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**Intergenerational material wellbeing: including wealth into the measurement of monetary
poverty**

Prepared by: Laura Ravazzini and Christian Suter, Institute of Sociology, University
of Neuchâtel

Abstract

Currently, the debate of national statistical offices and scholars working on poverty is on how to include wealth in the classical measure of income poverty. Holding the income-poverty threshold fixed, some studies show that wealth-corrected poverty rates of the elderly are much more affected than those of the rest of the population. In addition, the decline in poverty rates for the elderly is higher when the value of the household's main residence is included than when only non-housing wealth is taken into account. However, as the main residence is difficult to sell to foster consumption, it remains questionable whether this component should be added in the measurement of the risk of poverty. Difficult choices that remain to be made in the creation of a composite measure of poverty based on income and wealth are not only which components and which poverty threshold should be used, but also which methodology to aggregate income and wealth and which equivalence scale to adjust for different household members should be applied.

This contribution focuses specifically on this last issue of equivalence scales highlighting how this methodological choice changes the risk of poverty among the elderly. The analysis is run with CH-SILC 2015 and on its specific module on wealth. Results show how methodological choices change the risk of poverty for different age groups in a significant way.

Introduction

Beyond income, wealth is one of most relevant components among national and international indicators of household finances and material wellbeing. Wealth has many different functions. It can, for instance, augment the social status of individuals and give access to political power and occupational opportunities otherwise difficult to reach. Moreover, wealth can be directly used as an income source and a material resource to guarantee financial security during periods of low income. The OECD (2018) indicated that income allows people to satisfy their needs, whereas wealth makes it possible to sustain these needs over time. Wealth affects not only the present, but also the future as chances in people's life depend more on their wealth than on their income.

For all these reasons, the inclusion of wealth or net worth (i.e. assets minus debts) in poverty statistics has been identified as one of the main challenges for the measurement of poverty in the future (UNECE 2017). Therefore, traditional statistical indicators on poverty are currently being

reconsidered by researchers and by many national and international institutions.¹ A more refined poverty measure would serve several purposes including the improvement of means-tested programmes, which is one of the goals of the Europe 2020 strategy. It is indeed possible that low household incomes do not correspond to low living standards. A household with a low income might for instance enjoy higher living standards by using savings or contracting debts. The concern is that poverty measures might be upward biased for some population groups. A study on Germany has for instance found that more than half of the people who should receive social benefits according to income criteria do not claim them (UNECE 2017, p.37). At least part of this reduced claim might be attributed to overestimated needs produced by the exclusion of wealth.² In Switzerland, a study on the poverty of the elderly has also found that even though 26.8% of people 65+ were at risk of poverty based on income, only 10% had not sufficient financial means to face an unexpected expenditure of 2,000 francs within one month (SFO 2014a). For the rest of the population, the proportions were reversed with 11.9% at risk of poverty based on income and 18% unable to face an unexpected expenditure.

In Switzerland, the elderly are a relevant population group for an asset-based poverty rate because inheritances happen most often when people are 55 or older (Stutz, Bauer & Schmutz 2007) and because one quarters of pensioners withdraws the entire capital accumulated in their second pillar account within five years after their retirement age instead of receiving lifelong rents (OFS 2014, p.8).

Given the high level of median wealth in Switzerland, the discussion about asset-based poverty is highly relevant for all population groups. According to tax register data, Switzerland has around 594,000 millionaires and the median wealth of the country corresponds to USD 229,000 (CreditSuisse, 2017). Implications of the inclusion on wealth on poverty rates are thus expected to be large. To the best of our knowledge, no figure exists about the joint distribution of income and wealth in this country.

This paper is structured as follows. We start with a literature review of the methodological discussion around the joint distribution of income and wealth. We continue with the description of the methodology used in this analysis. We then present the result of the estimates with CH-SILC and we conclude with recommendations for the measurement of poverty through an asset-based poverty measure.

Literature review

Wealth and poverty

In the few contributions that link income and wealth for poverty estimates (Azpitarte 2012; Brandolini et al. 2010; Headey 2008; Kuypers & Marx 2018; Müller & Schmidt 2018), some findings seem rather recurrent:

¹ See the example of Slovenia and Israel at the UNECE expert meeting on measuring poverty and inequality 2017 and the OECD presentation of the Social Situation Monitor Research Seminar 2018.

