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Does the inclusion of assets resolve apparent contradictions between income poverty and other indicators on the standard of living?

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Abstract

In official Swiss poverty statistics, people are considered to be poor if they do not have the financial means to buy goods and services that are necessary for a socially integrated life. While this definition of poverty refers to the economic resources of the household in general, the poverty rates published by the Swiss Federal Statistical Office (FSO) have until now been calculated on the basis of disposable income only. However, it is widely recognised that household wealth can serve as an income substitute and buffer in periods of low income, especially if it is available at short notice. The inclusion of household assets in the measurement of poverty could therefore help to explain apparent contradictions between income poverty and other indicators on the standard of living. There are several possibilities to include assets in poverty measurement, and results may vary according to the wealth concept, the specified reference period and the poverty line applied. By varying such factors in the calculation of asset-based poverty rates, we analyse their impact on the general level of the poverty rate and on the population groups that are found to be especially at risk. We then compare these findings to several objective and subjective indicators on the household's standard to test whether the inclusion of household assets reduces the above mentioned contradictions in Switzerland. The analyses are based on the European Statistics on Income and Living Conditions (SILC) 2015 and its Swiss module on household wealth.

Introduction

The Swiss Federal Statistical Office (FSO) regularly publishes information on poverty in Switzerland. A person is considered poor if they do not have the financial means to be able to live a socially integrated life (e.g. FSO 2018a). This concept of poverty includes both income and assets. In research, the joint consideration of income and assets has long been strived for in measuring poverty (e.g. Weisbrod & Hansen 1968, Caner & Wolff 2004, Stiglitz et al. 2009, Brandolini et al. 2010, Azpitarte 2012). However, up until now, in the Swiss poverty statistics (as in most other countries), only income from assets and rentals (interest, dividends, rental income etc.) has been considered but not the assets themselves. The measurement of poverty is therefore limited to the measurement of income poverty. This is firstly because the required data are rare at microlevel and secondly, because suitable international concepts for integrating assets into the measurement of poverty are still under

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development (see FSO 2014a).

Thanks to the European Central Bank's Household Finance and Consumption Survey (HFCS), the availability of data in many European countries has been improved in past years. Switzerland does not participate in this survey but in the context of the Statistics on Income and Living Conditions (SILC) – which also serve as the basis of data for the official poverty statistics – it has included a special module to collect information on household wealth. In the mid-term, the FSO plans to supplement the income poverty rate by this information. We are primarily interested in the extent to which the income poor in Switzerland have financial reserves in the form of assets. Considerable reserves may be available in some cases in Switzerland, particularly among the older population. For example, although older people are more often income poor than other age groups, they are far less often materially deprived, are more satisfied with their financial situation and are less likely to have difficulties in making ends meet (FSO 2014b). The integration of assets could reduce such contradictions (see Headey et al. 2009).

In this contribution, we will discuss various ways of including assets in poverty measurement with reference to their suitability for the Swiss poverty statistics. Subsequently, we will empirically examine the influence of various parameters (which still need to be defined during the operationalisation) on the results and will test their coherence with various indicators on the standard of living. Finally, we will present some reflections on how to communicate the results.

Data availability and quality

Many European countries have collected data on assets at microlevel in recent years through the European Central Bank's Household Finance and Consumption Survey (HFCS) or their own surveys, so that the availability of data at European level has improved considerably. Switzerland does not participate in the HFCS. However, the FSO has integrated a question module into the Statistics on Income and Living Conditions (CH-SILC) in 2011, 2015 and 2018. This module collects information on the various asset components of households. These are the only detailed microdata on assets for the population as a whole in private households currently available in Switzerland. The questions are asked at household level and relate to the date of the interview or the end of the previous calendar year.

To measure poverty, the asset module in CH-SILC has the advantage of offering detailed data on assets in the same data base also used to calculate the income poverty rate and therefore no intricate matching process is required. To ensure that the households surveyed are not excessively burdened, the number of questions on assets, however, must be kept as small as possible. The CH-SILC asset data therefore do not offer the same level of detail as asset data from the HFCS. The main limitations in this case are the lack of delimitation of owner-occupied residential property and the absence of information on debts in the survey (other than mortgage debt).

The data quality of the first CH-SILC asset module in 2011 has been evaluated extensively (FSO 2014a). A comparison with macro values showed that assets were underestimated as is often the case with microdata assets (ECB 2016). Coherence with the macro values seems to be better in the 2015 module (Ravazzini et al. 2017). In the 2015 module, the plausibilisation of data was improved by using newly introduced rules and the method for imputing missing values revised. Depending on the asset components, between 8% and 20% of values need to be imputed due to partial non-response. The quality of these imputations is currently being analysed so that the asset data is classified as provisional for subsequent analyses.

Poverty measurement including wealth

Two main variants can be identified in the literature in order to incorporate assets into poverty measurement.

a) The unidimensional approach: The assets are directly integrated into the income so that a single indicator is generated. This can, for example, be achieved through an annuitisation of assets (e.g. Weisbrod & Hansen 1968, Haveman & Wolff 2004, Brandolini et al., 2010), or through the application of asset limits above which a person is by definition classified as not poor (Headey et al. 2009).

b) The two-dimensional approach: A separate asset-based poverty rate is calculated in addition to the income poverty rate. The income poverty rate remains unchanged. This approach is applied, for example, by the OECD (Balestra & Tonkin 2018) and Eurostat (2017) and is also described by the UNECE (2017).

