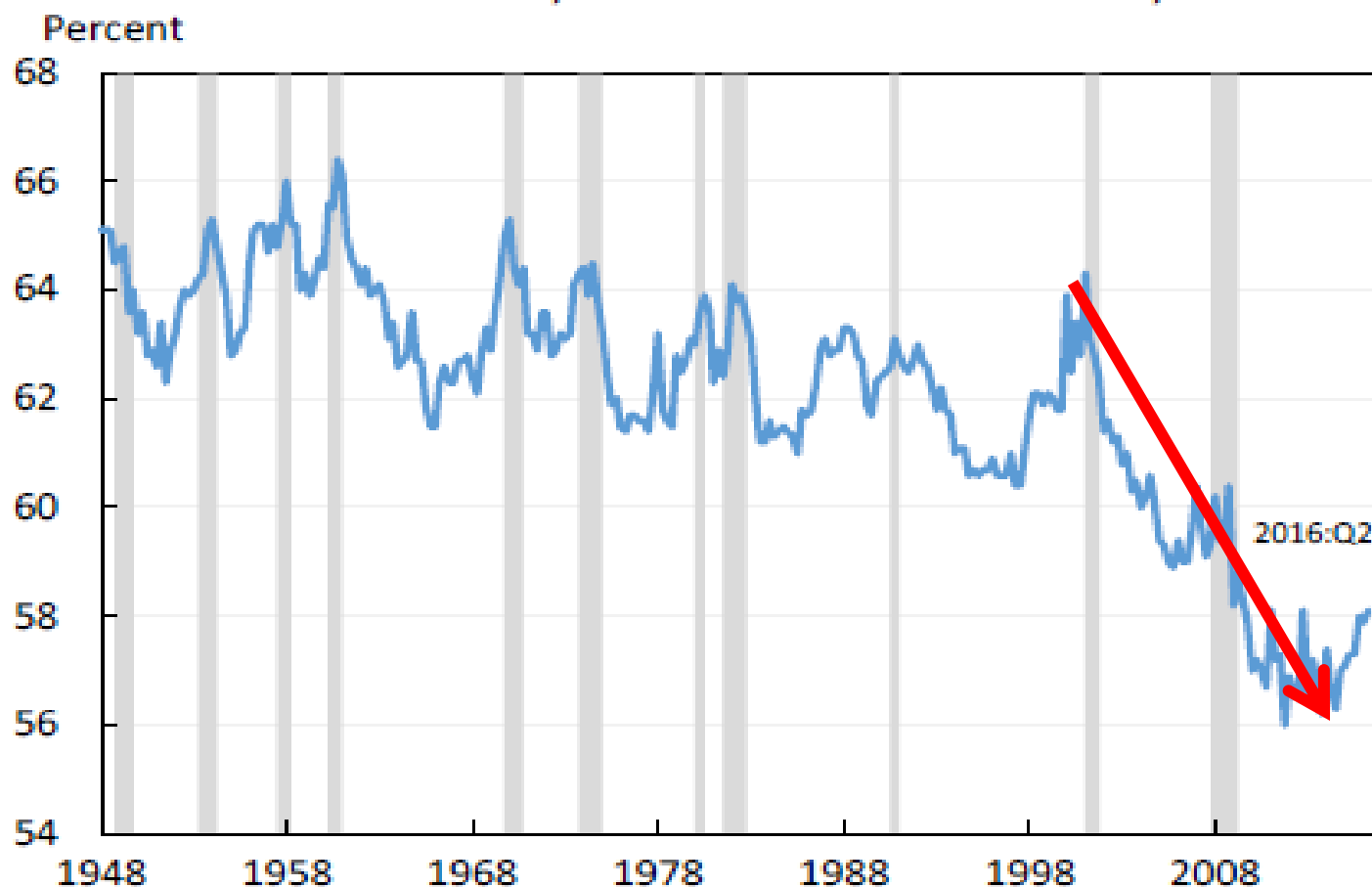
Crudely put: highly educated  
& highly paid male professionals  
used to marry their secretaries,



but now are more likely  
to marry highly educated & (relatively) highly paid women;  
and the couple passes the advantages on to their children.

6. The share of US national income going to labor  
has declined since 2000  
in part due to increased market power of firms, says Furman.

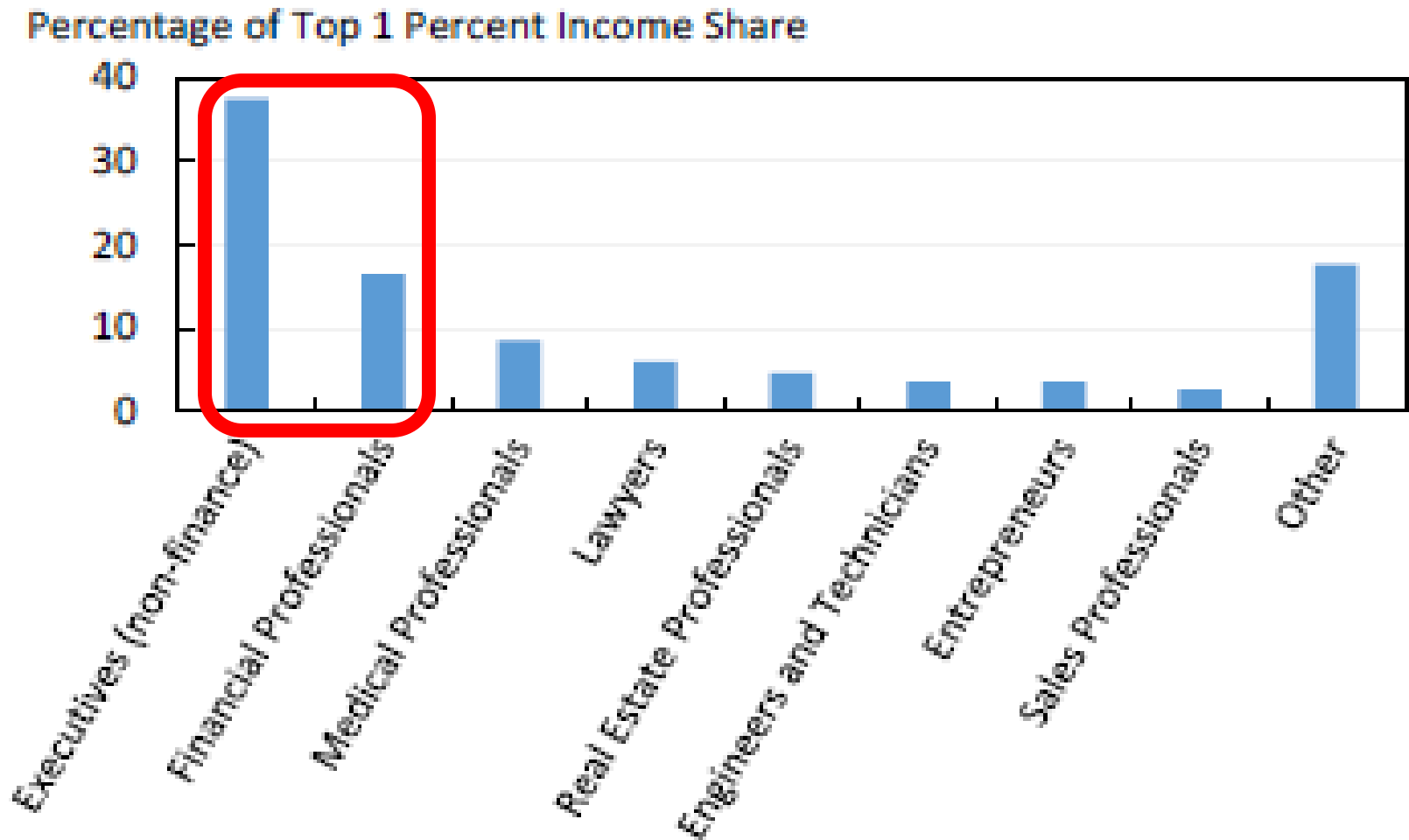
**Labor Share of Income, Nonfarm Business Sector, 1948-2016**



## 7. Excessive compensation?

Many top-1%-ers are executives and/or in finance.