² Wealth is not the only explanation, as they might also not claim benefits due to lack of information or fear to be stigmatised.

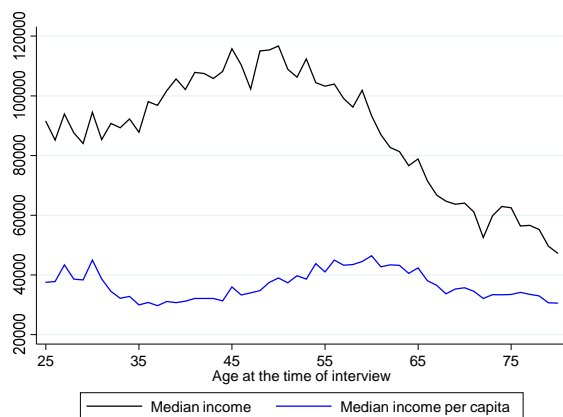
- (1) poverty estimates including wealth are much lower than the traditional income-based measures if the income threshold is not adjusted to wealth, and
- (2) poverty rates of the elderly are much more affected than those of the non-elderly.

The second point becomes clearer by looking at the distribution of income and wealth accumulation over the life cycle (Figure 1). In a life course distribution, the peak for income occurs much earlier than the peak for wealth. Young individuals are more likely to be poor according to both income and wealth, middle-aged individuals are more likely asset poor than income poor, whereas old individuals are more likely to be income poor than assets poor. Kuypers & Marx (2018) suggest that ideally, researchers should be able to distinguish between structural asset poverty and age-related asset poverty.

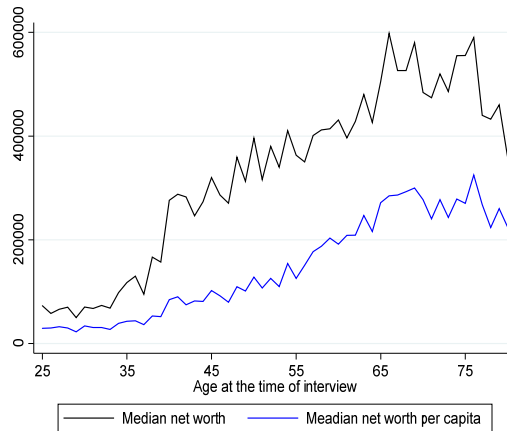
This almost specular image of income and wealth accumulation over the life cycle suggests that if poverty rates are based on both income and wealth, then poverty should be investigated according to different age groups. This is in line with the UNECE recommendations that suggest reporting poverty rates for different population groups (UNECE 2017, p. 33, Recommendation 4).

Figure 1: Distribution of the household income and the household wealth over the life cycle

A: Household income



B: Household wealth



Source: CH-SILC 2015. Notes: median household income and wealth (per capita).

Equivalence scales

Another issue that appears by looking at Figure 1 is that the household composition changes both the distribution of income and the distribution of wealth. The change for the income distribution is more intense with a per-capita transformation as the distribution loses its shape and becomes flat, whereas the shape of the distribution of wealth is maintained and shifted towards lower levels of wealth. In general, as most of the elderly live alone or in couples, but not in large households, the fact of equalizing for the household size creates a different equilibrium between age groups than the untransformed distribution. This concept is linked to horizontal redistribution, which is redistribution from one social group to another. In this application, redistribution would mean from the elderly to the young in case of wealth and from the young to the elderly in case of income. The issue of the equivalence scales has been investigated mainly for income (De Vos & Zeidi 1997; Cheung & Chou 2017). Income is usually equivalised taking

a more refined approach than per-capita income when used to describe the living conditions of the household. The most used equivalent scale for income is the modified OECD equivalence scale, which attributes different weights depending on the age of the household members: 1 to the household head, 0.5 to each additional adult and 0.3 to each child under 14 years old.³

