

Income-Tax-Based Redistribution

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Based on joint work with Nora Strecker and Sergey Nigai

Electoralates in Turmoil

- Changing political majorities and spectrum
- Fatigue with established political elites
- Questioning of long-standing political alliances (trade agreements, WTO, etc.)
- Why at all and why now?

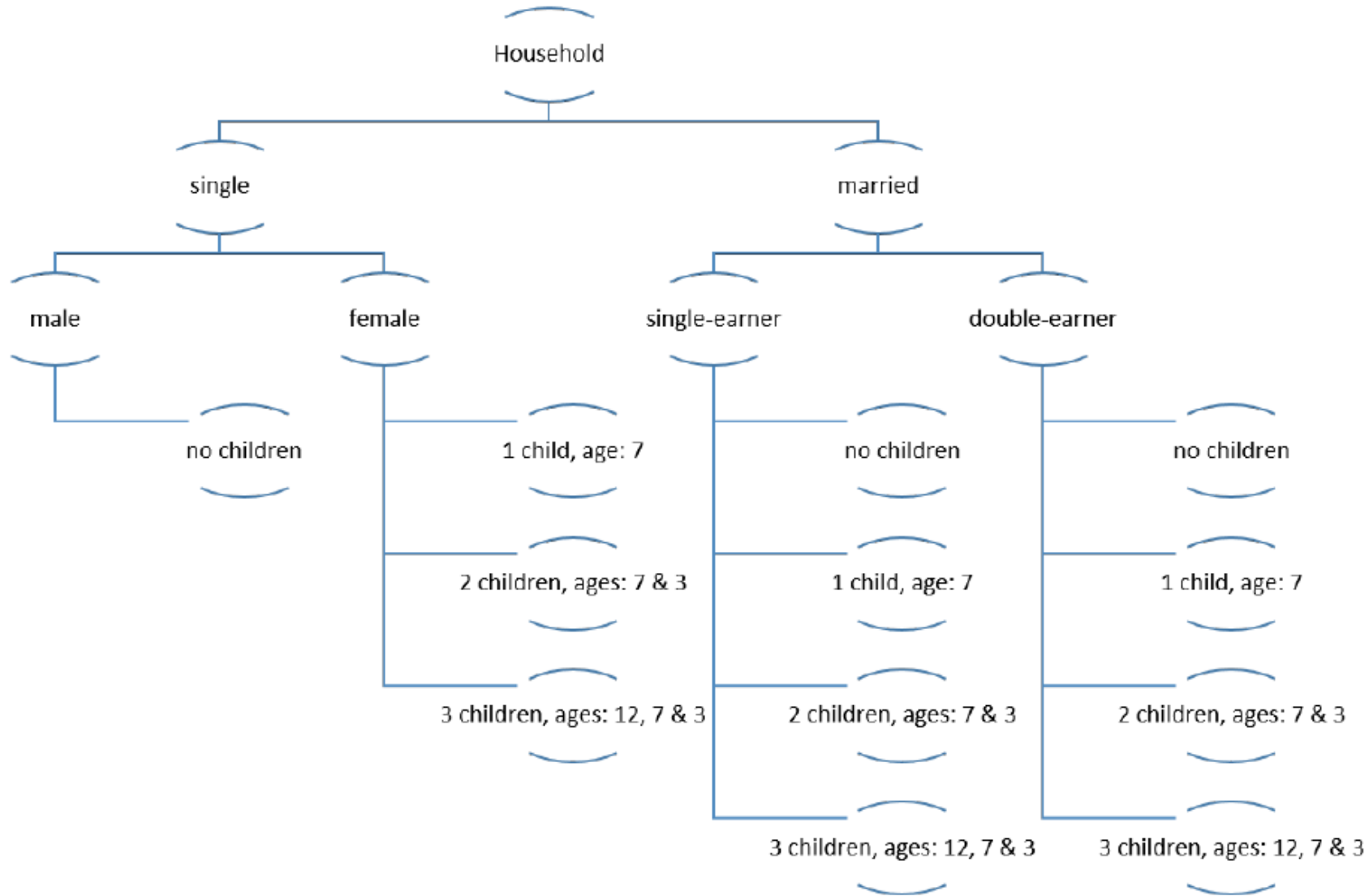
Some Reasons for Voters' Discomfort

- Of all the gains of globalization, what ended up in people's pockets?
- Changes in before-tax income distribution
- Changing prices (especially, real estate; some of which are inappropriately monitored/captured by inflation statistics)
- Income taxes (and benefits) as a key tool to administer redistribution
- Which one is biggest?

Data 1: Taxation

- Information from
 - OECD
 - tax consultancy firms
 - IMF
 - World Bank
 - National tax laws and amendments (especially, for LDCs and pre-2000 data)
- 252 countries and territories
- 1980-2012
- Subnational taxation (e.g., AUS, CHE, USA): use/report data for national capital
- 12 household types (married/unmarried; gender; number of children; etc.)

