

**Switzerland: Estimates of top shares of fiscal income
for 2011-2014, and revision for 1995-2010**

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World Inequality Lab

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I have extended the series for Switzerland to 2014. Due to the introduction of a family tax credit which caused a break in the underlying statistics, I have also revised the series for the period 1995-2010. The revision includes the use of a slightly differently defined tax statistic, which has the advantage of being less sensitive to future changes in the tax code. In this short technical note, I document the changes and their implications and I comment on an unusual, one-time observation in 2011.

1. Existing series of top shares of fiscal income

Top shares of fiscal income for Switzerland were first computed by Dell et al. (2007) and include the years 1933-1995. The series were based on aggregate statistics from the federal income tax. These statistics were usually computed including only taxpayers with a positive tax liability for the federal income tax. Only since 1993 (tax period 1995)¹ exist statistics including all taxpayers, also those without federal tax liability.

In a recent paper, Föllmi and Martínez (2017) updated existing series up to 2010. In order to ensure comparability with earlier series, their estimates were based on statistics including only filers with a positive tax liability. By making use of these statistics and following the approach by Dell et al. (2007), taxpayers with no tax liability in the strongly progressive federal income tax were treated as non-filers when using the Pareto interpolation method. Applying the same procedure as Dell et al. (2007), Föllmi and Martínez (2017) assigned the non-filers an income of 20% of the average income.

Such an assumption on income of the non-filers is needed to compute the total income denominator for the income shares. Since not all taxpayers show up in the tax statistics (e.g., non-filers), it is standard to calculate a total income denominator to also capture personal income which is not reported in the statistics. This leads to a more conservative measure of top income shares than without correcting for missing income in the statistics. The missing taxpayers can easily be determined from total adult population statistics (minus ½ of married adults due to joint filing of married couples). A common procedure is then to attribute these missing taxpayers a percentage of average reported income, e.g., 20% of average income.

2. The effect of introducing family tax credits in 2011

In 2011, the federal government introduced family tax credits of 251 CHF per child as well as a general deduction of up to 10,100 CHF for justified child-care expenses for children below

¹ The years 1993/94 were the base for tax period 1995/96 in the old retrospective tax system. The years reported in Dell et al. (2007) refer to the tax period. When combining earlier and new estimates, the time shift between tax base year and taxation period has to be taken into account: the earlier estimates need to be shifted backwards 2 years. See Föllmi and Martínez (2017) for details on the praenumerando taxation in Switzerland and the transition in the 1990s.

age 14.² These two measures together led to a reduction of taxpayers in the statistics covering only those with a positive tax liability: the total number of taxpayers reported in the statistics fell by more than 300,000 from 3,736,928 in 2010 to 3,425,351 in 2011 (see Table 1). At the same time, the total number of tax units according to population registers (reported in col. 4 of Table 1) had risen by an estimated 70,000 taxpayers.

The loss of taxpayers was not concentrated at the bottom of the income distribution, as Figure 1 shows. Taxpayers in the middle of the income distribution, up to the bracket of 120,000 CHF, were missing. This is also why average nominal income rose by 4% from 80,000 CHF to 83,300 CHF between 2010 and 2011 in the statistics which exclude those without federal income tax liability.

Comparing Columns 3 and 5 in Table 1 further shows that in the new statistics including all taxpayers, the number of taxpayers *exceeds* the hypothetical number of taxpayers in the country. How is this possible? There are two reasons. First, married taxpayers file two tax returns in the year in which one of the spouses dies. Up to the death of one spouse, they file jointly for that year, but for the remainder of the year the surviving spouse is taxed individually. In 2013, 25'190 married individuals died in Switzerland, making up for 78% of the difference. Second, taxpayers leave Switzerland and move to Switzerland over the year. Each of them is a taxpayer in their first and last year present in Switzerland. Population counts on December 31 get the counts wrong for this purpose: taxpayers who were present at the beginning of the year but have left are not captured by the population statistics anymore.

3. Correction of the total income denominator

In light of the changes in the tax system and their effects on the data base, I adjust the estimation of top income shares series from 1995 onwards by using the new statistics which include all taxpayers. These tax filers did report their income; they were just not included in earlier statistics. Since nowadays it is (and will be in the future) possible to include them in the statistics, it is accurate to include them and their actual reported income.