There is no internationally accepted standard for the establishment of an equivalence scale for wealth and there are doubts that the one used for income should be applied also to wealth. Equivalence scales can be constructed through a behavioral approach, a subjective approach asking direct questions or a parametric approach. Most studies use a parametric approach (UNECE 2017). In a recent report on wealth inequality recently published by the OECD, wealth estimates are simply presented on a per capita basis (Balestra & Tonkin 2018). In other empirical applications, the squared root is often the preferred choice for comparability reasons with developing countries (Brandolini et al. 2010, Azpitarte, 2012). Kuypers & Marx (2018) used the square root equivalence scale on two developed countries and showed that modifying the equivalence scale between 0 and 1, the overall poverty rate could change of maximum 5.5 percentage points in Belgium and Germany. However, for the elderly, this change was much more important: around 15 percentage points. To confirm this evidence, Lemmi et al. (2018) showed that the use of different equivalence scales (the Carbonaro, the modified OECD and new HBS scale⁴) affects not so much the size of the poor population, but, rather, its composition. All these equivalence scales are based on the number of household components and their age. These data-based scales are not the only possibility to measure economies of scale and needs. A mix of data-based and normative scales⁵ is the approach proposed by Menon, Perali & Sierminska (2017) to evaluate the economic situation through income and wealth in Italy.⁶ In their application, data-based scales follow the logic of the OECD equivalence scales, whereas normative scales have been determined following Anand and Sen (1997:6) recommendation to identify the “questions and debates in public discussions”, which in this case corresponds to the discussion around the reform of the equivalence scale (*il fattore famiglia*) for means-tested programmes. Menon et al. (2017) give extra weights to single parents (0.40), the unemployed (0.40), retirees (0.20) and people with at least 50% of invalidity (0.50).⁷ Their results find that accounting for normative equivalence scales classifies as poor an extra 3 percent of asset poor and an extra 5 percent of income poor. Normative information affects about 0.60 percent of the poor according to financial wealth and 1.90 percent of the poor according to property wealth. Moreover, the use of hybrid scales reduces the mismatch between poor people excluded by policy programmes and people defined poor by an income-wealth approach. The use of hybrid scales might be justified also in the Swiss case because expressed solidarity with the elderly in

³ The original OECD scale gave 1 to the household head, 0.7 to each additional adult and 0.5 to each child under 14 years old.

⁴ The new HBS scale is derived from the Carbonaro scale and gives 1 for a one-person household, 1.9 for a two-persons household, 2.7 for a three-persons household, 3.5 for a four-persons household, 4.2 for a five-persons household, 5.0 for a six persons household and 5.7 if the household members are seven or more.

⁵ The authors call these scales “normative” because not based on consumption.

⁶ Even if IT-SILC would allow estimating housing wealth through taxes levied on housing wealth, the researchers chose the SWIC database to have also financial wealth.

⁷ The reform in Italy considered single parents and parents with children below 3 years old. Invalidity was excluded from the characteristics for an additional weight in the equivalence scale. Retirees are not mentioned in the reform.

this country is higher than expressed solidarity with working parents or with the unemployed.⁸ This is further justified by the fact that both Germany and in Switzerland are among the few countries where the rest of the population expresses a higher solidarity with the elderly than the elderly themselves (score 7.09 vs. 6.85 in Switzerland and 7.69 vs. 7.29 in Germany on a scale from 0 to 10) (Ochsner et al. 2018).

The income-wealth approaches

There are mainly two approaches to combine income and wealth in the literature. The first approach creates a unidimensional poverty index through the annualisation of wealth (see Weisbrod & Hansen 1968, Short & Ruggles 2004 and Zagorsky 2005 with different surveys from the US, Van den Bosch 1998 with the Belgian Socio-Economic Panel, Brandolini et al. 2010 with LWS data).⁹ The second approach uses two separate poverty lines (Kim & Kim 2013 for Korea, Azpitarte 2012 for Spain and the US, Headey 2008 for Australia, Haveman & Wolff 2004 for the US).

Kuypers & Marx (2018) have recently compared results from both approaches for Germany and Belgium and have criticized the first approach for several reasons. First, younger households typically have lower net worth and longer life expectancies, which translate into much lower annuities and higher poverty rates. At the same time, the saving potential of younger adults and their fertility decisions are not taken into account by this measure. Second, the correlations between life expectancy and the level of wealth held by individuals or the dependency between the level of their (financial) education and the interest rates used to annualised wealth are difficult to include in the model. Third, in this measure wealth should be entirely consumed during the life course. This means that this measure does not give any possibility of bequest. For the elderly, this might be unrealistic also because they might trade future bequest for current care. In both Belgium and Germany, the application of this first approach increased the risk of poverty for the young (by respectively 6.9 and 5.8 p.p.¹⁰) and reduced the risk of poverty for the elderly (by respectively 4.2 and 1.6 p.p.). In this approach, the imbalance between the young and the old is therefore mainly methodologically driven rather than data driven.

