The Dynamics of Child Poverty in Sweden*

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Abstract

The purpose of this paper is to study (empirically) the dynamics of child poverty in Sweden, the quintessential welfare state. We find that 1 out of every 5 children is disposable income poor at least once during his or her childhood, while only 2 percent of all children are chronically poor. We also document a strong life-cycle profile for child poverty. Approximately 8.6 percent of all children are born into poverty. The average poverty rate then drops to about 7.5 percent among 1-year old children. After which, it declines (monotonically) to about 3.8 percent among 17-year olds. Children in Sweden are largely protected (economically) from a number of quite serious events, such as parental unemployment, sickness and death. Family dissolution and long-term unemployment, however, do push children into poverty. But for most of these children, poverty is only temporary. Single mothers, for example, are overrepresented among the poor, but not among the chronically poor. Children with immigrant parents are strongly overrepresented among the chronically poor; as are children whose parents have unusually low educations. We argue that information about the dynamics of child poverty may help policy makers to construct more salient policies for fighting child poverty.

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Introduction

One of the primary goals of Swedish family policy is to combat child poverty (SOU 2001:24). This goal is widely accepted in Sweden, since children are viewed as having no personal responsibility for their own economic situation and since the negative consequences of child poverty for both the individual and society may be quite large (Duncan and Brooks-Gunn, 1997; Lichter, 1997; Vleminckx and Smeeding, 2001; DS 2004:41). Numerous studies have been written about child poverty in Sweden with, generally, favorable conclusions concerning the role of both employment policies and family oriented transfers in reducing child poverty, particularly in comparison with the alternative policies pursued by the United States (Duncan et al., 1993; Jäntti and Danziger, 1994).

The most common approach to studying child poverty in Sweden has been to use cross-sectional data to asses the scope of poverty at a particular point in time (see, e.g., Jäntti and Danziger, 1994; SOU 2001:24; SCB 2002; DS 2004:41). Studies using cross-sectional data give us the answers to a number of fundamentally important questions. For example, they tell us how many children are poor. They tell us who these poor children are and where they live. But they also leave a number of very important questions unanswered. Do all children spend a short time in poverty or are there a few groups of children who spend their entire childhoods in poverty? What happens to children when their parents separate or remarry? What happens to children when their families expand or when their parents lose their jobs? To study these types of important questions one must adopt a dynamic approach and make use of longitudinal data.

In this paper, we use register data from 1991 to 2004 taken from the Longitudinal Database for Sweden (LINDA) to study the dynamics of child poverty in Sweden. This unique data set allows us to follow a large cohort of Swedish children for nearly their entire childhood. Sweden's Department of Social Services has emphasized the need for this type of longitudinal research (DS 2004:41). But the case of Sweden should also be of great interest to an international audience, since it is often viewed as the quintessential welfare state.

The dynamics of poverty have important policy implications. Chronic poverty may call for a different policy response than temporary poverty and the identification of key negative events that consistently push children into poverty may signal undesirable weaknesses in the public safety net. Furthermore, by following children (and their families) over time, we can determine whether policies should, perhaps, be tailored according to the age of the child, since

most families have a particular income and career life-cycle pattern. Thus, information about the dynamics of child poverty may help us construct more salient policies for fighting child poverty.[1]

There are less than a handful of previous studies concerning poverty dynamics among Swedish children and their families. Duncan et al. (1993) was probably the first. Their study compared poverty dynamics in 6 European countries (including Sweden) with those of Canada and the United States. They investigated transition rates into and out of poverty during the 1980's and examined how changes in employment status, marital status and receipt of social assistance affected these transition rates in different countries. In this way, they were able to discuss differences in the proximate causes of poverty across their sample of countries. Their study found surprising similarities across countries in the degree of upward mobility among the poor. But large cross-country differences in overall inequality still created large cross-country difference in the share of families with children living in poverty.[2] The largest shares were found in the United States and Canada, while the smallest shares were found in the Netherlands and Sweden. Gustafsson (2000) extended this analysis for Sweden to include income data up to 1992 and for all types of households, not just families with children.[3]

