

Vertical and Horizontal Redistribution:

The case of Western and Eastern Europe

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What is redistribution?

- The process through which the government shifts resources between individuals.
- Usual tools are taxes and transfers, but may also include subsidized provision of public services.
- Typically understood as transfers from the “rich” to the “poor” (“vertical redistribution”).
- One dimension often overlooked are transfers between different groups (“horizontal redistribution”).

This paper's contribution

- Provide descriptive evidence on the evolution of vertical and horizontal redistribution in the European Union in the last decade.
- Emphasize the role that active policy changes have had (and have not had) in easing distributional tensions in the region.
- The analysis is limited to the role of **direct taxes and transfers**, excluding indirect taxes and subsidized provision of public service.

Related literature

- Kanbur (2018) presents a theoretical treatment of how progressivity in the vertical redistribution can be negatively affected if this redistribution also implies transfers among socio-politically relevant(horizontal) groups
- Paulus and Tasseva (2017) analyze how changes in tax-benefit policies and market incomes have influenced income distributions in Europe.
- Dolls, Doorley, Paulus, Schneider and Sommer (2018) look at distributional changes from demographic change (upskilling, population aging), relying on demographic projections for analysis.

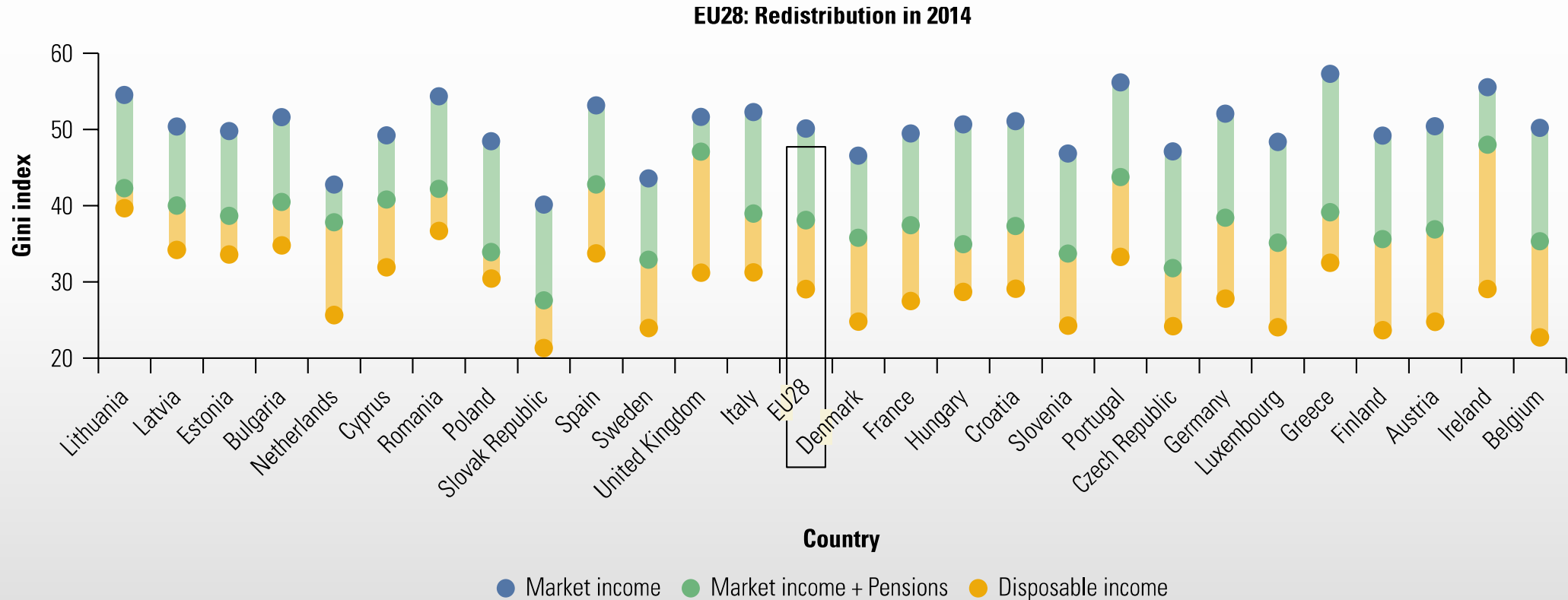
Vertical redistribution

- Traditional way of analyzing redistribution.
- Order individuals according to their income level.
- Emphasize how the tax and transfers system affects the “poor” and the “rich”.
- $RS_t = [Gini^{market} - Gini^{disposable}]_t$

