



Progressive taxes and top income shares: A historical perspective on pre- and post-tax income concentration in Switzerland



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HIGHLIGHTS

- This study provides new data about pre- and post-tax top income shares in Switzerland, from the 1945–2012 period.
- The development differs considerably among the top income groups.
- The highest-income households are able to avoid increased cantonal redistribution by self-sorting into low-tax cantons.
- The lower-level top income groups benefit from tax policy changes.
- Despite fiscal federalism, post-tax income concentration has been exceptionally stable in Switzerland.

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ABSTRACT

The literature on income concentration largely focuses on pre-tax income; the current study provides new data concerning both pre- and post-tax top income shares in Switzerland, from the 1945–2012 period. Redistribution due to progressive income taxes increased until the 1970s, and since then, the highest-income households have avoided increased cantonal income taxes by taking residence in low-tax cantons. Lower-level top income groups are less mobile than the highest-level groups, but have benefited from tax policy reforms since the 1980s. Nonetheless, despite fiscal federalism, redistribution and post-tax income concentration have been exceptionally stable in Switzerland.

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1. Introduction

This study provides new data about pre- and post-tax top income shares in Switzerland, from the 1945–2012 period. Using this dataset, we can assess the development of the redistributive effect at the top of Switzerland's income scale.

A rich body of literature on top income groups has exploited tax data to construct time series of income concentration in various countries (Alvaredo et al., 2015). Atkinson et al. (2011) provide a review of the results. The income variable most frequently

employed in this body of literature is pre-tax income; thus, the redistributive effect of income taxes has been largely neglected. Only (Piketty and Saez, 2007) construct top income shares both before and after the application of federal taxes, to assess the progressiveness of the US federal tax system. We add to this literature by proposing a new measure of the redistributive effect of progressive income taxes and applying it to both federal and subfederal taxes in Switzerland.

Given recent increases in income concentration, there has been increased political demand for more progressive tax systems. For this reason, assessments of the redistributive effect of existing tax systems are quite relevant and timely.

Switzerland's cantons and municipalities enjoy considerable fiscal autonomy. The significant heterogeneity in tax burden within

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a relatively small space enables high-income households to move to low-tax jurisdictions and thus avoid redistribution to some extent. Based on our new data, we are able to assess the effects of tax-induced mobility among cantons on income redistribution in Switzerland.

2. The redistributive effect of income taxes

Various studies evaluate the effect of tax policy on pre-tax top income shares.¹ The effects captured in this segment of the literature are basically behavioral responses to taxation, such as labor supply, tax avoidance, and compensation bargaining (Piketty et al., 2014). To assess the full redistributive impact of tax policy, it is necessary to assess inequality also in post-tax income.

The difference in inequality between pre- and post-tax incomes can be attributed to the redistributive effect of income taxes (Musgrave and Thin, 1948). We apply this thinking to income concentration and measure redistribution based on the difference between the pre-tax income share $Top_{p,Y}$ of the top income group p and the respective post-tax income share $Top_{p,Y-T}$. The measure is normalized in order to compare the redistributive effect among different top income groups: $RE_p = 1 - Top_{p,Y-T}/Top_{p,Y}$.

The main advantage of this measure is that it includes information about both the share of income and the tax burden of top earners, relative to the general population.

3. The data used

The Swiss Federal Tax Administration (SFTA) regularly publishes income data for up to 21 income classes. These data have been widely used to construct time series of top income shares at Switzerland's federal level (Dell et al., 2007; Foellmi and Martínez, forthcoming), as well as at the canton level (Schaltegger and Gorgas, 2011).² The income variable provided is gross income. It includes social security benefits, while social security contributions are deducted. The social security system already implies some extent of redistribution. However, as the level of benefits is linked to contributions, this mainly constitutes within-household redistribution over the lifecycle. Actual income redistribution as implied by social security is mainly relevant to low-income households, whereas the focus of this paper is high-income households. Hence, we denote this income variable as pre-tax.

