

Tax Policy and Redistribution

Stefanie Stantcheva

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Taxation: Balancing Efficiency and Equity

Benefits of Taxation

Raise revenues.

Redistribute (raise more from some people).

Efficiency costs of Taxation:

Labor supply, labor market participation...

Reduced investment in skills, occupational choice...

Other real responses: Savings? Investment? Migration?

Evasion?

Optimal Taxation Formula

Marginal benefit = marginal cost yields:

$$\frac{\tau^*}{1 - \tau^*} = \frac{1 - \bar{g}}{e}$$

with $\bar{g} = \frac{\int_i z_i g_i}{Z}$ and $e = \frac{dZ}{d(1 - \tau)} \frac{(1 - \tau)}{Z}$

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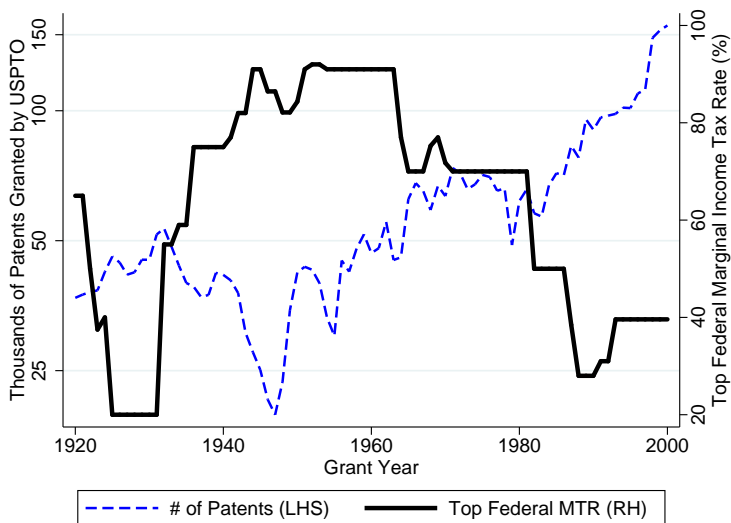
This talk:

- 1) Efficiency costs e : Reduced Innovation? Migration?
- 2) Redistributive preferences \bar{g} : How do people form their social preferences?

Taxation and Innovation in the 20th Century

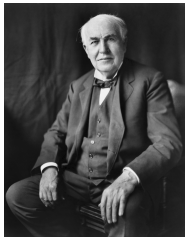
Akcigit, Grigsby, Nicholas, and Stantcheva (2018)

Akcigit, Grigsby, Nicholas, and Stantcheva (2018): Taxation and Innovation in the 20th Century



Correlation Coefficient: -0.48

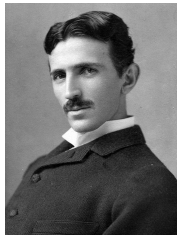
Taxation and Innovation in the 20th Century



Thomas A. Edison
Light bulb.
Holds 1093 patents.

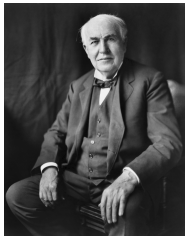


Melvin De Groot
Chocolate ice cream.
Holds 925 Patents.



Nikola Tesla
Alternating Current.
Holds 278 Patents.

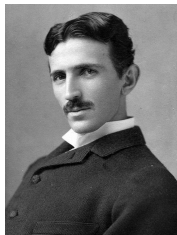
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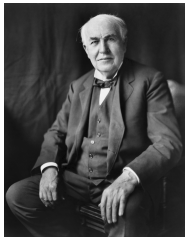
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Mad geniuses? Non responsive to net returns?

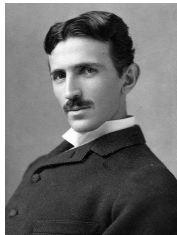
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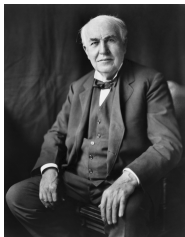
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Or were these inventors affected by taxes?

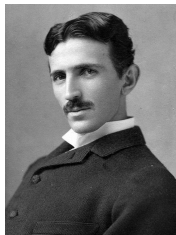
Taxation and Innovation in the 20th Century



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Personal taxes? Corporate taxes? In terms of patents produced? Quality of patents produced? Where they move? What firms they work for? Where they open research labs?

Akcigit, Grigsby, Nicholas, and Stantcheva (2018): Taxation and Innovation in the 20th Century

- How and how strongly do taxes affect innovation?

Akcigit, Grigsby, Nicholas, and Stantcheva (2018): Taxation and Innovation in the 20th Century

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- Challenging question, to a large extent unanswered because of:
 - i) lack of long-run data on innovation in the U.S.,
 - ii) difficulty in identifying effects of taxes.

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 - ii) Panel of all R&D labs (employment, location, patents) since 1921.
 - iii) Historical state-level corporate tax database.

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 - iii) Historical state-level corporate tax database.
- Study systematically the effects of **personal and corporate income taxes** since 1920 on:
 - i) Individual inventors (micro level).
 - ii) Firms that do R&D (micro level).
 - iii) Innovation in states (macro level).

Geography of innovation. Inventors per 10,000: 1920

Geography of innovation. Inventors per 10,000: 1920-1930

Geography of innovation. Inventors per 10,000: 1930-1940

Geography of innovation. Inventors per 10,000: 1940-1950

Geography of innovation. Inventors per 10,000: 1950-1960

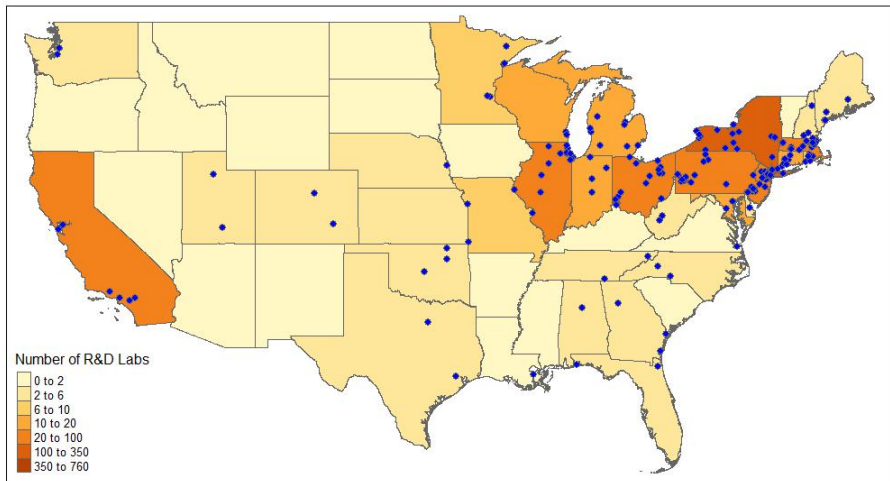
Geography of innovation. Inventors per 10,000: 1960-1970

Geography of innovation. Inventors per 10,000: 1970-1980

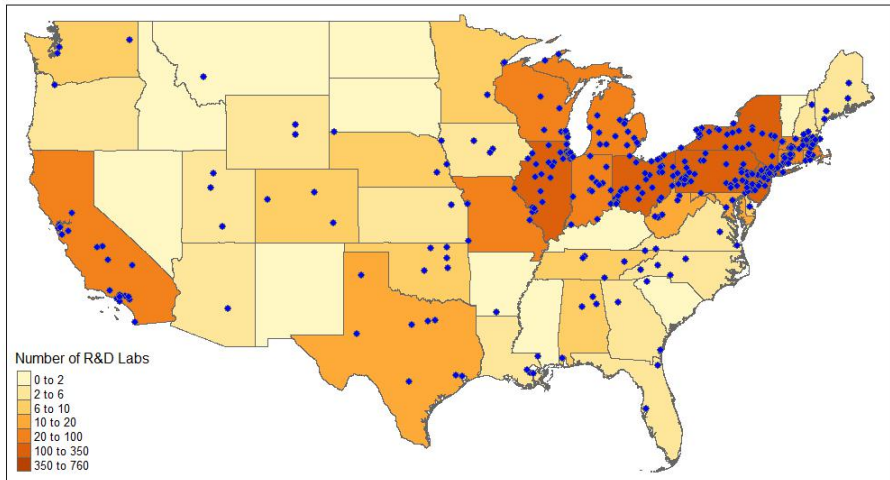
Geography of innovation. Inventors per 10,000: 1980-1990

Geography of innovation. Inventors per 10,000: 1990-2000 ▶ Pat.