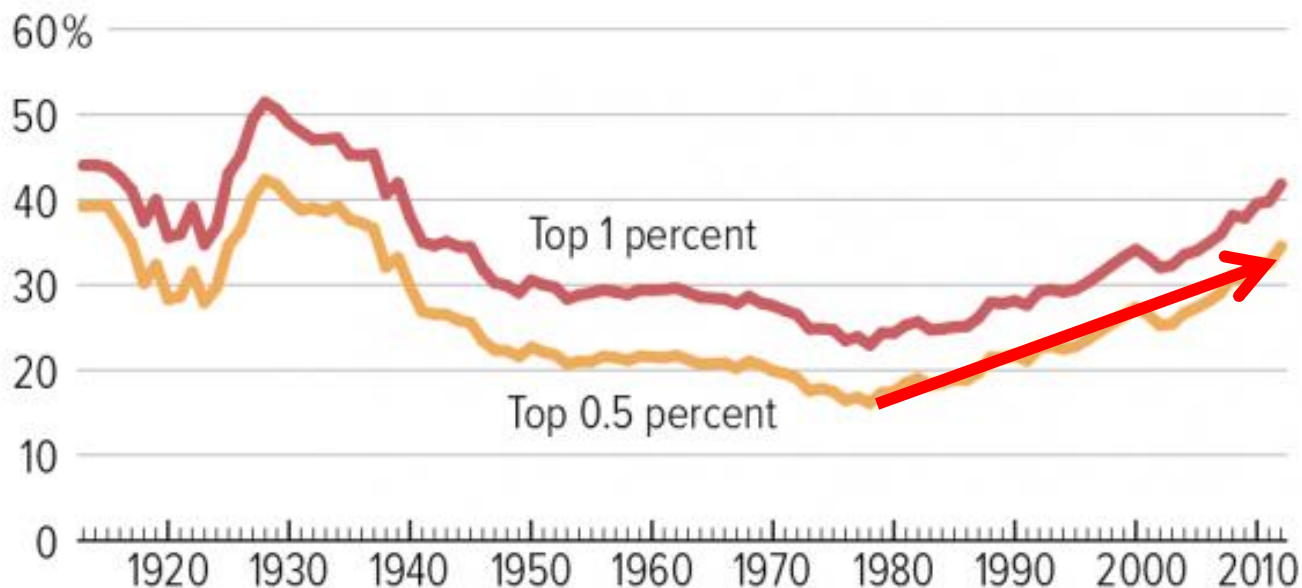
Composition of Top 1 Percent Income Share by Primary Occupation



## 8. Piketty: The share of wealth at the top has also been rising.

### Wealth Concentration Has Been Rising Toward Early 20th Century Levels

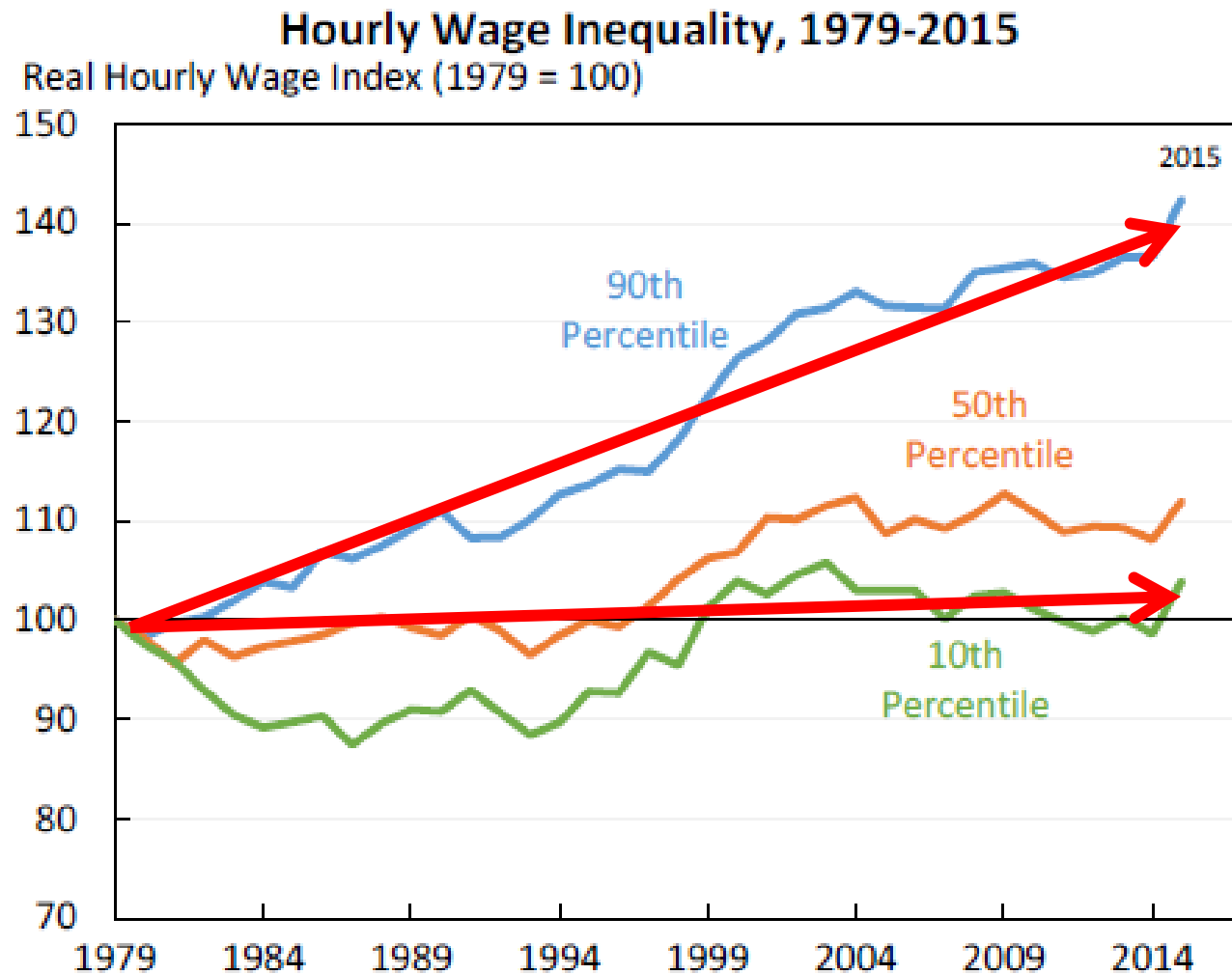
Share of total wealth held by the wealthiest families, 1913-2012



Source: Saez and Zucman, May 2016

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On the other hand, the big increase in inequality has been *within* labor (and within capital).



What weights should we place on each of these 8 factors in explaining increased inequality?

- I don't know.
- Probably all or most of them merit some weight:
- Trade, technology, education, winner-take-all, assortative mating, rents, executive compensation, or Piketty's wealth accumulation.
- Surely one must diagnose the cause before deciding on the corresponding remedy?
- No, I don't think one has to.

