

The impact of redistribution through taxes and deductions on the income distribution - A decomposition analysis with administrative tax data from Switzerland

Dr. Oliver Hümbelin, BFH Centre for Social Security.

Dr. Rudolf Farys, University of Bern

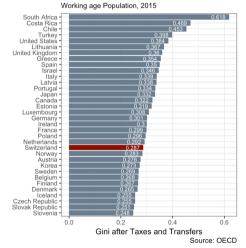
62nd ISI Wolrd Statistics Congress 2019, 18 - 23 August 2019, Kuala Lumpur 22nd August 2019, 10.30 am - 12.30 am

1 Part 1: Economic Inequality in Switzerland. What we can learn from tax data

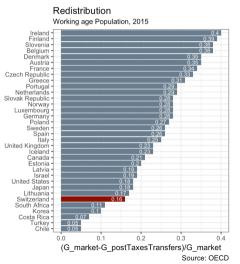
2 Part 2: Results from a study on redistribution through taxes and deductions with Swiss tax Data

Economic inequality in Switzerland: low income Inequality.

Inequality after Taxes and Transfers

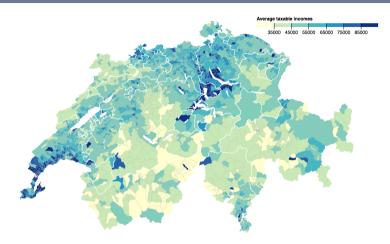


Economic inequality in Switzerland: low income Inequality& little Redistribution.



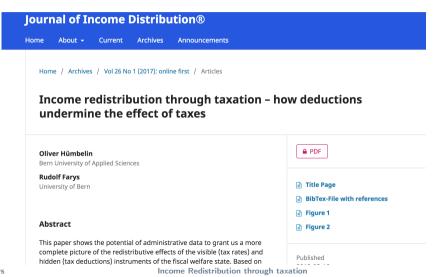
Income Redistribution through taxation

Regional inequality within Switzerland



(Source: http://inequalities.ch/)

Part 2: Results from a study on redistribution through taxes and deductions with Swiss tax Data



► The OECD (2011, 2015) points out that the recent increase in disposable income inequality is also because of a retreat of governmental redistribution. It is therefore important to fully understand the redistribution mechanics of a welfare state.

- ► The OECD (2011, 2015) points out that the recent increase in disposable income inequality is also because of a retreat of governmental redistribution. It is therefore important to fully understand the redistribution mechanics of a welfare state.
- An important element of income inequality reduction are *progressive direct taxes*. On average 25% of the overall redistribution can be attributed to income taxes (Wang et al. 2014).

- ► The OECD (2011, 2015) points out that the recent increase in disposable income inequality is also because of a retreat of governmental redistribution. It is therefore important to fully understand the redistribution mechanics of a welfare state.
- An important element of income inequality reduction are *progressive direct taxes*. On average 25% of the overall redistribution can be attributed to income taxes (Wang et al. 2014).
- ▶ 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.

- ► The OECD (2011, 2015) points out that the recent increase in disposable income inequality is also because of a retreat of governmental redistribution. It is therefore important to fully understand the redistribution mechanics of a welfare state.
- An important element of income inequality reduction are *progressive direct taxes*. On average 25% of the overall redistribution can be attributed to income taxes (Wang et al. 2014).
- 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) and hidden (deductions) instruments of the welfare state with respect to their impact on income inequality.

► Taxes: the degree of redistribution depends on the mean tax rate and the progressivity.

- ► Taxes: the degree of redistribution depends on the mean tax rate and the progressivity.
- ▶ Deductions: comprise amounts that are deductible from taxable income, which accordingly lead to a lower tax rate and tax burden. Some aim to lower hard social circumstances (e.g. child costs) others incentivize certain behaviors (saving for old age). Without data it is difficult to tell the redistributive effect.

- ► Taxes: the degree of redistribution depends on the mean tax rate and the progressivity.
- ▶ Deductions: comprise amounts that are deductible from taxable income, which accordingly lead to a lower tax rate and tax burden. Some aim to lower hard social circumstances (e.g. child costs) others incentivize certain behaviors (saving for old age). Without data it is difficult to tell the redistributive effect.
- ▶ Behavioral aspects: Taxes and deductions induce also behavioral responses that affect pre-tax income distribution (see Bargain et al. (2015)).