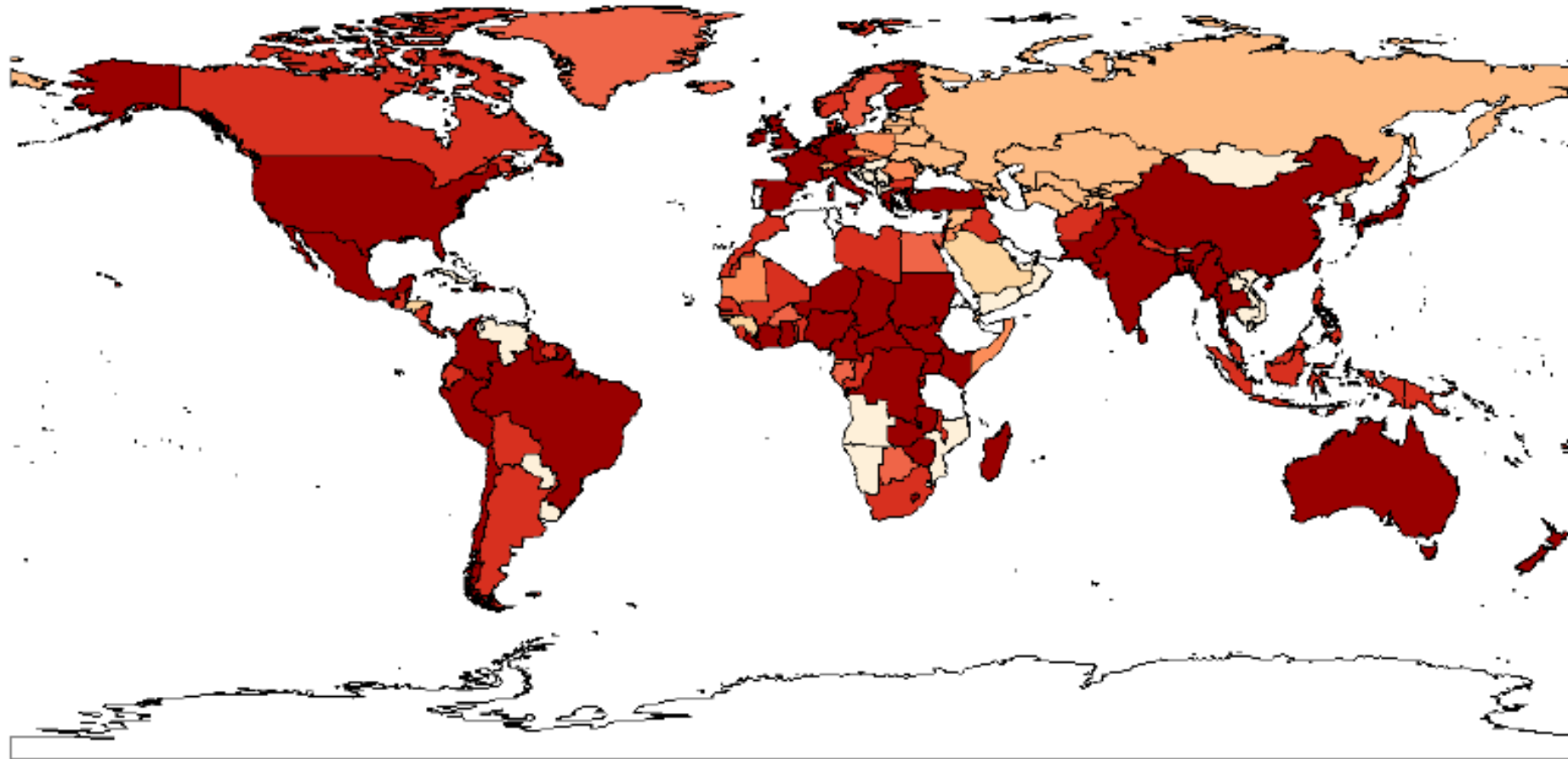
Data 1: Taxation Cont'd



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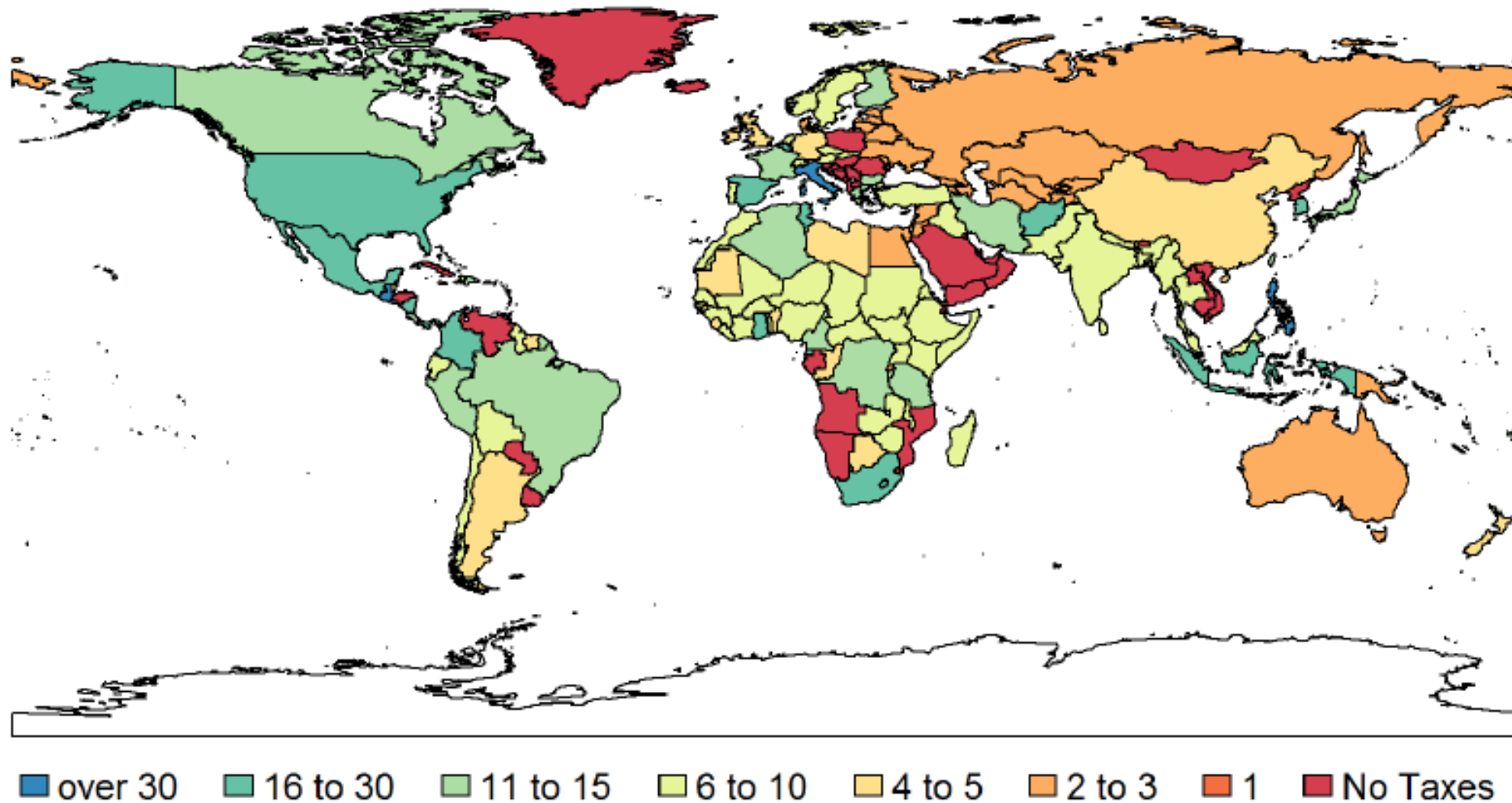
- Data are structured as
 - effective average and marginal tax rates for every US dollar (between 0 and 1 mn.) of gross income earned per year and household type
 - adjusted for deductions/allowances/credits related to
 - marital status
 - second earner income
 - spousal status
 - children (and their number)
 - gender
 - age
 - choice regarding joint or separate filing
 - social security payments (paid by employer or employee)