# The Second Fundamental Welfare Theorem.

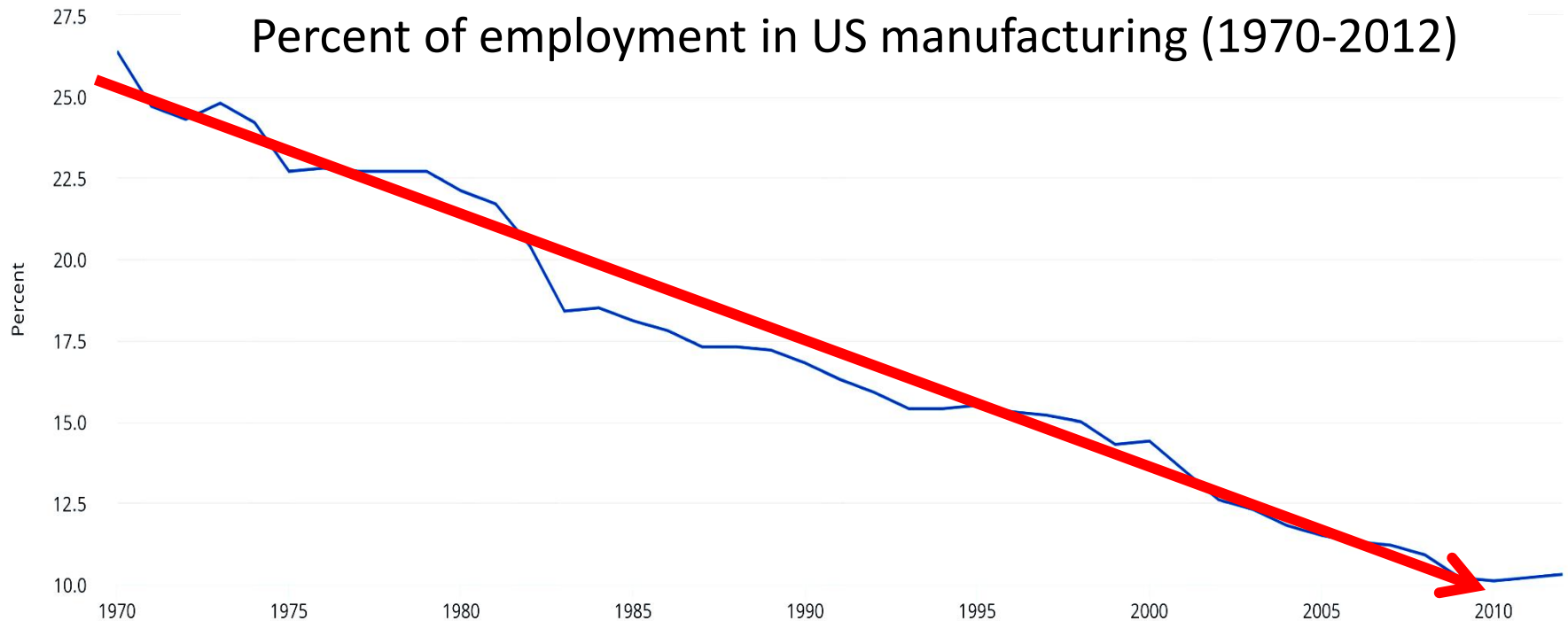
- When individuals are free to engage in trade, the size of the economic pie increases enough that the winners could in theory compensate the losers,
  - in which case everyone would be better off.
- Skeptics of globalization may understand this theorem and yet, reasonably, point out that the compensation in practice tends to remain hypothetical.
- They suggest that we should take the political failure to compensate losers as given, and so try to roll back globalization.
  - But an alternative would be the reverse strategy: take *globalization* as given and instead work on trying to help those left behind.
  - This is the sensible strategy.
    - Why?



- Even leaving aside the negative effects of trade wars on economic growth,
  - and the geopolitical damage,
- nothing a president does could bring the number of manufacturing jobs back up anywhere near the levels of 60 years ago.

We are not going back to 1950,  
when manufacturing jobs were 32% of the national total  
vs. down to 10% by 2010

-- any more than we are going back to 1790  
when farmers were 90% of national employment, vs. 2% today.



Some of those lost jobs were in autos & steel,

- where those northern workers who lacked a college education but were lucky enough to get a job in those two industries could earn a high income.
- After 1960, the number of jobs in sectors like steel fell by ½;
  - while the number of jobs in health care increased 6-fold.
- International trade was one factor that helped put an end to those high-paying jobs (along with productivity growth and relocation from the north to the south)
  - while improving the reliability, fuel efficiency and affordability of cars for all of us
  - not just importing autos,
  - but also making US autos competitive again.
- Regardless, it is hard to see how we could go back.

The most effective policies to help those left behind  
 (“to compensate the losers”):

- The program to help specifically those losing their jobs due to trade is Trade Adjustment Assistance.
  - But why help only the small number of workers who have identifiably lost their jobs due to trade agreements?
  - **Wouldn't it be better to help those who have been left behind regardless if the cause is trade, technology, or something else?**
    - and to do it in ways that still reward work.

Sensible policies to help those left behind include:

- Wage insurance;
- More progressive income tax system
  - including an expanded Earned Income Tax Credit,
  - And more progressive payroll tax rates too;
- Universal health insurance.
- Universal high-quality pre-school education;
- infrastructure investment spending;
- Financial regulation, such as Dodd-Frank.

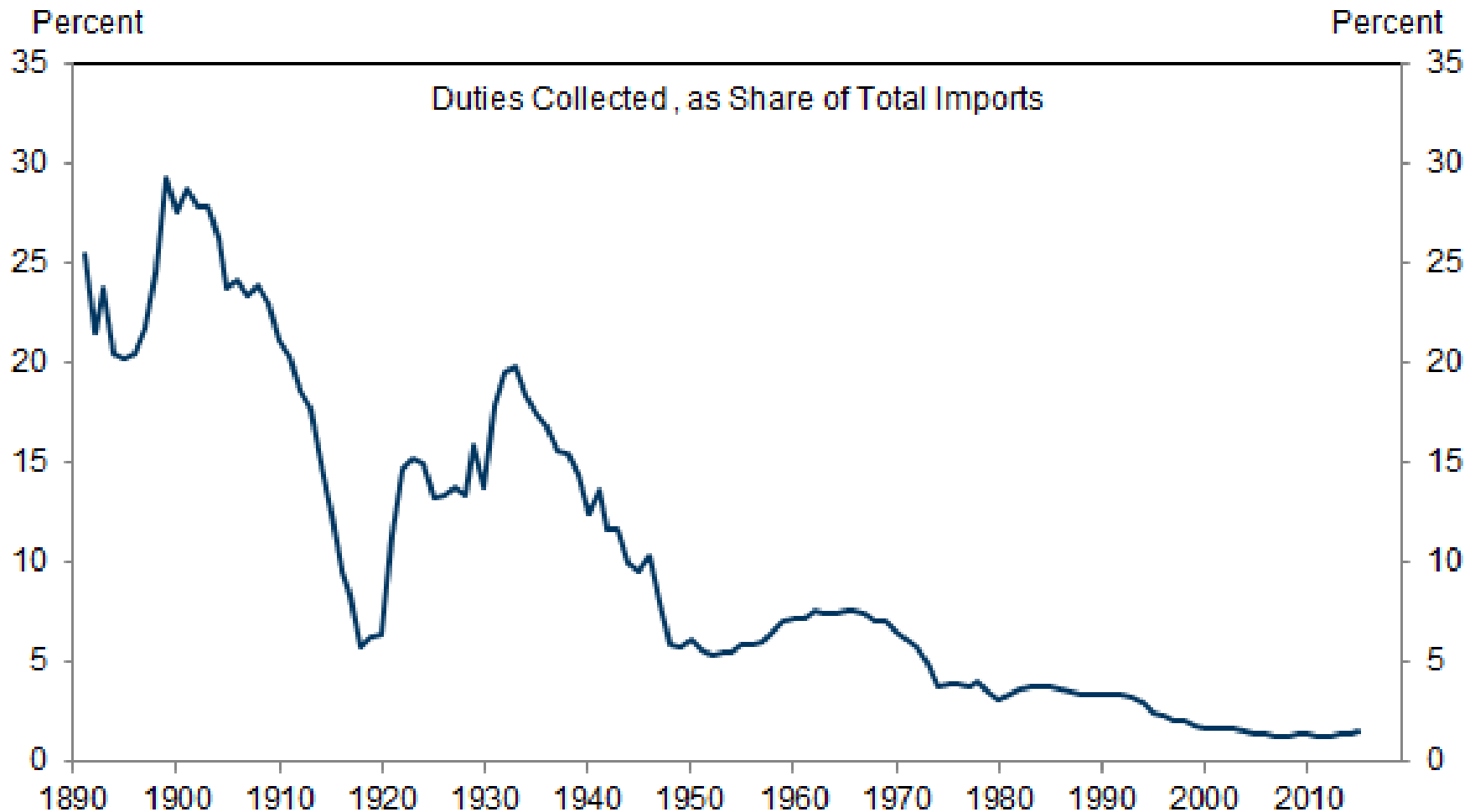
Some politicians oppose these measures,

- arguing that government overreach impedes growth.