This paper picks up where Duncan et al. (1993) and Gustafsson (2000) left off. The time period that we study in this paper, 1991 – 2004, is a particularly interesting one, since the Swedish welfare state was faced with several new challenges, particularly during the 1990's. These challenges included an increase in refugee immigrants and exceptionally high unemployment rates. Previous research has identified these two factors as among the most important proximate causes of poverty among children (Bradbury, Jenkins and Micklewright, 2001; Vleminckx and Smeeding, 2001, Gustafsson et al., 2007).[4]

We also make use of a different data source. Duncan et al. (1993) and Gustafsson (2000) used the Swedish Household Income Survey (HINK), while we have chosen to use register data from LINDA. There are several major advantages of using LINDA instead of HINK (which is

[1] Policy evaluators need this information too. Testing the causal impact of a particular policy on child poverty requires the evaluator to model child poverty dynamics properly in order to obtain a clean counterfactual.

[2] When inequality is large (i.e., families find themselves very far below the poverty line), then the distance needed to travel to escape poverty is larger. Thus, even when poor families in most countries travel the same distance from one year to the next, those living in high inequality societies do not travel far enough to escape poverty.

[3] In related work, Fritzell and Henz (2001) use register income data from 1971 – 1991 matched to the Swedish Level of Living Survey to study household poverty dynamics. Key references concerning the dynamics of *child poverty* include the book edited by Bradbury, Jenkins and Mickelwright (2001a) and studies by Jenkins and Schluter (2003), Crossley and Curtis (2006), Fertig and Tamm (2007) and Corak et al. (forthcoming).

[4] For an excellent review of poverty in Sweden during the 1990's, see Gustafsson et al. (2007).

now called HEK) to study poverty dynamics. The most important advantage is that we can actually follow the same children for nearly their entire childhood (i.e., we have a long, uncensored panel). This allows us to make several unique contributions. We can measure the share of chronically poor children among the population and we can also study the occurrence of multiple poverty spells. These types of questions are not possible to study using HINK, since survey participants are rotated out after only two waves of the survey.

The detailed information contained in the LINDA database concerning income, taxes and transfers received by individuals, combined with the large size of our sample of children, allow us to address several interesting questions not found elsewhere in the recent literature on child poverty. Aside from addressing standard (and important) issues of family structure, parental employment, welfare recipiency and immigrant status, we will also be able to look at children who, for example, have at least one parent that is a student, or is sick, has a work injury, a form of handicap, a disability pension, or has passed away. We will examine these and other types of severe "shocks" in order to ascertain how well children are protected (economically) from these shocks by the Swedish welfare state. Another interesting innovation is that we will report those who are after-tax poor along with the more common measures of market poor and disposable income poor. This allows us to determine *how* Sweden goes about fighting child poverty. Is it through lower unemployment and higher low-end wages, through a progressive tax system, or through transfers?

Our paper complements the study of Galloway et al. (2007) who examine the incidence and dynamics of poverty among immigrant children in Norway, Sweden and Denmark. Our paper says more about the actual dynamics of child poverty and also more about the poverty spells experienced by the "average" child (a necessary baseline for policy makers). Their research project, however, is quite promising since it focuses on a group of children that are particularly likely to be poor and since they adopt a cross-country approach.

Two other papers concerning poverty dynamics in Sweden deserve mention here: The first is Hansen and Wahlberg's (2004) study concerning the persistence of poverty in Sweden between 1991 and 2001. The two main similarities between our study and theirs are that both studies use register data from LINDA and that both are interested in poverty dynamics as opposed to simple poverty snapshots. The main, obvious, difference between our paper and theirs is that they study poverty in a panel representing the entire *adult* population, while we focus on a

panel of children. We, therefore, make use of additional information from the LINDA database in order to address a number of issues of particular importance to children.[5] The second is Oxley et al.'s (2000) paper, which compares the poverty dynamics of 6 OECD countries (including Sweden) between 1991 and 1996. Their paper is very much in the spirit of Duncan et al. (1993), albeit without Duncan et al.'s (2003) focus on *child* poverty. The methodological approach that we adopt in this paper is very similar to Oxley et al.'s (2000).[6]