Vertical redistribution



Vertical redistribution



Vertical redistribution 2007 vs 2014

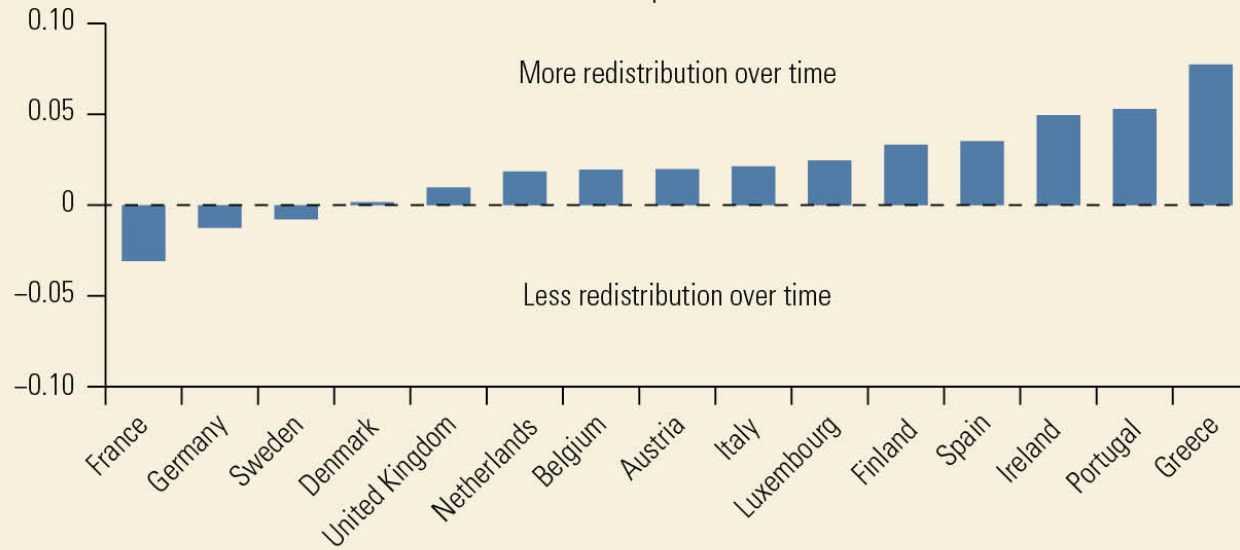
Change in redistribution, in Gini points

a. Western Europe

Difference between Gini coefficient based on market income and Gini index based on disposable income, 2007–2014