It has already been shown several times that the choice of approach (uni or two-dimensional approach) has a considerable influence on the results (e.g. Kuypers & Marx 2016, Azpitarte 2010, Brandolini et al. 2010, Tonkin et al. 2016, Törmälehto et al. 2013). Ravazzini et al. (2017) have also shown for Switzerland that the unidimensional approach leads to higher percentages of asset poor than the two-dimensional approach. As asset data are not available in the CH-SILC every year, the two-dimensional approach is better suited to official statistics in Switzerland. With this approach, we could continue to publish current figures on income poverty every year and provide supplementary information on assets in years with the module on assets. The two-dimensional approach also has the advantage that the income and asset situation of households can be considered in a differentiated way. This is not possible using the unidimensional approach as information on income and assets is aggregated (Azpitarte 2012).

We will therefore limit ourselves to a more in-depth presentation and analysis of the two-dimensional approach, such as described by UNECE (2017, p. 159): "asset poverty is defined as an individual having insufficient wealth to meet their basic needs over time." The corresponding indicator is calculated separately from the income poverty rate and referred to hereafter as the "asset-based poverty rate". In this concept, basic need is determined through the same poverty line that is also applied to income poverty. By combining the income and asset-based poverty rates, it is possible to distinguish between income poor people who are (still) able to compensate their low income by using assets (the "protected poor") and income poor people who do not have this possibility (the "twice poor", see Azpitarte 2012). Furthermore, persons who are not income poor but do not own sufficient assets to prevent them from ending up in a precarious situation in the event of loss of income (the "vulnerable non-poor") can also be identified. Schematically, the combination of both poverty rates is shown as follows (see Figure 1):

Figure 1: Illustration of the two-dimensional poverty index
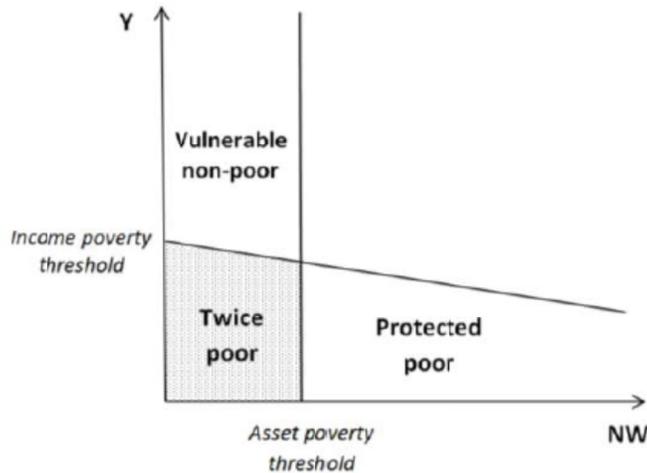
Source: Kuypers & Marx (2016)

For the operationalisation of the asset-based poverty rate, various choices need to be made: a) what type of **poverty line** is used, b) for which **reference period** the assets have to suffice, c) which **wealth concept** will be considered and d) how the assets are to be **equivalised**. Hereafter, we will empirically examine how strongly these choices influence the results for Switzerland. We will focus on the twice poor, i.e. people who are classified as poor both based on income and assets.

a) Poverty line

The Swiss FSO publishes income poverty rates based on various poverty concepts. As in the other SILC countries, a relative poverty line set at 60% of the median equivalised disposable income is applied. In Swiss analyses, an imputed rent is considered which offsets the financial benefits of owner-occupied residential property or subsidised rents. The imputed rent is defined as a property's use value minus paid housing costs. Furthermore, a national poverty line is calculated. It is set at the social minimum subsistence level that serves as the basis for measuring public social assistance benefits in Switzerland. The national poverty line is graded by household size which is why income is not adjusted for equivalence. It consists of a fixed amount for living expenses (food, hygiene, and mobility etc.) set by the Swiss Conference for Social Welfare (SKOS), the individual housing costs that are surveyed in the SILC (rent or mortgage interest incl. incidental expenses) and CHF 100 per person aged 16 and over in the household for further expenditure such as insurance. As housing costs are part of the poverty line, no imputed rent is considered in the national poverty rate.

Due to its needs orientation, the national poverty rate is of relevance for socio-political measures in Switzerland while the relative poverty rate corresponds to international standard definitions and is therefore suitable for international comparisons. In the following analyses, both poverty lines are used to operationalise the basic needs of the asset-based poverty rate, and the results are compared. The corresponding values for selected household types can be seen in Table 1.