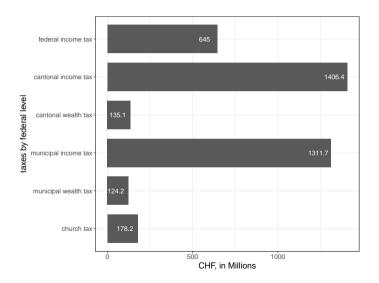
- ► Taxes: the degree of redistribution depends on the mean tax rate and the progressivity.
- ▶ Deductions: comprise amounts that are deductible from taxable income, which accordingly lead to a lower tax rate and tax burden. Some aim to lower hard social circumstances (e.g. child costs) others incentivize certain behaviors (saving for old age). Without data it is difficult to tell the redistributive effect.
- ▶ Behavioral aspects: Taxes and deductions induce also behavioral responses that affect pre-tax income distribution (see Bargain et al. (2015)).

As opposed to many other European countries where the levying of taxes is centralised, the tax system in Switzerland mirrors the historically evolved federal structure, giving a lot of power to the sub-state levels, namely the cantons and municipalities (ESTV, 2013). A total of 26 tax laws exist, with each canton having its own tax law and the municipalities and the federal state also levying taxes.

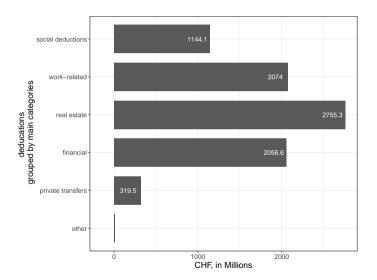
- As opposed to many other European countries where the levying of taxes is centralised, the tax system in Switzerland mirrors the historically evolved federal structure, giving a lot of power to the sub-state levels, namely the cantons and municipalities (ESTV, 2013). A total of 26 tax laws exist, with each canton having its own tax law and the municipalities and the federal state also levying taxes.
- ▶ We use tax data from a large canton in Switzerland.

- As opposed to many other European countries where the levying of taxes is centralised, the tax system in Switzerland mirrors the historically evolved federal structure, giving a lot of power to the sub-state levels, namely the cantons and municipalities (ESTV, 2013). A total of 26 tax laws exist, with each canton having its own tax law and the municipalities and the federal state also levying taxes.
- ▶ We use tax data from a large canton in Switzerland.
- Aargau is the fourth largest canton in Switzerland, with respect to economic inequality, mean income and the tax system it is an average canton, thus its not a special case we are looking at.

Overview on taxes under scrutiny



Overview on deductions under scrutiny



▶ Reynolds & Smolensky (1977) concept of measuring redistribution

▶ Reynolds & Smolensky (1977) concept of measuring redistribution

$$RS = G_{x} - G_{x-t} \tag{1}$$

▶ Reynolds & Smolensky (1977) concept of measuring redistribution

$$RS = G_{x} - G_{x-t} \tag{1}$$

► The overall effect differentiates the effect into an effect of progression/Kakwani-Index (Kakwani, 1977), average tax burden and an effect of reranking (Wang et al., 2014)

▶ Reynolds & Smolensky (1977) concept of measuring redistribution

$$RS = G_{x} - G_{x-t} \tag{1}$$

► The overall effect differentiates the effect into an effect of progression/Kakwani-Index (Kakwani, 1977), average tax burden and an effect of reranking (Wang et al., 2014)

$$RS = G_{x} - G_{x-t_{i}} = K_{i} * \frac{t_{i}}{1-t_{i}} - RR_{i}$$
 (2)

▶ Reynolds & Smolensky (1977) concept of measuring redistribution

$$RS = G_{x} - G_{x-t} \tag{1}$$

► The overall effect differentiates the effect into an effect of progression/Kakwani-Index (Kakwani, 1977), average tax burden and an effect of reranking (Wang et al., 2014)

$$RS = G_{x} - G_{x-t_{i}} = K_{i} * \frac{t_{i}}{1-t_{i}} - RR_{i}$$
 (2)

▶ (1) Identify effect of taxes

▶ Reynolds & Smolensky (1977) concept of measuring redistribution

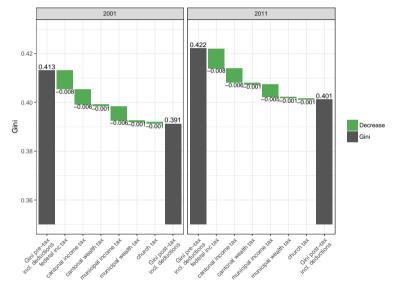
$$RS = G_{x} - G_{x-t} \tag{1}$$

► The overall effect differentiates the effect into an effect of progression/Kakwani-Index (Kakwani, 1977), average tax burden and an effect of reranking (Wang et al., 2014)

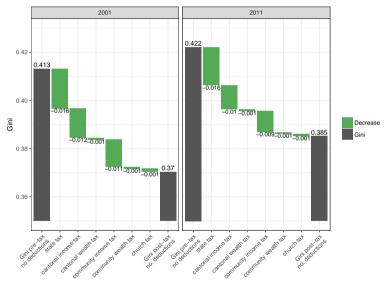
$$RS = G_{x} - G_{x-t_{i}} = K_{i} * \frac{t_{i}}{1-t_{i}} - RR_{i}$$
 (2)

- ▶ (1) Identify effect of taxes
- \triangleright (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 .