More redistribution over time

Less redistribution over time

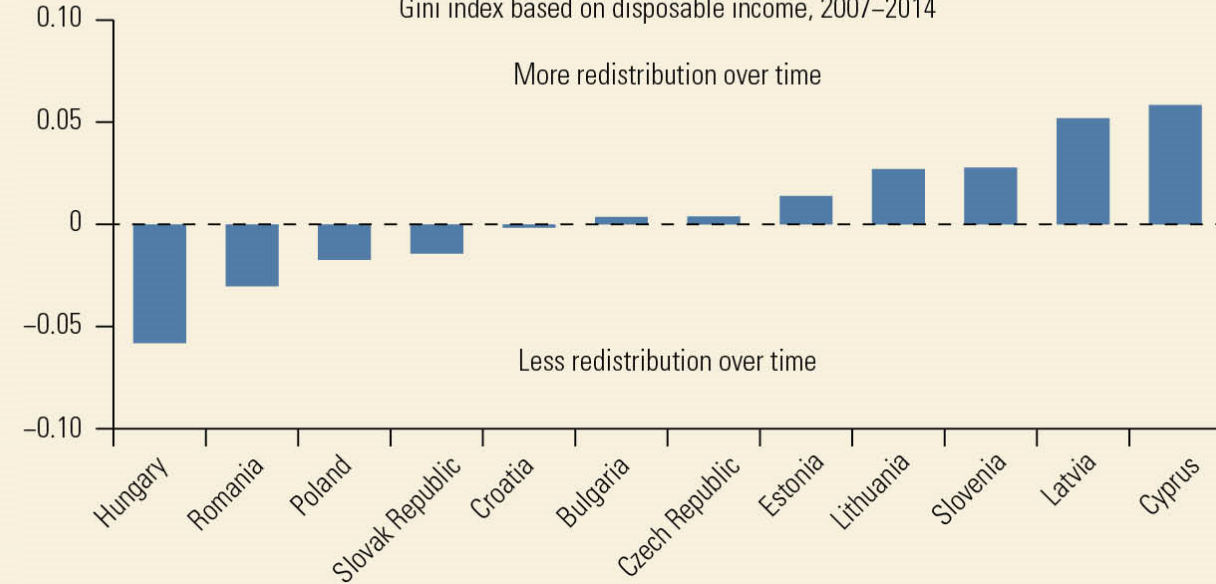


b. Eastern Europe

Difference between Gini coefficient based on market income and Gini index based on disposable income, 2007–2014

More redistribution over time

Less redistribution over time

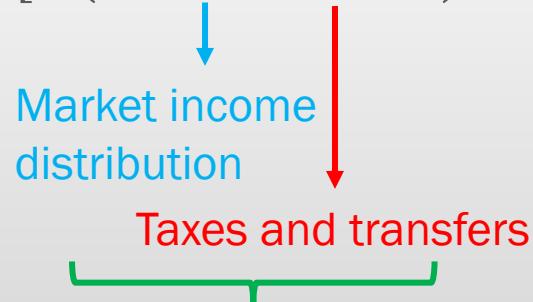


Decomposition of changes in vertical redistribution

- We want to decompose the change in redistribution pre and post financial crisis to understand the role played by changes in the tax and transfers system.

$$\bullet \Delta RS_{t_1-t_0} = \left[Gini_{t_1}^{market} - Gini_{t_1}^{disposable} \right] - \left[Gini_{t_0}^{market} - Gini_{t_0}^{disposable} \right]$$

$$\bullet \Delta RS_{t_1-t_0} = \left[G \left(f(y_{t_1}^{market}) \right) - G \left(f(y_{t_0}^{market}) \right) \right] - \left[G \left(f(y_{t_1}^{market}, TB_{t_1}) \right) - G \left(f(y_{t_0}^{market}, TB_{t_0}) \right) \right]$$



Disposable income distribution

Decomposition of changes in vertical redistribution

$$\Delta RS_{t_1-t_0} =$$

$\left[G \left(f(y_{t_1}^{market}) \right) - G \left(f(y_{t_0}^{market}) \right) \right] -$	\longrightarrow	How market income inequality changes	}	Market component
$\left[G \left(f(y_{t_1}^{market}, TB_{t_0}) \right) - G \left(f(y_{t_0}^{market}, TB_{t_0}) \right) \right] -$	\longrightarrow	How disposable income inequality changes absent any changes in taxes and transfers (“automatic” reaction).		
$\left[G \left(f(y_{t_1}^{market}, TB_{t_1}) \right) - G \left(f(y_{t_1}^{market}, TB_{t_0}) \right) \right]$	\longrightarrow	How disposable income inequality changes if taxes and transfers change for a given market income distribution .	}	Policy component

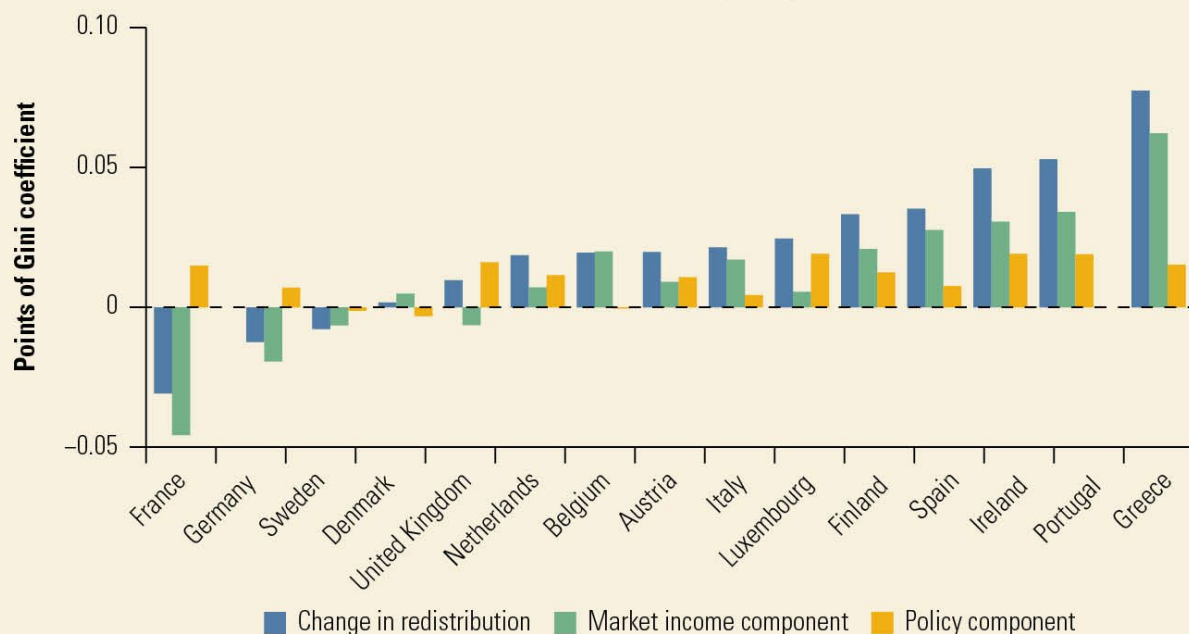
Decomposition of changes in vertical redistribution