The outline of our paper is as follows: In Section 2, we discuss a number of key measurement issues and we describe the data that we use in this study. Section 3 examines the incidence of poverty among children. The persistence of poverty is studied in Section 4, which is followed by a test of the severity of these poverty spells in Section 5. We then continue our analysis of the dynamics of child poverty in Section 6 by looking at the flows into and out of poverty. Section 7 presents an analysis of multiple poverty spells and briefly discusses the poverty trap hypothesis. In section 8, we investigate whether or not the risk of being poor varies across families with different observable characteristics. In section 9, the family characteristics of the chronically poor are examined. We then conclude with a summary of our main findings and a discussion of their implications for future research and their relevance for policy makers.

2. Measurement Issues and Data Description

Throughout this paper, we use income based measures of poverty as opposed to measures based on expenditures and/or consumption.[7] There are several good reasons for this. The first reason is one of data availability. In Sweden, there simply are no data on the consumption and expenditure patterns of children that cover the same children for any length of time. On the other hand, Swedish income tax registers give us a truly unique opportunity to follow a large sample of children for nearly their entire childhood. In fact, this paper follows the largest number of

[5] There are also a number of methodological differences between their paper and ours. Hansen and Wahlberg (2004) adopt a multiple spell hazard model, which allows them to estimate the duration of poverty spells and to test for poverty spell dependency despite the fact that the poverty histories that they study are censored (i.e., their data does not allow them to follow the same individuals from age 18 to death). The fact that our data are largely uncensored allows us to study poverty dynamics using more traditional panel methods. Fertig and Tamm (2007) apply Hansen and Wahlberg's (2004) methodology to a panel of children from the German Socio-Economic Panel.

[6] Key references concerning poverty dynamics in other countries include Bane and Ellwood (1986) and Stevens (1994, 1999) for the United States, Cappellari and Jenkins (2004) for Britain, Finnie and Sweetman (2003) for Canada, Devicienti and Gualtieri (2007) for Italy.

[7] Our measures are also uni-dimensional. Multi-dimensional measures that included access to services such as health care and education would most likely lower our poverty figures, since these services are provided by the government to all children free of cost.

individual children of any research paper (known to us) in the literature. Furthermore, the panel of children does not suffer from significant attrition (more on this below) and the income data are completely uncensored.[8]

The second reason for using a measure of poverty based on income is that previous research has shown a strong correlation between children's consumption, health and well being (along many dimensions) and their families' incomes, at least for children living in families with chronically low income, severely low income, or both (Duncan and Brooks-Gunn, 1997).[9] This does not, however, absolve researchers from the responsibility of trying to construct new and better data sets for studying child poverty. Several such projects are currently underway in Sweden.[10,11]

All information on income, taxes and transfers as well as demographic information is taken from the Longitudinal Individual Database for Sweden (LINDA).[12] The original panel is based on a fully representative sample of the Swedish population. It includes 3.35 percent of the Swedish population (in 1991). All family members of these individuals were then merged onto the data set. This increases the data set to include 8.8 percent of the population (in 1991).

The family definition used in this paper is the so called RTB family definition (where RTB stands for *registret över totalbefolkningen*, in English, the total population register). The family includes all individuals with family ties that are registered at the same address. This includes extended family members (grandparents, etc.), but excludes individuals that are cohabitating and do not have children together. This implies that the income of an unmarried mother's live-in partner is not included in our measure of total family income (unless they also

[8] In 1986, Statistics Sweden began taking in income information from both the tax registers and from employers. This eliminates the left censoring of reported incomes found in the Swedish tax registers, since employers are required to report even small amounts of income paid out.