# Appendices

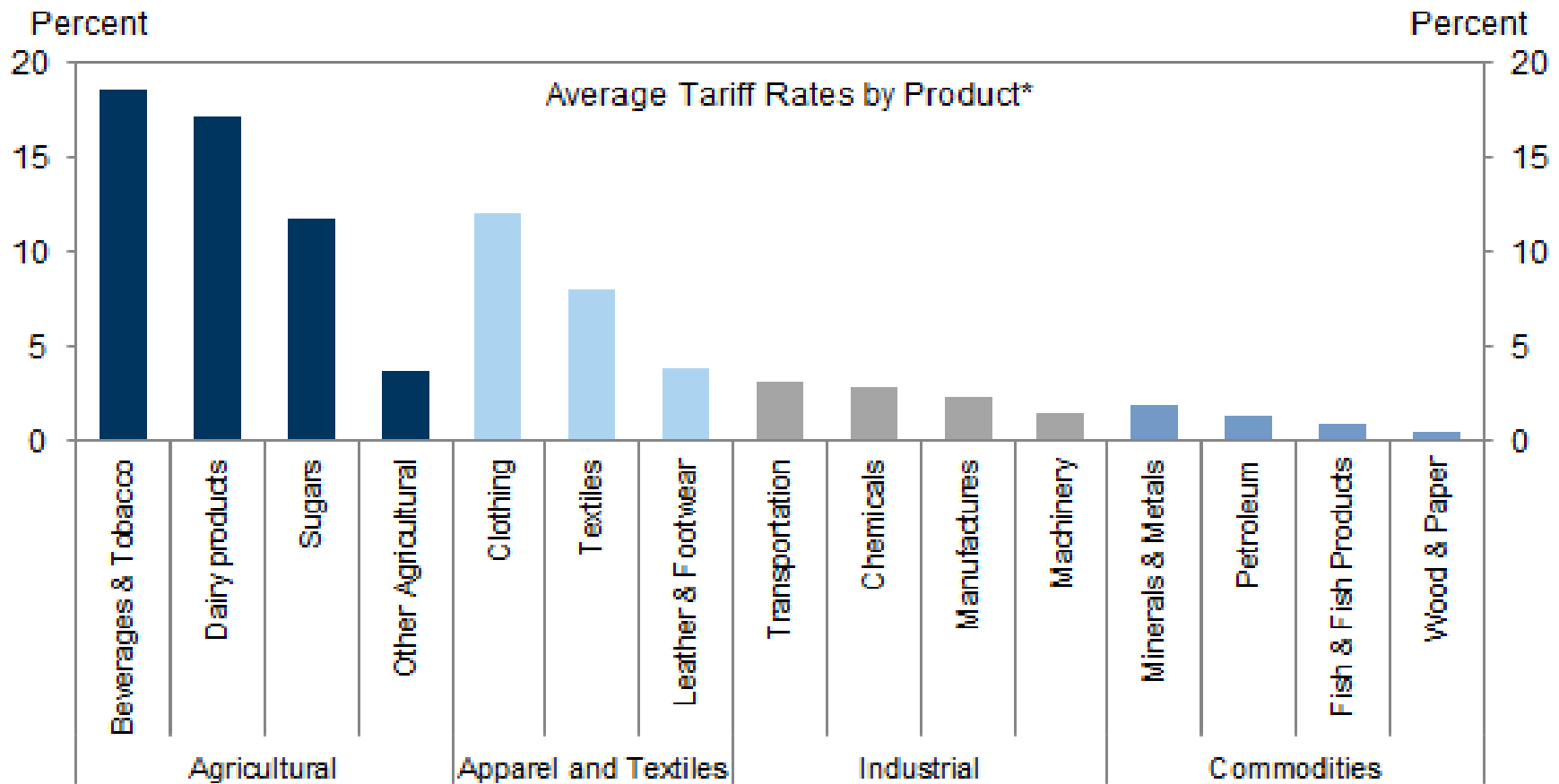
- Appendix 1: A century of US trade liberalization
  - Job losses in manufacturing
- Appendix 2: Trade theory
- Appendix 3: Opinion polls on trade
- Appendix 4: Trade and the environment
- Appendix 5: Improved global income distribution.
- Appendix 6: For each of 8 inequality diagnoses, one might think of a targeted policy response.
- Appendix 7: The outlook for the US trade deficit.

# Appendix 1: US Import Tariff Rates have Declined to Historical Lows



Data Source: US International Trade Commission

# US Tariffs are Low Except On Agriculture & Apparel



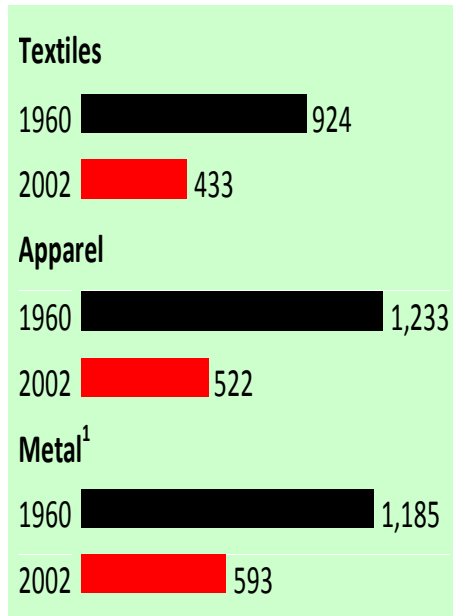
\*Average most-favored-nations tariff rates data as of 2014

Source: World Trade Organization

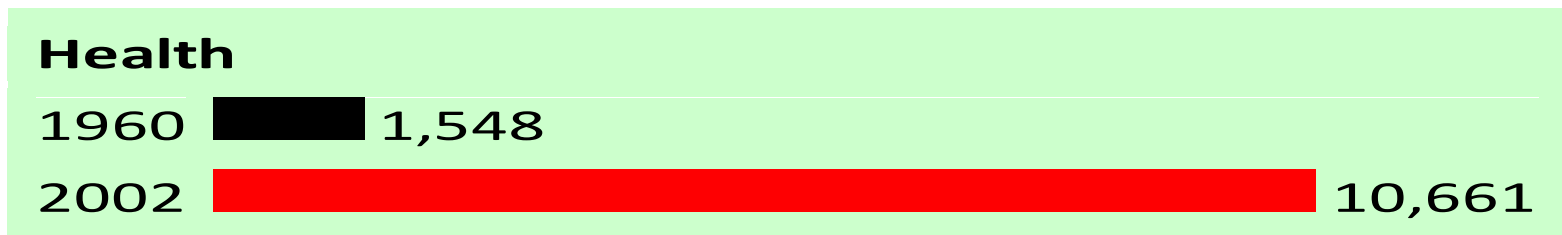


# The evolving employment mix

Jobs in clothing and steel fell by half



while the number of jobs in health care increased six-fold:



Some of the decline in US manufacturing jobs can indeed be associated with imports, especially from China.

according to David Autor, David Dorn and Gordon Hanson,

[The China shock: Learning from labour market adjustment to large changes in trade](#)", NBER WP 21906, 2016. And "[The China syndrome: Local labour market effects of import competition in the United States](#)", *American Economic Review*, 2013.

## Trader woes

### United States

*Manufacturing  
As % of total  
employment*

18

15

12

9

6

3

0

*Imports  
from China  
As % of GDP*

3.0

2.5

2.0

1.5

1.0

0.5

0

1990 95 2000 05 10 15\*

Sources: US Census Bureau; US Bureau of Labour Statistics; IMF

### Current-account balance, \$bn

China

United States

600

400

200

0

-200

-400

-600

-800

-1,000

2000

05

10

15\*

\* Estimate

## Appendix 2: Trade theory

- Throughout the history of international economics, theory has generally said that trade helps raise real national income:
  - classical comparative advantage (Ricardo);
  - and modern theories of trade
    - based on imperfect competition (Krugman)
    - & endogenous productivity (Melitz).