Table 1: Poverty lines of selected household types, in CHF per month

Household type	National poverty line	Relative poverty line
Individual	2 240	2 506
2 adults	3 052	3 759
1 adult with 2 children under the age of 14	3 586	4 010
2 adults with 2 children under the age of 14	3 980	5 263

1 CHF ~= 0.88 EUR (04.10.2018).

Notes: The national poverty line consists of a fixed amount for living expenses, individual housing costs and CHF 100 per month and per person aged 16 or over. For the calculation of the national poverty rate an individual poverty line is used for each household. Values shown here are national averages. The relative poverty line is calculated as 60% of median equivalised income (using the modified OECD-scale) including imputed rent.

Source: SKOS 2016, FSO – CH-SILC 2015

b) Reference period

The proportion of the asset-based poor also depends on the time span for which the assets should suffice. In the literature, a reference period of three to six months has been established as the most common time span (e.g. UNECE 2017, Balestra & Tonkin 2018, Tonkin et al. 2016). However, since this seems relatively arbitrary, analyses for other reference periods are also frequently presented, with ranges of one to twelve months (e.g. Eurostat 2017, Kuypers & Marx 2016). The results vary considerably with the chosen reference period, which is why we test the sensitivity of the asset-based poverty rates over one, three, six and twelve months.

c) Equivalence scale

While for income analyses it is standard to adjust income for equivalence when comparing different household sizes, there is no agreement in principle as to whether this is also appropriate for assets. However, for the asset-based poverty rate, assets are seen purely as an income substitute and are therefore interchangeable with income. For such analyses, the OECD recommends "to equivalise wealth with the same equivalence scales used to standardise household income" (OECD 2013, p. 178). Our relative poverty line is based on income that has been adjusted using the modified OECD equivalence scale. Before we compare assets with the relative poverty line, we divide it by the same factors as the income, i.e. 1.0 for the oldest person in the household, 0.5 for every other person aged 14 or over and 0.3 for every child aged under 14. For the national poverty line, as amounts are classified by household size, there is no need for an additional equivalence adjustment of income and consequently also of assets.

d) Wealth concept

In connection with measuring poverty, net worth is often used as a starting point, i.e. all assets minus all liabilities. In several studies, owner-occupied residential property is excluded, as this also has further benefit in addition to its monetary value (a roof over one's head). However, there are also good reasons for only including liquid assets in the poverty measurement. Liquid assets are the only type of asset to fully serve as an income substitute because they can be converted into income without any major delay and loss of value. In the literature, several of these variables are often used in parallel (e.g. Balestra & Tonkin 2018, Caner & Wolff 2004, Tonkin et al. 2016). Unsurprisingly, it turns out that the asset-based poverty rate varies depending on the wealth concept selected and accordingly, the more

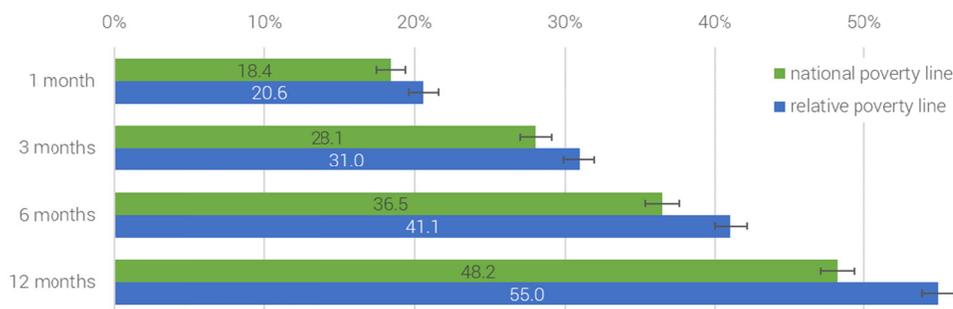comprehensive the wealth concept, the smaller it is.

The three wealth concepts mentioned can only be approximated using the data from CH-SILC 2015: firstly, apart from mortgage debt, no information is available on households' debt situation. Therefore, the possibility to calculate net values is limited. Secondly, in the case of real estate assets, only the total is asked for, meaning that the value of owner-occupied residential property cannot be properly defined.[2] Thirdly, respondents were given the choice to indicate real estate assets as a tax value, market value or purchase price. While this does lead to higher response rates it also makes comparing values more difficult. Due to these content and data based reservations, we will limit ourselves in the following analysis to the liquid assets and will refrain from presenting the influence of the wealth concept. Pursuant to the question in the CH-SILC, liquid assets are defined here as the household's total assets in bank and postal accounts and the estimated total value of shares, bonds and investment funds.[3]

Sensitivity analysis

In this section, we will calculate the asset-based poverty rate and the share of people who are both income and asset poor (the twice poor rate) using various poverty lines and for various reference periods.

Figure 2 shows that the asset-based poverty rate is considerably influenced by these factors: it varies between 18.4% (national poverty line, 1 month) and 55.0% (relative poverty line, 12 months). The duration for which the asset should suffice has a greater influence on the results than the choice of poverty line, which only leads to significant differences when a reference period of 6 to 12 months is considered. For short periods of time, the two poverty lines are close together. With increasing duration, the distance between the poverty lines also increases, meaning that the asset-based poverty rates vary more.[4]

Figure 2: Asset-based poverty rate, by poverty line and reference period
In % of the population (individuals), 95%-confidence interval

Notes: Only liquid assets such as deposits, bonds, shares, mutual funds etc. are taken into account. The national poverty line consists of a fixed amount for living expenses, individual housing costs and CHF 100 per month and per person aged 16 or over. The relative poverty line is calculated as 60% of median equivalised income including imputed rent.