- To simulate the counterfactual income distributions we use EUROMOD, a taxes and transfers micro-simulation model for the EU countries.
- Taxes that can be simulated are only direct ones, including social contributions. Indirect taxes are excluded from the simulation.
- All transfers, including pensions, are simulated in the model.
- EUROMOD is a static micro-simulation model, i.e. doesn't account for behavioral changes in labor market participation, for instance.

Decomposition of changes in vertical redistribution

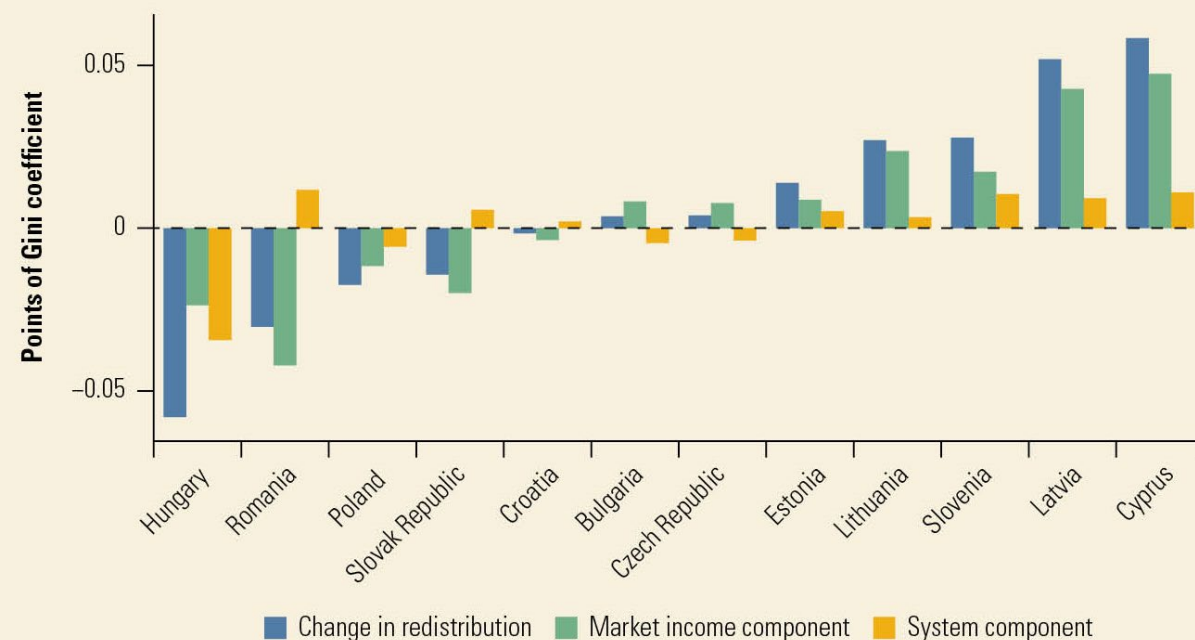
a. Western Europe

Decomposition of changes in redistribution, 2007–2014
Western Europe: countries sorted by change in redistribution