Data 1: Top Marginal Tax Rate in 1980



■ over 75 ■ up to 75 ■ up to 50 ■ up to 30 ■ up to 20 ■ up to 15 ■ up to 10

Data 1: Number of Kinks in Tax Schedule



Data 2: Inequality

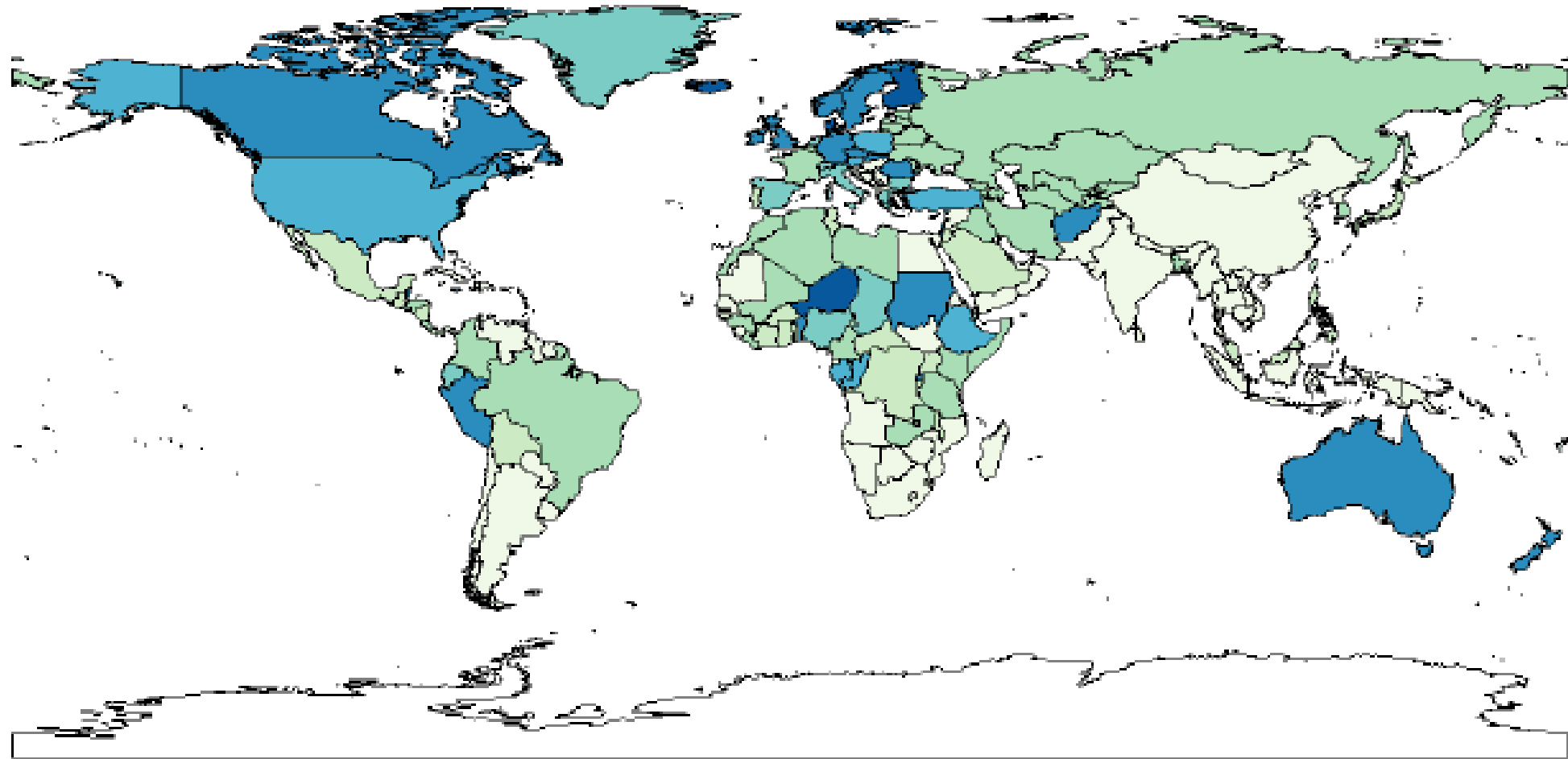
- Information from
 - World Bank on average income and GINI coefficient on income inequality
 - Luxembourg Income Study for centiles of the overall and household-type-specific income distribution
- Prior to our tax-data collection efforts, we thought that little to nothing was known about world-wide personal income taxation at the detail we envisaged and more was known about inequality
- But now we understand that, in spite of tremendous academic and institutional data-collection efforts, after our project we know much less about inequality...