Source: FSO – CH-SILC 2015 (provisional data on wealth, version 07.06.2018)

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[2] Both of these points have already been amended in the current survey on asset data (CH-SILC Module 2018).

[3] According to interviewer instructions, in the second item "holdings in private companies or communities of heirs, options, structured products and other financial investment opportunities" must also be considered (see CH-SILC household questionnaire 2015, p. 51, https://www.bfs.admin.ch/bfsstatic/dam/assets/530483/master).
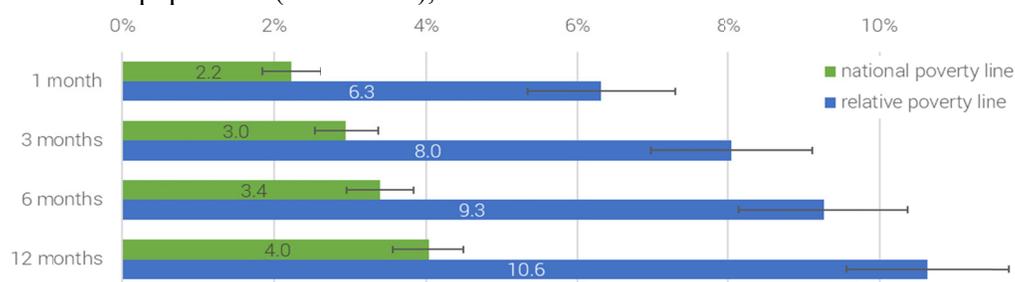
[4] For the national poverty line, the basic need for a single person varies from on average around CHF 2200 (1 month) to CHF 27 000 (12 months) and for the relative poverty line from around CHF 2500 to CHF 30 000. For two adults and two children, the corresponding values are CHF 4000 to CHF 48 000 and CHF 5300 to CHF 63 000.

As we mainly wish to supplement the poverty rate with information on assets, we are particularly interested in the twice poor rate, i.e. the share of people that have neither sufficient income nor sufficient assets to cover their basic needs (see

Figure **3**). It is calculated by crossing the income poverty rate with the asset-based poverty rate. The twice poor rate also varies considerably between 2.2% (national poverty line, 1 month) and 10.6% (relative poverty line, 12 months). However, the level of the values is less influenced by the reference period than by the poverty line. This is due to the fact that the income poverty rate is also integrated in the twice poor rate: the relative poverty rate is around twice as high as the national poverty rate (14.6% vs. 7.0%). The twice poor rate also increases when a longer reference period is chosen. The differences, however, are less pronounced than for the asset-based poverty rate.

Figure 3: Twice poor rate, by poverty line and reference period

In % of the population (individuals), 95%-confidence interval

Notes: Only liquid assets such as deposits, bonds, shares, mutual funds etc. are taken into account. The national poverty line consists of a fixed amount for living expenses, individual housing costs and CHF 100 per month and per person aged 16 or over. The relative poverty line is calculated as 60% of median equivalised income including imputed rent.

Source: FSO – CH-SILC 2015 (provisional data on wealth, version 07.06.2018

To check whether the same structures are shown by subgroup, the results are further broken down according to different characteristics (see Table 2). In fact, the twice poor rates are significantly higher for all groups considered if the relative poverty line is applied. The profile of the population identified as poor is, however, similar overall and broadly equivalent to that of income poverty. For all subgroups, the reference period influences the level of the twice poor rates, but not the profile of the concerned population groups. Consequently, persons with no post-compulsory training, women, tenants and persons living in the Ticino region are more often twice poor when compared with other groups in all configurations. For both poverty lines, the inclusion of assets especially reduces the poverty rates of the older population compared with income poverty. This means that the income poor aged 65 years and over may fall back on liquid assets particularly often. This finding is in line with many other studies on asset poverty (e.g. Kuypers & Marx 2016, Azpitarte 2012, Brandolini et al. 2010, Caner & Wolff 2004). This also influences analyses by employment status: while old-age pensioners and the unemployed have comparable income poverty rates, the unemployed are more than twice as often twice poor than pensioners.

Table 2: Income poverty rates and twice poor rates by poverty line and reference period
In % of the population