The second approach to aggregate income and wealth is able to separate income poor, asset poor and jointly poor households. This method suffers from fewer critiques than the method based on annualised income and has been retained by the OECD (2018) for their presentation on a preliminary asset-based analysis on poverty. According to the OECD, this second approach captures the exposure to the potential risk that insufficiency of income arises; it is therefore a measure of vulnerability, often called AROP (at-risk-of-poverty) by European statistical offices.

Both approaches require the setting of many parameters. The first parameter is the income and wealth components used to calculate household income and net worth and consequently the

⁸ Expressed solidarity is measured in the European Social Survey 2016 with the agreement to the fact that the government should ensure a reasonable standard of living for the old, ensure a reasonable standard of living of the unemployed or ensure sufficient child-care services for working parents.

⁹ Wanner & Gabadiho (2008) have also calculated the percentage of people with low financial resources adding 5% of financial wealth taken from tax register data from five Swiss cantons to the household income.

¹⁰ p.p. indicate percentage points.

asset-based poverty measure. The most important wealth component held by the middle class is home wealth from the main residence. Moreover, the main residence can be seen a fourth pillar for retirement as it reduces housing expenditures freeing resources for other types of consumption (Bradbury 2013). Even if this component is highly important, it creates two problems for the calculation of poverty and for intergenerational equity. First, younger households will appear mortgage-indebted, whereas older households will appear very wealthy because they have already repaid their mortgages. This is purely a life-cycle effect. Second, the main residence is often difficult to liquidate in the short term and does not assure financial stability for current expenditures other than housing costs. This problem is more important for countries with high home ownership rates and less important for countries such as Germany and Switzerland where home ownership is low. A common solution to these problems is to simply account for the gain that owners have compared to tenants. This gain is computed through imputed rents and is then added to income. Imputed rents are computed by most of OECD countries following different methodologies.¹¹ Imputed rents are an important element to tailor social assistance in Switzerland (SFO 2014, p.12). Moreover, half of the countries producing estimates of imputed rent include them in national definitions of income; five include imputed rent in the main national concept of income; and seven include it in secondary or alternative ones (Törmälehto and Sauli 2013). A previous study has found that including imputed rents reduces the average risk of poverty in many countries. The reduction starts at age 50 and is particularly intense for older people (between 65 and 75) (Törmälehto & Sauli 2013). Therefore, the choice of wealth components for the poverty measure is often limited to liquid financial assets that are easily monetized (OECD 2018).

The second parameter that must be set in the two approaches is the poverty line. The choice is mainly between a relative poverty line at a percentage and an absolute minimally acceptable living standard. In different contexts, there have been already some attempts to indicate an absolute poverty line for wealth: an absolute threshold of \$200,000 was implemented by Headey (2008) for net worth in Australia, whereas Gustafsson, Mac Innes & Österberg (2018) suggested a threshold of SEK 10,000 for the joint income-poverty measure in Sweden. The threshold for Sweden was identified as the amount below which people would have difficulties meeting unexpected expenditures, for example dental care. Another approach to set absolute poverty lines for wealth could be to look at asset tests. In many countries, asset tests exclude people holding assets above a certain threshold from means-test programmes based on income. The administrative threshold for asset tests in Switzerland is 4,000 CHF for singles, 8,000 CHF for couples (+ 2,000 CHF for underage children independently from their number) (CSIAS 2016). The implicit equivalence scale used here is a per capita equalization for adults with a vulnerability factor given to households with children independently from their number (0.25 for

¹¹ Regression-based approaches are used in Poland, Hungary, Latvia, Cyprus, Portugal, UK, Italy, Belgium, France, Luxembourg, Austria and the Netherlands (Törmälehto and Sauli 2013). Switzerland uses a hedonic regression model as well with the attributes of the dwelling (e.g. type of building and municipality, years lived in the dwelling, number of rooms, quality of building (appropriate heating and noise)) and other characteristics of the owner (age, education, nationality, ownership of valuables such as cars and personal computer) as covariates (SFO 2014b). Stratification is used in Romania, Malta, Lithuania, Bulgaria, Slovenia, Spain, Norway, Finland, Ireland, Denmark, Germany and Greece, whereas Estonia, Czech Republic, Iceland, Slovakia and Sweden employ user costs (Törmälehto and Sauli 2013).