Data 2: Inequality Cont'd

- To calculate effective (legally applying) tax rates, e.g., for the average worker, we need data on average incomes at which we can evaluate
- To know the distribution of after-tax incomes or the redistributive effect of income taxation across the distribution of incomes, we need data on before-tax income inequality
- Two facts:
 - for countries in the LIS survey, we can check functional form of distribution of gross (pre-tax) incomes by country, and that distribution is close to Pareto and log-normal (even better a mix of the two)
 - with such distributions, the average wage and the Gini (inequality measure) together are enough to represent the whole (e.g., all percentiles of the) distribution

Data 2: Inequality Cont'd

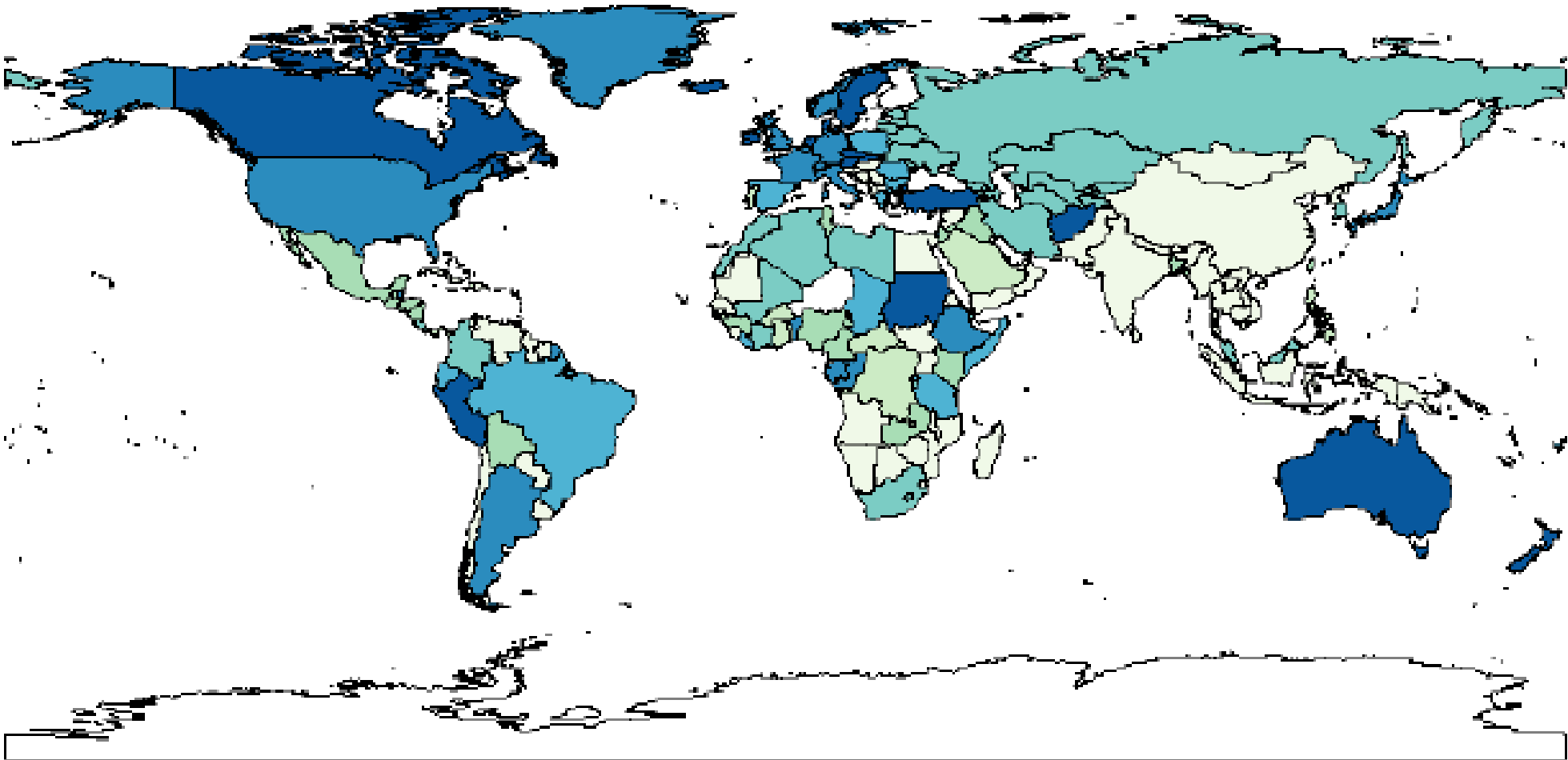
Effective Average Tax Rate in 1980



- over 50
- up to 50
- up to 30
- up to 20