	number of individuals in sample	a) national poverty line (excl. imputed rent)										b) relative poverty line (incl. imputed rent)									
		Income poor		twice poor: income poor and insufficient liquid assets for…								Income poor		twice poor: income poor and insufficient liquid assets for…							
				1 month		3 months		6 months		12 months				1 month		3 months		6 months		12 months	
		in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-
Total population	17164	7.0	0.6	2.2	0.4	3.0	0.4	3.4	0.4	4.0	0.5	14.6	0.8	6.3	1.0	8.0	1.1	9.3	1.1	10.6	1.1
0-17 years	3283	5.1	1.0	2.5	0.7	3.0	0.8	3.2	0.8	3.6	0.9	17.9	1.7	10.5	2.0	12.4	2.2	13.9	2.2	15.3	2.1
18-24 years	1408	7.5	1.6	1.6	0.9	3.0	1.0	3.8	1.1	4.3	1.2	15.4	2.2	5.4	2.6	8.3	3.2	10.0	3.3	12.4	3.0
25-39 years	2871	5.8	0.9	2.6	0.6	3.9	0.7	4.2	0.7	4.6	0.7	12.8	1.3	7.5	1.7	9.3	1.9	10.3	2.0	11.2	1.8
40-49 years	2628	4.4	0.8	1.7	0.5	2.2	0.6	2.6	0.6	3.1	0.7	10.1	1.2	4.8	1.7	6.3	1.9	7.1	2.0	8.2	2.0
50-64 years	3695	6.2	0.9	2.0	0.6	2.5	0.6	3.1	0.7	3.7	0.7	10.6	1.2	4.4	1.5	5.6	1.8	6.6	1.9	7.4	2.0
65 years or more	3279	13.9	1.6	2.5	0.7	3.0	0.8	3.6	0.9	5.0	1.0	21.8	2.0	4.6	1.5	6.3	1.7	8.0	1.9	10.1	2.1
Swiss nationals	14583	6.4	0.5	1.5	0.3	2.3	0.3	2.7	0.4	3.4	0.4	12.1	0.9	3.8	1.0	5.5	1.2	6.6	1.3	7.9	1.3
Foreign nationals	2581	9.0	1.5	4.4	1.3	5.1	1.3	5.7	1.3	6.1	1.3	22.5	2.2	14.1	2.4	15.9	2.4	17.4	2.3	19.1	2.0
Female	8830	8.1	0.7	2.6	0.5	3.3	0.6	3.8	0.6	4.7	0.6	15.9	1.0	6.8	1.1	8.6	1.2	9.9	1.2	11.6	1.2
Male	8334	6.0	0.6	1.9	0.4	2.6	0.4	2.9	0.4	3.4	0.5	13.3	0.9	5.9	1.1	7.5	1.2	8.6	1.2	9.7	1.2
Compulsory education	2095	10.9	1.7	4.2	1.4	4.6	1.4	5.2	1.5	6.3	1.5	24.7	2.4	12.2	2.4	13.8	2.5	16.0	2.4	18.3	2.1
Upper secondary level	7014	7.5	0.7	2.0	0.4	3.0	0.5	3.5	0.5	4.1	0.5	13.6	1.0	4.9	1.1	7.0	1.3	8.0	1.4	9.3	1.4
Tertiary level	4772	5.4	0.7	1.2	0.3	1.9	0.4	2.3	0.4	2.8	0.5	8.0	0.8	2.2	0.9	3.3	1.2	4.0	1.4	4.9	1.6
Individuals < 65 years	1353	12.5	1.5	5.5	1.0	7.0	1.2	8.5	1.3	9.4	1.3	16.0	1.7	7.3	2.0	9.8	2.2	11.4	2.3	12.8	2.2
Couples < 65 years, no children	2416	3.6	0.9	0.7	0.4	1.3	0.5	1.7	0.6	1.9	0.6	6.5	1.2	2.5	1.7	3.5	2.2	4.0	2.4	4.5	2.6
Lone parents with child < 18 years	535	12.5	4.4	6.6	3.5	7.6	3.7	8.1	3.8	10.0	4.0	30.8	6.4	17.8	6.8	22.5	6.3	23.2	5.9	25.4	5.2
Couples with child < 18 years	6420	4.4	1.1	1.9	0.9	2.5	0.9	2.6	0.9	2.8	0.9	14.7	1.7	8.7	2.1	10.2	2.3	10.9	2.4	12.4	2.2
Home owners	9094	4.4	0.7	0.4	0.2	0.5	0.2	0.9	0.3	1.4	0.5	8.3	1.0	1.3	1.2	2.3	1.5	3.2	1.8	4.2	1.9
Renters	8070	9.2	0.9	3.7	0.7	4.9	0.7	5.5	0.8	6.1	0.8	19.8	1.3	10.4	1.5	12.7	1.6	14.1	1.5	15.9	1.4
Lake Geneva region	3103	8.0	1.4	3.2	0.9	3.8	1.0	4.7	1.1	5.2	1.2	15.3	2.1	8.2	2.7	9.8	3.0	11.0	3.0	11.9	2.8
Espace Mittelland	4199	6.2	1.0	1.6	0.5	2.2	0.6	2.5	0.6	3.3	0.7	15.9	1.9	6.3	2.2	8.6	2.5	10.1	2.5	11.7	2.3
Northwestern Switzerland	2394	5.7	1.3	1.4	0.6	2.6	0.9	2.9	0.9	3.6	1.0	12.1	2.1	5.4	2.7	7.2	3.0	7.5	3.1	8.6	3.1
Zurich	2919	5.4	1.1	1.3	0.6	1.7	0.6	2.2	0.7	2.9	0.8	10.0	1.8	4.1	2.4	5.6	2.6	6.1	2.7	7.2	2.7
Eastern Switzerland	2254	7.5	1.7	2.3	0.9	2.8	1.0	3.2	1.1	3.5	1.1	15.0	2.5	4.8	2.4	6.0	3.0	6.9	3.2	8.5	3.3
Central Switzerland	1601	6.6	1.8	1.9	0.9	2.6	1.1	2.8	1.1	3.1	1.2	14.4	3.4	6.3	3.4	7.2	3.9	9.9	4.2	10.8	4.2
Ticino	694	17.3	6.8	8.4	6.0	10.5	6.1	11.2	6.1	12.8	6.8	31.3	7.6	15.3	7.5	18.8	7.6	22.1	7.6	26.8	6.9
Salaried employment	6527	2.9	0.5	1.1	0.3	1.5	0.3	1.7	0.3	1.9	0.4	6.7	0.7	3.2	1.1	4.3	1.3	5.0	1.4	5.6	1.4
Self-employment	827	10.4	2.7	4.8	2.5	6.1	2.6	7.1	2.6	7.5	2.7	16.2	3.0	6.9	3.1	9.2	3.3	11.5	3.4	12.8	3.4
Unemployed	168	(15.6)	4.4	(6.3)	3.0	(8.1)	3.3	(10.3)	3.6	(12.6)	3.9	(25.5)	5.6	(16.1)	6.3	(18.9)	6.3	(20.8)	6.1	(22.0)	5.3
Pensioners	2850	15.0	1.7	2.7	0.8	3.4	0.9	4.0	0.9	5.3	1.1	22.9	2.1	5.0	1.5	7.0	1.8	8.6	2.0	10.9	2.2
Others without employment	1737	11.7	1.5	4.4	0.9	5.8	1.1	6.7	1.1	8.1	1.2	24.5	2.2	12.2	2.3	14.7	2.5	16.8	2.6	19.3	2.4