[9] Also, if you are either severely poor or have been poor for a long time, then you may have already pushed your savings down to zero and may not able to borrow more money. If this is true, then current income and consumption expenditures will be equalized.

[10] One example is the recent study published by Statistics Sweden (2005) concerning the living conditions of children in Sweden. This study (a joint project with the Swedish Institute for Social Research, SOFI) interviewed children about different aspects of their lives, including; health, well being, housing, own finances, leisure activities, school activities, family structure, familial relations, and other important topics. Several topics were even suggested by the children themselves, such as the importance of having pets. Parents were also interviewed (separately) about the living conditions of their children.

[11] In their study on child poverty in Canada, Crossley and Curtis (2006) compare an income based measure of poverty with several measures based on consumption expenditures. They find that poverty among children is lower when measured using consumption expenditure than when measured using income.

[12] The database is maintained by Statistics Sweden, see www.scb.se. See also Edin and Fredriksson (2000) for more information on LINDA.

have children together) nor is the children's biological father's income, since he is living elsewhere. Child support is included in the mother's income, but the RTB definition may still understate the resources that children have access to if their parents live at different addresses. Hence, we risk overstating the degree of poverty among single-parent households.[13]

Another drawback to using LINDA as opposed to, for example, HINK (now called HEK), is that we use payments from the unemployment insurance system and/or payments from labor market programs as indicators of a parent's unemployment status. We do not have a direct measure of parental unemployment nor do we have information on underemployment, discouraged workers, or job search. Some unemployed persons may find themselves outside of the insurance system and still not be enrolled in an active labor market program (they may be on welfare for example). Thus, we may be classifying some people as gainfully employed when they are, in fact, unemployed or underemployed. This may lead us to understate the role of unemployment as a proximate cause of child poverty.

We use the LINDA data to construct two different types of data sets. Our main data set consists of a panel of children aged 0 to 4 in 1991. All of these children are members of the original probability sample and are, therefore, representative of their cohorts. We follow these children until 2004 when they are between the ages of 13 and 17. Thus, we can follow the same children for nearly their entire childhood. We remove those children who emigrate from Sweden or die in any year up to and including 2004.[14] The panel data set includes 18,518 children that we follow for every year. Throughout this paper, we refer to this panel data set as "our cohort" of children. The second data set is a repeated cross-section of all children (in the LINDA sample) between the ages of 0 and 17 for each year between 1991 and 2004. Each annual cross-section includes about 250,000 children.

The LINDA database provides detailed information on all forms of taxable income, all taxes paid and all transfers received (both negative and positive, taxable and non-taxable), including unemployment insurance, parental leave benefits, sick benefits, child allowances, social assistance payments, etc. We will use 3 different definitions of income in this study; (i) total market income, which includes all taxable labor related earnings (e.g., wages, pensions, sickness

[13] A similar problem arises when studying child poverty using U.S. Census of Population data. The extent of this problem is analyzed in Carlson and Danziger (1999).

[14] We started out with 19376 children; 61 children die, 640 emigrate from Sweden, and 157 are lost for unknown reasons. In total, we lose 4.4 percent of the original probability sample.

benefits, unemployment benefits, and other taxable job related benefits[15]) and net income from capital, business income, farm income, etc., (ii) total after-tax market income, which is equal to total market income less taxes paid, and (iii) disposable income, which is equal to total after-tax market income plus all non-taxable transfers and less benefit repayments (e.g., repayment of student loans).

We assume that all members of the family share equal living standards.[16] We then calculate the needs adjusted income per family member using the following equivalency scale;

$$\text{needs adjusted income per family member} = (\text{family income})/(\text{adults} + 0.7\times\text{children})^{0.85}.$$

This equivalency scale gives an equal weight to each adult (persons 18 years or older) in the family and assumes that the needs of children are seventy percent of the needs of an adult. This equivalency scale also assumes a certain degree of economies of scale in the family's ability to meet the needs of its members, which is mirrored in the exponent on the denominator equal to 0.85. This particular equivalency scale is quite common in the literature on child poverty (see, e.g., Bradbury and Jäntti, 2001a, 2001b) and is similar to the official equivalency scale used by the OECD.