couples with children and 0.5 for single parents). Many cantons, however, implement different thresholds for asset tests (e.g. the canton Bern uses 120,000 CHF for singles and 150,000 for couples) and this creates regional inequality with respect to the identification of recipients of social assistance. In general, family home is usually disregarded in the asset tests even if sometimes there are maximum sizes and values. This element supports the exclusion of the main residence also from an asset-based poverty measure. Other wealth components, such as other real estate is treated in different ways according to the country. In some countries, it is completely deducted, whereas in others, there is a discounting rule. In addition, luxury material goods disqualify in some countries (e.g. Greece, Lithuania, and Romania). In some countries, like Belgium, the calculation of the means of existence is overall more generous for the elderly. In general, asset tests change the eligibility to poverty benefits among population groups and particularly between the unemployed and pensioners (i.e. with asset tests the unemployed face a higher risk whereas the elderly a lower risk). A critique to asset tests is that they make people who have saved worse off than people who have not (Hills 2013). Discouraging asset holding can be risky because people might save less and become more vulnerable. Creating an asset-based poverty line with an appropriate threshold for wealth might solve this problem and reduce the administrative burden of implementing asset-tests.

Moreover, the establishment of a threshold based also on wealth could allow people to manage their resources so that they could benefit from social assistance if they are close to the threshold. With a pure income-based threshold people are less able to escape a threshold effect.

Because problems of social exclusion are often more important than the struggle to meet basic subsistence levels in developed countries, an absolute poverty line is not often used to identify official poverty rates. Although set in a rather arbitrary way, a relative poverty line is preferred particularly at the international level because it increases the comparability across different countries. In the literature, a relative poverty line for wealth has been operationalized as having enough net financial wealth to survive three months above the designed poverty line for income, which in Europe is set at 60% of the median income (Caner & Wolff 2004; Tonkin, Sarafino & Davies 2006). Other applications have also proposed a relative bottom threshold at 10% of the distribution (Müller & Schmidt 2018). The discussion is currently open about the survival time in terms of number of months (see also Kuypers & Marx, Fig.3). At the OECD level, the discussion is mainly between three or six months of survival. In general, it is important that the wealth thresholds are not set too low because this might discourage savings and increase overconsumption among those at risk of poverty (for a discussion about the application of different survival times in Switzerland, see Guggisberg 2018).

Methodology

Based on previous critiques and the OECD recommendations, we focus on the two-dimensional poverty approach. We test this measure with a threshold for relative poverty that simplifies the comparability between countries. These choices reduce the number parameters to test and allow us to focus on a measure of vulnerability to poverty. The approach we use can be formalized by the following two expressions:

$$\text{Income poverty: } Y < Z$$

Asset poverty: $NW < \delta Z$

where (Z) is the relative income poverty line set at 60% of the median equivalised disposable annual household income. For this exercise, we set δ at $\frac{1}{2}$ or six months of survival time. We use a very simplistic way to determine asset poverty to be able to test the other parameters. In Kuypers & Marx (2018) the income poverty line is adjusted with the rate of return on assets. We do not do so because we assume a survival time of six months, which is usually not enough to receive important interests from capital. For the same reason, Kuypers & Marx (2018) use net worth of the previous year compared to income. In CH-SILC, however, wealth is measured either on the same year or at the beginning of the year that follows the measurement of income. We therefore consider the measurements of income and wealth to be almost simultaneous.

We compute the unidimensional measure of income and annualized assets for comparability reasons. In this measure we set an interest rate (r) of 2% and we model life expectancy (le) for partnered and single individuals. The expression of this measure can be written as:

$$\text{Annualized income poverty: } AY = Y + AY = Y + \left[\frac{r}{1-(1+r)^{-le}} \right] NW < Z$$