+/- = limits of the 95%-confidence interval. Notes: Only liquid assets such as deposits, bonds, shares, mutual funds etc. are considered. In the national poverty line, differences in housing costs are directly taken into account, while in the relative poverty line, these differences are taken into account by the means of imputed rents. Results are based on a distribution of persons and weighted accordingly. Numbers in brackets are based on low case numbers and should therefore be interpreted with caution.

Source: FSO – CH-SILC 2015 (provisional data on wealth, version 07.06.2018)

However, differences between the two concepts are noticeable for children and young people under the age of 18. For the relative poverty line, these groups are considerably more often twice poor than the other age groups, while the twice poor rate shows no major differences by age when the national poverty line is used. This reflects the structure of the respective income poverty rates and is mainly due to the fact that the national poverty line rises less sharply with increasing household size[5] than the relative poverty line (see

Table 1 on p. 4 and note 4 on p. 6). Children typically live in larger households. For the relative poverty line, households with children accordingly have higher income poverty rates and twice poor rates than comparable households without children, whereas for the national poverty line, the differences between households with and without children are smaller.

Coherence with other indicators on the standard of living

Finally, we will test whether the inclusion of assets can increase the coherence between poverty rates and other indicators of living standards. The analyses confirm that assets divide the income poor population into two groups with standards of living that are clearly different. The income poor are much less exposed to material or subjective difficulties if they have assets in reserve compared with those who do not have any such resources to fall back on (see Figure 4).

Overall, 11.0% of the total income poor population (according to the national poverty line) are affected by material deprivation[6]. Among the twice poor (i.e. people who are both income and asset poor), this share is far higher: Depending on the reference period, between 19.4% (12 months) and 29.0% (1 month) showed a deprivation in at least three out of nine areas of life due to a lack of financial resources. Among the protected poor (i.e. people who are income poor but not asset poor), the corresponding shares are markedly lower with values between 0.9% (12 months) and 3.4% (1 month). The results based on the relative poverty line are very similar.[7] By including assets, income poor persons can thus be divided into two sub-groups, which show considerable differences in material provision.

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[5]   The difference in the increase of both poverty lines is mainly due to the fact that the national poverty line integrates individual living costs (see FSO 2013). Housing costs do not equally increase with additional persons in the household and are also relatively high even in single person households.

[6]   Material deprivation is defined as "the enforced inability […] to pay unexpected expenses, afford a one-week annual holiday away from home, a meal involving meat, chicken or fish every second day, the adequate heating of a dwelling, durable goods like a washing machine, colour television, telephone or car, being confronted with payment arrears" (see https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Material_deprivation)

[7]   Analyses using the relative poverty line and further reference periods are shown in the appendix (Table A1).