Once each child is assigned his or her needs adjusted income (henceforth, income), we then establish a minimum income threshold that separates poor children from non-poor children. This involves two sets of choices. The first set of choices concerns whether the poverty threshold should be defined in absolute terms (e.g., a fixed income level like the U.S. poverty line) or in relative terms (e.g., a percentage of the median income). The second set of choices pertains to whether one wants to fix this threshold at one point in time (i.e., a fixed percent of the 1991 median income) or if one wants to use a moving threshold.

[15] For a description of job related benefits see Sjögren Lindquist and Wadensjö (2006).

[16] The assumption of equal sharing of resources within the household has not received much support from the relevant research. Some authors argue that poor parents cushion their children from poverty by consuming less themselves (Middleton, Ashworth and Braithwaite, 1997), while others stress that mothers and fathers spend different amounts on different types of consumption – with the underlying hypothesis being that mothers will spend more resources on children than fathers (see, e.g., Lundberg, Pollak an Wales 1997). This literature also discusses the importance of the within-household bargaining power derived from a spouse's own earnings and income, which, in turn, affects the outcome of a bargaining game that determines the composition of family expenditures (see, e.g., Phipps and Burton, 1998). Unfortunately, this literature can not provide us with a better sharing rule than the one we have adopted. We can only hope that the equal sharing rule reflects some kind of average among different families.

We opt for a relative measure of poverty, namely 50 percent of the median disposable income.[17] This is, probably, the most widely used definition of poverty.[18] We allow this threshold to move over time, reflecting year-to-year changes in the median disposable income. Our choices have been motivated by sentiments similar to those expressed by Miles Corak (2005, p. 13). "The threshold must in some sense represent the level of resources below which it would be insufficient to participate normally in society, and it should be updated as changes occur in the availability and consumption of goods and services that determine this norm."

Following Bradbury and Jäntti (2001a), we label children as market poor, after-tax poor or disposable income poor if their market incomes, after-tax incomes or disposable incomes are below this poverty line. As such, all 3 income types and poverty measures are viewed in relation to this single poverty line, which is defined in terms of disposable income. This will allow us to compare our results concerning the share of market poor and disposable income poor directly with the cross-country evidence presented in Bradbury and Jäntti (2001a).

2.1 An Overview of Swedish Family Policy and Family-Oriented Transfers

Before we begin our empirical analysis, we would like to briefly mention several of the key family policies Sweden has adopted to fight child poverty. First, every child in Sweden receives a tax-free child subsidy (*barnbidrag*) each month. The subsidy is currently 1050 SEK per month, which is about 150 U.S. Dollars. Each additional child (after the first) receives an added subsidy (*flerbarnstillägg*). A family with five children, for example, receives a total amount of 7614 SEK, or about 218 U.S. Dollars per child each month.

Low income families with children can also apply for tax-free rent subsidies (*bostadsbidrag*)**.** Education, health care and dental care are provided free of charge to all children. Daycare is heavily subsidized (costing about one tenth of what private daycare in the U.S or U.K. currently costs) and employment participation rates among women are quite high

[17] Note that one could have chosen the median income of all children as the benchmark. We choose the median income of all persons in the population.

[18] The Swedish Government has frequently used 50 percent of the median income as an unofficial poverty line, for example in its 2001 National Action Plan against Poverty and Social Exclusion written for the EU. The United Nations and the OECD also use this measure. In their report to the European Commission, Atkinson et al. (2002) recommend reporting both 50 and 60 percent of the median income, which we do in Section 5. Another reason for choosing this poverty line is that we wanted to be able to compare our results with those produced in Duncan et al. (1993), Gustafsson (2000), Oxley et al. (2000) and Bradbury and Jäntti (2001a, 2001b), all of which used 50 percent of the median income as their poverty line.

even among single mothers.[19] Sweden's compressed wage distribution implies that the low end wages are relatively high. The Swedish parental leave insurance system also provides considerable income support for parents with newborn and young children.[20]

Although the state encourages divorced and separated parents to agree on child support payments, it is more common that the primary caretaker (usually a single mother) receives child support payments from the government (*underhållsstöd*), which in turn collects money from the other parent (typically the father). This particular form of child support payments are completely harmonized, so that all single parents receive the same amount, regardless of their former spouse's income. These tax-free payments are currently equal to 1273 SEK per month (about 182 U.S. Dollars).