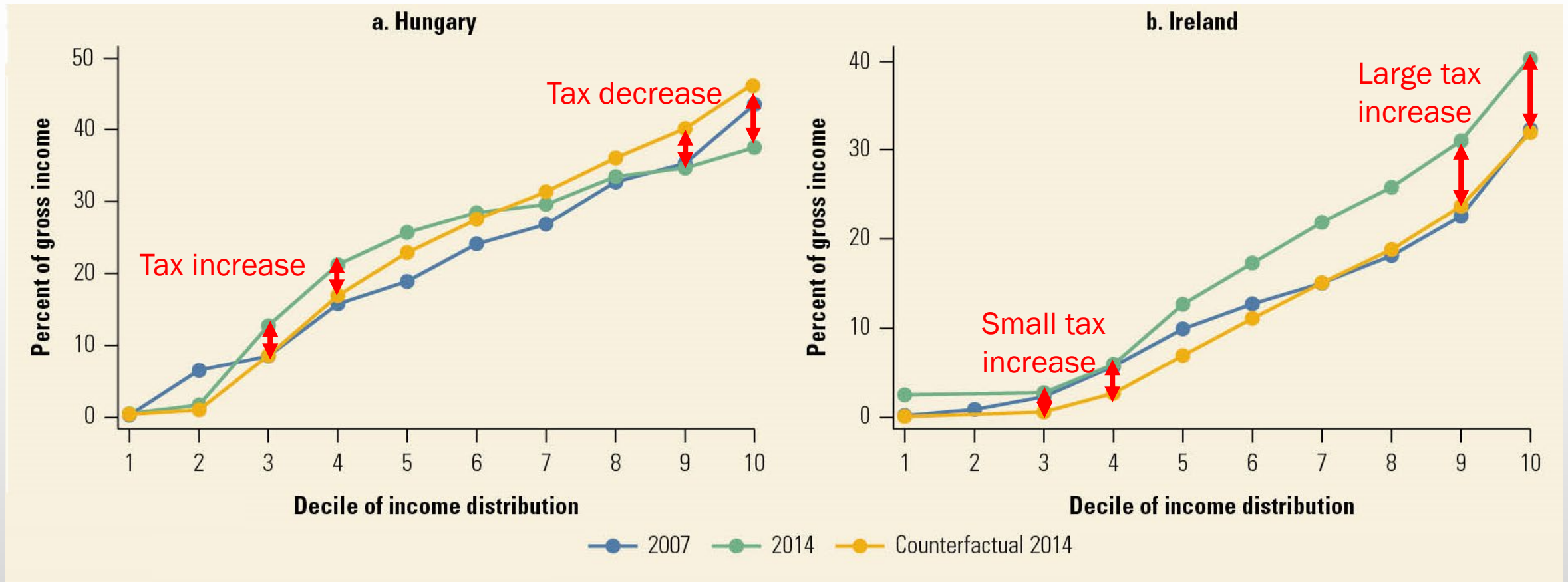
b. Eastern Europe

Decomposition of changes in redistribution, 2007–2014
Eastern Europe: countries sorted by change in redistribution



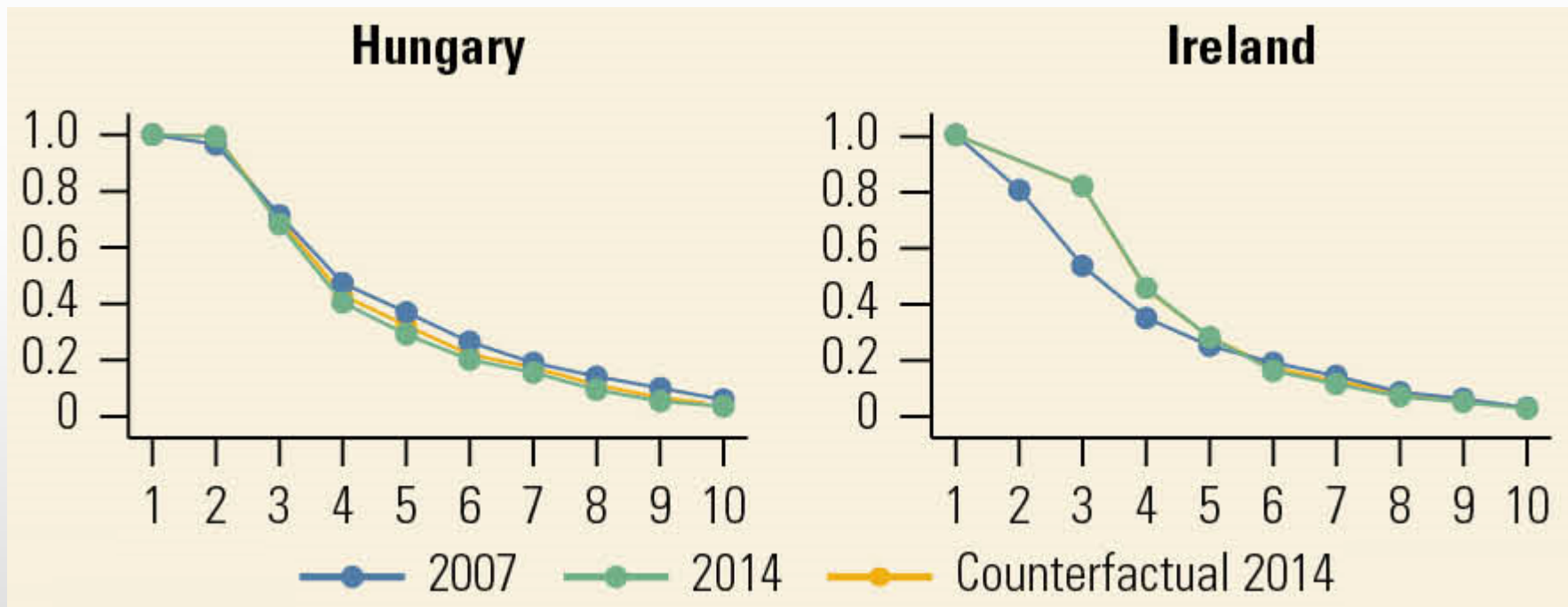
Decomposition of changes in vertical redistribution