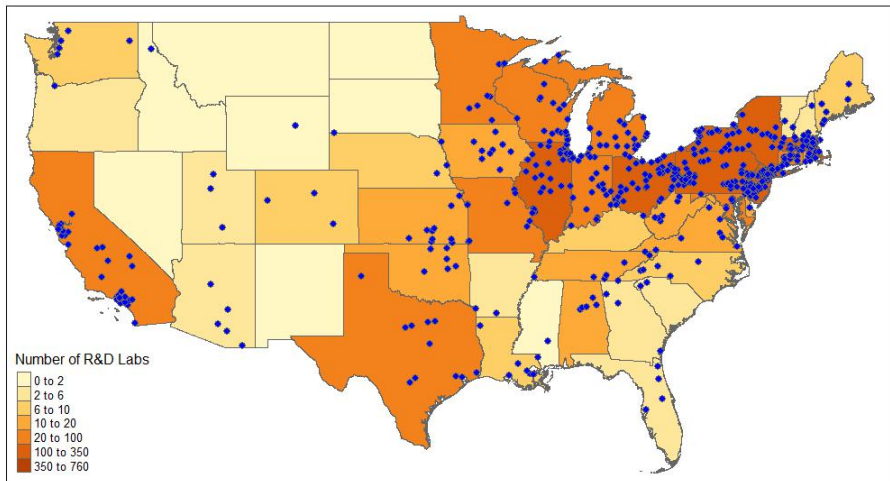
Location of R&D Labs - 1921



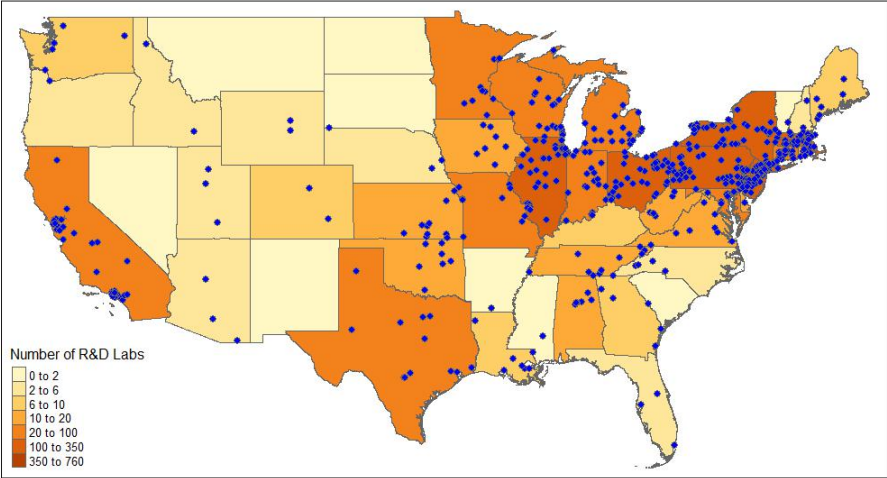
Location of R&D Labs - 1927



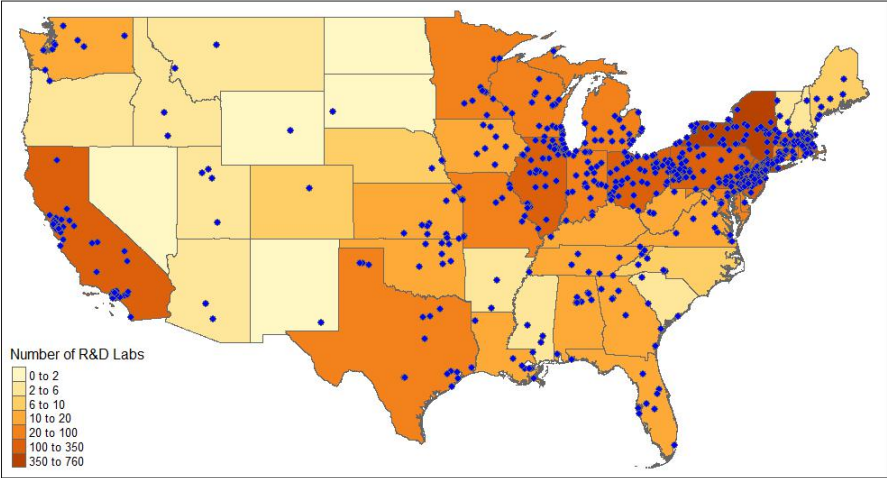
Location of R&D Labs - 1931



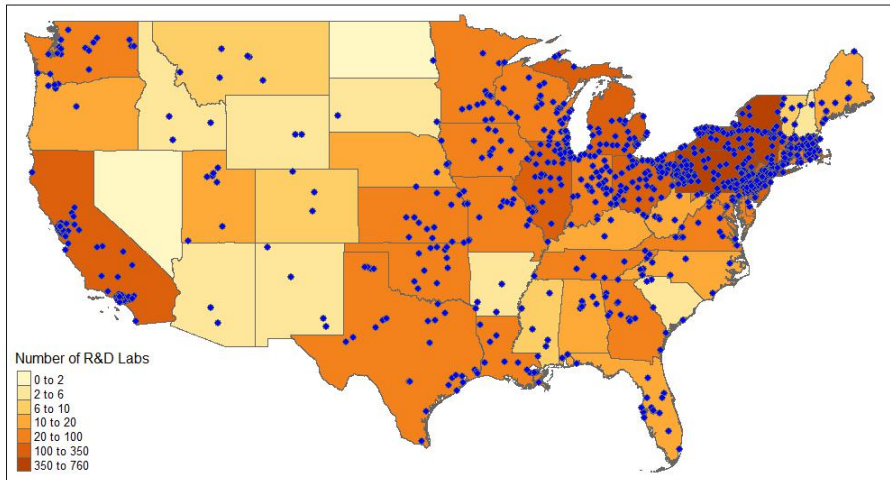
Location of R&D Labs - 1933



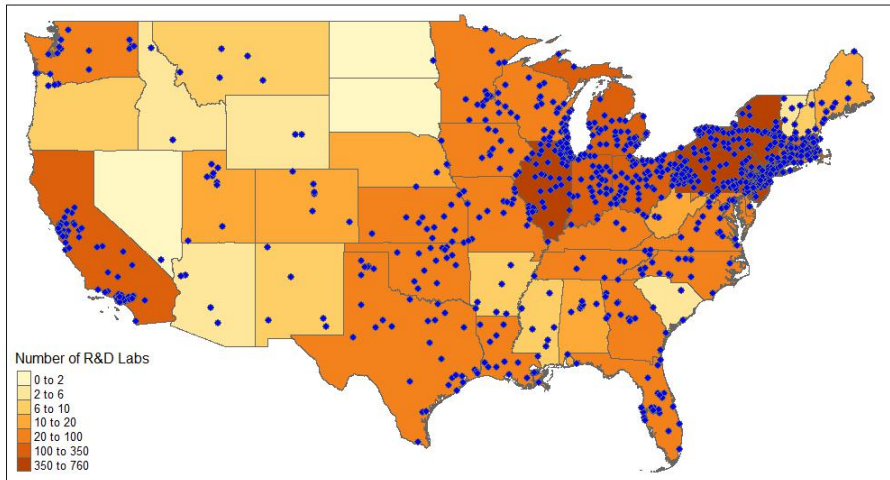
Location of R&D Labs - 1938



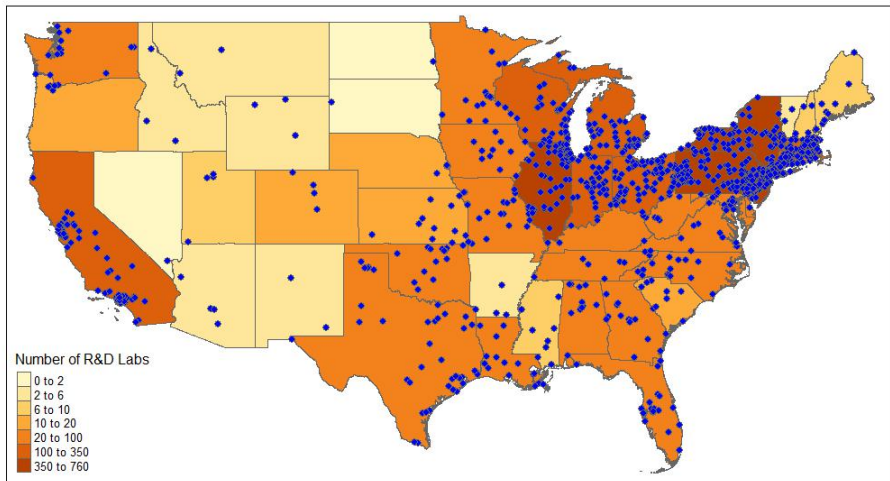
Location of R&D Labs - 1940



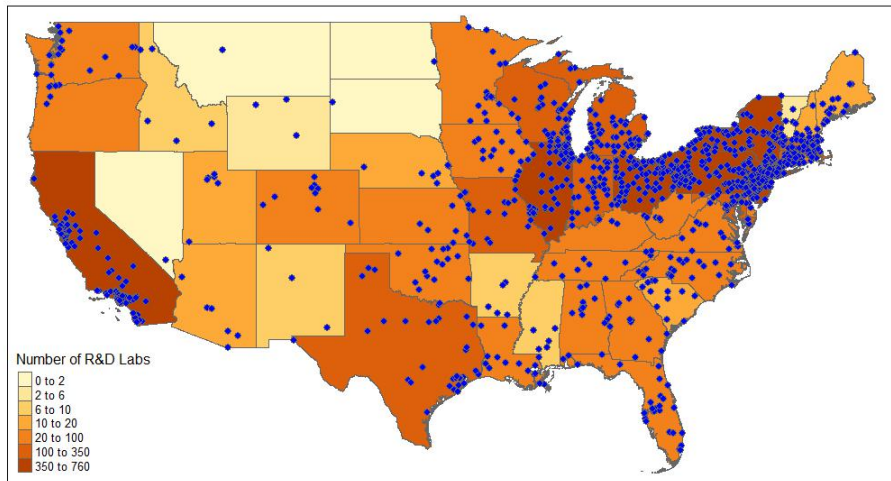
Location of R&D Labs - 1946



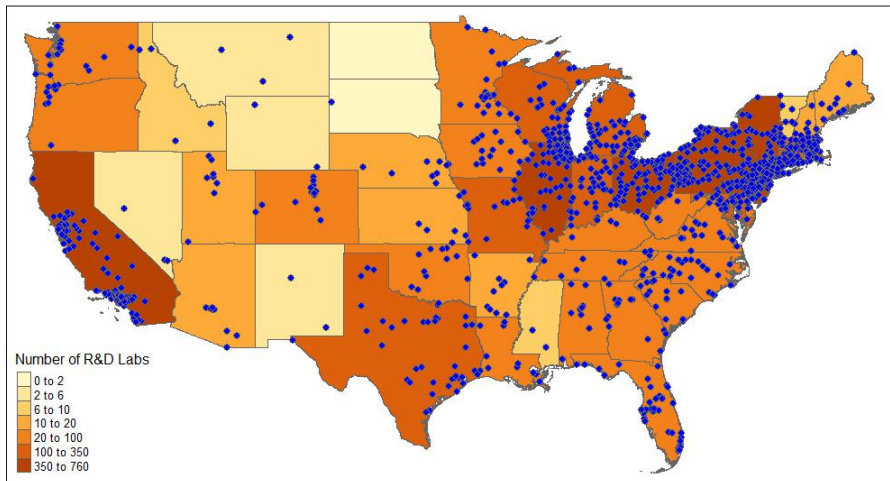
Location of R&D Labs - 1950



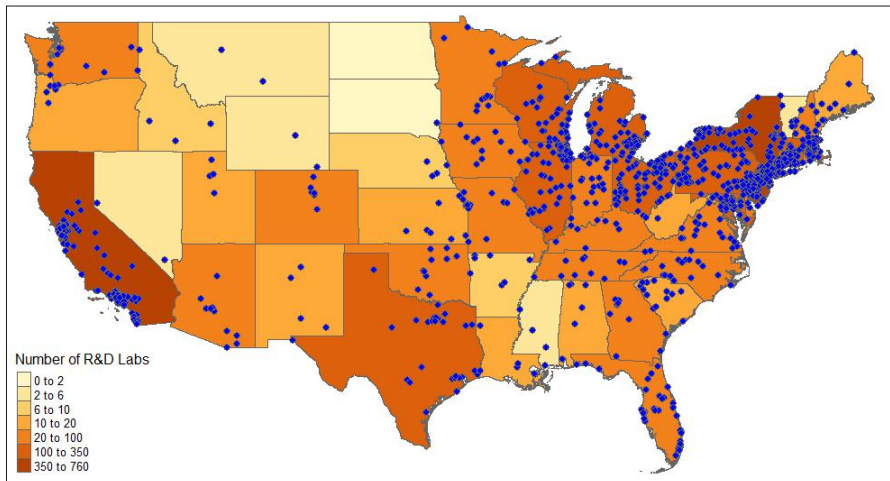