Figure 4: Share of population indicating material or subjective difficulties
In % of the population (individuals), 95%-confidence interval
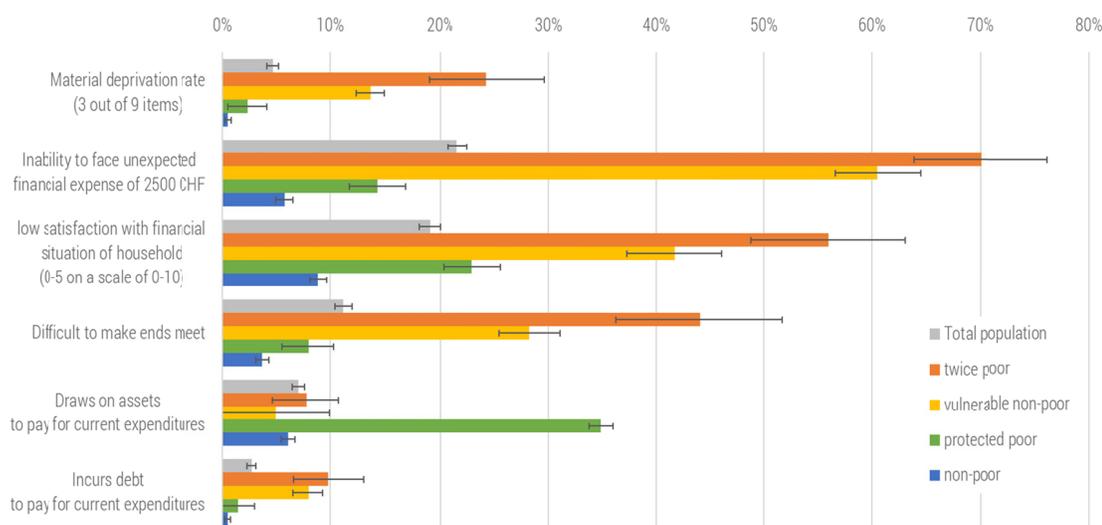
Notes: The classification of *twice poor, vulnerable non-poor, protected poor* and *non-poor* is based on the national poverty line and a reference period of 3 months considering only liquid assets. *Twice poor* are defined as both asset and income poor, *vulnerable non-poor* as asset poor, but not income poor, *protected poor* as income poor, but not asset poor, and *non-poor* as neither income nor asset poor.

Source: FSO – CH-SILC 2015 (provisional data on wealth, version 07.06.2018

The same pattern can be seen for the subjective indicators: the twice poor are most dissatisfied with their household's financial situation and most often struggle to make ends meet. Together with the vulnerable non-poor (i.e. people who are asset poor but not income poor), they face the most frequent difficulties in meeting unexpected financial expenses and get into debt most often to cover ongoing household expenses. Despite their low income, the protected poor are usually even better off than the population as a whole. As expected, this group also includes the highest proportion of people who use their assets to finance their ongoing expenses.

For all indicators, the second worst off group is the vulnerable non-poor. Assets therefore appear to have at least as much correlation with the variables used as income: a financial buffer has a greater influence on material living standard than the current income situation and also seems to make a greater contribution to satisfaction. Headey et al. (2009) also came to a similar conclusion: "It may be noted that some recent research has suggested that in several countries, including Australia and Germany, wealth has as much if not more impact on life satisfaction than income". For all indicators considered, those with sufficient income and reserves for at least 12 months are best placed. This can be seen as a strong indication that the combination of income and assets is of great relevance to the standard of living and, consequently, both should be included in the measurement of poverty.

Communication

In research, there is now a broad consensus that assets should be considered in measuring poverty. But for NSOs, which primarily address the general public, the communication of these results poses a major challenge. Feedback from users of our statistics shows that there is already today some uncertainty as to which poverty rate (national poverty rate or relative poverty rate) is most suitable for a certain purpose. The introduction of yet another poverty rate could exacerbate such uncertainties. By introducing the asset-based poverty rate, the

income poverty rate may furthermore lose some legitimacy, because in public debate poverty is usually equated with a lack of income and assets, and in Switzerland assets are also included in the assessment of eligibility for social welfare support. Because we only have access to asset data periodically, the income poverty rate must, however, remain the most important poverty statistic indicator for the time being.

At the political level, the new results could also further fuel debate on the welfare state if the fact that a considerable proportion of the income poor in Switzerland own certain assets were misinterpreted as though they were actually "wealthy". We consider it important to clarify that the focus of asset-based poverty is not on larger asset reserves but on relatively modest amounts that would be used up in a few months without any income. To avoid any misunderstanding, the terminology should therefore be chosen with care and should describe as clearly as possible what is really measured with the new indicator. In this way, the asset-based poverty rate, for example, could be described as the "share of people without sufficient reserves for x months" whereby x corresponds to the chosen reference period. The term "poverty", therefore remains limited to income poverty.

Finally, our analyses have also shown that the operationalisation of the asset-based poverty rate has a large impact on the results. To increase acceptance and ensure the correct classification of the various poverty indicators among our stakeholders, we want to enable a dialogue before the definitive launch of the asset-based poverty rate. The concepts and initial results will therefore firstly be published as experimental statistics[8] and only established as a new official indicator in the mid-term (with any necessary adjustments).

Conclusions and outlook

The presented results show that integrating assets would enrich poverty measurement in Switzerland with valuable information and considerably improve the coherence of poverty rates with further indicators on the standard of living. In particular, the contradiction between the high income poverty rates of the older population and the positive evaluation of their subjective situation may largely be explained by the fact that this age group very often has financial resources in the form of assets.

