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August 2013
DP 60
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1. Introduction

Does increasing income inequality also imply increased poverty? The answer to this question would intuitively appear to be “yes”, but the issue is more involved than that. Especially, because both inequality and poverty are likely to be related to business cycles, studying the relation between them means that we need to uncover the dynamics of economic growth and decline, and how these changes relate to income differences and poverty risks. This is what we do in this paper. We illuminate the relation between inequality and poverty by studying the case of Sweden 1991-2007, a period of great macro-economic changes, from boom to bust to boom again. It is not our intention to address the issue of causality; if possible at all, answering such a question would require very long time periods and/or many countries. But we are able to show that for a modern Western economy, a deep recession reduced income inequality but increased poverty, measured as the risk of falling below the ("absolute") poverty line. Income inequality, during this period, was pro-cyclical, increasing as the economy improved. Poverty, on the other hand, was anti-cyclical – while increasing during the recession, it decreased during growth.

Our results suggest that, in Sweden, income inequality and absolute poverty are negatively related, the reason being that their associations with macro-economic fluctuations have different signs. However, this pattern is likely to be historically contingent and nationally specific. Notten and Neuborg (2011) show that in all their studied countries (EU15 and the US) income growth in the 1990’s increased real incomes along the entire income distribution, but there was wide variation across countries in terms of which income strata benefited the most. This means that we can generally expect economic growth to reduce (absolute) poverty, while effects on income inequality will vary. The effects of economic downturns are however not obvious. In particular, the effects on both poverty and inequality will depend on how downwardly fungible low incomes are.

The way business cycles and income inequality are related to poverty is also dependent on how we measure poverty. If we instead of using an absolute poverty line conceive of poverty in relative terms (letting the poor be defined as those whose income is 50 or 60 percent below the median), poverty in Sweden is pro-cyclical; somewhat counter-intuitively decreasing during the recession. As relative poverty is a special way of measuring income inequality, it is not so surprising that it is related to business cycles in the same way as income inequality itself. However, there is not necessarily a positive association between the two as the definition of
relative poverty is only dependent on the lower half of the income distribution. If, as in our case, there is a tendency that improving macro-economic conditions will benefit those with lower incomes least, income inequality and relative poverty will go hand in hand during a macro-economic upturn. Conversely, when the economy deteriorated, those with the lower incomes were not affected as much, in real terms, as those with median incomes, and therefore relative poverty decreased. This is likely to be the case in many other countries too, especially those with minimum wages, but may not obtain in more market-liberal economies, such as the USA or Great Britain.

We proceed by discussing, as a background, the macro-economic conditions in Sweden in the 1990s and 2000s. Then, we present our concepts, data, and variables, and subsequently the results of our empirical analyses. These are divided into three parts: income inequality, absolute and relative cross-sectional poverty, and poverty dynamics. All these three parts focus trends, addressing the question of simultaneity of change in different types of income inequality and poverty. The paper concludes with a discussion of the results.


In the late 1980s, the Swedish economy boomed, and with unemployment figures below 2 per cent there was in reality severe labour shortage in several industrial branches. In 1991 the Swedish economy crashed in a turmoil similar to the development after the 2008 financial crisis in the USA, and of equal severity. Beginning at the end of 1991, unemployment rose to 3 per cent, GNP growth was negative, and a critical financial crisis and a rapid fall in the real estate market followed suit. This led to two more years of negative growth, and with three consecutive years of negative GNP figures the period could in fact be classified as depression. Unemployment rose dramatically to almost 10 per cent in 1993 and stayed that high until 1998 when it came down to 8 per cent – still very high in relation to Sweden’s post-war history of (more or less) full employment.¹ Employment rates fell from 80 per cent (of 15-64 year olds) to 73 per cent in 1993, made a recovery in 1998-2001, and have hovered around 75 per cent since then. The new “normalized” economic and labour market situation in the 2001-2007 period has been

¹ All figures reported in this paragraph are from the Swedish Labour Force Surveys accessed via OECD.Statextracts [2010] and concern all people aged 15-64. Unemployment figures are according to the ILO standard, that is, slightly higher than the official Swedish measure that counts people in full-time education as being out of the labour market.
characterized by economic growth, with varying year-to-year fluctuations, but also by relatively high unemployment rates (though still below EU averages).