Location of R&D Labs - 1956



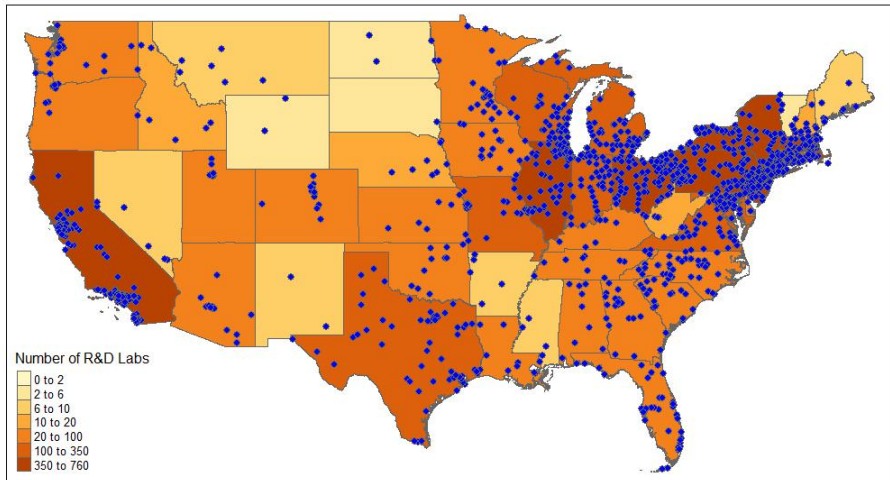
Location of R&D Labs - 1960



Location of R&D Labs - 1965



Location of R&D Labs - 1970



Empirical Strategy and Identification

Innovation Outcome = $\beta_1 \times$ Income tax + $\beta_2 \times$ Corporate tax + Controls.

At state (macro) level.

At individual inventor and firm (micro) level.

Within state tax changes: At the macro and micro levels, state + year FE + time-varying controls specifications exploit within state tax changes in personal and corporate taxes.

At micro level: Add inventor FE.