- up to 15
- up to 10
- up to 5

Data 2: Inequality Cont'd

Effective Marginal Tax Rate in 1980

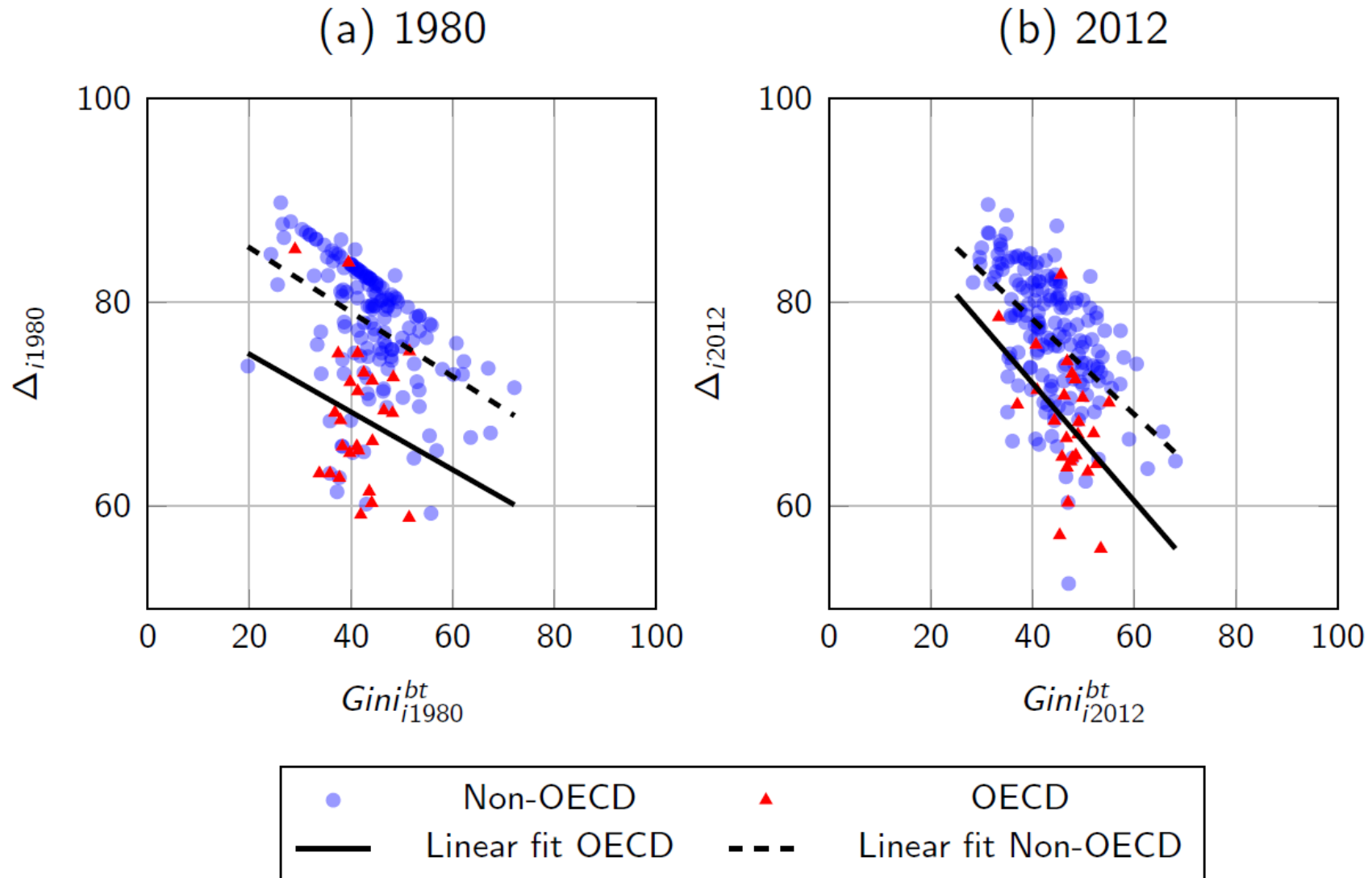


- over 50
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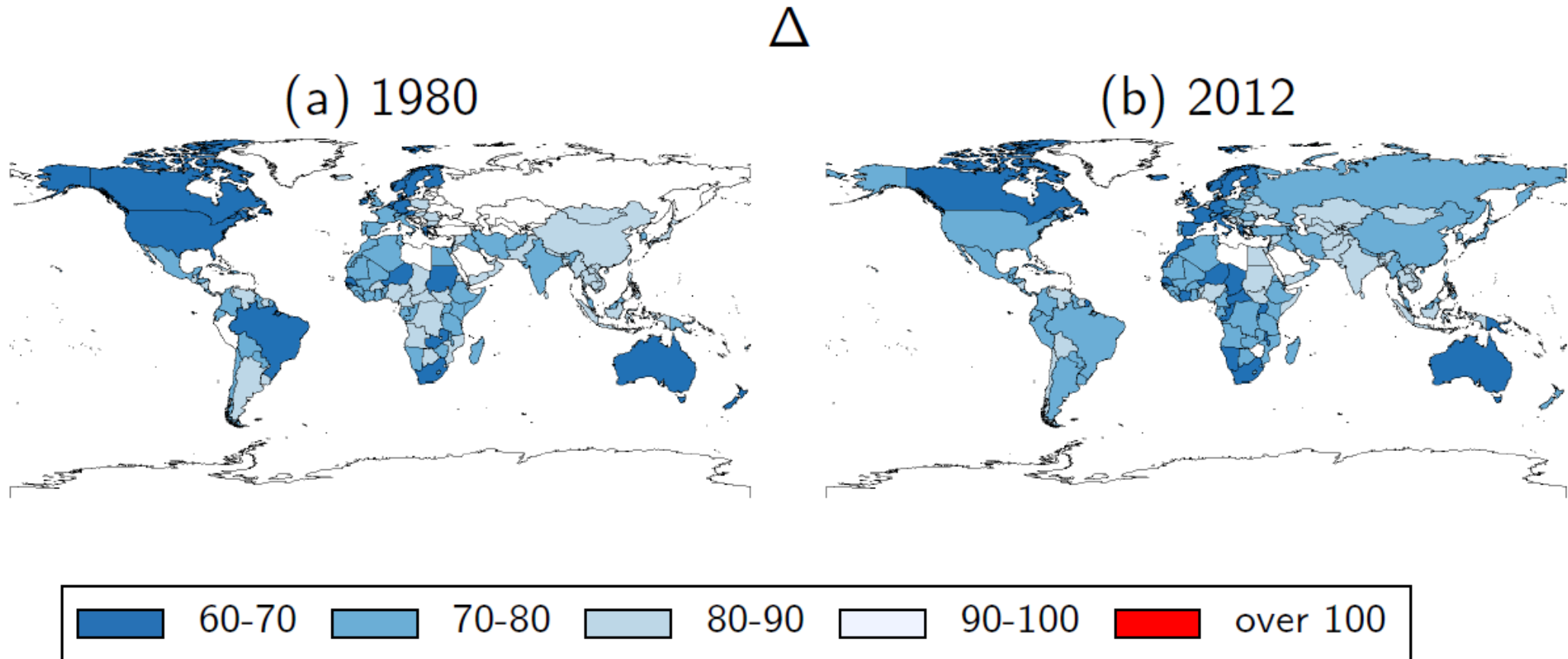
Data 2: Gini Coefficients

- higher (lower) values of Gini mean more inequality (equality)
- Bounded between 0 and 100
- knowing the before-tax income-Gini coefficient ($Gini^{bt}$) and average before-tax income together with the tax calculators, we can compute the after-tax income-Gini coefficient ($Gini^{at}$)
- we can then also compute the relative change in Gini due to income taxation: $\Delta = 100 * Gini^{at} / Gini^{bt}$ for every country and year (smaller numbers mean more redistribution through income taxation)
 - $\Delta < 0$: an income tax system is progressive
 - $\Delta > 0$: an income tax system is regressive

