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Poverty trends during two recessions and two recoveries: lessons from Sweden 1991–2013

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Abstract

We study cross-sectional and long-term poverty in Sweden over a period spanning two recessions, and discuss changes in the policy context. We find large increases in absolute poverty and deprivation during the 1990's recession but much smaller increases in 2008-2010. While increases in non-employment contributed to increasing poverty in the 1990's, the temporary poverty increase 2008-2010 was entirely due to growing poverty among non-employed. Relative poverty has increased with little variation across business cycles. Outflow from poverty and long-term poverty respond quickly to macro-economic recovery, but around one percent of the working-aged are quite resistant to such improvements.

JEL codes: I30, I32, E32

Keywords: Poverty, Recessions, Income inequality, Sweden, Long-term poverty, Material deprivation

1 Introduction

The internationally severe recession starting in 2008–2009 has spawned research on the consequences in terms of poverty and inequality (e.g. De Beer 2012; Smeeding et al. 2011; Jenkins et al. 2012). Recessions can generally be expected to suppress real incomes and increase poverty measured using a fixed poverty line, while effects on inequality and relative income poverty are more ambiguous, both theoretically and empirically (Jenkins et al 2012; De Beer 2012). While some results suggest that also inequality increases during downturns (Parker 1998; De Beer 2012), studies focussed on the 2008–2009 recession suggest that this economic downturn only had modest effects on inequality in the case of the USA (Grusky et al. 2011) and heterogeneous effects across countries (De Beer 2012; Jenkins et al. 2012).

However, the studies of the recent recession have only been able to analyse the short-term development around and after the crisis. We profit from an opportunity of adding a long-term perspective by turning to the case of Sweden. Sweden was one of the few countries that experienced a "Great Recession" already at the beginning of the 1990s (Palme et al. 2002), with an extreme economic downturn starting in 1991, which rapidly raised unemployment rates from 2 to 10 % and brought about financial turmoil

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and austerity measures (e.g. Fritzell et al. 2014)—as we will show, the economic situation for households did not reach pre-recession levels until the year 2000.

While previous research has shown how income inequality changed during and in the aftermath of the recession (for Sweden, see Gustafsson et al. 2007; Jonsson et al. 2010; Björklund and Jäntti 2012; Fritzell et al. 2014), thereby vindicating a post-recession increase in income inequality shared by many other Western countries (Atkinson 2013), there is much less research on poverty. Yet, the way poverty develops following a deep recession as well as a long-term increase in income inequality is both theoretically interesting and of great policy relevance. Hence, our first contribution is a long-term analysis of how the situation for the most vulnerable in Sweden has developed over a 22-year period of rather dramatic societal changes.[1]

One particular shortcoming in the existing literature is the dominance of only one out of several conceptually sound poverty indicators, namely relative-to-median income poverty (e.g. Eurostat 2009). Our second contribution is to address the issue of poverty with a much more comprehensive approach, using measures of absolute and relative income poverty and social assistance, as well as several measures of material and economic deprivation (cf. Nolan and Whelan 2011).

Thirdly, and particularly important for social policy, we take advantage of longitudinal data to study the development of poverty dynamics and of long-term poverty during and after the 1990s recession. Did long spells of poverty become more common in and after the recession? The loss of jobs may prolong poverty spells: it is simply difficult to find employment. This may also have post-recession consequences to the extent that human capital depreciation, negative signal effects, or worker discouragement makes it difficult to leave unemployment even during economic recovery (e.g. Kroft et al. 2014). In addition, it is a common political argument that benefit recipiency and poverty are in themselves self-reinforcing through mechanisms such as "learned helplessness" and dependency—claims of this kind were in fact the motivation behind the 1996 restructuring of the US welfare system. If this argument holds, an inflow caused by exogenous factors such as a lack of jobs will generate lingering poverty rates also when times improve. On the other hand, those who are poor in a booming economy are more likely to be low-skilled or to have other characteristics that make them less attractive to employers, which may make them more prone to longer poverty durations. Finally, in having long time series for our indicators, we are furthermore in a position to extend our analysis into and actually also through the 2008–2009 recession, thus enabling a comparative view of poverty across business cycles within one country.

Our results suggest, first, that poverty increased rather dramatically during the 1990s recession: more households fell below the (absolute) poverty line, more received social assistance, and more became economically deprived. At the same time, the recession held inequality back, and relative income poverty actually decreased as incomes in the middle of the income distribution fell more than at the bottom. Contrariwise, when the economy improved, relative poverty increased while absolute poverty fell. This pattern reflects a situation where most households experienced growing real incomes but middle incomes increased quicker than low incomes. This result, and similar ones for other countries (Notten and De Neubourg 2011; Saunders 1992), cast doubt on the (face) validity of the commonly used relative poverty measure, especially in times of quick changes in business cycles.

Second, while more people experienced long spells of poverty during the recession, mostly because of low outflow, the exit rates from poverty increased almost instantaneously with the macro-economic improvement—there was no temporal stickiness, one reason probably being that duration dependence in Sweden is quite limited (cf. Mood 2013). We estimate that long-term poverty among those of working age almost halved from the mid-1990s to the mid-2000s. However, 2 % of the working-age population are largely unresponsive to macroeconomic conditions, and around half of this group stand outside of the labour market.

Third, the most recent recession, around 2008–2009, did not have a large impact on inequality (cf. Björklund and Jäntti 2012) nor on poverty in Sweden, and poverty levels returned to pre-recession levels in 2013—half the time it took for recovery after the deep 1990s recession. Hence, our results show that recessions may not only have different associations with poverty and inequality across countries, as previously shown, but also within a country across recessions.

Finally, we discuss policy measures for alleviating poverty in the two recessions. Generous and automatic stabilizers, such as unemployment benefits and social insurances, appear to have been relatively effective but clearly insufficient in the deep recession in the 1990s. Active labour market policy, in order to keep the work force employable and active, was extensively used, and during the 1990s, educational initiatives kept unemployment down and provided incomes for many (Stenberg and Westerlund 2015). Still, in the 1990s, poverty rates soared, partly because more people lost their jobs, but mostly because of increased poverty in that group—something that may be due to the gradual erosion of the social insurance systems following the fiscal crisis. In the most recent recession, the entire increase in poverty rates (which was rather small) was due to increased poverty among the non-employed, again suggesting that a gradual weakening of the social insurance system was behind. We conclude that policy measures for alleviating poverty can certainly be identified, but our further analysis of long-term poverty also suggests that a small proportion (around 1 %) of the working-age population are likely to be difficult to reach with labour market policy measures.

2 Defining poverty

A common definition of poverty is that someone is poor who, because of limited economic resources, is unable to live a life that is acceptable or expected in his/her society, including the participation on equal terms in social life (e.g. Townsend 1979). There are two major avenues of measuring poverty following on from that either to find a “poverty line” in terms of income or to measure economic deprivation directly, e.g. by measures of participation in social life or possessions of consumer goods, alternatively by subjective information about hardship (cf. Nolan and Whelan 2011). Taking a rather unapologetic stance to the measurement of poverty, we will follow both of these strategies, utilizing data on income from taxations and survey data on economic deprivation.[2] In addition, we use a measure of social assistance (SA) from administrative records: at least in Sweden, SA is a good indicator of general economic hardship (Halleröd and Larsson 2008).[3]

The poverty line can be identified in numerous ways, and we use two of the more common: *Absolute income poverty* is defined by calculating the monetary value of a basket of goods and services regarded as necessary for a “decent” or “acceptable” living standard in a given society at a given time—thus, despite the term, this indicator is actually taking a relative stance to poverty. The measure is absolute in the sense that the poverty line defines the same purchasing power from one year to the next and also in the sense that someone with a purchasing power below the poverty line is regarded as poor no matter how many others fall below this line, which is intuitively sound (cf. Sen 1983).