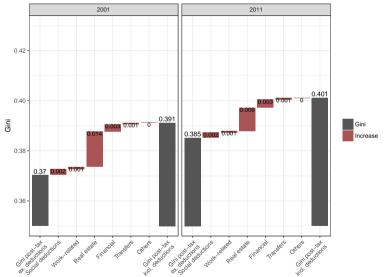
Results: Partial redistributive effect of taxes (incl. deductions)



Results: Partial redistributive effect of taxes (no deductions)



Results: Partial redistributive effect of deductions



Hümbelin&Farys Income Redistribution through taxation 14 / 17

While most studies focus on direct taxes paid, this paper expands the perspective by providing insight into the mitigating effect of the often hidden part of the fiscal welfare state; deductions.

- While most studies focus on direct taxes paid, this paper expands the perspective by providing insight into the mitigating effect of the often hidden part of the fiscal welfare state; deductions.
- Our administrative data based study showed however that deductions mitigate the redistributive effect of taxes drastically (by nearly 50%).

- While most studies focus on direct taxes paid, this paper expands the perspective by providing insight into the mitigating effect of the often hidden part of the fiscal welfare state; deductions.
- Our administrative data based study showed however that deductions mitigate the redistributive effect of taxes drastically (by nearly 50%).
- ▶ Put simply, high income earners profit greatly from deductions.

- While most studies focus on direct taxes paid, this paper expands the perspective by providing insight into the mitigating effect of the often hidden part of the fiscal welfare state; deductions.
- Our administrative data based study showed however that deductions mitigate the redistributive effect of taxes drastically (by nearly 50%).
- ▶ Put simply, high income earners profit greatly from deductions.
 - 1. While a lot of deductions were created to reduce taxes to ease the consequences of difficult social or work-related circumstances (such as the deduction for children or deductions for commuters) they are nevertheless open to everyone. In a progressive tax system however, the resulting relative tax relief for high income earners is higher.

- While most studies focus on direct taxes paid, this paper expands the perspective by providing insight into the mitigating effect of the often hidden part of the fiscal welfare state; deductions.
- Our administrative data based study showed however that deductions mitigate the redistributive effect of taxes drastically (by nearly 50%).
- ▶ Put simply, high income earners profit greatly from deductions.
 - 1. While a lot of deductions were created to reduce taxes to ease the consequences of difficult social or work-related circumstances (such as the deduction for children or deductions for commuters) they are nevertheless open to everyone. In a progressive tax system however, the resulting relative tax relief for high income earners is higher.
 - 2. High income earners have additional options to claim deductions like costs related to homeownership or shifting money to the pension system.

- While most studies focus on direct taxes paid, this paper expands the perspective by providing insight into the mitigating effect of the often hidden part of the fiscal welfare state; deductions.
- Our administrative data based study showed however that deductions mitigate the redistributive effect of taxes drastically (by nearly 50%).
- ▶ Put simply, high income earners profit greatly from deductions.
 - 1. While a lot of deductions were created to reduce taxes to ease the consequences of difficult social or work-related circumstances (such as the deduction for children or deductions for commuters) they are nevertheless open to everyone. In a progressive tax system however, the resulting relative tax relief for high income earners is higher.
 - 2. High income earners have additional options to claim deductions like costs related to homeownership or shifting money to the pension system.
 - 3. Inequality and redistribution scholars should therefore also have an eye deductions and not only on tax rates.

Thank you for your attention! oliver.huembelin@bfh.ch / rudolf.farys@soz.unibe.ch

Bibliography

Bargain, O., Dolls, M., Immervoll, H., Neumann, D., Peichl, A., Pestel, N., & Siegloch, S. (2015). Tax Policy and Income Inequality in the United States, 1979-2007. Economic Inquiry, 53(2), 1061-1085.

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.

Reynolds, M., & Smolensky, E. (1977). Post-fisc distributions of income in 1950, 1961, and 1970. Public Finance Review, 5(4), 419-438.

Wang, C., Caminada, K., & Goudswaard, K. (2014). Income redistribution in 20 countries over time. International Journal of Social Welfare, 23(3), 262-275.