Data 2: Pre-to-Post-Tax Gini Ratio – Single Males

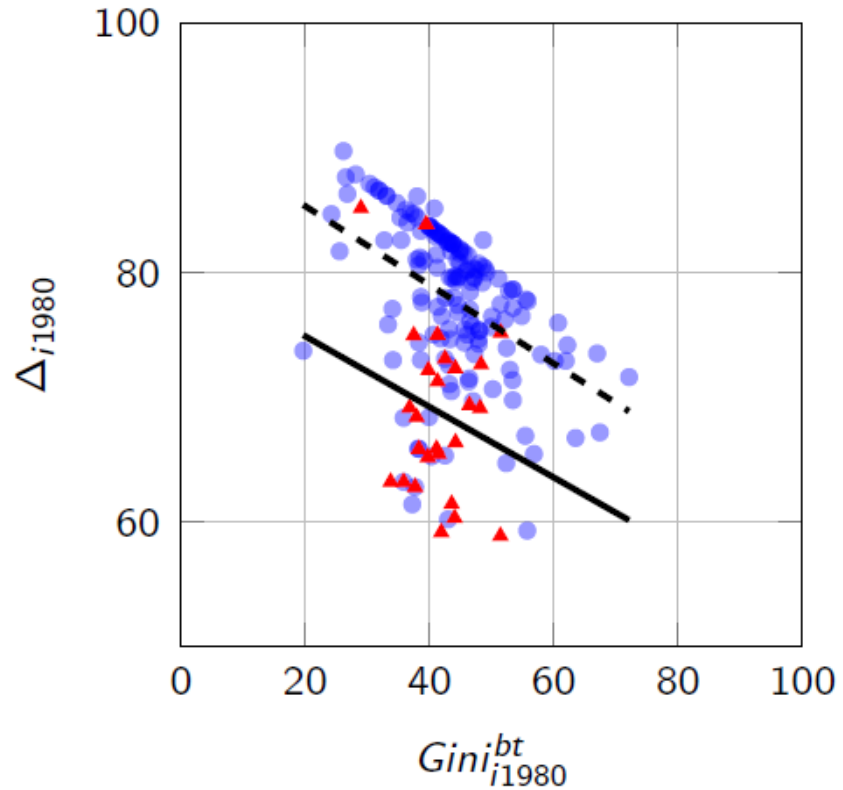


Data 2: Redistribution Around the Globe - Single Males

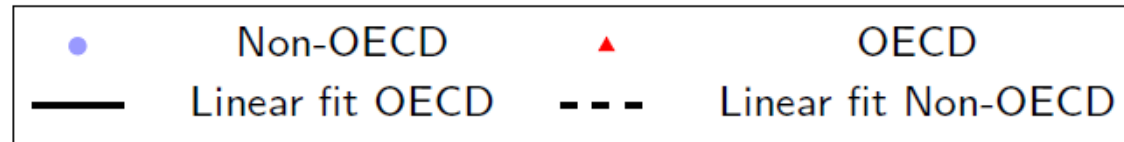
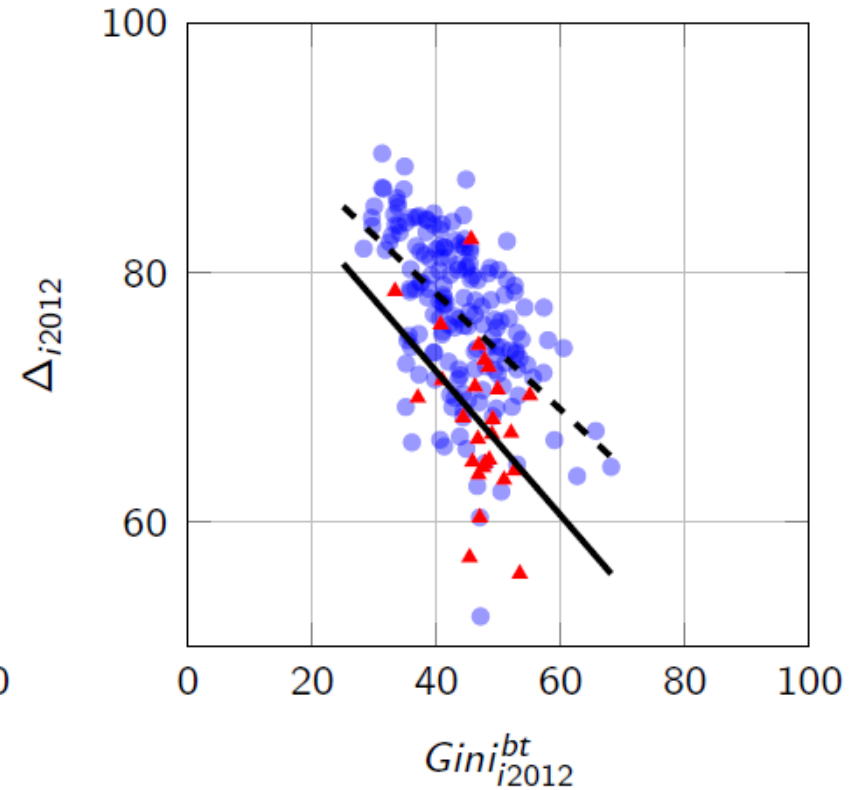