We define *relative income poverty* according to the current international standards: a person is poor whose income falls below 60 % (Eurostat 2009) or 50 % (OECD (Organisation for Economic Co-operation and Development) 2008) of the median income. The argument for this measure is that we should count as poor those who have an income much below people in general in the society in which they live because it is the relative economic distance to others, not some absolute purchasing power, which determines the ability to live a life "in decency". An alternative way of viewing this measure is as indicating inequality in the bottom half of the income distribution.

3 Data and variables

The data we use in the first part of our empirical analysis come from surveys carried out by Statistics Sweden. For incomes and income-based poverty, we use data from the Household Economy Survey (HEK) (Statistics Sweden 2009), and the data on cash margin come from the Survey of Living Conditions (ULF) (Vogel et al. 1988).[4] Information on social assistance comes from tax and income registers, which also provide the income information for HEK.

For the study of poverty dynamics and long-term poverty, we turn to register data as the dynamic questions put very high demands on data: it must be large, longitudinal, and cover many consecutive years. Because of large and selective non-response and attrition, analyses based on survey data are much less reliable. Our register data cover the entire Swedish population aged 16–74 during the period 1990–2012, allowing us to assess individual-level poverty experiences across two recessions and the intervening non-recession period.

Income is defined as annual, equivalized (adjusting for household size), disposable income. *Disposable income* is the income an individual or household commands. It is calculated as income from employment and capital, adjusted for taxes and deductions, and adding monetary transfers and benefits.[5]

Absolute poverty is based on a calculation of the poverty line defined as the norm for social assistance that held from 1985 to 1995 (Jansson 2000, Socialstyrelsen (The National Board of Health and Welfare) 2007). This norm is in turn based on an estimate (by *Konsumentverket*, an independent state bureau) of *acceptable living standard*, based on the costs for goods and services deemed necessary (such as housing, clothing, health care, radio and TV, daily paper, telephone, insurances).[6] The calculation of this "basket" includes estimated costs for housing and journeys to and from work, depending on the region of residence, year, and household composition. The poverty line thus defined (in 1985) is CPI-adjusted annually to compensate for inflation and deflation.[7]

Income standard is calculated as the equivalized disposable income divided with the poverty line (taking into account housing costs and household composition). Income standard = 1 represents an income on the poverty line. Those with lower incomes are regarded as poor in an absolute sense. Those with an income standard below 0.75 are considered *extremely poor* while we denote those between 1 and 1.25 as *nearly poor*. As benchmarks, we also use the values 2 (well-off) and 4 (rich).

Relative income poverty is derived from the income distribution. An individual is considered poor in a relative sense of the term if their equivalized disposable income falls below 60 % of the median of the population (EU standard since 2003). In OECD, the limit is instead 50 % of the median, and we use this as a complementary measure.

Social assistance (SA) is the last resort for people with acute economic problems who fall below the absolute poverty line and lack economic assets (such as a car or a house). Newly arrived immigrants with no other means of subsistence have the right to get a benefit that is equivalent to SA (and included in the SA statistics up until 2012). The variable indicates whether a person lives in a household that had SA at any occasion during the year in question.

Economic deprivation is measured in three different ways. *Lack of cash margin* is defined as not being able to raise a given sum of money in a week, if needed. In the annual survey of living conditions (ULF), Statistics Sweden asked whether the respondent was able to get 15,000 SEK in a week. The sum is adjusted from time to time to approximately accommodate changes in consumer price levels. This series was discontinued in 2008, from which year we however have information from The European Union Statistics on Income and Living Conditions (EU-SILC) study, about the share of *economically deprived*, defined as those who cannot afford three out of nine defined "necessities" (e.g. durable goods, paying debts, heating one's dwelling),[8] and from an ULF question about *economic problems*, asking whether the respondent had problems, during the last 12 months, to pay rent/housing and bills for electricity, telephone, etc.

Long-term poverty is defined as having at least five consecutive calendar year's household incomes below the (CPI-adjusted) absolute poverty line.[9] One-year spells out of poverty are not counted if income during that year is below 110 % of the poverty line. For immigrants, the poverty line during the first calendar year in Sweden is defined by dividing the annual income poverty line by 12 and multiplying it by the number of months of residence in Sweden. We use annual individual-level data from income and tax registers from Statistics Sweden.

4 Trends in income inequality 1991–2013

There has been a rather clear upward secular trend in income inequality in many Western countries, something that has triggered much research and insightful assessments of its causes, potential consequences, and possible policy responses (e.g. Nolan et al. 2014; Salverda et al. 2014; Atkinson 2015). This trend is also visible for Sweden (e.g. Björklund and Jäntti 2012; Fritzell et al. 2014) and can be clearly discerned in Fig. 1, which shows the development of real incomes across the income distribution 1991–2013.[10] Following the recession in 1991, real incomes fell in Sweden, hitting rock bottom in 1995, after which there was a sizeable and enduring improvement (with smaller blips). During the period 1995–2013, real median incomes grew with almost 70 %. While all income strata experienced a favourable development, higher-income earners profited from a more pronounced income growth, and the growing distances between top and middle as well as between middle and bottom translate into a rather dramatic increase in inequality.

This increase in income inequality is reflected in Fig. 2, where we report the Gini coefficient (lower pair of curves and right y-axis) and the quotient between the incomes at the higher end of the income distribution (95th and 90th percentiles, respectively) and the low incomes (5th and 10th percentiles; left y-axis).

The upper curves in each pair show results including capital incomes, the lower excluding them. We can see that the Gini coefficient make a remarkable jump from 0.21 in 1991 to 0.29 in 2010–2012, only to drop somewhat in 2013. Also excluding capital income, the change is noticeable, from 0.20 to 0.26. Nevertheless, a Gini coefficient of