# What does trade theory say about income distribution?

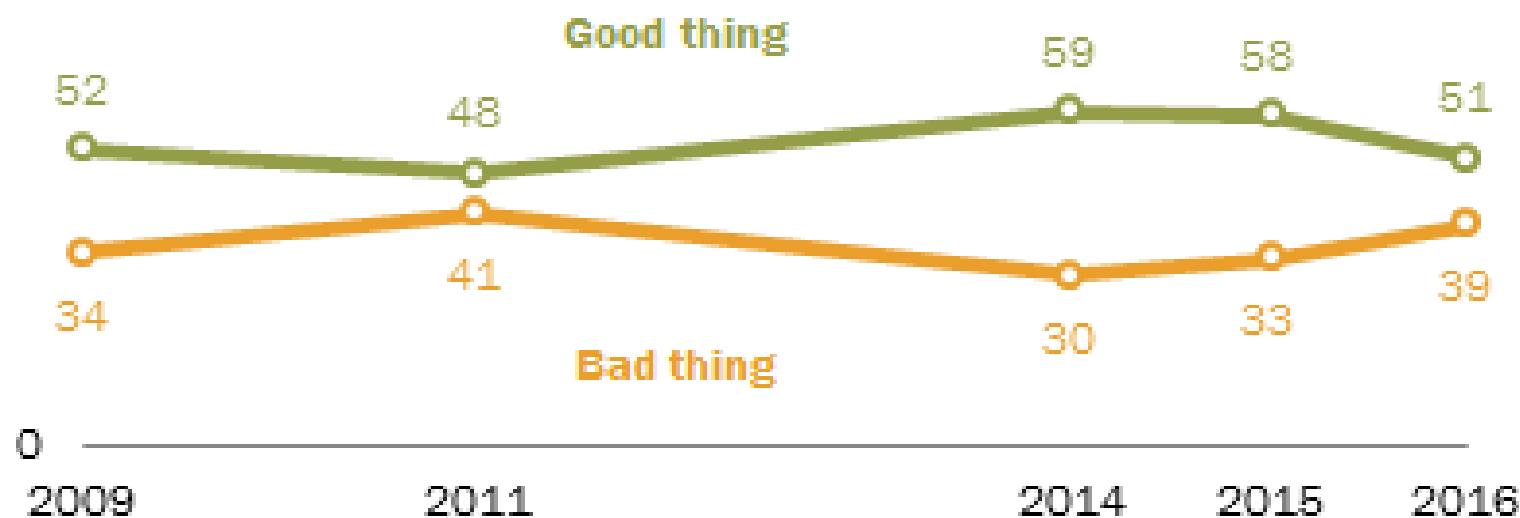
- Ironically, the trade theory that dominated academic research during the 1950s-70s was Heckscher-Ohlin-Samuelson,
- which gives solidly respectable grounds for fearing trade would hurt American workers even in absolute terms.
- It divides the population into “Unskilled” workers vs. others (owners of capital or land, or skilled workers)
  - The Stolper-Samuelson theorem specifically predicts that workers in a capital-abundant country will lose from trade (wages fall), even though total real national income goes up.
- The H-O-S theory does not include the advances in trade theory since 1980.
- Still, its conclusions are very suggestive,
  - particularly regarding trade with low-income countries.

## Appendix 3: Polls tend to show Americans support trade

### Americans continue to favor free trade agreements

*Free trade agreements between the U.S. and other countries have been a \_\_\_ for the United States*

100 %

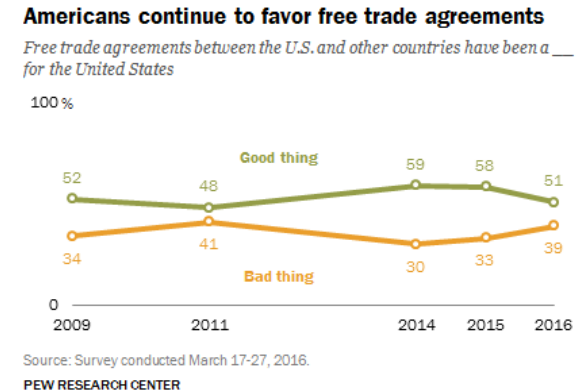


Source: Survey conducted March 17-27, 2016.

PEW RESEARCH CENTER

# Polls tend to show Americans support trade

- A [survey last month](#) by the nonpartisan Pew Research Center found
  - Americans by 50 to 42 % said trade agreements had been “a good thing” for the US.
- July [Washington Post-ABC News poll](#). Asked if they wanted the next president to support trade agreements or oppose them,
  - 75 % of respondents said they wanted a supporter
  - Vs. 17 percent favored an opponent.
- A [Gallup poll](#) early this year found that
  - 58 percent of Americans viewed trade as an economic opportunity,
  - 34 percent as a threat.
- Similarly, in [a July poll for NBC News](#),
  - 55 % of registered voters agreed with a statement that trade was good “because it opens up new markets and we cannot avoid the fact that it is a global economy,”
  - while 38 % agreed trade was bad “because it has hurt manufacturing and other key industries.”





## Appendix 4: Trade can have either positive or negative effects on the environment.

- Example of negative effects:
  - “Race to the bottom” in environmental regulation among national governments pursuing of cost-competitiveness.
- Example of positive effects:
  - Trade in environmental goods & services.
    - US ended 1980s tariffs & quotas on fuel-efficient Japanese autos, benefiting both consumer pocketbooks & air quality.
    - Almost  $\frac{3}{4}$  of EU trade-remedy barriers currently target imports of products used for renewable energy! (Kasteng, 2013; Wu, 2014)
    - AD remedies currently block trade in solar power inputs:
      - US has AD tariffs on imports of Chinese solar panels (2012, 2014, 2015).
      - China has them against imports of polysilicon from US & EU (2012 & 2016);
      - EU has penalties on imports of Chinese solar glass & panels (2013, 2015).
      - They should be dropped, either by negotiation or unilaterally.



Which tend to dominate in practice,  
positive or negative effects of trade on the environment?

Econometric estimates depend on environmental criterion.

- For  $\text{SO}_2$ 
  - Trade seems to be beneficial
    - “Environmental Kuznets Curve” =>  
at higher incomes, people want to clean the environment.
- For  $\text{CO}_2$ 
  - Even at high levels of income, trade continues to hurt.
    - The “freerider” problem => popular desire for environmental quality cannot be enacted at the national level, absent an effective multilateral treaty à la Paris Agreement.