Data 2: Pre-to-Post-Tax Gini Ratio – Single Earner 2 Children

(a) 1980



(b) 2012

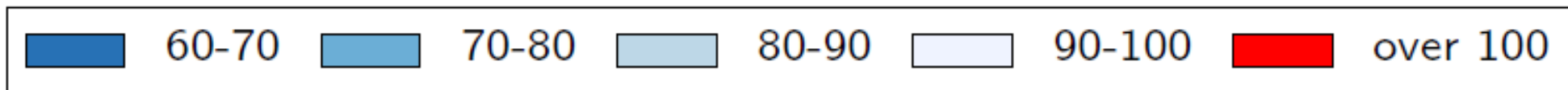
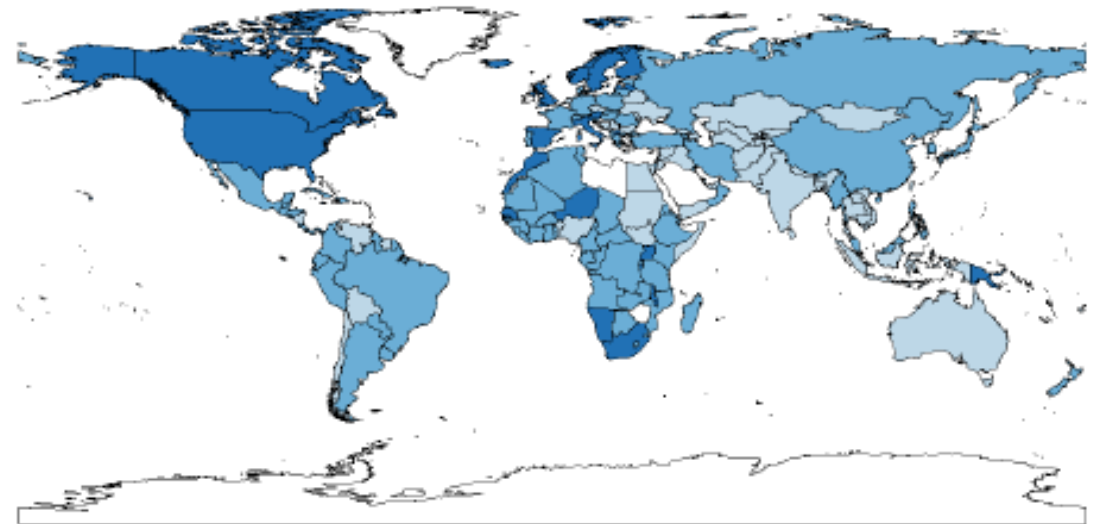


Data 2: Redistribution Around the Globe - Single Earner 2 Children

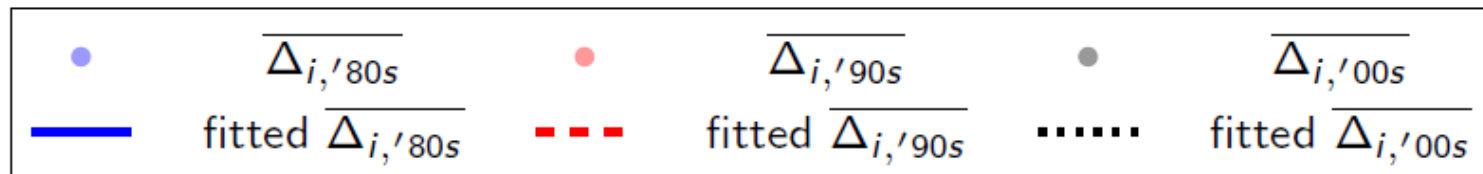
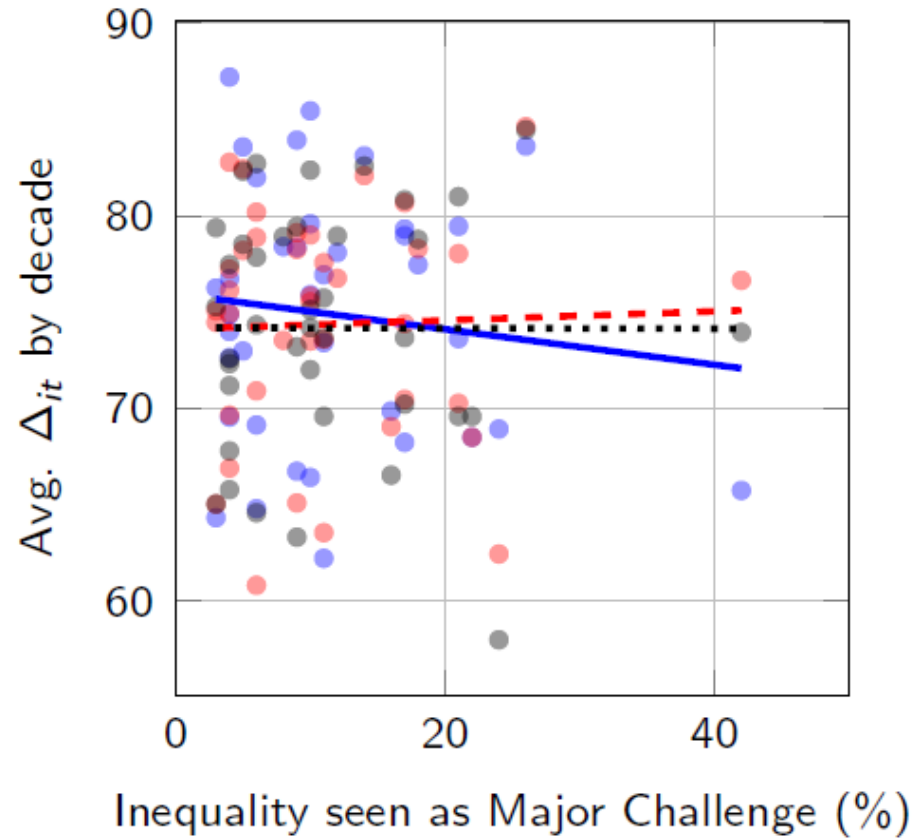
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(a) 1980

(b) 2012



Data 2: Redistribution And Public Opinion



Source: Pew Research Center and own calculations

Analysis 1: What Drives Eff. Tax Rates?

- Do analysis for 135 DCs + LDCs as well as for 108 LDCs only
- Account for
 - population and demographics
 - economic well-being
 - political orientation & participation
 - time-invariant (country-specific) effects and common, time-specific ones

Analysis 1: What Drives Eff. Tax Rates?

Short run:

- aging population and proportional voting increase extent of redistribution
- High labor-market participation and high voter turn-out reduce extent of redistribution

Long run:

- higher wage volatility and unified (left- or right-wing government) increase redistribution

Throughout:

- higher population density reduces redistribution

Analysis 2: How Does Taxation Respond to Globalization?

- Globalization brings new/amplifies existing risks
- Shocks may be positive (unexpected positive demand shocks), but they may be negative; either one amplifies volatility
- Globalization increases demand for security/insurance
 - by raising chance of losing ones job
 - by reducing chance of finding a (new) job
- Governments need to finance such demands and needs by taxes
- Income taxes are a major source of revenue

Analysis 2: How Does Taxation Respond to Globalization?