Within state-year tax differences: To include state \times year FE for income taxes, use different tax brackets within state-year.

Instrumental variable strategy at macro and micro levels: exploit only federal level tax changes in personal and corporate income taxes.

Main Results

Taxes – personal income and corporate income taxes– matter for:

- 1 Quantity of innovation,
- 2 Quality of innovation,
- 3 Location of innovation.

Corporate inventors more elastic to taxes (to net returns in general?).

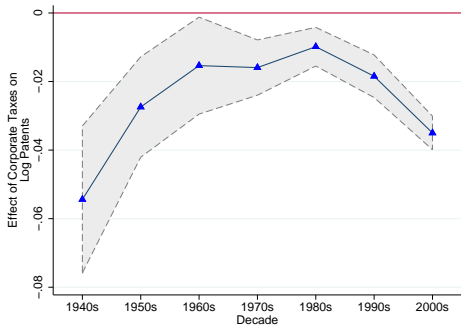
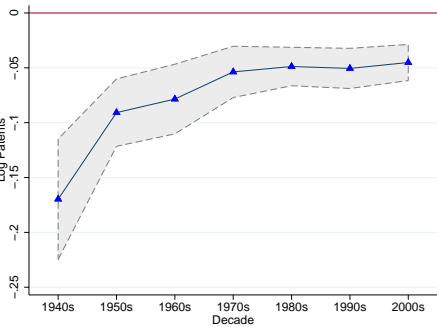
Agglomeration matters: inventors are less sensitive to taxation where there is already more innovation.

At macro and micro levels, effect of taxes attenuated by “innovation agglomeration.”

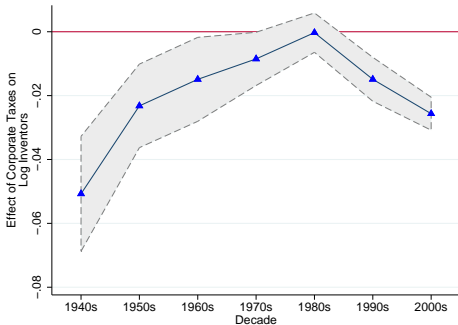
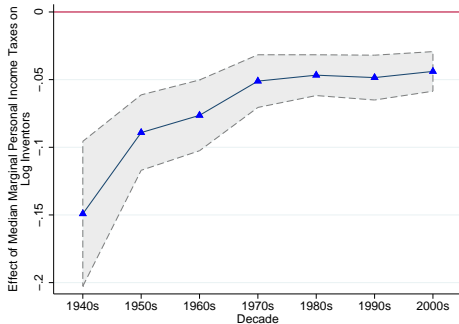
Effect of taxes at the macro level seems to be decreasing over time, as some core innovation hubs have appeared.

Feedback effect/amplification effect of taxes in the long run?

The Changing Effect of State Taxes on Patents



The Changing Effect of State Taxes on Inventors



Taxation and the International Mobility of Superstar Inventors

Akcigit, Baslandze, and Stantcheva (2016)

Taxes and International Migration: Anecdotes but Little Evidence

- Is the “brain drain” in response to taxes real? Lots of anecdotes:
 - ▶ NYT, 2013: ‘The Myth of the Rich Who Flee From Taxes’
 - ▶ Forbes, 2 days later: “Sorry New York Times, Tax Flight of the Rich Is Not a Myth.”
 - ▶ Famous people migrating for tax reasons? Rolling Stones to France (!), David Bowie to Switzerland, Rod Stewart to California, Sting to Ireland, Gerard Depardieu’s Russian citizenship, Edoardo Saverin (facebook co-founder) to Singapore, ...
- Scarcity of rigorous evidence due to a lack of **international panel data**.
 - ▶ Exceptions: Kleven, Landais and Saez (2013) on football players.
- This paper: study the effect of taxes on the **international mobility of inventors**.

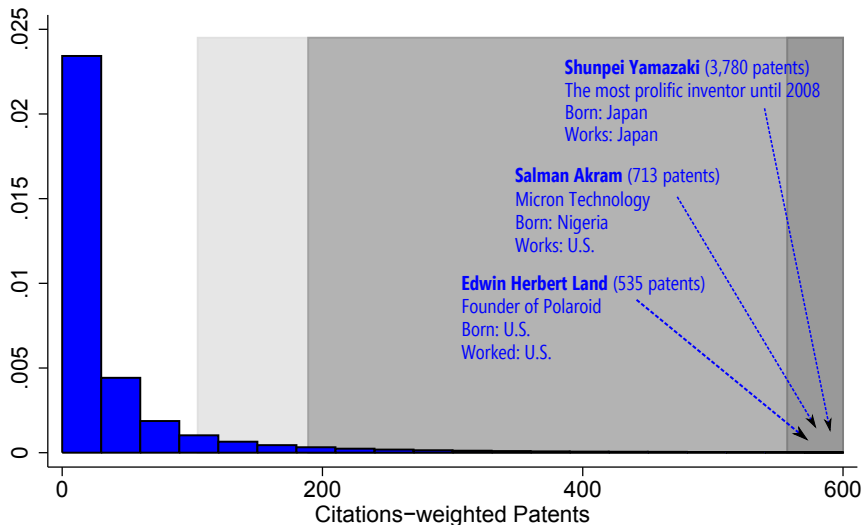
Study the Effects of Taxes on Migration using Patent Data

- Use a **unique international panel data** to overcome challenges:
 - ▶ **Patent data** from the USPTO and EPO, 1977-2000.
 - ▶ Track inventors in 8 big patenting countries: CA, CH, DE, FR, IT, JP, UK, US through residential addresses.
- Study effects of **top tax rates** on “**superstar**” inventors’ locations.
- Patent data gives direct measures of inventor quality.
- Detailed controls for *counterfactual* earnings in each potential location.

Three levels of analysis:

- ① Macro country-year level migration flows (country-by-year variation).
- ② Country case studies (quasi-experimental variation from reforms).
- ③ Micro inventor level location choice model
(differential impact of top MTR within country-year.
Inventor quality → ↑ propensity to be treated).

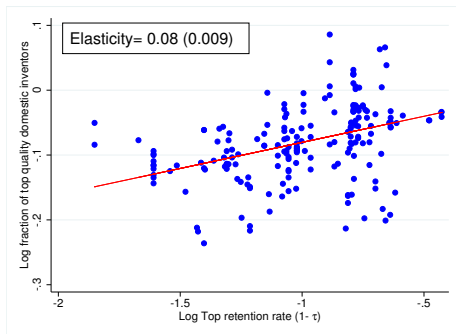
Superstar Inventors in a Highly Skewed Quality Distribution



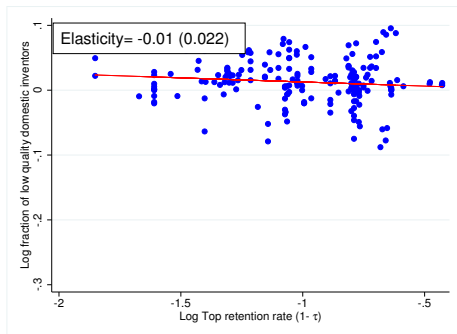
Preview of Findings

- Superstar top 1% inventors' location choice significantly affected by top tax rates.
- If have worked for multinationals more sensitive to tax differentials.
- If company has localized research activity, less sensitive.