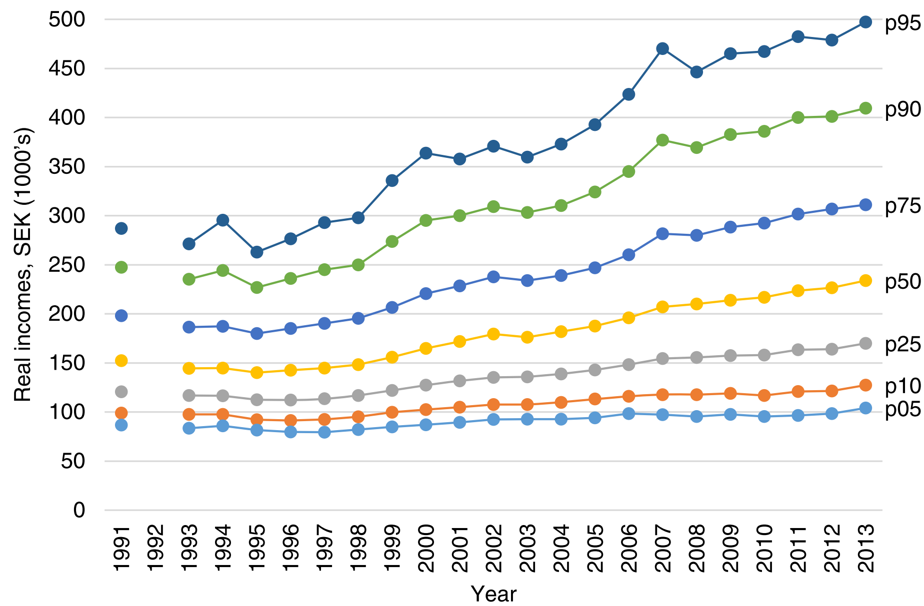

Fig. 1 Development of real incomes at different percentiles of the income distribution. Disposable equivalized incomes, including capital incomes, 2013 prices. Notes: There is no information for 1992. Source: HEK, Statistics Sweden

0.26 represents a relatively even income distribution in an international view, although a number of countries had a similar magnitude of inequality in 2010 (OECD 2014).

The 95/5 and 90/10 quotients tell a similar story about trends in income inequality, with a long-term increase but with a relatively stable level since 2007–2008. It is worth noting that the increase in inequality has been greatest for the more extreme comparison, incomes

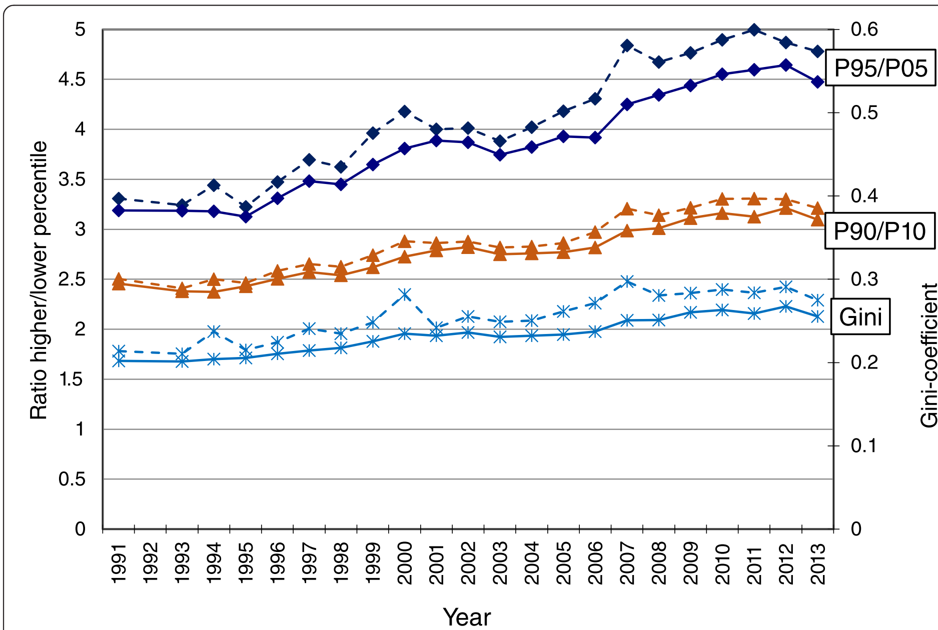

Fig. 2 Income inequality 1991–2013. Gini coefficient (*right axis*) and ratio of the 95th to 5th and of 90th to 10th percentiles (*left axis*). Disposable equivalized incomes, 2013 prices. The *dashed lines* include capital incomes, and the *solid lines* exclude them. Notes: There is no information for 1992. Source: HEK, Statistics Sweden. The confidence interval for the Gini coefficient is around 0.007

at the 95th percentile going from 3.2 times the levels of incomes at the 5th percentile in 1991 to a high of 5 times in 2011, with capital incomes having increased in importance for the gap (which is not the case for the 90/10 relation).

5 Trends in cross-sectional poverty 1991–2013

Does poverty follow the same trends as income inequality? The answer to this question would intuitively appear to be "yes", but the issue is more involved than that. Income inequality actually decreased somewhat during the economic crisis in the early 1990s, because those with higher incomes were slightly more affected, but at the same time many more people fell under the (absolute) poverty line. Figure 3 suggests that although the initial phase of the recession was swift and dramatic, mass poverty was held at bay; absolute poverty rates (yellow curve) peaking a few years later, in 1996, when 11 % of the Swedish population were poor. One reason for this delayed increase is probably not only the social insurance system or household savings but also that the first years of unemployment for many were covered by the unemployment benefit system in combination with active labour market policy measures (see Aaberge et al. 2000; Sianesi 2001). The long recovery after the recession saw declining absolute poverty rates down to 4.7 % in 2006.

The receipt of welfare benefits (dark blue line) describes a similar development as absolute poverty—the proportion on SA shrunk from 9 % in 1996 to a good 4 % in 2006. The small (around 2 %) group defined as extremely poor in an absolute sense—having an income below 75 % of the poverty line—did also diminish in size but at an appreciably slower

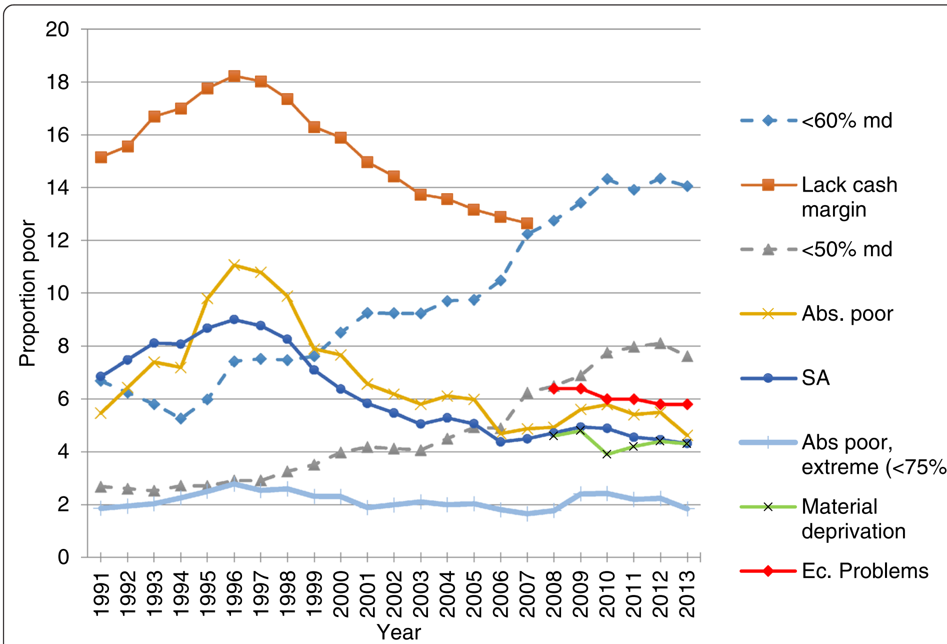

Fig. 3 Poverty trends 1991–2013 according to different measures. The proportion of the population* (i) with incomes below the relative and absolute poverty line, respectively, (ii) with social assistance some time during the year, and (iii) economically deprived. Notes: *HEK all ages; ULF (1991–2007) 16–84; (2008–2013): 16-w; EU-SILC all ages. Values for 1992 and 2002 are interpolated for income-based indicators. The curve for cash margin collapses two adjacent years and is based on moving averages. Social assistance includes introductory benefits for immigrants up to 2012. Source: HEK, ULF (cash margin, economic problems), and EU-SILC (material deprivation), Statistics Sweden

rate. When we turn to our first indicator of material deprivation—lacking cash margin (the upper, brownish curve)—we see that this proportion changes almost exactly at the same pace as the proportion receiving SA, thus reflecting the absolute dimension of poverty.