The beginning of the 1990s was of course much more dramatic in other parts of Europe: The civil war in Yugoslavia was a human disaster, and led not only to casualties and to political chaos, but also to large-scale emigration. In the midst of the Swedish economic crisis, the immigration from ex-Yugoslavia was record-high, amounting to substantial figures in 1993 and 1994 (particularly from Bosnia). Sweden had also from the latter half of the 1980s experienced high immigration rates from non-European countries, especially from the Middle East (which continued also after the economic recession), so the total immigration was at very high levels from the late 1980s and onwards. Up until 2004 it amounted to 40-50 thousands a year, with a peak in 1994 of nearly 80 thousands (almost one per cent of the total population), although return-migration was also relatively high. In 2004-05 immigration increased again, now largely because of an influx from new European Union member states, but they arrived to an economy that was constantly recovering. For the immigrants who came during the 1990s, the down-turn in the economy was detrimental for their economic integration – they found it difficult to get a footing in the labour market, and many ended up with low income and with high and enduring poverty and social assistance rates (Jonsson, Mood, and Bihagen 2010; Mood 2011).

The development during the first years of the 1990s meant that the budget deficit increased and as a response the government sought to decrease welfare state expenditures by restricting the levels, durations, and/or eligibility conditions of various benefits, such as sickness, parental and unemployment benefits, and the universal child benefit (Regnér 2000, Palme et al. 2002, Socialstyrelsen 2006, ch. 4). Naturally, these changes added to the already increasing risks of poverty.

3. Defining poverty and finding the poor

A common definition 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 (as incomes stand for the lion’s share of individuals’ and families’ economic resources), or to measure economic deprivation directly (e.g., by measures of participation in social life or possessions of consumer goods, or by subjective information about hardship). We will follow both of these
strategies, utilizing data on income from taxations, on social assistance (SA) from administrative records, and survey data on economic deprivation (here in the form of a question of cash margin).\(^2\)

Taking incomes as a point of departure, we follow the tradition of estimating the poverty line by calculating the monetary value of a basket of goods and services regarded as necessary for a “decent” or “acceptable” living standard (where the value is adjusted according to needs by considering the composition and size of the household). Even though the goods and services deemed necessary to achieve an acceptable living standard are dependent on where and when one lives – and in this respect is relative – we will use this poverty line to define absolute poverty. The measure is absolute in the sense that the poverty line defines the same purchasing power from one year to the next, and is absolute 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).

Social assistance (SA), an alternative absolute measure of poverty that we also use, has the advantage of being tested for needs, so those who get it are with some certainty poor – apart from having low income, they also lack economic possessions. SA has also been shown to be a very good indicator of general economic hardship in Sweden (Halleröd and Larsson 2008). However, a major drawback is that changes in SA rates could be due to (i) the development of economic resources in the population (“real” poverty); (ii) changes in application propensities among the needy;\(^3\) (iii) alterations of the poverty line from the government; (iv) changes in acceptance standards or routines used by officials in local administration.\(^4\) In addition, newly arrived immigrants in Sweden have to resort to SA while others who are equally poor do not, because they are eligible for other benefits (such as unemployment, sickness, or disability benefits) if they have, or have had, a connection to the labour market.

We define relative poverty according to the current EU standard: a person is poor whose income falls below 60 percent of the median income (Eurostat 2009). The argument for this measure is that we should count as poor those who have an income much below what people in general have in the society in which they live. It is the relative economic distance to others, not

\(^2\) There are several influential and 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 (1996), Halleröd (1995).

\(^3\) Estimating this number is very difficult. For Sweden, there is no exact information, but some estimates suggest that the proportion eligible who do not apply is large (Gustafsson 2002), leading to an underestimation of the poverty rate. Similar results are reported from a number of other countries, and it is probable that lack of information on eligibility of SA, and the stigma associated with it, account for this pattern (Mood 2006).