Top $(1 - \tau)$ and % of Domestic Inventors in Home Country



(a) Top quality inventors

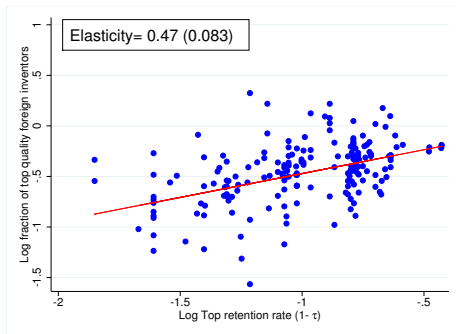


(b) Low quality inventors

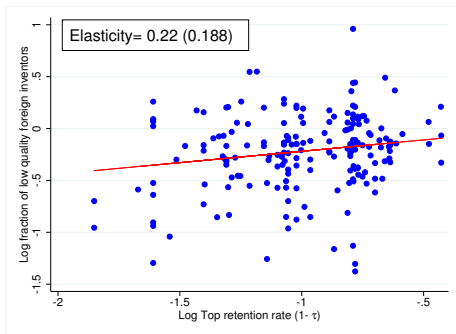
Additional macro level results in the paper:

- Domestic and Foreign inventors.
- For different quality levels, in different datasets.
- With leads and lags.

Top $(1 - \tau)$ and % of Foreign Inventors



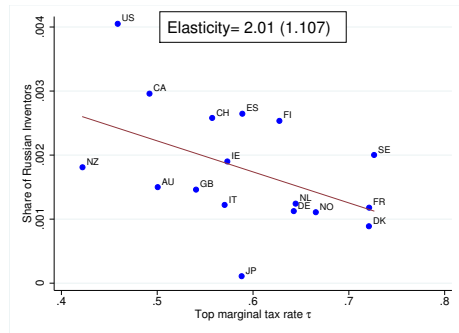
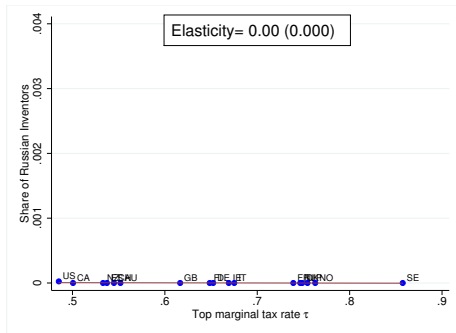
(a) Top quality inventors



(b) Low quality inventors

Log outcomes at the country-year level. Partial residual plots controlling for country's patent stock, GDP per capita, country fixed effects, year fixed effects. Elasticities reported (standard errors clustered at the country level).

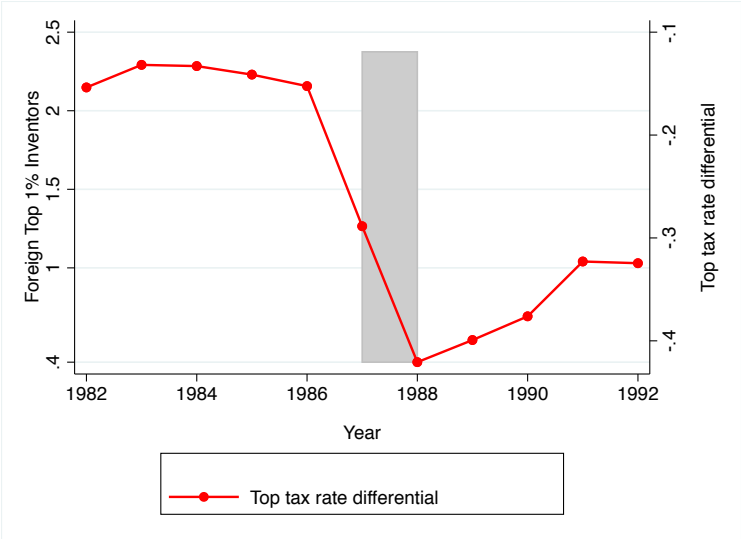
Russian Inventors' Migration and Top Tax Rates Pre and Post Soviet Union Collapse



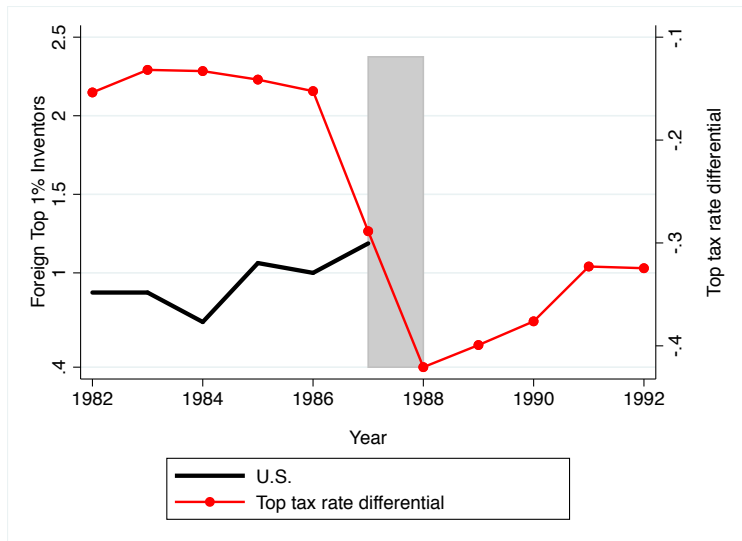
(a) Pre Soviet Union Collapse: No possible migration

(b) Post Soviet Union Collapse: Migration negatively correlated with top τ .