The alternative would be to try to adjust the income share attributed to non-filers after 2011. The problem with this approach is that it would have to be adjusted whenever the number of those with zero tax liability changes due to a tax reform.

When using the new statistics which include those without tax liability, there is no point of correcting for income of non-filers, as there are in fact no non-filers.³ Therefore, I correct the series by using the statistics which include all taxpayers and without correcting the total income denominator after 1995. Figure 2 below shows how this changes the results after 1995 in the case of the top 10%. Between 1995 and 2010, the difference is minimal. This indicates, that the 20%-rule is a good fit to estimate the income of missing taxpayers during this period. In 2011 however, when the family tax credits are introduced, the 20%-rule is not adequate anymore. As a result, top income shares overshoot.

² A current reform proposal suggests to increase the deduction to 25,000 CHF.

³ Also see appendix of Föllmi and Martínez (2017) on why there are no true non-filers.

Table 1: Number of filers, adults and total tax units

| Year | Filers with tax liability | All filers | Total adults in population registers | Total tax units according to population registers |
|------|---------------------------|------------|--------------------------------------|---|
| 2008 | 3639757 | 4617790 | 6250712 | 4522320 |
| 2009 | 3689063 | 4681823 | 6336785 | 4599535 |
| 2010 | 3736928 | 4744872 | 6416153 | 4678449 |
| 2011 | 3425351 | 4795463 | 6497511 | 4750014 |
| 2012 | 3468248 | 4860716 | 6577492 | 4818410 |
| 2013 | 3526860 | 4932933 | 6667327 | 4897285 |

Note: Filers with tax liability (col. 2) and total filers (col. 3) as reported in tax statistics; total adults as reported in population registers; total tax units refer to the total adult population minus ½ of married adults in the total resident population.

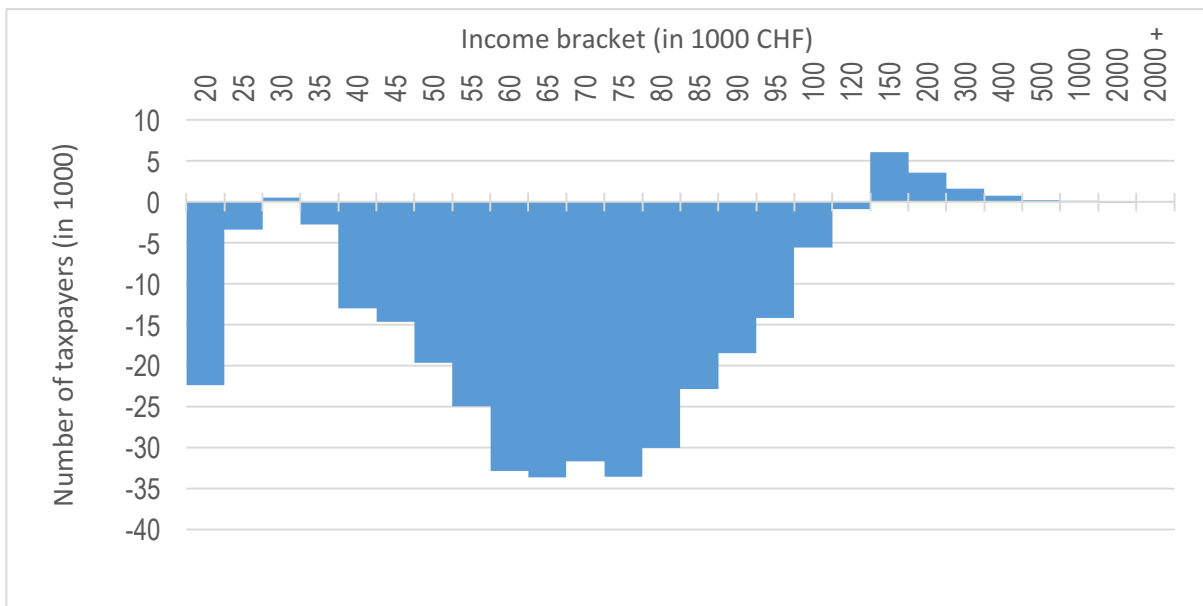


Figure 1: Difference in number of filers between 2010 and 2011 in each income bracket

Note: Numbers based on tax statistics including only taxpayers with a positive tax liability in the federal income tax.