\(^4\) Particularly the two latter possibilities make it risky to use SA as an official measure of poverty, as the government or local municipalities may then be tempted to fight poverty by cutting poverty support.
some absolute purchasing power, which determines the ability to live a life under the same conditions as others in society, and participate in social life like them.

Inevitably, the number of poor varies with the definition of poverty, which accentuates the fact that the measures of poverty are partly arbitrary. This is illustrated for relative poverty by the change, in 2003, of the EU poverty line from 50 per cent of the median income to 60 per cent. The absolute measures of poverty are less arbitrary, even if the same issues can be raised over the definition of the basket defining the minimum standard of living, particularly for items outside of the basic needs for nutrition. At any event, merely “counting the poor” is more of a political or administrative task, and the numbers arrived at are difficult to judge in themselves for a given country at a given time (unless they are extreme). A more scientific task is to understand differences between population groups and countries, correlates to poverty, and changes over time in poverty, however defined.

3. Data, definitions, and variables

The data we use in the first two parts of our empirical analysis (for trends in income inequality and poverty) come from surveys carried out by Statistics Sweden. The analyses of change in income and group differences in poverty 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).

Income is defined as annual, equivalized, 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. Equivalized disposable income, or disposable income per consumption unit, is the disposable income adjusted according to need, where need is estimated according to the size and composition of the

5 With a relative definition of poverty, the purchasing power at which one is considered poor can change from one year to the next. Theoretically, in the defense of a relative poverty measure one can argue that a general growth in affluence of a population has as one consequence that it becomes more expensive to maintain one’s self-esteem and social status; that there is inflation in the amount of money needed to be on par with one’s likes. The absolute measures of poverty, in turn, can of course be adapted to new “needs”, so that the content of the basket is updated (to include, e.g., computer or mobile phone). In this sense, the absolute measure is culturally relative, but the content is the same for everyone, and if your income is not high enough to afford the basket you are considered poor no matter how many others are not able to do this.
household. In order to make annual incomes comparable over time, they have been adjusted according to the price level of 2007 using Statistics Sweden’s consumer price index.

**Absolute poverty** is based on a calculation of the poverty line defined as the norm for social assistance in 1985 (Jansson 2000, Socialstyrelsen 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). The calculation of this “basket” includes estimated costs for housing and journeys to and from work, depending on region of residence, year, and household composition. The poverty line thus defined (in 1985) is adjusted annually with the consumer price index to compensate for inflation and deflation.⁷

**Income standard** is calculated as the equivalized disposable income divided with the poverty line (taking into account residence 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**.

**Relative 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 per cent of the median of the population (EU standard since 2003). In OECD, the limit is instead 50 per cent of the median. We use this measure to define the **very poor**, and the limit of 40 per cent of the median to define the **extremely poor** in a relative sense.

**Social assistance** (SA) is the last resort for people with temporary economic problems who fall below the absolute poverty line. Only the lower limit is decided by the government – apart from that, the decision lies with local municipalities. Extra support can be given in particular cases, for example if special dental treatment would be needed. Officials at the municipality social office make individual assessments of the need for support. The basic principle is that someone who has money in the bank or other economic resources (such as a car or a house) is not eligible

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⁶ We use Statistic Sweden’s standard equivalence scale which has the following weights that are summed over the individual’s household:

- 1 – one adult
- 1.51 – two adults
- 0.52 – the first child in the household
- 0.42 – each of the other children
- 0.60 – children older than 19 and other adults in the household.

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.
to SA. 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).

*Lack of cash margin* is defined as not being able to raise a given sum of money in a week. In the annual survey of living conditions (ULF), Statistics Sweden asks whether the respondent is able to get 15,000 SEK (2008; around 1,500 Euros) in a week, if needed. The sum is adjusted from time to time to approximately accommodate changes in consumer price levels.


Two of the bases of poverty trends defined in terms of income are the development of real incomes and the changes in income dispersion, and we begin our analyses with a description of these changes between 1991 and 2007. Figure 1 shows the development of the mean of and spread in incomes (excluding capital income), by trend lines for different income percentiles (P05 representing the fifth percentile, under which 5 per cent of the population are, P95 the 95th percentile, and the median the 50th).  