After setting these parameters, we work on two aspects that could create a difference for the young and the elderly. First, we exclude or include housing wealth, and consequently we include or exclude the gain obtained through imputed rents for home owners.¹² In the measure of liquefiable wealth, we include deposits, bonds, stocks and mutual funds and valuables. We exclude savings in the third pillar as they cannot be easily liquefied. The poverty threshold is adjusted according to the inclusion or exclusion of the gain from imputed rents. Second, we work on the equivalence scales for wealth on the bi-dimensional measure of poverty. We compare a measure with no scales with different alternative measures. First, we consider higher economies of scales for children like in the income poverty line applying the modified OECD scale. Second, we introduce economies of scales among all household members independently of children with the squared root of the household size. Third, we consider no economies of scale but different needs across household members correcting for the household size. Fourth, we adjust for different needs and inspired by Menon et al. (2017), we add a vulnerability factor for the retirees and for invalid individuals. This vulnerability factor takes into account the fact that these individuals will not be able to become active in the future and have or are likely to have more health expenditure than the rest of the population. We operationalize this considering the household size and a 0.5 vulnerability factor. Sixth, we consider only adults with an adult per capita transformation. Seventh, we additionally test the effect of including different needs for families. In this case, we refer to what has been implicitly proposed with the absolute thresholds of the CSIAS (2016). We therefore adjust wealth according to the number of adults and then we add a vulnerability factor of 0.5 for single parents and a vulnerability factor of 0.25 for families

¹² With CH-SILC, it is impossible to separate home wealth from total housing wealth. We therefore exclude housing wealth entirely. We remark for future studies that in CH-SHARE the relationship between mean home wealth and mean total housing wealth in the population 50+ is of three quarters for respondents with other real estate.

with children. In all the analysis, we attribute the household wealth to each member of the household.

Results on poverty with CH-SILC

Income poverty rates applying the commonly used poverty line at 60% of the median equivalent disposable annual income, which in 2015 corresponds to 30,072.75 CHF with gains from home ownership or to 28,848.6 CHF without gains from home ownership, are displayed in Figure 2. With gains from home ownership, the poverty rate of the youngest age group is 12.8%, whereas the poverty rate of the eldest age group is significantly higher: 21.6%. Middle-aged groups face lower risks of poverty (around 10%) that are not significantly different from the risk faced by the youngest age group. Excluding gains from home ownership creates a large difference for the elderly who increase their poverty rate of almost 5 p.p. going up to 26.2%. This means that home ownership is very important for this age group and allows them to make economies compared to a tenure contract. The differences between the elderly and the other age groups are always significant.

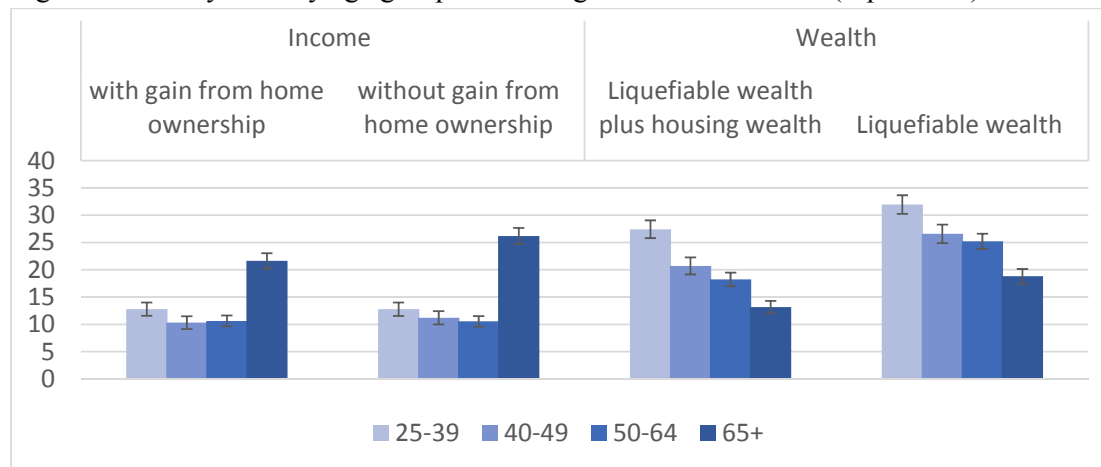
Figure 2 shows a clear life-course pattern with the young being asset poor and the elderly income poor. Considering only liquefiable wealth and a wealth threshold at 15,036.4 CHF, the poverty rates of the youngest group increases by almost 20 p.p. reaching 31.9%. This means that in Switzerland almost one third of people between 25 and 39 do not have enough liquefiable wealth to survive six months out of poverty. On the contrary, the poverty rate of the elderly declines reaching 18.8%. All age groups face a significantly lower risk of poverty if we include housing wealth as an important resource for the determination of poverty. The threshold in this case is 14,424.3 CHF and is very close to what was estimated for financial wealth. We can therefore conclude that the difference between the two measure is not the result of a threshold effect, but of different endowments.