Our analyses also show, however, that different choices in the integration of assets lead to very large variation in the level of the asset-based poverty rate and the twice poor rate. The twice poor rates differ by poverty line and (to a limited extent) also by the reference period for which the assets must suffice. However, the profile of the population at risk is similar in all variants. Consequently, unemployed persons, foreign nationals with no post-compulsory training, women, tenants and persons living in the Ticino region are considered to be particularly at risk, while this is no longer the case for persons aged 65 and over. However, differences can be seen in the classification of children under 18 and of couples with children, which only appear to be particularly at risk using the relative poverty line.

Our results suggest that the twice poor rate in Switzerland, as with income poverty, should be calculated for both poverty lines. Due to it is needs orientation, the national poverty rate is of relevance for socio-political measures in Switzerland, while the relative poverty rate corresponds to international standard definitions and is therefore suitable for international comparisons. The reference period for determining the basic need shows differences in the level of available assets. As this factor cannot be calculated objectively, a range should be given for transparency reasons. This can also be used to provide an indication of the amount

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[8] see www.experimental.bfs.admin.ch

of liquid assets and how long they will last.

While in research there is now a general consensus that assets should be included in poverty measures, the communication of these results represents a considerable challenge for NSOs as we address a wide public. By defining the new indicator as transparently as possible and providing the opportunity for a dialogue with stakeholders ahead of the official launch, we hope to improve acceptance of the indicator and ensure its correct use.

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Appendix

Table A1: Share of population indicating material or subjective difficulties, by poverty line and duration
In % of total population, income poor and twice poor

	Total population		a) national poverty line (excl. imputed rent)										b) relative poverty line (incl. imputed rent)									
			Income poor		twice poor: income poor and insufficient assets for…								Income poor		twice poor: income poor and insufficient assets for…							
					1 month		3 months		6 months		12 months				1 month		3 months		6 months		12 months	
	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-	in %	+/-
Material deprivation (index and selected items)																						
Material deprivation rate (3 out of 9 items)	4.6	0.5	11.5	2.4	29.0	6.8	24.3	5.3	21.7	4.6	19.4	4.0	13.5	2.2	28.2	4.8	22.9	3.9	20.4	3.4	18.3	3.0
Severe material deprivation rate (4 out of 9 items)	1.4	0.3	4.7	1.4	11.8	4.3	10.1	3.4	9.0	2.9	7.9	2.5	5.5	1.4	11.7	3.2	9.7	2.5	8.7	2.2	7.5	1.9
Payment arrears	8.6	0.8	11.1	2.6	25.4	6.6	23.2	5.6	20.4	4.8	18.0	4.2	15.8	2.5	30.4	5.2	26.5	4.3	23.5	3.8	20.7	3.4
Inability to face unexpected financial expenses of 2500 CHF	21.7	0.9	37.6	4.4	79.5	5.9	70.0	6.2	62.6	6.1	55.6	6.1	46.5	3.4	86.9	4.3	73.5	4.2	65.9	4.4	60.5	4.1
Inability to afford a one-week annual holiday away from home	8.6	0.7	23.4	4.3	51.0	8.8	43.7	7.7	39.8	7.1	36.5	6.4	22.7	3.0	39.7	5.7	34.2	4.8	31.6	4.3	29.2	3.9
At least one durable good missing	5.6	0.5	14.7	2.6	27.4	6.6	25.4	5.4	23.9	4.8	22.9	4.3	14.7	2.3	23.5	4.6	20.9	3.7	19.6	3.4	19.0	3.0
Subjective assessment of financial situation																						
Low satisfaction with financial situation of the household (0-5 out of 10 points)	19.1	1.0	36.8	4.4	57.4	8.4	55.9	7.1	52.0	6.7	47.6	6.3	41.4	3.5	59.1	5.7	57.0	5.0	53.1	4.7	49.8	4.3
Difficulty to make ends meet	11.2	0.8	23.0	4.3	49.9	9.0	44.0	7.7	39.4	7.0	35.5	6.4	27.6	3.3	48.2	5.9	40.8	5.0	38.7	4.7	34.9	4.3
Household draws on assets or reserves to pay for current expenditures*	6.9	0.5	23.5	3.3	31.8	4.5	35.0	5.1	36.8	5.5	39.2	6.1	16.2	2.1	24.9	3.3	28.7	3.9	32.5	4.5	36.4	5.5
Household incurs debt to pay for current expenditures	2.7	0.4	4.9	1.6	12.8	4.4	9.8	3.3	8.6	2.9	8.1	2.7	8.2	2.0	16.4	4.2	14.0	3.5	12.3	3.1	11.0	2.7

+/- = limits of the 95%-confidence interval. Notes: In the national poverty line, differences in housing costs are directly taken into account, while in the relative poverty line, these differences are taken into account by the means of imputed rents. Items of material deprivation include being confronted with payment arrears, the inability to face unexpected financial expenses of 2500 CHF, afford a one-week annual holiday away from home, a meal involving meat, chicken or fish every second day, the adequate heating of a dwelling, durable goods like a washing machine, colour television, telephone or car. Results are based on a distribution of persons and weighted accordingly.
* Values for protected poor (i.e. income poor with sufficient assets for the respective reference period) are shown.

Source: FSO – CH-SILC 2015 (provisional data on wealth, version 07.06.2018)