The economic cycles are reflected in falling real incomes up until 1995 and a rapid increase after that. During this latter period of economic growth real incomes grew with no less than 59 per cent, and at the same time the spread in income increased. This is evident from the fanning out of the curves showing incomes at different percentiles. Almost all income strata experienced a favourable development of their real disposable annual incomes during the period, but high-income earners profited from a more pronounced income growth in real terms. The equivalized disposable incomes at the fifth percentile (representing the incomes of the economically most vulnerable) increased from around 75k SEK during the 1990s to around 90k SEK in 2006-2007. At the 95th percentile, however (i.e., among those with the highest incomes) the growth was dramatic, from a good 250k to 380k. Households at all income levels (also those not shown in Figure 1) witnessed increased real disposable incomes, and thus became richer, but the richest became

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8 Capital incomes generate money that can be used for consumption but are also sensitive to changes in tax regulations. In 2001, for example, a change in the taxation of profit from selling condos made many realize these profits in 2000 with a consequence that they were registered with high incomes that particular year (Statistics Sweden 2002).

9 At the time of writing, 100 SEK is equal to 11 Euro, 9 GBP, or 14 USD.
Figure 2. Income inequality in Sweden 1991–2007

Percentile quotient* P95/P05 and P90/P10; Gini-coefficient, with and without capital incomes

* The quotient between incomes at different percentiles in the income distribution.

Values for 1992 are interpolated.
Source: HEK, Statistics Sweden.

In fact, including capital income the Gini-coefficient increased from around 0.22 in 1991 to around 0.30 in 2007, which is a remarkable change.10 Also excluding capital income, the change is noticeable, from 0.20 to 0.25. Nevertheless, a Gini-coefficient of 0.25 represents, compared to other countries, a relatively even income distribution. Sweden’s small income dispersion is matched in EU25 only by Slovenia, and is far off the high marks of Great Britain, Portugal, Italy, and the Baltic states, all with a Gini-coefficient around or over 0.32 – though Sweden does follow, along with the other Nordic countries, an international trend towards growing income disparities (OECD 2008; Fritzell, Bäckman, and Ritakallio 2011).

10 The year 2007 was however a local peak: more recent figures show that the Gini-coefficient dropped to 2008 and then increased somewhat in 2009 and 2010 (Statistics Sweden 2012).
5. Trends in cross-sectional poverty

In times of growing income dispersion, the number of relatively poor is likely to increase, as that measure is based on income differences. The proportion of relatively poor did also increase markedly during the period. Using the EU definition (60% of the median), the poverty rate decreased during the recession, then increased from a good five percent in 1994 to more than 12 percent in 2007, with a particularly rapid increase during the most recent years. This is evident from the bold upwardly sloping curve in Figure 3. The dashed lines describing a similar trend, though not so pronounced, reflect relative poverty trends using even lower poverty lines (50 and 40% of the median) to define the very poor and the extremely poor, respectively.\footnote{Despite the increase since 1991, the proportion in relative poverty is low in Sweden in an international perspective (OECD 2008). An important reason for the low rate in Sweden is that transfers such as child allowances, welfare benefits, and housing allowances (but discounting pensions) have a strong equalizing effect (OECD 2008). In a comparative perspective, wage levels in low-pay jobs are also rather high.}

Interestingly enough, the development of absolute poverty, as well as of SA, reveal a marked decrease since 1996. Figure 3 clearly shows that the proportion in absolute poverty (i.e., with an income below the absolute poverty line) increased substantially during the economic recession in the early to mid-1990s, but has since then fallen steadily. In fact, this type of poverty was halved between 1996 and 2007. The reception of welfare benefits describes a similar development – the proportion on SA shrunk from 9 per cent in 1996 to a good 4 per cent in 2007. The small (around 2 per cent) group defined as extremely poor in an absolute sense (income below 75 per cent of the poverty line) has also diminished in size, but at an appreciably slower rate. The pattern described by these indicators suggests that the trend in absolute poverty follows the change of real incomes rather than the change in income dispersion.
Figure 3. Poverty 1991–2007 according to different measures

The proportion with incomes* below the relative and absolute poverty line, respectively, and the proportion in households with social assistance some time during the year, both of the whole population. The proportion aged 16-84 without cash margin. Per cent

* Equivalized disposable income.
Values for 1992 are interpolated.
The curve for cash margin collapses two adjacent years and is based on moving averages.
Source: HEK and ULF (cash margin), Statistics Sweden.