An interesting picture appears when we construct the intersection between income and wealth poor (Figure 3). The bidimensional poverty rates are always lower than the poverty rates based either on income or on wealth. This means that even though many of the youngest age group are at risk of poverty when we take wealth alone, some of those identified poor according to their income (around 5 p.p.), are not at the same time poor according to their wealth. This might for instance be the case of young adults living with their parents.

For the young, the reduction in poverty rate assessed with the unidimensional measure compared to the classical income measure is hardly visible because of their long life-expectancy. For this group, the risk of poverty measured with a unidimensional approach is therefore similar to the risk of poverty measure only by income. In Switzerland, the unidimensional approach applied to the young does not increase their risk of poverty as in Belgium and Germany. In this context, the change in poverty rates becomes however more marked for the elderly whose short life expectancy and high level of wealth reduces their risk of poverty by almost 10 p.p. reaching 12.2% with only liquefiable wealth. With this approach, the young and the elderly face equal risks of poverty.

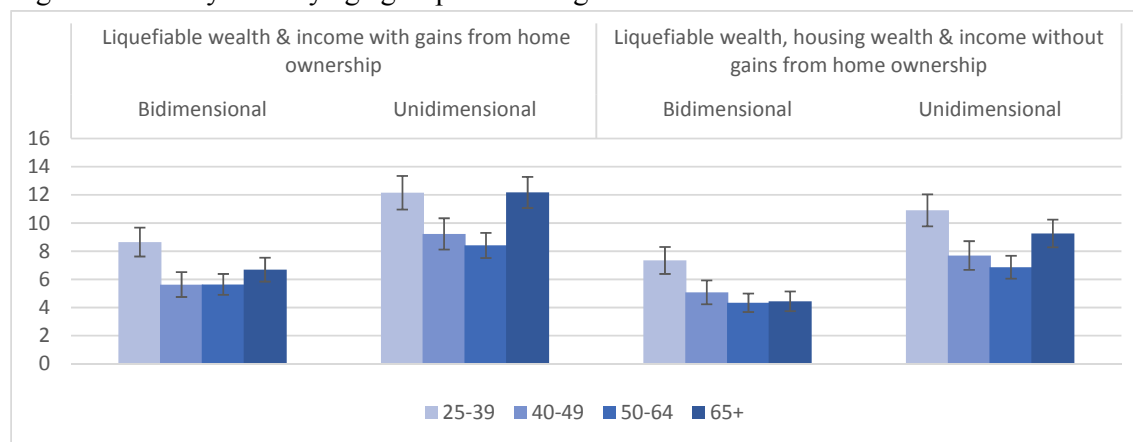
Different results are produced with a bi-dimensional approach. Compared to poverty based only on income, the bi-dimensional poverty rates constructed including gains from home ownership and liquefiable wealth for the youngest is also reduced (from 12.8% to 8.7%).

Figure 2: Poverty rates by age groups according to either income or (liquefiable) wealth



Source: CH-SILC 2015.

Figure 3: Poverty rates by age groups according to both income and wealth



Source: CH-SILC 2015. Notes: housing wealth is reported at current market prices (see Ravazzini et al. 2018 for the conversion rules). Income is equivalised with the modified OECD scale. Wealth is not equivalised. 95% confidence intervals.

Poverty rates created with liquefiable wealth, housing wealth and income without gains from home ownership show a stronger age gradient. The inclusion of housing wealth penalizes the elderly and does not lift many young out of poverty.

