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# Inequality and Taxation

Insights into the redistributive effects of the Swiss tax system

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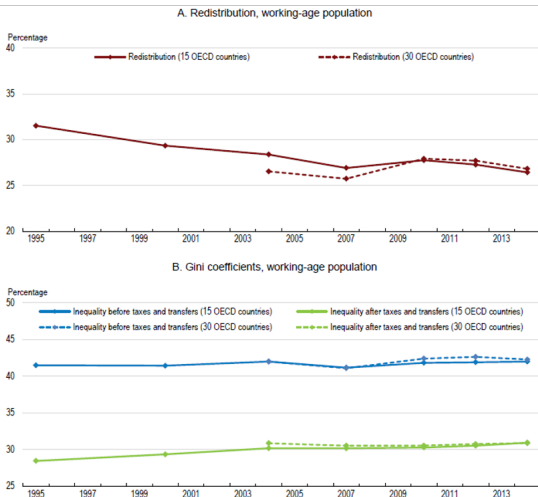
Prof. FH Dr. Oliver Hümbelin, Bern University of Applied Science

Prof. Dr. Ben Jann, University of Bern

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- 1** Introduction: Welfare States on the Retreat? What we can learn from tax data
- 2** Data&Methods: Decomposition of redistribution effects based on Swiss tax data
- 3** Results: Redistribution in Switzerland. Effects of the visible and hidden instruments of the welfare state
- 4** Summary & Conclusion

# Introduction: Increase in inequality of disposable income as a result of less redistribution



Source: Orsett Causa & Mikkel Hermansen, 2018. Income Redistribution Through Taxes and Transfers across OECD Countries, LIS Working papers 729, LIS Cross-National Data Center in Luxembourg

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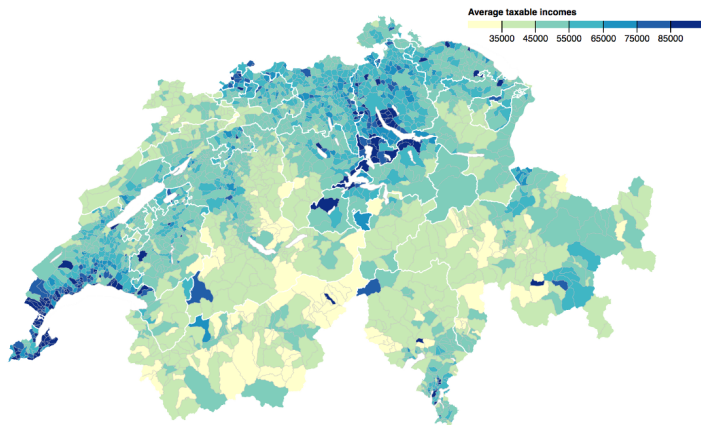
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- ▶ Yet many countries also provide options for claiming deductions that alter the redistributive effect of taxes. This latter aspect however is often neglected since data usually only reports on taxes paid.
- ▶ By using administrative tax data we are able to evaluate *the visible (taxes & benefits) and hidden (deductions) instruments of the welfare state*



# Inequality in Switzerland - an ongoing research project



<http://inequalities.ch/>

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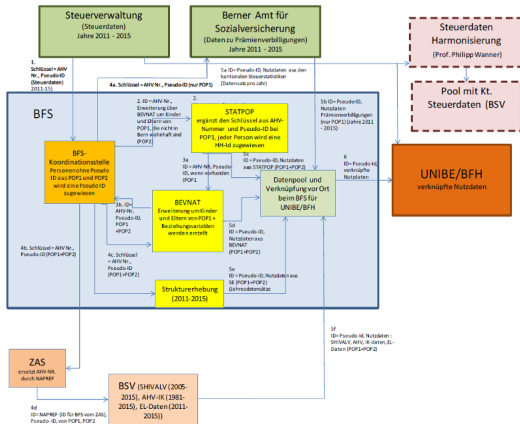
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- ▶ We use tax data from a large canton in Switzerland.
- ▶ Bern is the 2nd largest canton in Switzerland (1 Million inhabitants), with respect to economic inequality, it is a bit below Swiss average and direct taxes are comparably higher.