It is an important question just how quickly the recession led to increasing absolute poverty rates. Figure 3 suggests that although the initial phase of the recession was swift and dramatic, mass poverty was held at bay; poverty rates peaking a few years later, in 1996, at 11 per cent. One reason for this delayed increase is probably not only the comprehensive social insurance system, but that the first years of unemployment for many were covered by the unemployment benefit system.
Figure 3 shows also another indicator of poverty, lack of cash margin. This is a more immediate measure of economic problems or vulnerability that may stem from too low income in relation to needs, or from too large expenses in relation to income (for example, by high mortgages). The relevance of the measure is high because it is important in everyday life to meet a sudden economic need (e.g., for changing a defect washing machine, or repairing the car). In difference to the income-based measures of poverty (but just like SA), the cash margin depends on the total economic situation, for example also on savings and other economic resources. It is an interesting complement to the other measures because it lies closer to the definition of economic deprivation in being a more direct indicator of poverty. It is entirely possible that a reduction of absolute poverty is counteracted by the raising consumption level following growing real incomes – if the “acceptable” living standard increases with increasing disposable (real) incomes, and the surplus thus is used for “keeping up with the Joneses”, we can imagine that the access to cash margin would not follow the growth in real income. It does, however. In fact, the proportion lacking cash margin changes almost exactly at the same pace as the proportion on SA, thus reflecting the absolute dimension of poverty.

The difference in results, depending on the definition of poverty, reflects the fact that relative poverty is a dimension of income inequality. During economic recovery in Sweden (circa 1998-2007), with sustained growth in real incomes, income inequality increased, which is perhaps not so unusual in times of economic growth (for Ireland, see Layte, Nolan, and Whelan 2001). Therefore, those less well off slid somewhat more behind the median income – but also when we adjust for changes in inflation (which were minor), this group found their purchasing power increasing. We think it is sound to portray this improvement in disposable real incomes as one of decreasing poverty, but increasing inequality.  

An interesting feature of Figure 3 is that it shows that the economic recovery on average did change things for the better even as compared with the figures at the end of the economic hey-days of the late 1980s-early 1990s – absolute poverty rates, just as social assistance rates, were lower in 2007 than in 1991. This is even more pronounced when we consider the trends of the “nearly poor” (with an income standard between 1 and 1.25). This group grew from around 13 per cent in 1991 to around 20 per cent in 1996, but has since shrunk noticeably, representing no more than around 5 per cent of the population in 2007. This is demonstrated in Figure 4, which shows the change in absolute poverty in perspective of the total distribution of absolute income – that is, we

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12 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.
can see the change in the proportional size of groups who are near poverty as well as those who are affluent. 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 increased markedly, and comprised more than half of the population in 2007.

When considering the whole period, and the fact that poverty was less at the end of it, we may ask whether this is to some extent a side-effect of using a poverty line from 1985 (adjusted for CPI). Perhaps is what we see merely a reflection of an underlying economic growth with a slump in it? There is no way of addressing this, so we cannot rule it out, but at least two things speak against such an interpretation. First, the empirical facts from the 1990s (in Sweden and Finland, mainly), and from the almost equally deep recession in the USA (reflected also in other countries) in 2008 and onwards, let alone the economic crisis in Greece (and potentially also other EU countries), suggest that it may not be as obvious to believe in a sustained economic growth in Western countries as it has been in the past. Secondly, we also believe that the time period under study is fairly short and close to our measure of the absolute poverty line, and although it could be argued that more items should have been included into the basket defining the acceptable living standard, these would hardly have had more than a marginal effect on the overall level. On the other hand, trends in poverty will always be difficult to measure over a longer period, not only because of the problem of defining an acceptable standard of living, but also because a similar challenge in defining a basket of goods and services for calculating the consumer price index.
Figure 4. Poor and rich 1991–2007

The proportion of people living in households with different income standards in relation to the absolute poverty line. Disposable equivalized income. Whole population. Per cent.