The pattern described by these indicators suggests that the trend in *absolute* poverty followed the change of real incomes rather than the change in income dispersion. However, calculating poverty using the *relative* poverty definition (shown in dashed curves) tells a totally different story. Relative poverty actually declined during the 1990s recession but grew quite substantially from a good 5 % in 1994 (60 % poverty line) to more than 14 % in 2010, with a particularly rapid increase since 2006. This trend—which is mirrored, at a lower level and with subdued changes, in the curve using the stricter relative poverty definition (50 %)—appears counter-intuitive but aligned with the development of income inequality (of which it arguably is a special dimension). We think it is an apt portrayal of the post-recession period as one of decreasing poverty, but increasing inequality.[11]

It is interesting, in Fig. 3, to scrutinize the poverty reactions to the latest recession, which started in 2008 in Sweden and peaked in 2009. There is a visible upturn in absolute poverty rates (both defined as below the poverty line and below 75 % of it), peaking in 2009–2010, but then gradually falling to pre-recession (2007) levels in 2013. We complement these curves with EU-SILC data from 2008–2013 showing material deprivation and economic hardship. On the whole, they support the picture we get from absolute poverty rates. In addition, we can also note the fading of the strong upward trend in relative poverty (although it is not advisable to interpret single-year changes, it is interesting to note that the 2012–2013 change is the only one that reduces poverty across all measures). The development of poverty after the 2008–2009 recession is thus in line with the pattern from the 1990s recession, but much smaller in magnitude—which is expected given the limited impact that the recent recession had on employment as compared to the earlier one.

An interesting feature of Fig. 3 is that it suggests that the economic recovery on average did change things for the better even as compared with the figures at the end of the economic heydays of the late 1980s and early 1990s—social assistance rates were lower in 2007 than in 1991 and absolute poverty too. This positive development is even more pronounced when we next, in Fig. 4, also consider the trends of the "nearly poor" (with an income standard between 1 and 1.25 of the absolute poverty line). This group grew from around 13 % in 1991 to around 20 % in 1997, but has since shrunk noticeably, representing less than 6 % of the population in 2007—the increase was hardly visible for the most recent recession. Figure 4 shows the compositional change for poor and non-poor groups alike, including the "rich" (defined as having an income four times or higher than the poverty line). At the same time as poverty declined, and those in the risk zone became fewer, the group with (at least) twice as high income as the poverty line—which we call the "well-off"—increased markedly and comprised more than half of the population in 2013. Since the end of the 1990s, the "rich" category has also increased noticeably, from 2 to 8 % of the population.

When considering the longer time perspective, an interesting question is whether the poverty line needs to be updated as the economic growth, with increasing real incomes, may render it obsolete. We have tried different alternative specifications but conclude that, for the time horizon we have, these do not change our conclusions about poverty trends. Besides, the belief in some sort of inevitable continuous underlying growth, demanding recurrent upward adjustments of the poverty threshold, is perhaps cast in some doubt with the recent economic development in Greece and other countries.

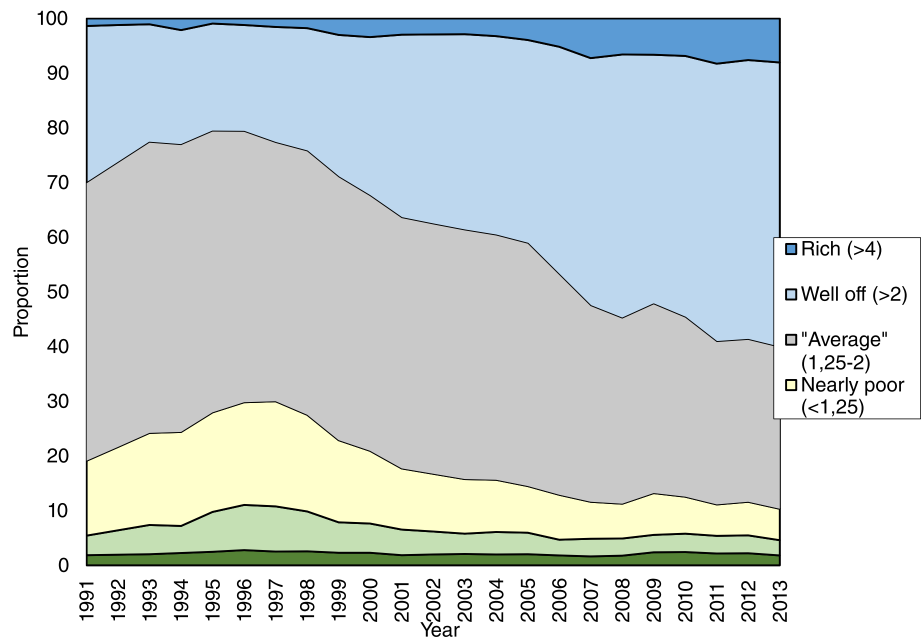

Fig. 4 The composition of poor and rich 1991–2013. The proportion living in households with different income standards in relation to the absolute poverty line. Disposable equivalized income. Whole population. Notes: Values for 1992 and 2002 are interpolated. Source: HEK, Statistics Sweden

6 Poverty in the two recessions: why so different?

While the absolute poverty and deprivation rates increased massively during the 1990s recession, the 2008–2009 recession had very little impact on poverty. Relative poverty was also apparently unaffected by the latest recession, following the ongoing upward trend. The downturn in GDP during the most recent recession was very deep but swift, which to some extent may be explained by the restructuring of the Swedish economy after the earlier recession (cf. Hassler 2010; OECD 2011).

A major difference between the two recessions was the impact they had on unemployment. At the beginning of the 1990s, unemployment rose from less than 2 % to almost 10 % in just a couple of years. A significant part of this consisted in the loss of jobs that were never replaced, and after the recession, unemployment remained at around 5–6 %. During the latest recession, the increase in unemployment was more modest, from 6 to 9 % (Björklund and Jäntti 2012), and job losses, mostly in manufacturing, reflected temporary lowered capacity utilization rather than the permanent destruction of jobs that was the case in the 1990s (Hassler 2010).