Incidence of taxes and social contributions on gross income, per decile



Decomposition of changes in vertical redistribution

Incidence of transfers on gross income, per decile



Horizontal redistribution

- Stewart (2001): “Horizontal Inequality: A Neglected Dimension of Development”
 - “[...] an intrinsic part of human life is group membership, in fact it is this that makes up the identity of individuals ”
 - Akerlof and Kranton (2011): “Identity Economics - How Our Identities Shape Our Work, Wages, and Well-Being”
- Order individuals according to their membership to a given group.

Horizontal redistribution

- Three dimensions explored:

1) Age

Increased job insecurity, inequality among younger generations

2) Occupation

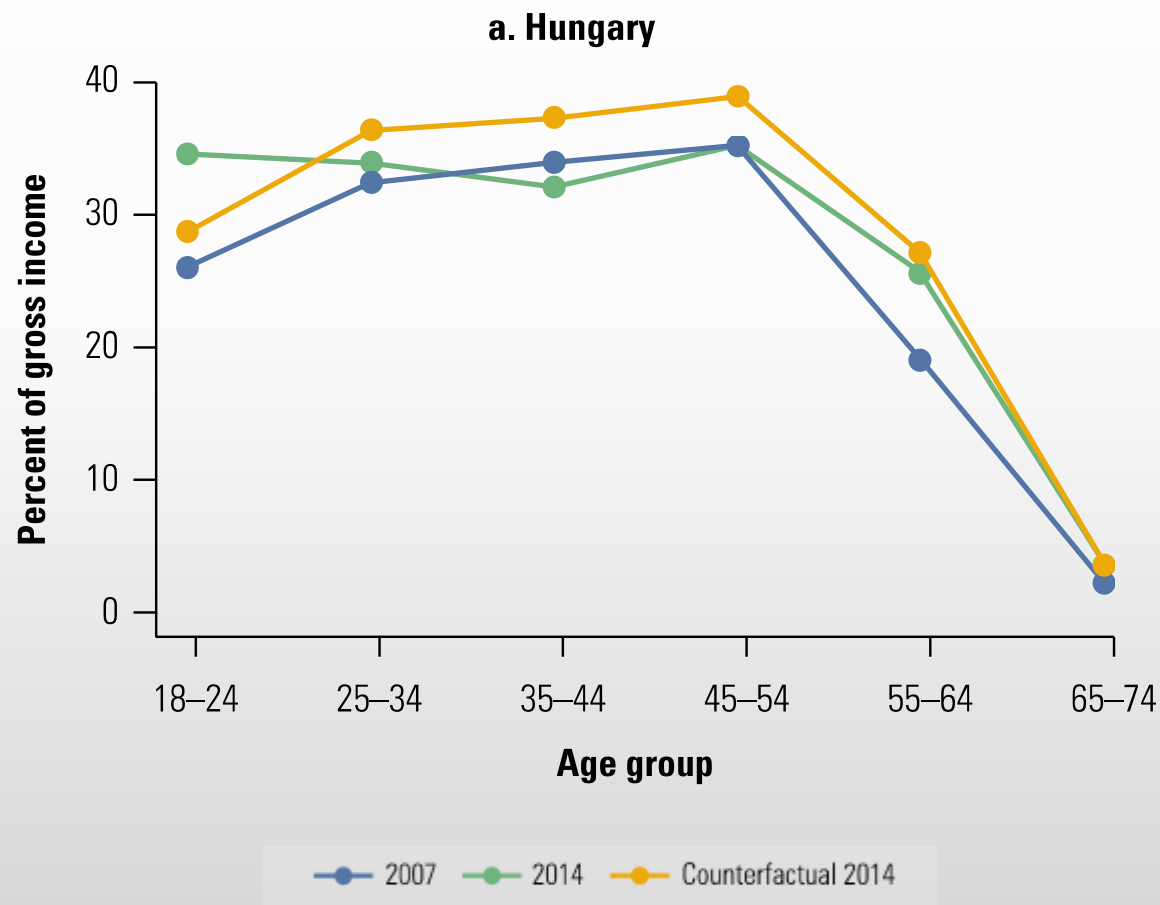
Job polarization: changes in labor market structure affect more occupational groups than skill groups