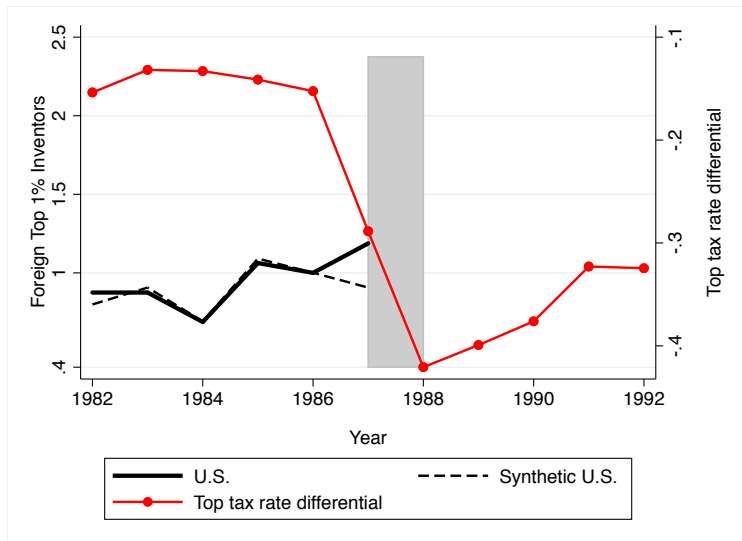
Case Study: U.S. TRA 1986



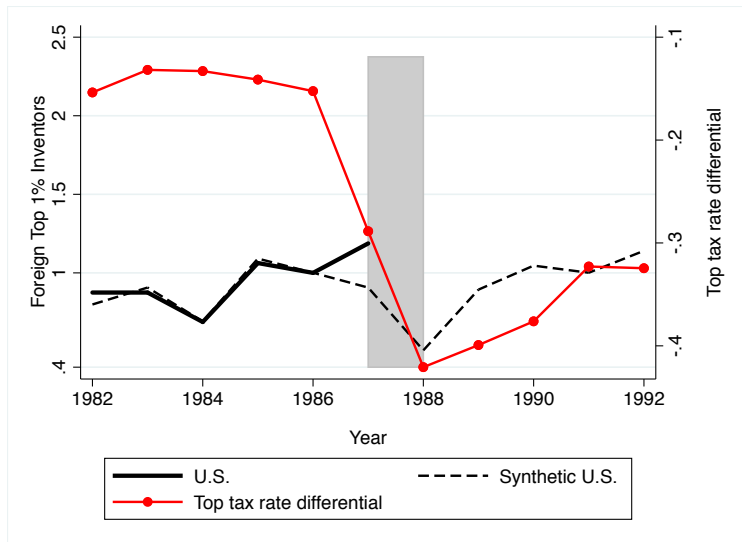
Case Study: U.S. TRA 1986



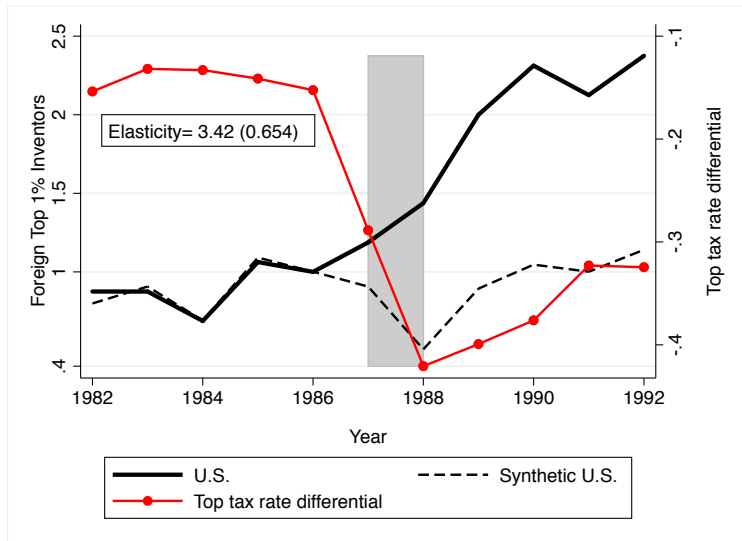
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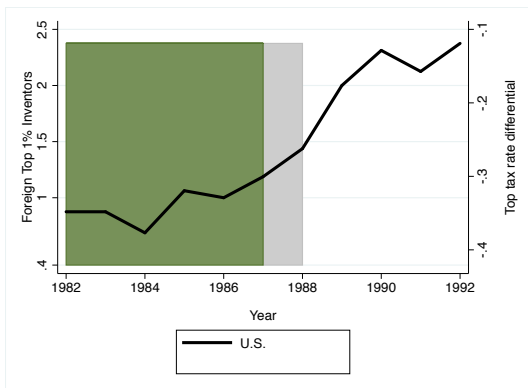
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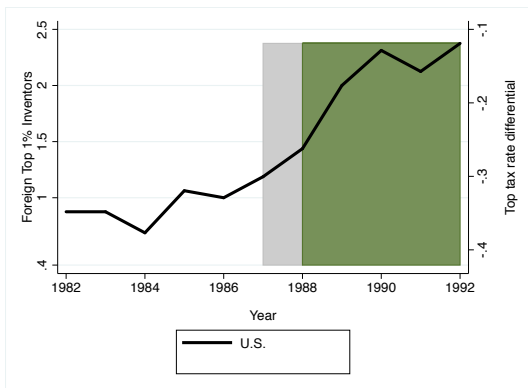
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Structural break in growth of foreign top 1% relative to lower quality inventors.

Inventor quality	Pre T.R.A 1986	Post T.R.A 1986
Top 1%	6.8%	16.4%
Top 10-25%	13%	11.4%

Case Study: U.S. TRA 1986



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What shapes people's views on redistribution?

Theory: Generalized Social Welfare Weights

Saez and Stantcheva, 2016:

Rather than assuming standard social welfare function:

$$SWF = \int_i G(u_i) \quad \text{or} \quad SWF = \int_i \lambda_i u_i$$

Use “generalized social welfare weights” (GSWW)

g_i = how much society values \$ 1 to person i . $g_i = g(x_i, x^s)$.

x_i : Things that enter utility which we *also* care about as a society: laziness vs. bad health? which types of consumption? Do we redistribute across that dimension?

x^s : Things we care about as a society, even if don't affect utility directly (conditional on consumption, labor, etc.): Family background?

Empirics: Online Experiments and Surveys

- Use large-scale online surveys and experiments to examine how info affects redistributive demand.
 - ▶ Top income tax rates, transfer policies, and inheritance taxes.
- Compare people's perceptions to reality: are people's perceptions accurate?
- Provide randomized information on topic of interest to redistribution (here; inequality, next: intergenerational mobility).
- Test for (causal) effect of perception on redistributive demand.

“How Elastic are Preferences for
Redistribution?”

Kuziemko, Norton, Saez, and Stantcheva
(2016)

Puzzle: Rising inequality, yet no demand for redistribution

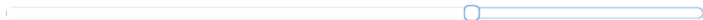
- Focus in media on growing income share of “one percent” (23% in 2012).
- More recent focus on *wealth* inequality increase (top 1% has 35% of wealth).
- Classic models predict demand for redistribution is increasing in inequality.
 - ▶ But: top income and inheritance taxes in US have fallen during period.
 - ▶ Voter demand for redistribution has been flat or falling during this period.
- Do Americans simply not care about inequality?
 - ▶ Newsweek (2001): *“If Americans couldn’t abide rising inequality, we’d now be demonstrating in the streets.”*

Where are you in the income distribution?

Please enter your annual household income* in the box below:

\$

39% of US households earn less than your household



We now encourage you to move the blue slider above (by clicking on the line) to explore the US income distribution on your own and to answer the questions below.

79% of households earn less than **\$73,000** .

https://hbs.qualtrics.com/SE/?SID=SV_77fSvTy12ZSBihn

Where would you have been in the income distribution?

Income Inequality has increased dramatically in the United States since 1980.

Incomes of poorer and middle-income families have grown very little while top incomes have grown a lot.

How would YOU be doing if inequality had not increased?

The slider below shows how much each group would make if incomes had grown by the same percentage since 1980 for all groups: the poor, the middle class, and the rich. Use the slider to answer the questions below.



A household making **\$25,800** today would instead be making

\$35,200 if inequality had not changed since 1980.

In other words, if growth had been evenly shared, this household would have earned

37% more.

https://hbs.qualtrics.com/SE/?SID=SV_77fSvTy12ZSBihh

Main Findings

Views on inequality very malleable.

Views on redistribution very rigid.

Making people think there is more inequality makes them very significantly distrust the government (“It’s the government’s fault”).

Lower trust in government leads to less support for redistribution.

“Intergenerational Mobility and Support for Redistribution”

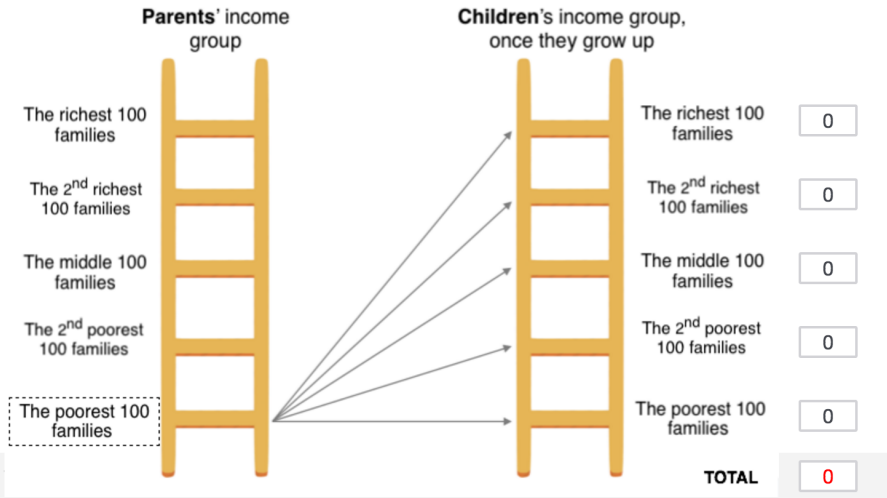
Alesina, Stantcheva, and Teso (2018)