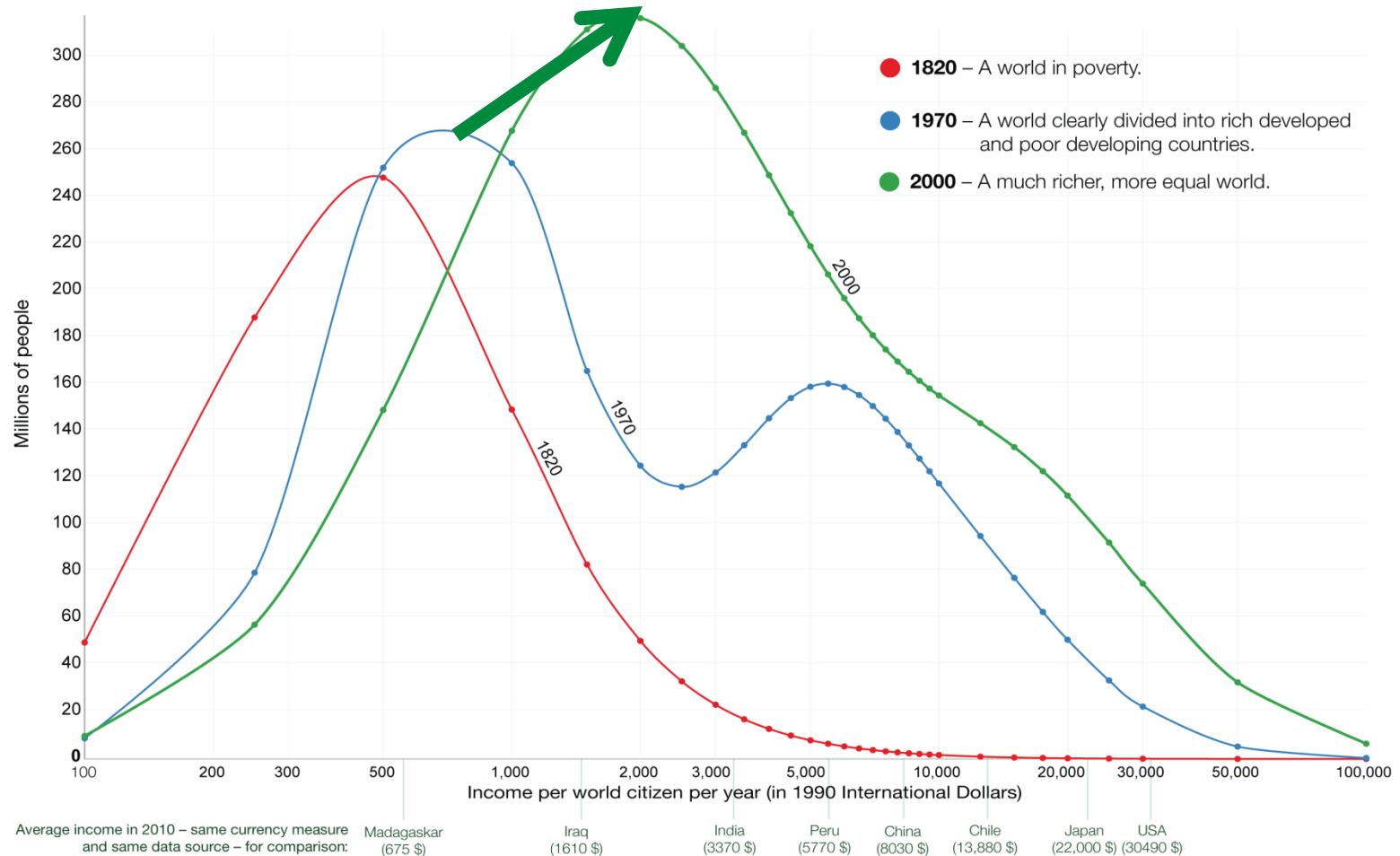


# Appendix 5: *Global* inequality fell sharply 1970-2000.



## The World Income Distribution in 1820, 1970 and 2000 – by Max Roser

The yearly income of all world citizens is measured in International Dollars. This is a currency that would buy a comparable amount of goods and services a U.S. dollar would buy in the United States in 1990. Therefore incomes are comparable across countries and across time.



Data source: [www.Clio-Infra.eu](http://www.Clio-Infra.eu) via van Zanden et al. (2014) – *How Was Life?*, OECD.

The interactive data visualisation is available at [OurWorldinData.org](http://OurWorldinData.org). There you find the raw data and more visualisations on this topic.

<https://ourworldindata.org/global-economic-inequality>

Licensed under CC-BY-SA by the author Max Roser.

Over the last 25 years, poverty has fallen especially rapidly in such countries as China, Indonesia & India

Appendix 6: For each of the 9 inequality diagnoses, one might think of a targeted policy response:

**1. Trade**

- Trade Adjustment Assistance or, better yet, wage insurance.

**2. Technology and 3. education**

- Make college more accessible to lower-income students.

**4. “Winner-take-all” labor markets.**

- An rise in income taxes & payroll taxes for the upper 0.1%.

**5. “Assortative mating”**

- Education again, especially universal pre-school.

...

For each of the 9 inequality diagnoses, a targeted policy response, continued:

...

**6. Reduced corporate competition** and increased monopoly rents

- More aggressive anti-trust action.

**7. Executive compensation, especially in finance**

- Reforms such as “say on pay,” separating the function of CEO & Chairman of the Board, “claw-back provisions,” and so on;
- Continued financial reform, begun under Dodd-Frank
  - e.g., risk-tax on large financial institutions.
- Higher tax rates on the upper 0.1% and, very specifically, eliminating the carried-interest deduction.

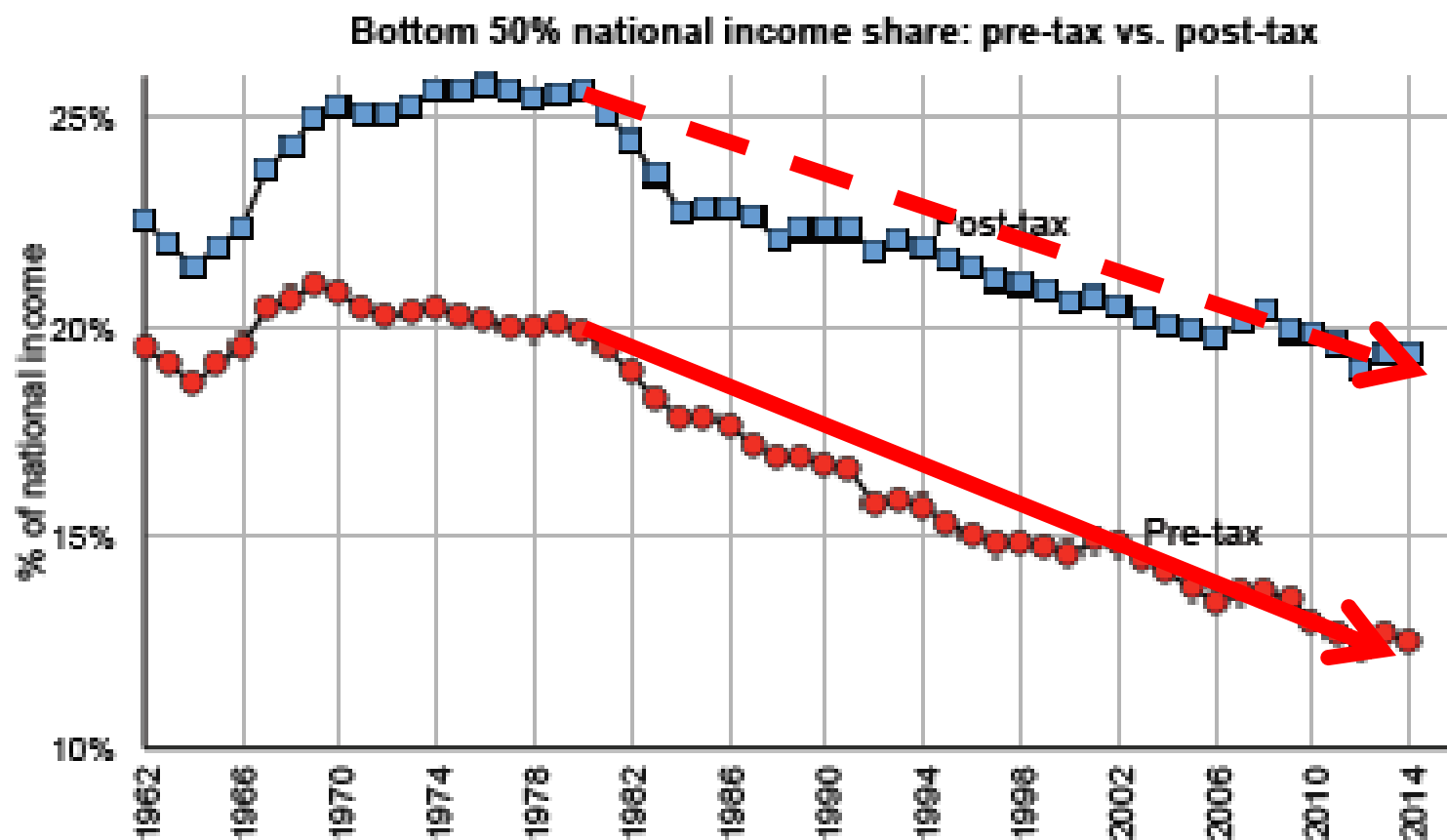
**8. Piketty’s wealth accumulation:**

- Inheritance tax, at least on estates above \$5 million.

**9. Less progressive income tax since 1981.**

- Could reverse that.

## 9. Taxes & transfers have done a bit to narrow the income decline of the bottom 50% (but not as much as in other countries).