3) Household type

Changes in household composition, increased burden on members active in the labor market

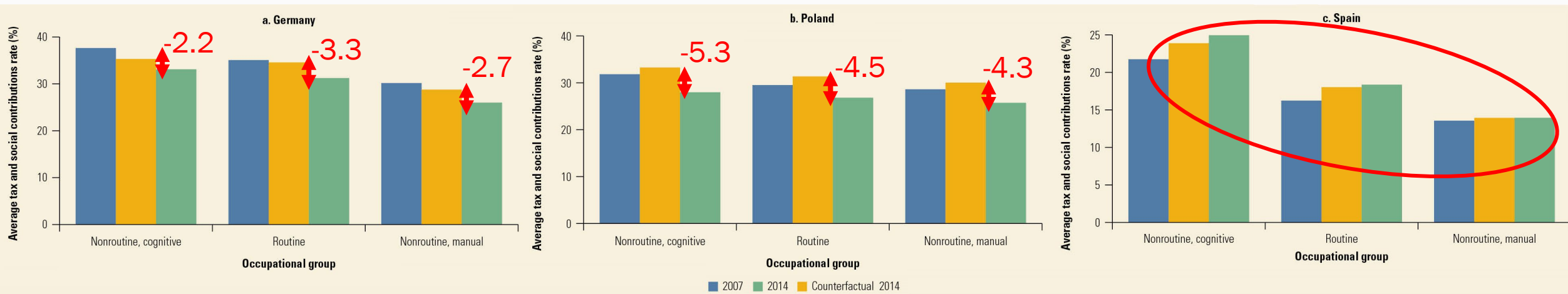
Horizontal redistribution – age groups

Incidence of taxes across age groups



Horizontal redistribution – occupational groups

- Three occupational groups: jobs intensive in 1) nonroutine, cognitive tasks, 2) routine tasks, 3) nonroutine, manual tasks. 2) and 3) are “losers” of job polarization; 1) is “winner”



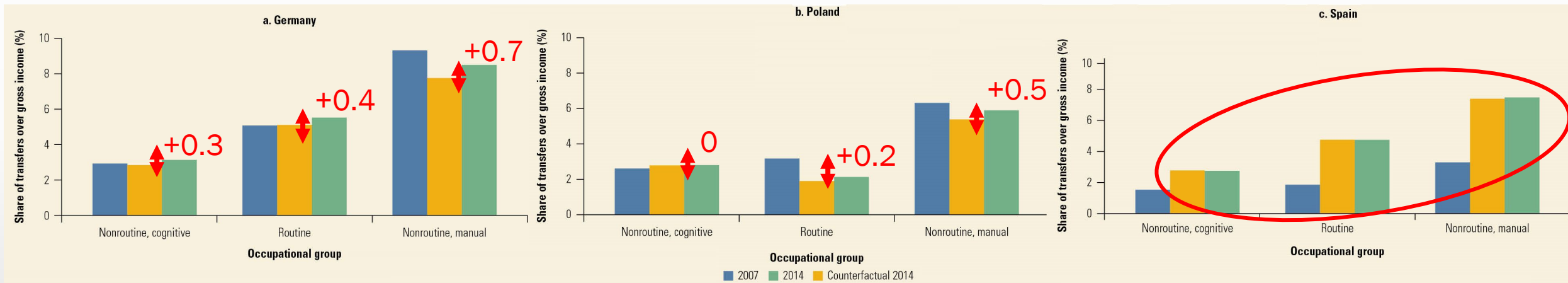
Largest decrease for “losers”