A novel contribution of this study is its construction of a time series of post-tax top income shares. The SFTA data include information about paid federal income taxes. Additionally, we employ a yearly SFTA publication on subfederal income taxes.³ The tax burden varies considerably among cantons and municipalities. As a result of income sorting, high-income households are more likely to reside in low-tax jurisdictions. When constructing the average tax burden for a certain income class, one must account for this effect (Roller and Schmidheiny, 2016). To determine the average tax burden in a canton, the tax burden of each community is weighted by the communities' share of the canton's total income. To determine the average tax burden of a certain income class across the whole of Switzerland, the tax burden of each canton

is weighted according to the canton's income share within the respective income class.⁴

Since we have no information regarding the wealth status of various income classes, we are not able to account for wealth and inheritance taxes. These taxes account for about 11% of direct taxes on households in Switzerland, while income taxes – which we do include – account for about 83%. We also do not include corporate taxes, which are borne by capital owners and wage earners and thus are already incorporated into market incomes of households.

To determine both the pre- and post-tax top income shares, we employ the Pareto interpolation method, following Dell et al. (2007).

4. Descriptive evidence

In Table 1 we provide the results for the year 2012. Fig. 1 shows the development of pre- and post-tax income shares for six distinct top income groups. Pre-tax income concentration is quite stable in Switzerland. The highest-income groups exhibit an increasing tendency, but are also very volatile. Due to Switzerland's progressive tax system, the top income shares are consistently lower after taxes. Fig. 2 shows the normalized redistributive effect for each group. The higher on the income scale a group is, the greater the effect redistribution has on it. For middle-class incomes between the median and the top 10th percentile, redistribution is actually negative; hence, the income shares of these groups are larger after taxes.

Redistribution generally increased until the 1970s; between 1967 and 1974, we detect in the data a strong increase in redistribution at the top of the income scale. This was induced by an increase in top marginal tax rates (Fig. 3).

In Figs. 4 and 5, we compare the redistributive effect in Switzerland and the redistribution within cantons. Both measures include the effect of the total income tax burden (i.e., federal, cantonal, and municipal income taxes). Given their fiscal autonomy, the redistributive effect varies among cantons. This canton-level heterogeneity is illustrated by a boxplot for each tax period. For the top 0.01%, we find a considerable increase in redistribution within cantons between 1967 and 1974 (Fig. 4). However, as tax rates vary considerably among cantons, the average redistributive effect in Switzerland depends on the distribution of these households among the cantons. Redistribution in the country as a whole is much more stable than within the cantons; this divergence can be explained by increased income sorting by the respective households. Apparently, the highest-income households have been locating, with increased propensity, to low-tax cantons. While redistribution within cantons has increased due to higher tax rates, these households are able to avoid the effect by self-sorting into low-tax cantons. This finding is consistent with that of Roller and Schmidheiny (2016), who show that the effective tax rates in Switzerland are reduced at the top of the income scale, due to income sorting.⁵

Fig. 2 shows that lower-level top income groups between the top 10th and 1st percentiles have been exhibiting a declining redistributive effect since the 1980s. However, income sorting seems to be much less relevant an issue for these income groups. We observe no systematic divergence between development across Switzerland and that within cantons. Additionally, top marginal tax rates were quite stable in the 1980s. Thus, the decline in the redistributive effect was probably caused by tax

¹ See, for example, Saez (2004), Saez and Veall (2005), Moriguchi and Saez (2008), and Atkinson and Leigh (2008), or Roine and Waldenström (2008), Roine et al. (2009), Sarkar and Tuomala (2010), Atkinson and Leigh (2013), Piketty et al. (2014), and Frey et al. (forthcoming).

² Our pre-tax income series is based on Schaltegger and Gorgas (2011). We extend the series to 2012 and include so-called special cases ("Sonderfälle") (i.e., high-net-worth immigrants who enjoy special tax treatment).

³ "Steuerbelastung in der Schweiz", 1945–2012.

⁴ For the 1955–2006 period, the weighted tax burden is cited in the SFTA publication; for the years before 1955 and after 2006, we construct weight values based on federal tax statistics. We compare the estimated total tax liability to the official income accounts. The deviation is not systematic; on average, it is about 2.5%, and we take this as validation of our method.

⁵ For further evidence regarding income sorting in Switzerland, see also Feld and Kirchgässner (2001), Hodler and Schmidheiny (2006), and Schaltegger et al. (2011).

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