How to tax?

- Proportional increase in taxation
 - Leaves the pre-to-post-tax inequality the same
 - Are risks equally distributed? No: the less skilled/low incomes tend to be affected more severely
 - Are the gains from globalization equally distributed? No: the high skilled/high incomes tend to be gaining more
- Theory:
 - Closed economies/no mobility of higher taxed: tax (more) progressively
 - Open economies/no mobility of higher taxed: tax (less) progressively

Analysis 2: How Does Taxation Respond to Globalization?

How to identify the pattern?

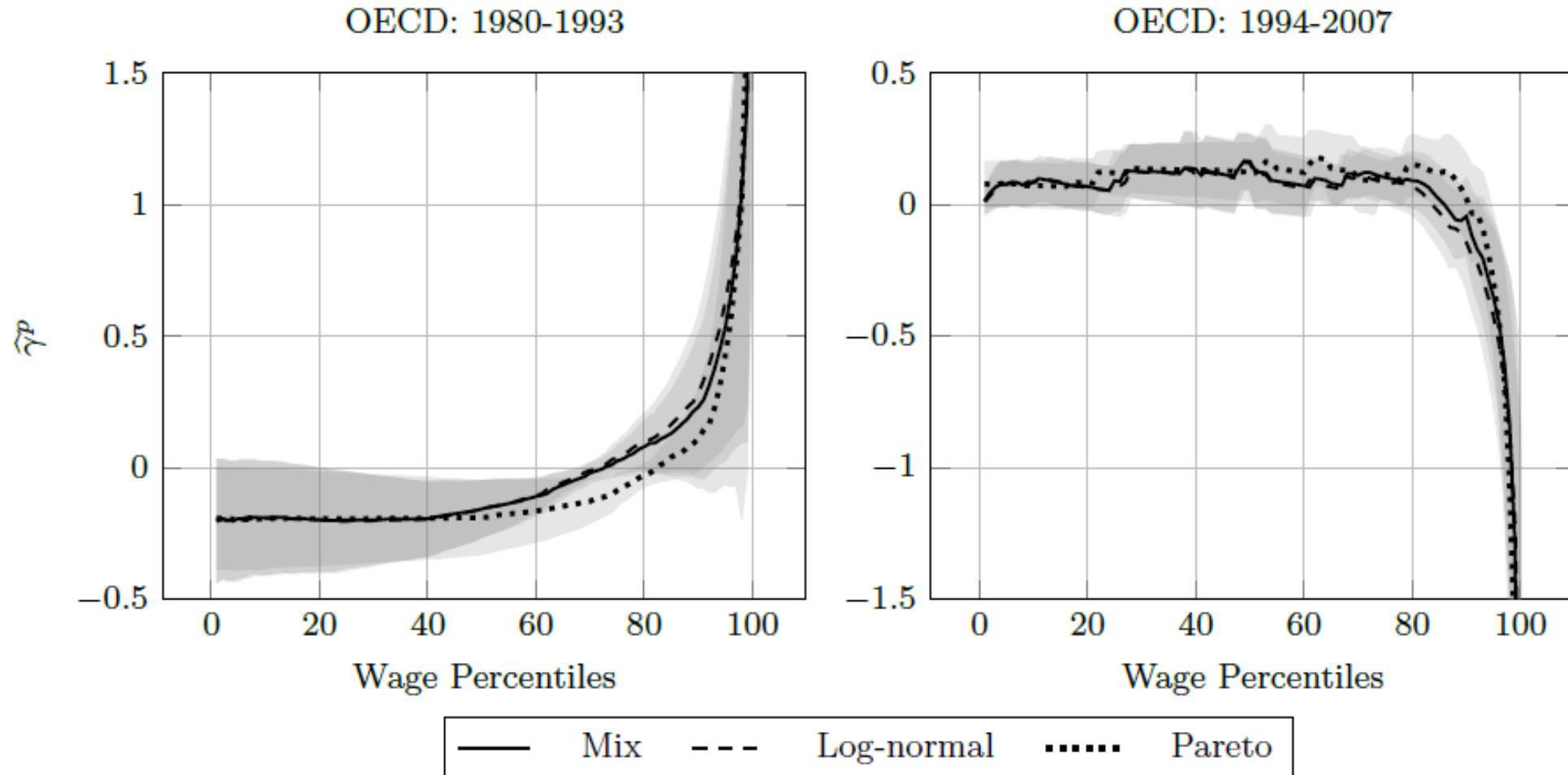
- Data on income-percentile-specific tax burdens in percent of income (tax rate for each income percentile)
- Explain these tax burdens for each country and period bracket (1980-1993; 1994-2012) separately
- Look at income-percentile-specific (trade and migration) globalization coefficients
- Coefficients state how average country changes its tax rate for each percentile and period due to the same change in globalization/openness
- Globalization is endogenous (use instruments)

Analysis 2: How Does Taxation Respond to Globalization?

Findings

- Fundamental difference in behavior between
 - OECD and non-OECD countries
 - Pre-1994 and after-1994 (big openness-policy shifts in mid 1990s)
- OECD pre-1994
 - Income taxes used progressively, as if countries were closed and higher incomes had been immobile
- OECD post-1994
 - Income taxes used regressively at the top, as if countries were open and higher incomes had been mobile
 - Hollowing out of the middle class

Analysis 2: How Does Taxation Respond to Globalization?



Analysis 2: How Does Taxation Respond to Globalization?

These results are very robust

- Irrelevant whether one uses «imputed» income distribution from average wage plus Gini or measured one from LIS
- Irrelevant which form of the distribution one assumes (Pareto, log-normal)
- Irrelevant whether one considers trade or migration for openness
- And the break in patterns emerges statistically in 1994:
 - Not much afterwards
 - Ans not much before that

Analysis 2: How Does Taxation Respond to Globalization?

What does this mean?

- **Government view:**

- Have to rely more heavily on middle class, because they are less mobile than top incomes
- New demands require new taxes, and they cannot be collected from top earners

- **Citizens' view:**

- Benefits from globalization are taxed away from the masses in the income distribution
- Tax authorities rely less and less on top earners

Thank you!