Values for 1992 are interpolated.

Source: HEK, Statistics Sweden.

7. Trends in poverty dynamics and in long-term poverty

Above, we have shown poverty trends using cross-sectional data. This gives the true picture of the aggregate poverty levels each year, and year-to-year changes based on these annual rates. This view could however be complemented by another view of poverty, namely the dynamic, where individuals (or households) are followed over time. For example, increasing poverty rates would seem more severe if they reflected a growing stickiness of poverty (so poverty episodes became longer and long-term poverty thereby increased), rather than if they reflected an increase in short-time poverty (so more people experienced short spells of poverty). Another strong argument for caring more about the long-term poor than for 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, five percent of the population stand for half of all poverty years in Sweden during the period under study (Mood and Jonsson 2012).

To study trends in poverty in a dynamic perspective raises extreme demands on the data material, because it must be large, longitudinal, and cover many consecutive years. Because of attrition and small sample sizes, it can hardly be done using existing survey data. We therefore turn to register data covering the entire Swedish population during the period 1990-2007. We use annual individual level data from various registers from Statistics Sweden (e.g., the censuses (FoB), tax registers (IoT), and other administrative data (e.g., RTB, LISA)). For the analyses here, we exclude self-employed as their registered incomes are not always good indicators of their actual living standard (Engström and Holmlund 2009).

Poverty is defined according to the (CPI-adjusted) absolute poverty line, based on calendar year household incomes. One-year spells out of poverty are not considered in the analyses if income during that year is below 110 per cent 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. All analyses are made on persons 16 years and older, excluding those who do not live in own households (in practice, almost all 16-19-year-olds live with their parents).

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 2007, with the lower field representing the inflowing poor the year in question, and the upper field those who remain poor from at least the preceding year. Around four percent of the population entered poverty yearly during the recession 1993-2007, compared to around three percent in non-recession years. The proportion staying in poverty increased even more during the recession, from 4.5 percent in 1991 to 7 percent in 1997, 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.

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13 This means that we may miss poverty episodes that are short (if the incomes the rest of the year are high enough to bring the annual income above the poverty line), and we do not know the exact length of spells in months or days. 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.

14 The total yearly poverty levels differ somewhat from those estimated on survey data in the analyses above, probably due to different measurement of income and households, and non-response in survey data.
A closer inspection of outflow rates shows these to follow the business cycle quite closely, being slowest for those who entered poverty at the beginning of the recession (1991) and quickest for those whose entry year was just before the recovery (around 1997 and onwards). For the former, around 45 percent left poverty after one year, 20 percent remained after six years, and 8 percent after ten. For the latter, the one year poverty experience was almost as common (closer to 50 percent), while only 10 percent remained after six years and around 3 percent after ten years in poverty (Jonsson, Mood, and Bihagen 2010, Fig. 7).

It is well-known that an important aspect of poverty dynamics is relapses into poverty (Stevens 1999). This is important partly because frequent mobility in and out of poverty can be expected to discourage long-term investments, such as in home ownership or in children’s education. 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 1991-93), a good 50 percent had returned to poverty at least one time during the next ten years, re-entry rates being as high as 25 percent after two years.

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, Mood, and Bihagen 2010, Fig. 9). This is a reminder that trends in poverty are not only dependent on macro-economic conditions, but also on the composition of the population at large and the population of poor.

A corollary of the focus on poverty entry, exit, and re-entry – that is, on poverty dynamics – is that we can identify 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. 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 five years or longer) in the period 1994-2007 in the Swedish population.\(^{15}\) We display three curves, the upper one, which is the annual poverty rate in the population, being just a reference point. The bottom curve shows long-term poverty histories that are defined by looking back in time from a given year – that is, it describes, for each calendar year, the proportion of the population that has experienced five or more straight 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, we also show (middle curve) poverty episodes, which sum concluded episodes of poverty from the beginning to the end – that is, this curve describes the proportion of the population that each calendar year is in a long-term poverty episode.