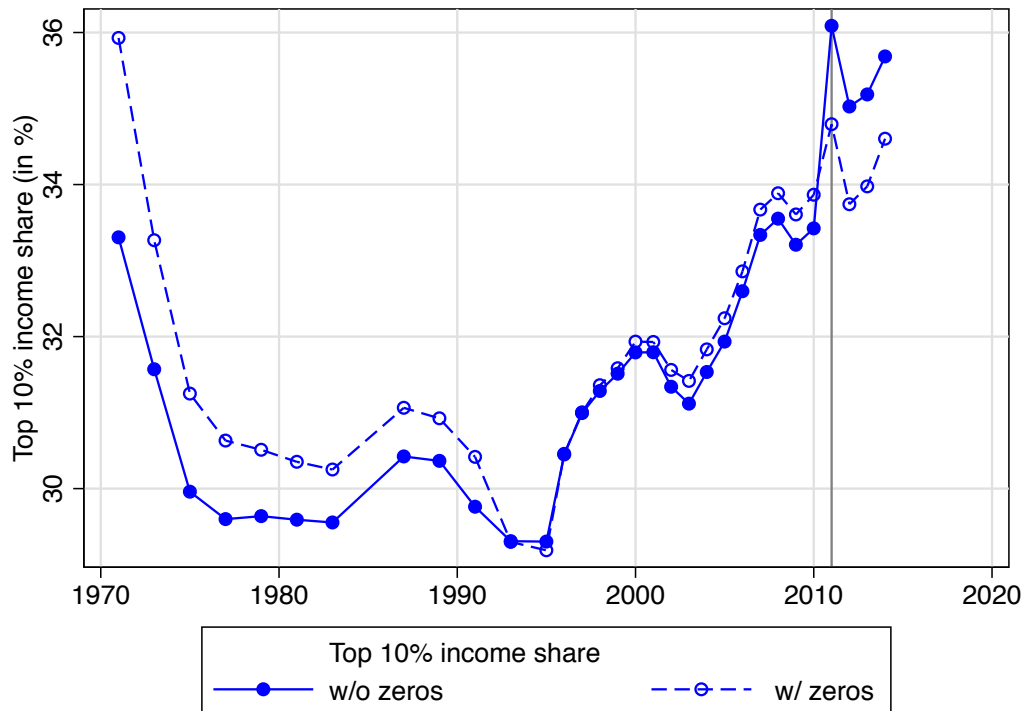


Figure 2: Top 10% shares in fiscal income based on statistics including or excluding those with zero tax liability

Note: Tax statistics including also those without tax liability in the federal income tax are available since 1995. Before that, the underlying statistics are identical for both series. Top income shares of the dashes series are not calculated with a corrected income denominator. Before 1995 these series show how top income shares would have been overestimated prior to 1995 without correcting for income of non-filers/missing taxpayers. Series excluding those without tax liability (solid line) are calculated with a corrected income denominator, where missing tax units are assigned 20% of average income. After introduction of family tax credits in 2011, this correction factor of 20% does not capture incomes missing in the underlying statistics well anymore.

4. No revision of data prior to 1995

Prior to 1995 the series for Switzerland on WID.world are based on estimates by Dell et al. (2007) and I refrain from correcting their series. Prior to 1993 no data on taxpayers without tax liability is available. As Figure 2 shows, however, their method of estimating top income shares by correcting the total income denominator is very accurate and matches estimates based on the new statistics almost perfectly 1993-2000. Also, the further one moves to the very top of the income distribution, the smaller becomes the effect of using one or another version of the underlying statistics, such that the effect for shares within the top decile are even less affected.

5. A special note on the 2011 increase in top income shares

The data point for 2011 will strike most readers with surprise. This is not due to a reporting error or something alike. The effect is also not related to the possibility introduced in 2010 to opt for a tax amnesty once in a lifetime nor any other tax changes. The observed increase in top income shares is due to a large, one-time income increase among a small number of taxpayers. Due to confidentiality reasons, the Federal Tax Administration cannot make available any further information on this matter.

References

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