Research Questions

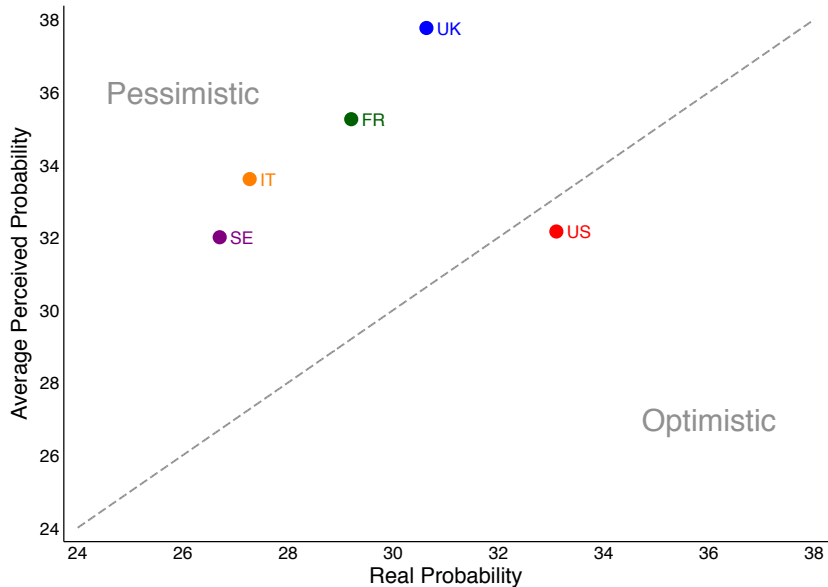
- Do people have realistic views about intergenerational mobility?
- What are their views on fairness, such as the role of effort vs. luck?
- Link between perceived intergenerational mobility and preferred redistribution policies?
 - ▶ **Equality of opportunities** policies (education, bequest taxes)
 - ▶ **Equality of outcome** policies (social insurance, progressive income taxation)?
- Correlation and Causality (experimental).
- Heterogeneity by socio-economic background, political views, own mobility experience?
- Online surveys and experiments on representative large ($N \geq 12,000$) samples in the US, UK, France, Italy, and Sweden.

Eliciting respondent's beliefs on upward mobility

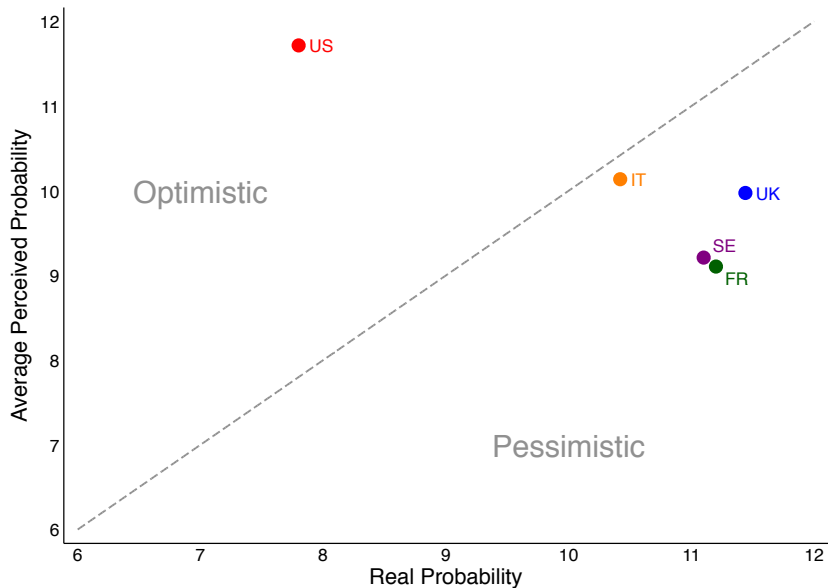
Here are **500 families** that represent the US population:



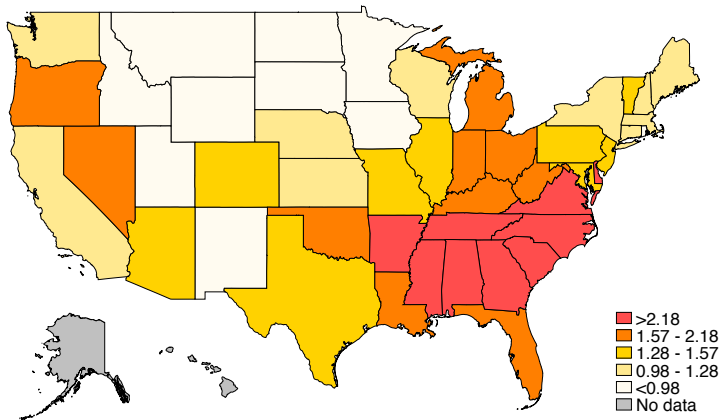
Probability of Staying in Bottom Quintile (Actual vs. Perceived)



Probability of Moving to Top Quintile (Actual vs. Perceived)

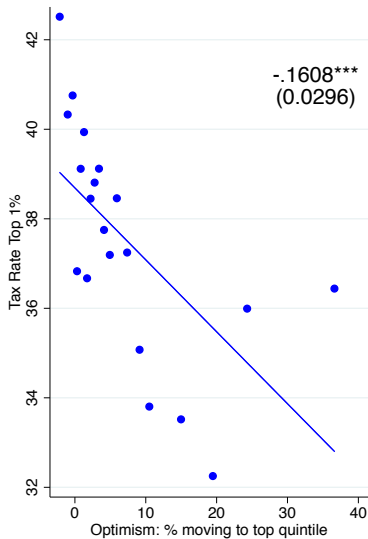
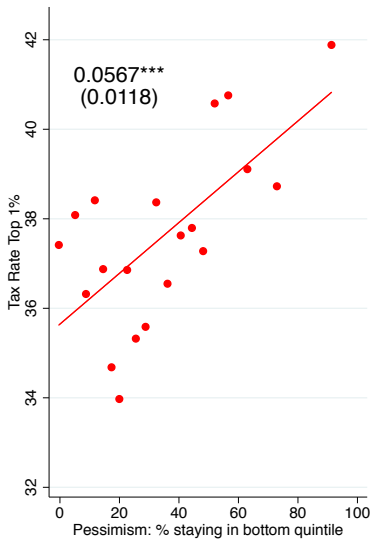


Ratio of actual local and perceived probability of moving from bottom to top

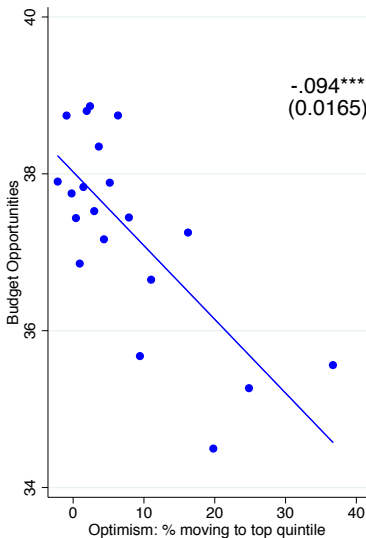
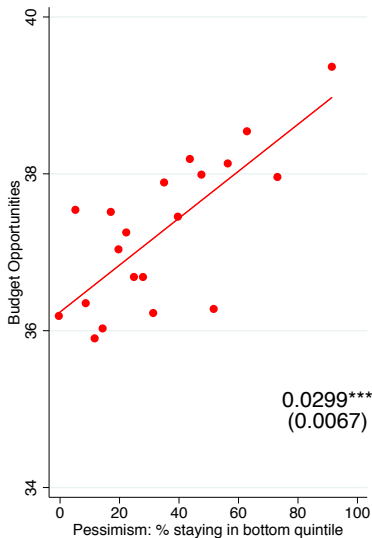


Strongest predictors of optimism: 1) high racial segregation 2) low income segregation (controlling for both at same time).

Pessimism, Optimism, and Top Tax Rate



Strong Correlation with Equality of Opportunity Policies: Education and Health



Main Findings

- Americans are more optimistic than Europeans, but:
 - ▶ Americans too optimistic, especially about “American dream.”
 - ▶ Europeans too pessimistic, especially about staying stuck in poverty.
- People believe effort matters, but not for making it to the very top.
- Pessimism on mobility ↔ support for redistribution (especially “equality of opportunity policies.”)
- Experiment: more pessimistic → increases support for redistribution... but only among left-wing respondents.
- Strong polarization between left and right wing on government, redistribution: same information, very different effects.