To get a sense of how poverty in the two recessions relates to what happened in the labour market, we can decompose the change in poverty rates into three components: (1) the change in non-employment rates, (2) the change in poverty rates among the employed, and (3) the change in poverty rates among the non-employed. For the decomposition, we use the "two-component" solution presented in Kitagawa (1955), so called because it decomposes the increase into compositional changes and changes in group-specific rates. The total proportion of poor (Q) in 1 year is equal to the weighted sum of the proportion poor among the employed (Q_e) and the proportion poor among the non-employed (Q_n), where the weights are the proportions of employed (p_e) and non-employed (p_n) in the population:

$$Q = Q_e p_e + Q_n p_n \tag{1}$$

The change in the poverty rate between $t1$ and $t2$ (ΔQ) can be decomposed as follows (where superscripts $t2$ and $t1$ indicate the recession year and the pre-recession year, respectively):

$$\Delta Q = 0.5\left(Q_e^{t2} - Q_e^{t1}\right)\left(p_e^{t2} - p_e^{t1}\right) + 0.5\left(Q_n^{t2} - Q_n^{t1}\right)\left(p_n^{t2} - p_n^{t1}\right) \tag{2}$$

$$+0.5\left(p_e^{t2} + p_e^{t1}\right)\left(Q_e^{t2} + Q_e^{t1}\right) \tag{3}$$

$$+0.5\left(p_n^{t2} + p_n^{t1}\right)\left(Q_n^{t2} + Q_n^{t1}\right) \tag{4}$$

where [2] gives the change attributable to composition, in this case the increase in the proportion non-employed; [3] gives the change attributable to the change in the proportion poor among the employed; and [4] gives the change attributable to the change in the proportion poor among the non-employed.

Table 1 shows the result of this decomposition, focusing on the working-age population (20–64), comparing 1991 to 1996 and 2006 to 2010, as these are the pairs of years with the lowest poverty rate just before the recession and the highest poverty rate after the onset of the recession in each of the cases (see Fig. 3). From 1991 to the recession peak in terms of poverty in 1996, poverty increased by more than 5 percentage units. This co-occurred with a sharp decline (almost 8 percentage points) in employment, increasing the non-employed part of the population by 41 %. Poverty doubled or almost doubled among employed and non-employed alike but from much higher baseline rates among the non-employed. Almost a fifth (18 %) of the increase in poverty was driven by the increase in non-employment, and another third by the increase in poverty among the employed—although this is most likely to stem from less than full yearly employment rather than decreasing wages. The rest, almost half of the total increase, was a result of increasing poverty rates among the non-employed. Although we cannot say for sure, it is not unlikely that the lowering of the coverage and replacement levels during the crisis played a part here.

The situation was very different during the latest recession. The increase in poverty was much smaller (1.6 percentage points), and there was no increase in non-employment from 2006 to 2010: the non-employment dropped only very briefly for around a year in 2008 and

Table 1 Change in absolute poverty overall and by employment status; non-employment rates in the two recessions (1991–1996 and 2006–2010); and decomposition of the poverty change

	1991–1996	2006–2010
Change in absolute poverty	5.1	1.6
Change in % of non-employed in the population	7.8	−0.4
Relative change (recession non-employed/pre-recession non-employed)	1.41	0.98
Change in % of poor among employed	2.2	0.1
Relative change (recession poverty/pre-recession poverty)	1.76	1.05
Change in % of poor among non-employed	10.8	7.0
Relative change (recession poverty/pre-recession poverty)	2.01	1.52
% of poverty increase due to fewer employed	18	−4
% of poverty increase due to increase in poverty among employed	34	5
% of poverty increase due to increase in poverty among non-employed	48	99
	100	100

2009 and was in 2010 back on the same levels as before. The poverty rate, however, peaked in 2010, which suggests that the increase in poverty may have some other underlying cause. The small increase in poverty was in fact entirely driven by the situation among the non-employed: Although the group did not increase in size between 2006 and 2010, their poverty rate increased with 7 percentage units, corresponding to a relative increase of over 50 %. Further analyses (not shown) tested whether this increase could be explained by compositional changes in terms of immigrant status or subgroups of non-employed (students, unemployed or sick, and others), but none of these factors could account for the increase in poverty.[12]

In all, the recent recession appears to have had little impact on poverty, probably because it was short enough for social insurances to bridge the economic situation of those affected by unemployment. The increase in poverty in the non-employed group is probably, at least to some extent, an effect of real-term cuts in benefits made by the centre-right government since 2006. These, however, were not responses to the recession but part of a larger package aimed at increasing work incentives.

7 Trends in poverty dynamics

Did the deep recession in the 1990s leave traces in terms of poverty, over and above the annual figures? To address this question, we need a dynamic view, where individuals are followed over time. Increasing poverty rates would be judged more severely if they reflected slower exit rates, longer poverty episodes, and growing long-term poverty, rather than an increase in short-time poverty (so more people experienced short spells of poverty).

Cross-sectional poverty rates depend on the two pillars of poverty dynamics: entry rates and exit rates. Figure 5 shows how poverty entries and exits shaped the population poverty rate between 1991 and 2012, with the lower field representing the inflowing poor the year in question and the upper field those who remain poor from at least the

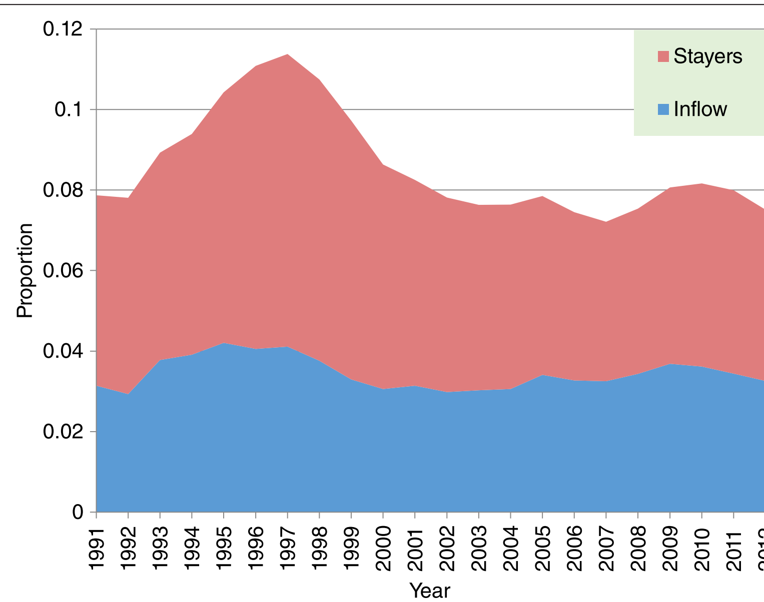

Fig. 5 Poverty inflow and persistence. The proportion of people entering and remaining in (absolute) poverty 1991–2012. Disposable equivalized income. Per cent of the population aged 16–74 in own households. Source: LISA, Statistics Sweden

preceding year.[13] The two fields together make up the total poverty rate. Around 4 % of the population entered poverty yearly during the 1993–1998 recession, compared to around 3 % in non-recession years. A similar, but smaller, increase in poverty inflow occurred following the 2008–2009 downturn. However, the main conclusion from Fig. 5 is that the proportion *staying* in poverty increased even more during the recession, from 4.5 % in 1991 to 7 % in 1997—we register a similar, but much more muted, hump in 2008–2010. So, while the increase in poverty was driven both by higher entry rates and lower exit rates, the latter were more influential. In the same vein, the economic recovery saw a sharp decline in poverty stickiness and a decrease, albeit smaller, in inflow rates.