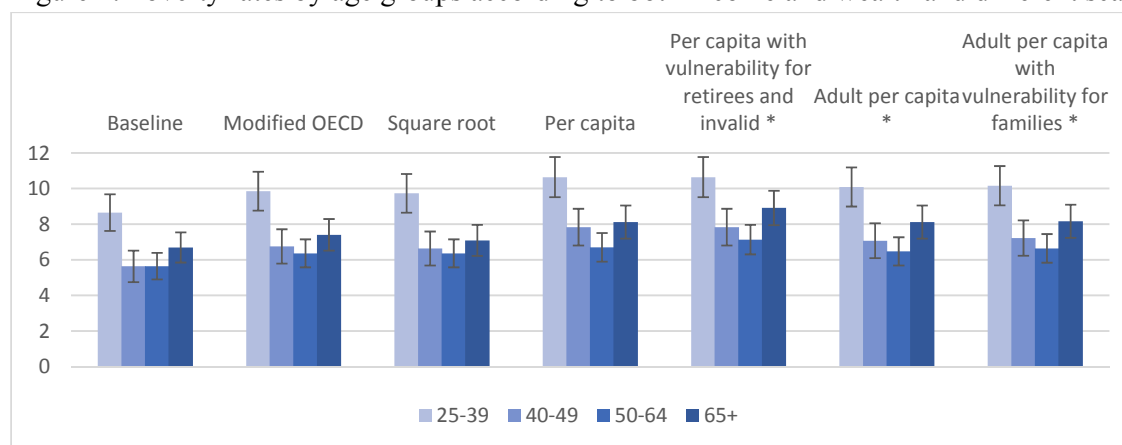
Considering these results, we run the analysis on the equivalence scales on the measure of liquefiable wealth and income including gains from home ownership, which we set as a baseline.

Compared to the baseline scenario, the risk of poverty increases for all age groups if we apply an equivalence scale (Figure 4). Contrarily to what was found by Kuypers & Marx (2018), the change from the baseline scenario is on average larger for younger age groups than for the elderly. Depending on the scale, the risk of poverty of the youngest age group increases by a

minimum of 1.1 p.p. up to a maximum of 2 p.p., whereas the risk of poverty of the elderly increases by a minimum of 0.4 p.p. up to a maximum of 2.3 p.p. For all age groups, the change in poverty rate is similar or identical between the modified OECD scale and the square root equalisation. This result complies with results by Cheung & Chou (2017) about the insensitivity of equivalence scales on the measure of child income poverty. Transforming wealth into a per capita measure creates slightly larger changes. In this case, the poverty rate of the youngest become 10.6%, which is closer to their original poverty rate based only on income. For the elderly, the risk of poverty 8.1 or 8.9 if on top of the per-capita equalisation we include also their possible additional vulnerability.

It is interesting to notice that the application of this last equivalence scale makes the difference in the risk of poverty between the young and the elderly insignificant with 95% confidence intervals. An adult per capita equalisation produces the same results at lower risks of poverty for all age groups. Correcting for additional vulnerability for families does not alter this result in a significant way.

Figure 4: Poverty rates by age groups according to both income and wealth and different scales



Source: CH-SILC 2015. Notes: Bi-dimensional approach. Income is equalised with the modified OECD scale. Income includes imputed rents and wealth is liquefiable wealth. 95% confidence intervals. * indicates that the confidence intervals of the youngest and oldest age group cross.

Concluding remarks and further discussion

The aim of this paper is to illustrate how methodological choices create an imbalance in the risk of poverty between the young and the old. We work on the inclusion of different assets, such as liquefiable wealth and housing wealth, and on the inclusion or the exclusion of gains from home ownership. We also test the sensitivity of different equivalence scale to model the risk of poverty over the life course.

Results show that although the elderly are the most vulnerable group according to a measure of income poverty, young adults are the most vulnerable group according to both a bi-dimensional and a unidimensional measure that includes income and wealth. In case of the bi-dimensional approach, this is because most of the elderly have sufficient liquefiable resources to survive six months without falling into poverty. In case of the unidimensional approach, this is because the long life-expectancy and low wealth of the young makes their poverty rate more similar to the

measure of income poverty, while the poverty rate of the elderly is reduced by their shorter life expectancy and their high wealth.

In a bidimensional approach, the risk of poverty of the young is also reduced because some of those identified poor according to their income, are not at the same time poor according to their wealth. This opens the floor to a discussion about whether the possibility and the timing of intergenerational transfers that should matter for the measurement of poverty.

The difference between the young and the old becomes even more visible if we include housing wealth among the assets. The inclusion of this component might however be unjustified if we consider that the first residence is difficult to liquefy in the short term. Including home wealth in the measure of poverty would therefore create a higher vulnerability for the elderly that would not be captured by the poverty rate.

The inclusion of equivalence scales increases the risk of poverty for all age groups. The application of an adult per capita equalisation of wealth with an adjustment for the extra vulnerability of the retirees and the invalid makes the difference in the risk of poverty insignificant between the young and the elderly. The same is obtained with an adult per capita equalisation.