\(^{15}\) Because we begin with spells that lasted at least five 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 since the sample is left-censored some of them may have started their poverty spell earlier).
Figure 6. Trends in Long-term Poverty

The proportion of the population in long-term poverty between 1994 and 2007 in terms of poverty histories and poverty episodes, respectively; the reference curve represents the annual cross-sectional poverty rate. Disposable, equivalized income.

Figure 6 demonstrates that long-term poverty behaves much like the annual 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 analysis does not explain why long-term poverty follows the same trend as cross-sectional poverty, but it appears unlikely that there was a strong state or duration dependence in poverty during this period: this would have been reflected in lingering or even increasing 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 substantial importance for rates of social assistance (Mood 2012). The fact that long-term poverty did not increase is of course of great relevance for social policy. For our present concern, we conclude that the relation between income inequality and long-term poverty is similar to the one between income inequality and cross-sectional poverty.

16 This is also vindicated in analyses where long-term poverty rates are expressed as a proportion of the poor and not, as here, of the whole population (Jonsson, Mood, and Bihagen 2010, Fig. 8).

17 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 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).
8. Conclusions and discussion

We argue in this paper that the association between income inequality and poverty is not easily predicted: therefore, the fear that increasing income gaps will lead to increasing poverty rates is not necessarily warranted. One important reason is that improving macro-economic conditions may lead to reduced poverty but increased income differences, and vice versa. Thus, we argue that in understanding the relation between income inequality and poverty, it is crucial to analyze how these two relate to business cycle change. We exemplified this with empirical analyses of the case of Sweden 1991-2007, a time-period with dramatic swings in business cycles, from boom to bust, to boom again. Indeed, we find that (“absolute”) poverty rates increased during the recession – though with some lag, probably dependent on the social welfare and unemployment protection systems – from 5 to 11 percent in five years’ time (1991-1996). These rates then fell back to 5 percent when the economy improved again (1996-2007). These trends are robust to choice of poverty indicators. It goes not only for income poverty, but for social assistance and economic deprivation (measured as cash margin) as well; and it is true for inflow into poverty, 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 poverty rates increased during the recession, income inequality shrunk, only to increase again when times got better. The take-off in the growth of real incomes was swifter for the high-income group, starting already in 1996, although all income deciles followed. When incomes grew most rapidly – during the upsurge of the economy in 1998-2007 – the incomes also increased much more for those in the 90th and 95th income percentile than in the 5th and 10th, both in absolute and relative terms. The result of this was an increase in income inequality, measured by the Gini-coefficient (from 0.20 to 0.25) and as indicated by the ratios of high incomes to low incomes.

Because poverty was anti-cyclical and income inequality pro-cyclical the cross-sectional association between income inequality and poverty was negative during the time period we study. While this result accurately depicts the situation in Sweden 1991-2007, it is no doubt contingent on income generating mechanisms that may differ over time and across countries. First and foremost, the income floor in Sweden was quite high during this period, partly because welfare state and unemployment benefits took effect at low market income levels (and despite the fact that
there were cuts in public expenditures as a response to the recession).\textsuperscript{18} This will be the case for other Nordic countries as well, and minimum income levels will no doubt play the same role in other countries. In countries where there is no downward limit for the lowest incomes, a deep recession may instead increase income differences (findings from the USA show this pattern; see Parker 1998) and thus growing income inequality and growing poverty could take place simultaneously. On the other hand, even with fungible incomes it will always remain a possibility that growing income differences will occur because those with higher and medium incomes will increase their incomes while the incomes of those in the bottom half of the distribution will stay the same or increase at a slower rate. In such a case, ceteris paribus, the number of (absolute) poor will not increase.