An important aspect of poverty dynamics is relapses into poverty (Stevens 1999), as they suggest that leaving poverty may be a temporary relief rather than a permanent improvement. Frequent mobility into and out of poverty can also discourage long-term investments, such as in home ownership or in children's education, and hence have negative effects on the long-term standard of living. And indeed, those who have once dipped below the poverty line are quite likely to do it again at a later point in time: During the period we study, of those who left poverty at the onset of the recession (in 1991–1993), a good 50 % had returned to poverty at least one time during the next 10 years, re-entry rates being as high as 25 % after 2 years (results not shown).

The relapse rates predictably declined when times got better, but unexpectedly then increased again in 1998 and onwards. The reason for this is that the composition of the poor changed: with rapidly increasing immigration, more and more immigrants made up the category of poor people, and because recent migrants are vulnerable (particularly in the labour market), they contribute both to increasing long-term poverty (Mood 2011) and to increasing rates of relapses into poverty (Jonsson et al. 2010, Fig. 9).

8 Long-term poverty 1990–2012

A corollary of our calculations of poverty entry, exit, and re-entry—that is, on poverty dynamics—is that we can identify the long-term poor. This is a particular case of poverty persistence, worthy of a special study because we expect all evils of poverty to be accentuated here: Long spells in poverty are likely to increase the risk of exclusion, deprivation, and human capital depreciation. Another strong argument for caring more about the long-term poor than about the temporary poor is that the former stand for a much larger share of the total poverty years in society (Bane and Ellwood 1986); in fact, 5 % of the population stand for half of all poverty years in Sweden during the period under study (Mood 2015). Did the recession have as a consequence that long-term poverty increased; and did this stickiness continue also after the economy recovered?

Figure 6 shows the trends in long-term poverty (defined as spells of 5 years or longer) in the period 1994–2012 in the Swedish population.[14] The bottom curve shows long-term *poverty histories* that are defined by looking back in time from a given year—it describes, for each calendar year, the proportion of the population that has at that moment in time experienced five or more consecutive years in poverty. This measure is easy to understand and is in itself correct. However, it can be misleading, as many of those who have fewer years in poverty a given year will continue in poverty (Bane and Ellwood 1986). Therefore, the upper curve shows *poverty episodes*. They sum up concluded episodes of poverty from the beginning to the end—that is, this curve describes the proportion of the population

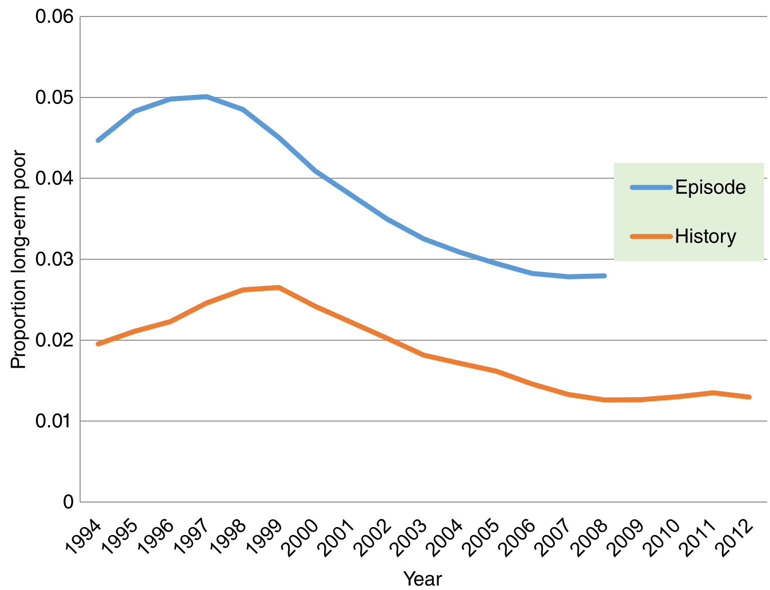

Fig. 6 Trends in long-term poverty. The proportion of the population in long-term poverty in terms of poverty histories (1994–2012) and poverty episodes (1994–2008), respectively. Disposable, equivalized income for ages 16–74 in own households. Source: LISA, Statistics Sweden

that, for each calendar year, currently is in a poverty episode that has lasted or will eventually last 5 years or more.

Figure 6 demonstrates that long-term poverty behaves much like the annual absolute poverty rates, namely increasing during the recession (with some lag, just as the cross-sectional figures) and falling during economic expansion. The fall is somewhat more accentuated when measuring poverty episodes, chiefly because these profit from counting more years ahead, years when the economy continued to improve. The fact that also long-term poverty fell quickly when the macro-economic conditions improved is both good and important news. It suggests that marketable skills did not get dated during the recession and that there was no apparent state or duration dependence in poverty during this period: this would have been reflected in lingering long-term poverty rates. Such an interpretation is also in line with recent results from Sweden, suggesting that "true" duration dependence, even though existing, is not of great importance for rates of social assistance (Mood 2013). The fact that long-term poverty responds positively and substantively to macro-economic conditions is of course of great relevance for social policy.[15]

9 The labour market attachment of the long-term poor

Given that long-term poverty appears to be an unwanted companion of economic downturns, it is important both to understand why that is and at the same time address the issue of the policy potential of eradicating it. We take a first step towards this by analysing the composition of the group of long-term poor in terms of their relation to the labour market. To what extent could those who remain in poverty be helped by economic growth? Because almost all retired are out of the labour market in Sweden, we now concentrate on those in working ages (16–64, living in their own household). We divide the long-term poor in this age category into four groups, depending on whether they have an income from gainful employment or not and on whether they are

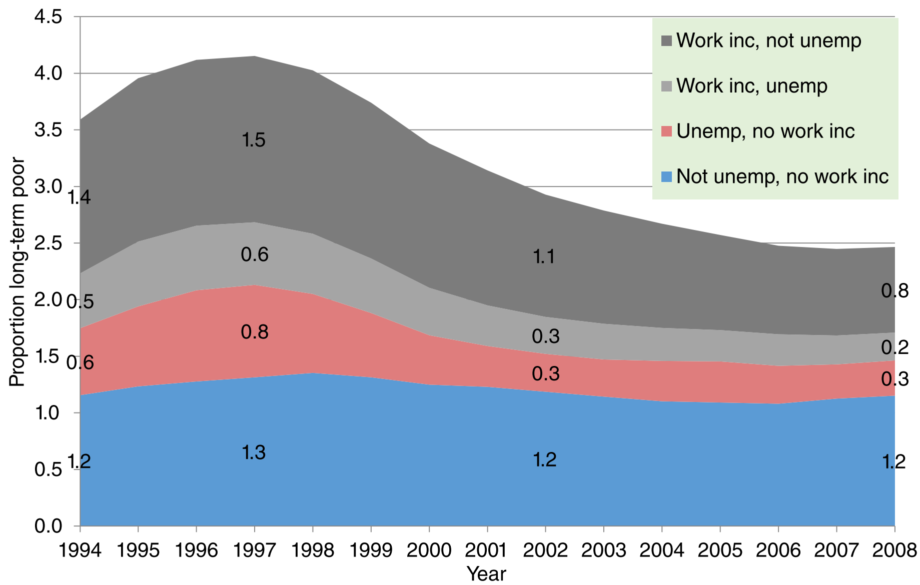

Fig. 7 The composition of labour market status in the group of long-term poor, 1994–2008 (spanning poverty 1990–2012). People in working age (16–64), living in own households. Source: LISA, Statistics Sweden

registered at the employment office or not.[16] Figure 7 shows the annual composition of these four groups for those who are in a poverty spell (episode) of 5 years or more. The labour market attachment is thus measured each observation year and need not be constant over the entire poverty episode for a given individual.