Largest decrease for “winners”

Little role for policy changes
(mostly “automatic” reaction)

Horizontal redistribution – occupational groups

Incidence of transfers on gross income, per occupational group



Largest increase for “losers”

Largest increase for “losers”

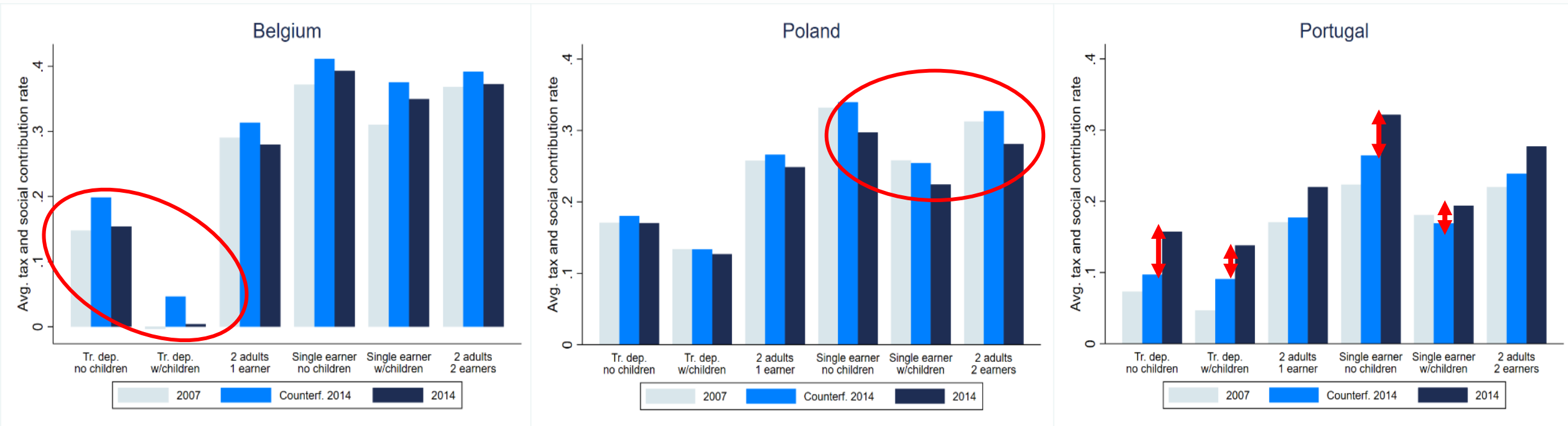
Little role for policy changes
(mostly “automatic” reaction)

Horizontal redistribution – household types

- 1) Transfer dependent (no labor income), no children
- 2) Transfer dependent (no labor income), with children
- 3) Two adults, one labor income earner, with and without children
- 4) Single adult with labor income, with children (“single parent”)
- 5) Single adult with labor income, no children (“young professional”)
- 6) Two adults, two labor income earners, with and without children

Horizontal redistribution – household types

Incidence of taxes and social contributions on gross income, per household type



Large tax cuts for transfer dependent households

Large tax cuts for households with labor market income

Large tax increase for transfer dependent and “young professional” households, smallest for “single parent” households

Horizontal redistribution

- Three dimensions explored:

1) Age

Transition to flat-tax regimes in Eastern Europe have increased tax rates on young and decreased them on middle-aged.

2) Occupation

In some countries, tax changes may exacerbate distributional tensions between occupational groups. Transfers accommodate the “losers” of job polarization in general.

3) Household type

Large regional variation: Eastern European countries have reduced the tax burden on households with labor income, Southern European countries (in financial crisis) have increased it.

Concluding remarks

- Europe has the largest redistribution between market and disposable income, even compared to other high income regions.
- Moreover, it has increased in 21 of the 28 EU countries between 2007 and 2014.
- When looking at horizontal redistribution results are more heterogeneous. Changes in vertical redistribution may not be very informative on changes in redistribution across groups.
- Important to account for horizontal dimension of redistribution in public debate.