It goes without saying that the relation between income inequality and relative poverty need not be the same as with absolute poverty (as we have defined it). This is because relative poverty – as measured as the proportion having less income than 50 or 60 percent of the median – is a special dimension of income inequality, and as such could be expected to move in the same direction. Indeed, it does in our case, because those with mid-level incomes experienced a stronger real income growth than those with low incomes – this moved more people below the relative poverty line, although their real incomes actually increased. 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 it is possible (but presumed rather than proven) that the social consequences of low incomes could hinge on their relative and not absolute level: to be socially accepted may in times of economic growth require increasingly expensive clothes and technological equipment, for example. However, although this is so, we believe that the relative dimension is rather well captured by measures of income inequality, and that the disadvantages of the relative concept of poverty – materialized as the counter-intuitive decrease in poverty during an unprecedented recession – make it less suitable to use in the study of trends in poverty.\textsuperscript{19}

Finally, we should acknowledge that the way trends in income inequality and in poverty relate to each other depends also on other changes than business cycles. Among these other types of changes are institutional changes in legislation and regulations (such as taxes, benefits in kind, regulations on housing and prices etc.); and institutional changes in legislation and regulations (such as taxes, benefits in kind, regulations on housing and prices etc.).

\textsuperscript{18} We should note that there is no legislation in Sweden regarding minimum income levels, but strong trade unions have for a long time pushed the lowest incomes upwards in a way that is reminiscent of such minimum income legislation.

\textsuperscript{19} A way of making more sense of trend analyses of relative poverty is to use ”anchored poverty” defined by the relative poverty line at the start of a period, and with trends calculated on the basis of this initial value but adjusted for CPI change. Such an analysis produces trends in poverty that in our case are almost identical to absolute poverty, and appears to us to be theoretically cumbersome since it uses the concept of relative poverty without believing that poverty is relative.
prerequisites for claiming benefits, etc.), and changes in the composition of the population (such as demographic changes in the age structure or in the proportion of one-person households). In Sweden, during the period we study, the most pertinent change was due to large-scale immigration. Because those who arrived in Sweden during the deep recession had great problems of finding jobs, they contributed both to increasing income inequality (adding to the lowest income band) and to increasing poverty, thereby attenuating the negative relation we found between the two. This development also reminds us that in worrying over increased poverty, income inequality is in itself perhaps not the most important factor. And, shifting the angle, the most worrying aspect of growing income differences in society is perhaps not the potential impact on poverty, but the risk that inequality of opportunity increases in the next generation.
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Aims

The core objective of GINI is to deliver important new answers to questions of great interest to European societies: What are the social, cultural and political impacts that increasing inequalities in income, wealth and education may have? For the answers, GINI combines an interdisciplinary analysis that draws on economics, sociology, political science and health studies, with improved methodologies, uniform measurement, wide country coverage, a clear policy dimension and broad dissemination.

Methodologically, GINI aims to:

- exploit differences between and within 29 countries in inequality levels and trends for understanding the impacts and teasing out implications for policy and institutions,
- elaborate on the effects of both individual distributional positions and aggregate inequalities, and
- allow for feedback from impacts to inequality in a two-way causality approach.

The project operates in a framework of policy-oriented debate and international comparisons across all EU countries (except Cyprus and Malta), the USA, Japan, Canada and Australia.

Inequality Impacts and Analysis

Social impacts of inequality include educational access and achievement, individual employment opportunities and labour market behaviour, household joblessness, living standards and deprivation, family and household formation/breakdown, housing and intergenerational social mobility, individual health and life expectancy, and social cohesion versus polarisation. Underlying long-term trends, the economic cycle and the current financial and economic crisis will be incorporated. Politico-cultural impacts investigated are: Do increasing income/educational inequalities widen cultural and political ‘distances’, alienating people from politics, globalisation and European integration? Do they affect individuals’ participation and general social trust? Is acceptance of inequality and policies of redistribution affected by inequality itself? What effects do political systems (coalitions/winner-takes-all) have? Finally, it focuses on costs and benefits of policies limiting income inequality and its efficiency for mitigating other inequalities (health, housing, education and opportunity), and addresses the question what contributions policy making itself may have made to the growth of inequalities.

Support and Activities

The project receives EU research support to the amount of Euro 2.7 million. The work will result in four main reports and a final report, some 70 discussion papers and 29 country reports. The start of the project is 1 February 2010 for a three-year period. Detailed information can be found on the website.

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GINI GROWING INEQUALITIES' IMPACTS

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