While Fig. 7 reflects the economic recession and recovery among the long-term poor (as in Fig. 6), the main conclusion is that there is one group of poor that is hardly affected at all by macro-economic changes. These are (in the blue, bottom field of the graph) non-employed people with no work income, a group that most likely mainly consists of those who simply cannot work, such as disabled or chronically ill, although there may also be a small subgroup of those who do not want gainful employment (e.g. homemakers).

When long-term poverty hit the roof in 1997 (poverty episodes covering 1993-2001), it was instead exceptionally reliant on people with some connection to the labour market, whether in terms of looking for employment or having some employment income (though not enough of it to avoid poverty). This was a group, however, whose poverty often would be eliminated by the better times to come, and the decrease in long-term poverty resulted both from decreases in in-work poverty and from lower unemployment. Of the just over 4 % long-term poor in 1996 to 1998, these groups constituted almost three quarters, while at the end of the studied period (2004–2012), they made up only around half of the long-term poor.

It is of course difficult to foretell the future trends of long-term poverty, but our results in Fig. 6 suggest that the long-term poverty rate can be expected to double in a severe recession—perhaps even more, as our restricted age range means that we leave out groups that may be more vulnerable. Turning the perspective around, it also means that a group of more than 2 % of those in working age will probably be long-term poor regardless of macro-economic improvements and that around half of this group will be out of reach for labour market policy. Although the groups are small, they stand for a large share of all poverty, and if including the entire population, these groups would most likely be larger.

10 Policy and poverty

It is evident that in Sweden, the connection to the labour market is crucial for avoiding poverty. Because of high wages also for unskilled work, the proportion "working poor" is negligible if we consider those with full-time jobs: In a comparison of European Union member states, Sweden is actually the country where employment reduces poverty risks most (European Commission 2014, p. 158). But obviously, macro-economic conditions do not have a straightforward impact on poverty via unemployment. Between the job losses in the recessions and individual- or family-level economic hardship stand two types of policy mediators: the so-called automatic stabilizers (e.g. unemployment benefits and social benefits of various kinds) and what we can term situational policy initiatives.

In the 1990s recession in Sweden, around 65 % of employees were covered by unemployment benefits, with a high replacement level—90 % until 1993, when it was lowered to 80 % (Aaberge et al. 2000)—and a relatively long duration, up to 60 weeks. Our analyses indicate that poverty increased during this recession due to a fall in employment but more importantly by a rise in poverty among non-employed and to a lesser extent among employed (who may also be partly unemployed during the year). Automatic stabilizers were probably behind the delayed effect on poverty of the sudden rise in unemployment at the beginning of the 1990s (Figs. 3 and 4). The fiscal crisis meant that several social insurance schemes saw replacement levels lowered and coverage reduced (Regnér 2000; Palme et al. 2002). This no doubt increased poverty rates. Even so, such a trend towards welfare retrenchment was more muted in Sweden than in most comparable countries (Korpi and Palme 2003).

Sudden recessions also spur situational policies to combat poverty: in Sweden, the foremost strategy is to implement active labour market policy, such as retraining, relief work, and work experience schemes as well as various youth programmes, following the established Swedish Rehn-Meidner model (Erixon 2010). This strategy was also followed during the 1990s crisis, with two effects: A large portion of the workforce were in some paid activity at some point in time, and such activity could be used to renew (or even create) eligibility for unemployment benefits (in principle, indefinitely). An evaluation of these labour market policies concludes that they were effective for increasing employment rates, although they on average also prolonged job search by reintroducing more spells of unemployment benefits (Sianesi 2001). However, even if this led to partial inefficiency in programmes, it probably reduced poverty rates.[17]

Such labour market policies were also combined with a massive expansion of education at all levels, although predominantly later on in the 1990s keeping the open unemployment figures down.[18] These policies together were most probably effective also for keeping mass poverty at bay during the 1990s as they provided income or income replacement for many, at least temporarily, thus supplementing the automatic stabilizers. In addition, such programmes raised human capital and probably also counteracted human capital depreciation for long-time unemployed (see Stenberg and Westerlund 2015). Our analyses show that there was a sharp decline in longer poverty spells when the economy improved and these programmes may have played a role for this.

The recession in 2008–2009 was short-lived, and automatic stabilizers appear to have contributed to the fact that it had relatively small effects on poverty (cf. Björklund and

Jäntti 2012). More situational policies in order to counteract the recession were also put in place, and followed much in the same tradition as in previous recessions, that is, mainly with active labour market policy (Chung and Thewissen 2011).

While there are reasons to be quite optimistic about the ability of policy to alleviate poverty based on the Swedish case (although we are not able to isolate any causal effects), some challenges can be pointed out. Firstly, due to the construction and coverage of the insurance systems, some groups face high risks of poverty because of their low labour market attachment. This goes particularly for young people, newly arrived immigrants, and single parents (Jonsson et al. 2010; Mood 2011; Gustafsson 2013). The first two groups have had shorter time to qualify for unemployment benefits, so they often have to rely on other social benefits for their incomes in times of joblessness. Secondly, with a gradual decrease of the real value of such benefits, many fall below the relative poverty line. Indeed, in 2010, no less than 90 % of children in jobless households, who have to rely on benefits, were classified as poor according to EU's income poverty definition (Mood and Jonsson 2015). Thirdly, our analyses indicate that there is a core of poor people in the magnitude of around 2 % of the working-age population that are unaffected by business cycles and stay poor over a long time. Half of this group stands outside the labour market and will hence be hard to reach with labour market policy, but further study of its composition may be able to identify possible specific policy programmes to lift them out of poverty.

11 Conclusions

We study the long-term development of poverty following the deep recession in Sweden at the beginning of the 1990s, and find increasing (absolute) poverty rates—though with some time lag, probably dependent on the social welfare and unemployment protection systems—from 5 to 11 % in 5 years' time (1991–1996). These rates then fell back to 5 % when the economy improved again (1996–2007). These trends are robust to the choice of "breadline" poverty indicators. It goes not only for income poverty but also for social assistance and economic deprivation (measured as cash margin); and it is true for inflow into poverty and outflow from it, as well as for short-term and long-term poverty (though the exact timing of the up- and downturns in the trends varies somewhat).

While *absolute* poverty rates increased during this exceptionally deep recession, *relative* poverty shrunk, only to increase again when times got better, just as income inequality at large—a pattern that has also been found in other countries (e.g. Notten and De Neubourg 2011; Layte et al. 2001). The relative poverty concept has some theoretical appeal, as there is a relative dimension in what money can buy (e.g. in the housing market), and because social acceptance may in times of growing real incomes require increasingly expensive assets and habits. However, the fact that trends in relative poverty diverge from the trends in absolute poverty as well as those in social assistance and economic deprivation, and given the counter-intuitive relation between relative poverty and general macro-economic conditions, it appears less suitable for studying trends in poverty—at least as a stand-alone indicator, as is commonly the case.