“Immigration and Redistribution”

Alesina, Miano, and Stantcheva (2018)

We Study Two Broad Questions

How do people (mis)perceive immigration?

Are perceptions of immigration, about the number, origin, religion, unemployment, education, poverty, correct amongst natives of the host countries?

What are natives' views on immigration policies?

What are perceptions of and views on immigration correlated with?

What is the link between immigration and redistribution?

Are perceptions of immigration and views about redistribution correlated? And do perceptions of immigrants "cause" preferences for redistribution?

Method and Setting

Large-scale surveys in 6 countries: France, Germany, Italy, Sweden, UK, and US:

Done through commercial survey companies

In the US in Jan-Feb 2018; In Europe Feb-Mar 2018.

Sample sizes: 4,000 in FR, DE, IT, UK and UK, 2,000 in SE;

Total of \approx 22,000 respondents.

Survey components:

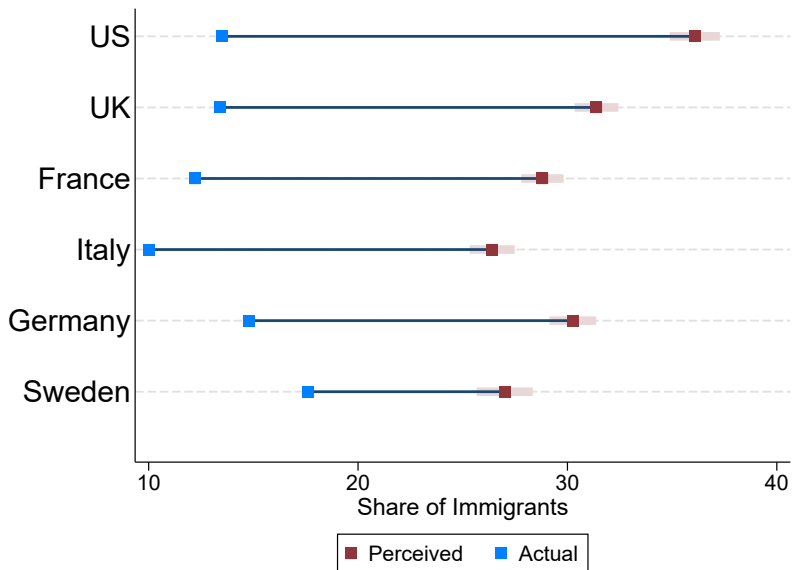
Background info, perception of immigrants (number, origin, religion, hard work, economic conditions, support), policy preferences (redistribution + immigration).

Randomized treatments:

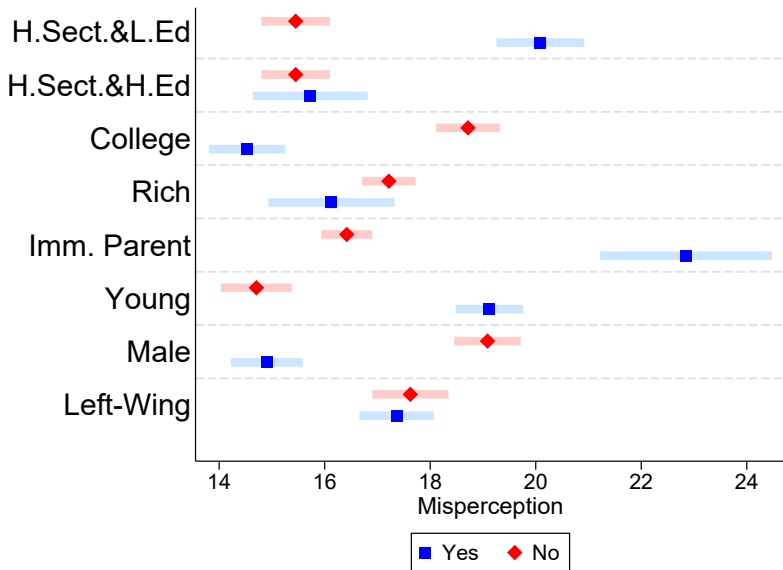
“Order” treatment where people simply asked about immigration before being asked about redistributive policies.

Information on 1) number, 2) origins, 3) hard work of immigrants.

Perceived vs. Actual Number of Immigrants (By Country)

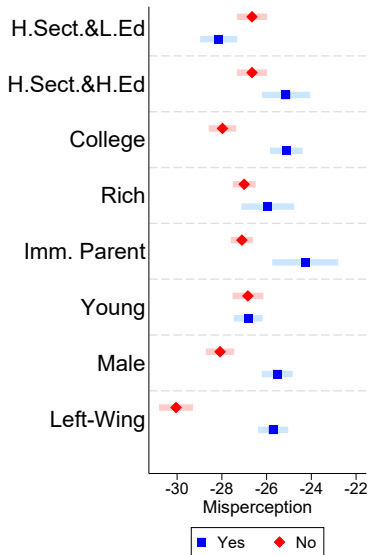
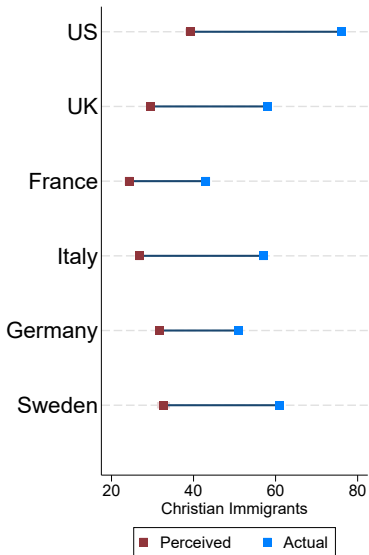


Misperception of Number of Immigrants

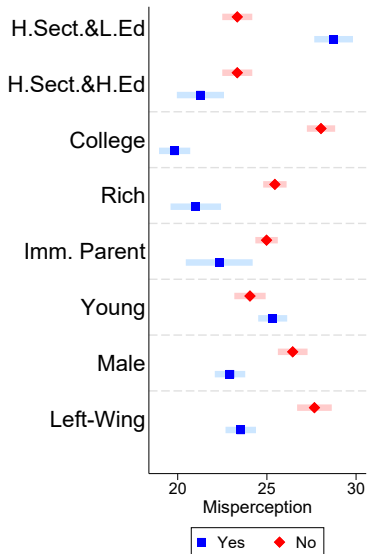
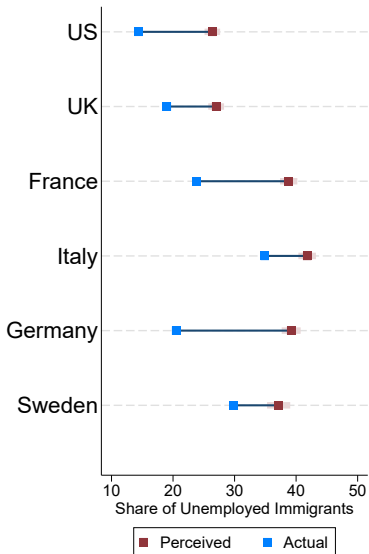


Who misperceives more? Those 1) in high immigration sectors with low education, 2) without college, 3) who are young, 4) who have an immigrant parent, 5) women. [▶ US Sectors](#)

Perceived vs. Actual Share of Christian Immigrants



Perceived vs Actual Unemployment of Immigrants



Main Findings

Across countries and respondent characteristics:

Stark overestimation of share of immigrants, share of Muslim (underestimate Christians), underestimate immigrants education, level of income, stable employment, contribution to welfare state.

Left and right-wing equally misperceive % of immigrants, but right-wing believe immigrants have “less desirable” in their views characteristics.

Support for redistribution and immigration strongly correlated and causal effect:

Number of immigrants per se does not matter: perceived composition of immigrants (origin, work effort..) does.

Just making people think about immigrants (“order treatment”) generates a strongly negative reaction in terms of redistribution.

Good info on number, origin and hard work of immigrants can counter negativity.