# Data: Linking Tax Data for Inequality Studies

## Data linkage



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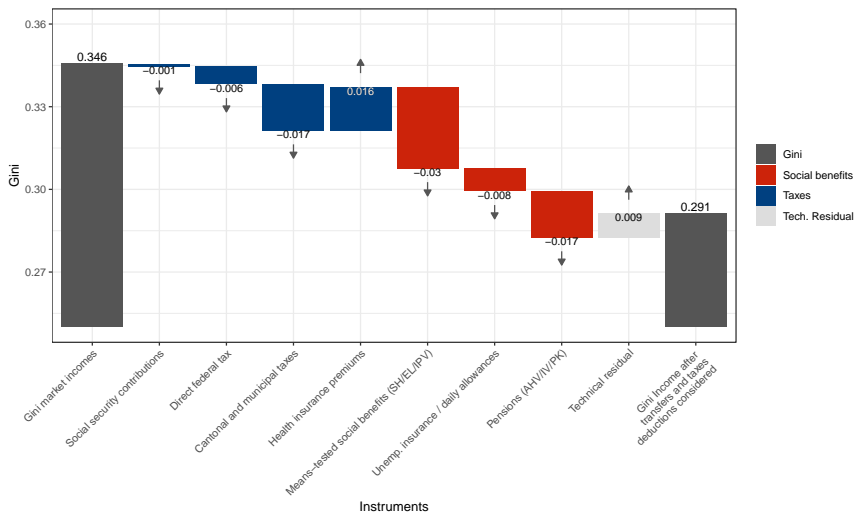
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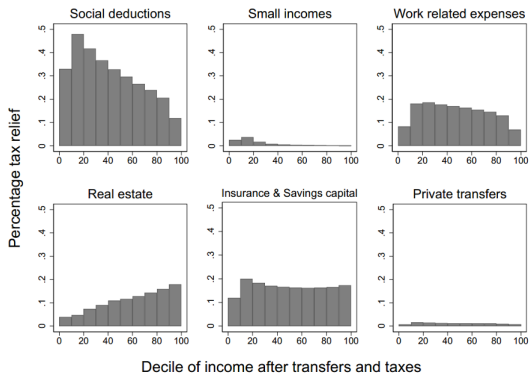
- ▶ (1) Identify effect of taxes (and benefits)
- ▶ (2) To identify the effect of deductions a post tax income distribution without any deductions was created ( $G_z$ ). The effect of every single deduction ( $u_i$ ) was identified by comparing post tax income distributions applying deduction  $i$  ( $G_{u_i}$ ) to  $G_z$ .

# Results: Redistributive effect of taxes and benefits

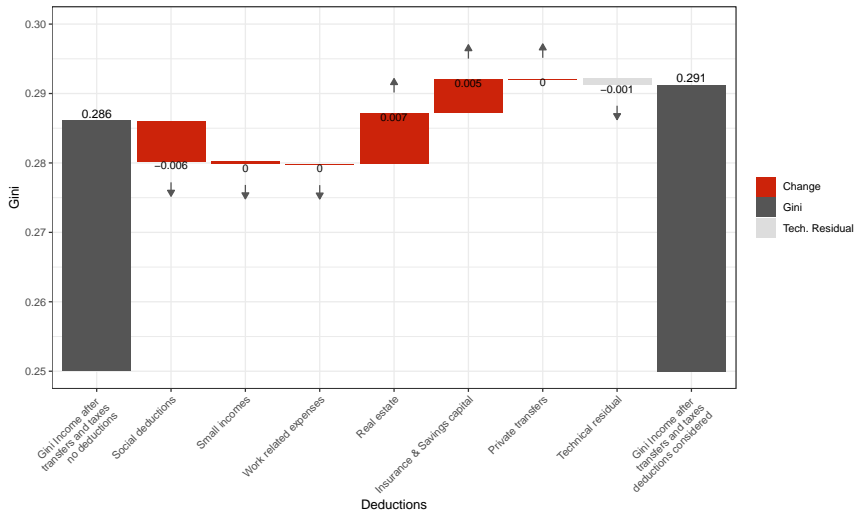


Note: Income inequality before and after taxes and benefits, working age population, Canton of Bern, equivalence-scaled income

# Results: Which income groups profit from deductions?



# Results: Effect of deductions (via taxes) on income inequality





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- ▶ Political debates arise around deductions. Right now, there is a voting on increase child deductions, that is subject of fierce debate in Switzerland.
- ▶ It is therefore important for inequality and policy analysis to investigate on the effect of deductions and not only on tax rates.

*Thank you for your attention!*  
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- Caminada, K., Goudswaard, K, Wang, Ch., Wang, J. (2019). Has the redistributive effect of social transfers and taxes changed over time across countries? *International Social Security Review*, 72(1), 3-31
- ESTV (2013). *Das schweizerische Steuersystem*. Bern: Eidgenössische Steuerverwaltung.
- Kakwani, N. C. (1977). Measurement of Tax Progressivity: An International Comparison. *The Economic Journal*, 87(345), 71-80.
- OECD (2008). *Growing Unequal? Income Distribution and Poverty in OECD Countries*. Paris: OECD Publishing.
- OECD (2011). *Divided We Stand. Why Inequality Keeps Rising*. OECD Publishing.
- OECD (2015). *In It Together: Why Less Inequality Benefits All*. Paris: OECD Publishing.
- Orsetta C. & M, Hermansen (2018). *Income Redistribution Through Taxes and Transfers across OECD Countries*, LIS Working papers 729, LIS Cross-National Data Center in Luxembourg
- Reynolds, M., & Smolensky, E. (1977). Post-fisc distributions of income in 1950, 1961, and 1970. *Public Finance Review*, 5(4), 419-438.