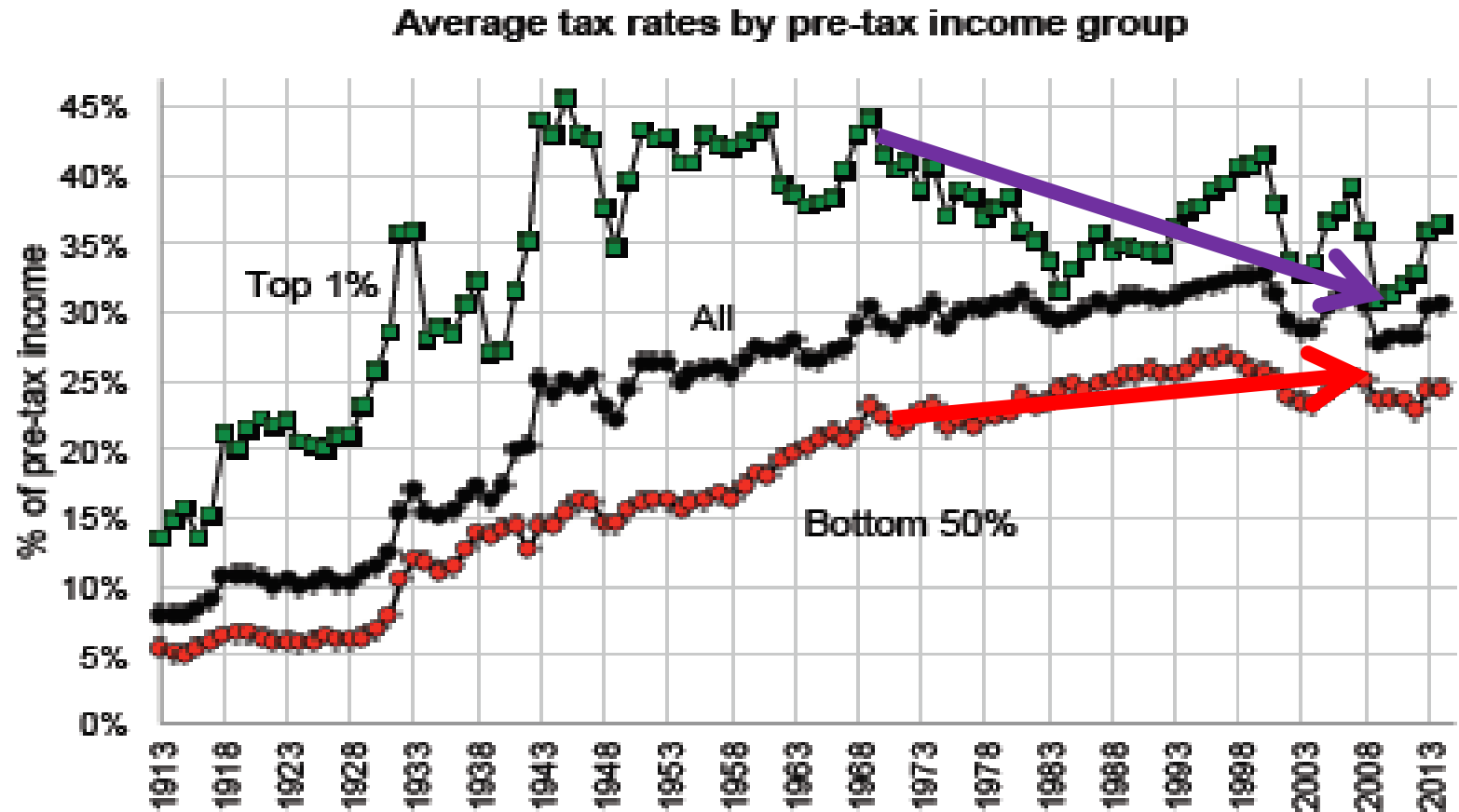
Source: Appendix Tables II-B1 and II-C1

Piketty, Saez, & Zucman, Dec. 2016, "Distributional National

Accounts: Methods and Estimates for the United States."

<http://gabriel-zucman.eu/files/PSZ2016.pdf>

Tax rates for the upper 1% fell after 1943-70,  
and for the bottom 50% rose.



Source: Appendix Table II-G1.

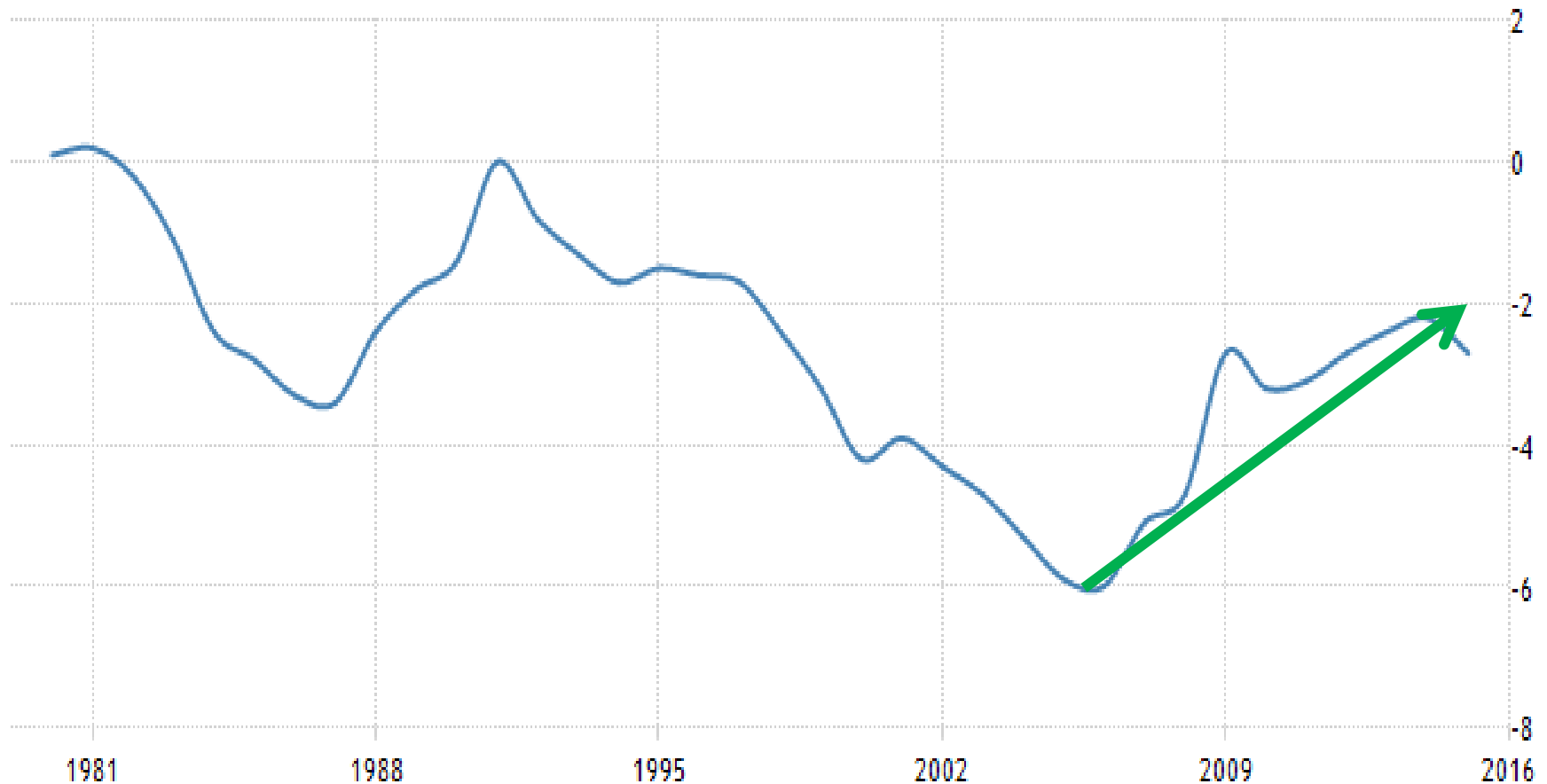
Piketty, Saez, & Zucman, 2016 Fig. 10, p.48. Notes: The top panel depicts the macroeconomic tax rate (total taxes to national income), and the average tax rate of the top 1% and bottom 50% pre-tax income earners, with income equally split among spouses. Taxes include all forms of taxes at the federal, state, and local level. Tax rates are expressed as a fraction of pre-tax income. 45

## Appendix 7: Outlook for the US trade balance

- Little-known fact: The US trade deficit has been narrowing for the last 10 years as a share of GDP
  - [See graph.]
- Mr. Trump's policies are likely to put the trade deficit back on a deteriorating path,
  - even if he doesn't stop China from intervening in the foreign exchange market.

The US trade deficit as a share of GDP has narrowed over the last ten years.

US CURRENT ACCOUNT TO GDP



Mr. Trump's policies are likely to set the trade deficit back on a deteriorating path.