Our most important contribution in this paper is to show trends in long-term poverty, a phenomenon that is particularly relevant for social policy and also likely to increase both during and after deep recessions. There was little temporal stickiness in poverty in Sweden: Long-term poverty, measured as five consecutive years in absolute poverty, increased during the 1990s recession to reach a high of 4 to 5 % in 1996–1997, but once the economic growth resumed, it returned to pre-recession levels at around 2–3 %. Our further explorations suggest that half of the group of long-term poor in good times is quite resistant to macro-economic improvements, as they are not likely to be available for the labour market, but that a large fraction that are long-term poor during a recession respond quickly to job opportunities.

Although the 2008–2009 recession was felt in Sweden as well, it swept by without much consequence neither for inequality nor poverty. Our data show only weak reflections on poverty levels, following the same pattern as the much deeper recession in the 1990s: absolute poverty levels increased from 5 to 6 %, SA levels from four and a half to five, and the growth in relative poverty and income inequality slowed down. By 2012–2013, absolute poverty rates were back to the 2007 pre-recession levels, as were the rates of inflow into and exits from poverty. As a comparison, resuming to "normal" after the 1990s recession took around 9 to 14 years, twice as long time as after the 2008–2009 recession.

We are in no position to predict future poverty trends or to generalize from this single country study to other countries. Sweden joined many Western countries in a rather persistent increase in income inequality during the 1990s (e.g. Atkinson 2013), but just as there were country-specific variations around that theme (Jenkins et al. 2012), recessions provoked different policy reactions in different countries. We believe that Swedish automatic stabilizers, the unemployment insurance, and different social benefits, protected many from falling into poverty in the short run. Moreover, other types of policies implemented as a response to the recessions, such as active labour market policy and educational reforms, may also have had positive consequences for poverty levels, probably particularly in the somewhat longer time perspective. However, our results show that both in the 1990s recession, and particularly the 2008–2009 recession, poverty levels rose especially due to increased poverty among the non-employed. This suggests that a gradual decrease in replacement levels and real values of social benefits, as well as stricter eligibility rules, contributed to higher poverty rates in Sweden.

Endnotes

[1]We should say already here that it is beyond the aims of this paper to address the issue of causality; if possible at all, this would require very long time series and/or many countries. It is also obvious that macro-economic changes are far from the only predictor of inequality and poverty; policy and demographic change are two other important factors.

[2]There are several important studies based on more elaborate direct measures of poverty, following theoretical arguments in Townsend (1979), Mack and Lansley (1985), and Ringen (1988): see, for example, Nolan and Whelan (2011) and Halleröd (1995). None of these studies, however, have long time series of poverty trends.

[3]SA should be seen as a complementary measure as it is sensitive to changes in legislation, administrative routines, and application propensities.

[4]Income data with comparable household definitions do not exist for 1992 in HEK, and the incomes for 2002 are likely to be wrong at the bottom of the income distribution. In Figs. 3 and 4, we therefore impute values for these years, by taking the average of the adjacent years.

[5]As income records are annual, poverty must be defined per calendar year, which means that we may miss poverty episodes that are short (if the incomes of the rest of

the year are high enough to bring the annual income above the poverty line). Arguably, such short spells of poverty are not of great weight if they are not repeated, for example in the form of seasonal poverty, which, however, is rare in contemporary Sweden.

[6]In the long run, such baskets need to be re-evaluated for changes in social norms about living standards and consumption patterns. Our time period is fairly short, and although new items could have been included into the basket (smartphones, internet, etc.), our tests show that these would have had no more than a marginal effect on the poverty line.

[7]An alternative would have been to stick to the annual eligibility limit for SA. The principal reason for not doing so is that this poverty line is ultimately a political decision and trends over time could thus reflect changing budgetary concerns. In practice, however, the SA eligibility limits have changed so little that the results would hardly be affected.

[8]In the European Commission's "Europe 2020 goals", the limit is instead four out of nine items. In Sweden, this goes for only around 1 % of the population in later years, and it has decreased between 2003 and 2014 (http://ec.europa.eu/eurostat).

[9]The calendar-year definition of poverty (which is necessary due to the nature of data) means that we do not know the exact length of spells in months or days, and dynamics can only be observed on a year-to-year basis.

[10]From 1991 to 2013, there was a secular increase in the consumer price index of 38 %.

[11]Some studies combine the absolute and relative measures, starting a given year with a relative definition, but then holding the purchasing power constant (e.g. "anchored poverty"; see Eurostat 2009). Results from such an analysis are almost identical, in our case, to using absolute poverty.

[12]Sweden has during the entire period under study had high immigration. Recent immigrants have high poverty rates (Jonsson et al. 2010; Mood 2011), but immigration is not the driver behind the trends we observe nor of the differences in poverty across the recessions. The proportion immigrants in the population was somewhat higher and the proportion new immigrants roughly the same at the onset of the 2008–2009 recession as in 1991. Nor were there any differences in the distributions of other demographic factors (e.g. age, family type) that were large enough to make any meaningful contribution to the differences in the poverty rates across the two recessions.

[13]All analyses are made on persons aged 16–74, excluding those who do not live in own households (in practice, almost all 16–19-year-olds live with their parents). Note that the total yearly poverty levels in Fig. **5** differ somewhat from those estimated on the survey data in the analyses above, probably due to different measurements of household units and to non-response in the survey data.

[14]Because we begin with spells that last at least 5 years, the first year we can observe long-term poor is 1994 (those people have been poor since the first year of our data, 1990, but as the sample is left censored, some of them may have started their poverty spell earlier).

[15]Unlike long-term poverty, long-term social assistance increased and continued to stay at a relatively high level also after the recession was over (Socialstyrelsen (The National Board of Health and Welfare) 2007; Bergmark and Bäckman 2007). This development can however be almost entirely accounted for by increased immigration and by increased SA dependence in this group. This is to a large extent because newly arrived immigrants are often not qualified for labour market-related benefits but have to rely on SA during sustained periods of poverty (Mood 2011).

[16]The information on unemployment comes from Statistics Sweden's LISA database.

[17]The active labour market programmes in Sweden during the 1990s have been evaluated against outcomes such as regular employment, matching, and long-term earning consequences, with various both positive and negative effects in these dimensions (see the review by Calmfors, Forslund, and Hemström 2002; cf. Stenberg and Westerlund 2015). However, the effect on poverty may very well be positive (although not necessarily effective).

[18]These policies included the prolongation of the 2-year vocational programmes at the upper secondary school, the expansion of regional tertiary educational institutions, and a large-scale effort, beginning in 1997, to upgrade schooling for adults with shorter formal education, the adult education initiative (*Kunskapslyftet*, see Stenberg and Westerlund 2015).

Competing interests
The IZA Journal of European Labor Studies is committed to the IZA Guiding Principles of Research Integrity. The authors declare that they have observed these principles.
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