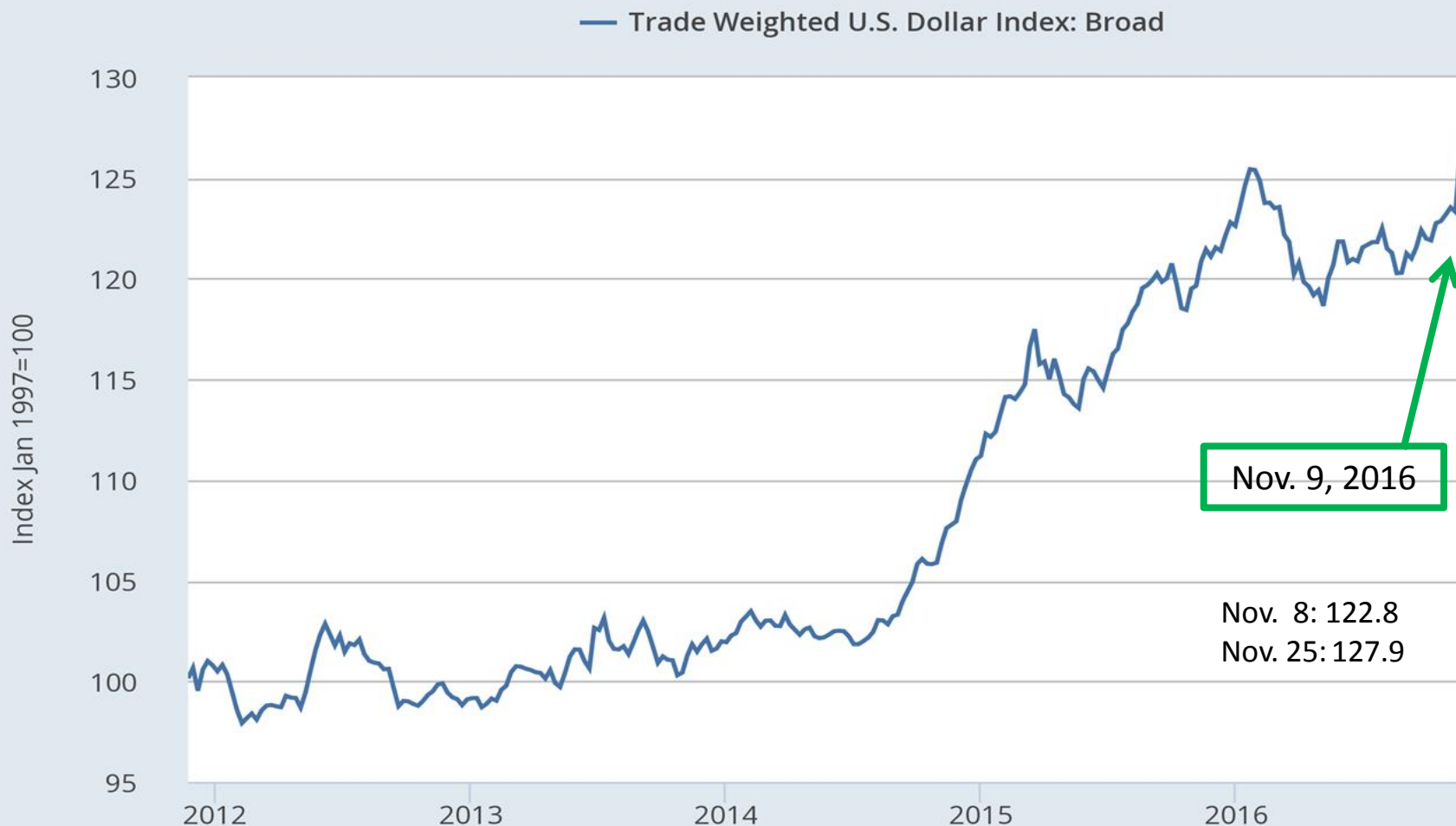
- Plans for fiscal expansion:
  - massive tax cuts
  - and spending increases
    - including military and infrastructure investment.
- It is hard to predict the carryover from campaign statements to actual policies.
  - But Congress is likely to support this sort of fiscal expansion.
  - It would repeat what Ronald Reagan and George W. Bush did.
- The budget deficit would reduce national savings, which would worsen the current account deficit.
  - An example of the “twin deficits” we saw under Reagan & Bush.



# What causal channel would widen the trade deficit?

- Fiscal expansion would put upward pressure on interest rates, especially since we are already essentially at full employment.
  - The Fed had already been expected to raise interest rates Dec. 14.
  - Recent developments augur more interest rate hikes in 2017 & 2018.
  - The new Administration will probably oppose the increases
    - notwithstanding that the candidate has attacked the Fed for keeping interest rates too low.
    - One hopes the Fed's independence will hold, as it did under Volcker.
- That will also put upward pressure on the dollar:
  - Because higher interest rates attract a capital inflow, as in the classic Mundell-Fleming model ( $BD \uparrow \Rightarrow NS \downarrow \Rightarrow i \text{ rate } \uparrow \Rightarrow \$ \uparrow$ )
  - Mr. Trump is doing more to depreciate other currencies against the \$ than currency manipulation does.
- Indeed the increases in US interest rates and the value of the dollar are already underway, ever since the election.  
[See graph.]

After the election the dollar appreciated  
against a broad set of currencies.



Source: Board of Governors of the Federal Reserve System (US)

<https://fred.stlouisfed.org/series/TWEXB>

## Appendix 8: The argument for TPP

- As with most previous trade agreements, the net economic effect is positive, on both sides.
- Specific examples of American sectors that are likely to gain exports are in:
  - Agriculture
    - dairy to Canada, poultry to Vietnam; beef, pork, soy & wine to Japan.
  - Services – engineering, education, software, express delivery services...
  - Manufactures – ICT hardware (& autos, machinery...)

# Overview of other aspects of TPP

- **TPP differs from past agreements**, as both supporters & detractors point out.
  - So-called “deep integration
  - Most prominently, it addresses:
    - some areas of particular concern to the left, such as
      - **the environment**
      - **and labor rights**
    - and some areas of particular concern to the right, such as
      - **IPR**
      - **and investor-state dispute settlement.**
  - Of course TPP is politically unpopular,
    - in part, because many workers feel left behind by modern trends
      - a valid point that we should discuss further.
  - But, few critics know what is actually in the agreement.

# Environmental (Chapter 20)

- Steps to help implement at the national level bans on **trade in endangered wildlife**
  - under CITES (Conventn. On Int. Trade in Endangered Species)
  - but insufficiently enforced until now.
  - E.g., rhinos, elephants, tropical birds, and rare reptiles.
- Steps to protect the ocean environment from **ship pollution**.
- **& to limit subsidies for fishing fleets**,
  - which subsidize depletion of tuna, & swordfish...
- For the 1<sup>st</sup> time in a regional agreement, these provisions are **subject to a dispute settlement process backed up by threat of trade penalties**.

## Labor practices (Chapter 19)

- Including steps to promote union rights in **Vietnam**
  - **allowing independent labor unions for the first time**
  - VN agreed bilaterally to make labor regulations consistent with the US, or forfeit tariff concessions on clothing & textiles.
- As with enviro, dispute settlement & trade penalty threat backs up commitment to labor provisions.

In two particular areas, critics were afraid that the final agreement would give too much to US corporations such as tobacco & pharmaceuticals.

- This could have happened, given that Pres. Obama needed Republican votes for TPA.
  - But these industries did not get what they wanted.
- **ISDS**, e.g.,
  - might have interfered unreasonably with countries' anti-smoking campaigns.
  - But, no. Australia is free to ban brand name logos on cig. packs.
- **IPR**, e.g.,
  - TPP might have extended to other countries our 12-year protection for data on new drugs from our pharma and bio-tech. companies.
  - But, no, the most they get is 8 years in some countries
    - (5 years in others, with other measures).

# Geopolitics

- If, as expected, the US Senate fails to ratify TPP, the Asian members will conclude that the US has lost interest in their region
  - and perhaps has lost the capacity to lead globally.
- As a result, they will conclude they have no choice but to draw closer to China.
  - It has already happened:
    - AIIB
    - RCEP...