All of these systems – and others not mentioned here – are quite general in nature. Only the housing subsidy and (in some cases) child support payments are means tested. Those who still fall below a locally determined (but nationally regulated) minimum standard of living can turn to the social welfare office for added income support.

3. Incidence of Poverty

We begin our empirical analysis by examining the incidence of child poverty in Sweden. Table 1 presents the share of children living in poverty during the years 1991 to 2004. This share is calculated for our cohort (children born between 1987 and 1991) and for yearly cross-sections of all children (in LINDA) aged 0 to 17. We report these shares for our three different income measures, which enables us to talk about three different categories of poor children; the market poor, the after-tax poor, and the disposable income poor.

There are several results worth noting. First, despite Sweden's relatively compressed wage distribution and high labor participation rates among both men and women, an average of 26 percent of all children are market poor. This figure is comparable to that found in the other Nordic welfare states and is approximately 6 percentage points lower than the average share

[19] The participation rate for women fluctuates between 70 and 80 percent during the time period studied.

[20] The Parental leave insurance system provides families with newborn and small children with 13 months of taxable benefits equal to 80 percent of the at-home parent's current salary up to a maximum monthly salary of about 33,000 SEK (≈ $4714 per month). Two of these months must be taken by the father or they are lost. After these 13 months are used up, parents have an additional 90 days of benefits paid out at a fixed daily rate of 180 SEK (≈ $26) per day. Many parents also have extra parental leave insurance provided for them through their collective labor agreements. All central government employees, for example, receive 90 percent of their salary and the monthly salary ceiling is removed entirely.

found in industrialized countries (Bradbury and Jäntti, 2001a).[21] Second, 43 percent of all children are (on average) classified as after-tax poor. This is quite remarkable given most people's preconceived notion of the Swedish tax system being strongly progressive.[22] From the standpoint of low income children, it is not.

The share of disposable income poor in our cohort is (on average) 4.2 percent between 1991 and 2004. This can be compared to an average of 5.7 percent among all children (in LINDA) during this period.[23] These shares are quite low by international standards (see, e.g., UNICEF, 2000; Förster, 2000; Bradbury and Jäntti, 2001a, 2001b).

How then does Sweden fight child poverty? The differences between the average poverty rates of our three income measures answers this question quite clearly. Sweden uses transfers to fight child poverty.

In Table 1, we see that the share of market poor children in our cohort falls (almost) monotonically from 24 percent in 1991 to 16 percent in 2004. The share of after-tax poor children in our cohort falls (almost) monotonically from 44 percent in 1991 to 28 percent in 2004. The share of disposable income poor also falls, albeit not monotonically, from 6.2 percent in 1991 to 3.5 percent in 2004. Similar falls in child poverty are not observed for children in the yearly cross-section samples.

The differences between the time series profiles for our cohort and for the yearly cross-sections of all children can be interpreted as the life-cycle profile of child poverty. As our cohort ages, their families tend to have more resources than those families with younger children. The average age of children (and their parents) in the cross-section samples, on the other hand,

[21] Bradbury and Jäntti (2001a) report 39 percent market poor children for Sweden. They report 31 percent for the U.S. and an average across 23 countries of 31.7 percent. Their measure of market poor used for Sweden differs from ours, since it is based on the older, tax unit definition of households. For the other countries, their measure is based on a household definition similar to our RTB definition.

[22] All workers in Sweden pay local taxes, which are flat rate taxes that vary from county to county, but are (on average) about 30 percent. Tax deductible income amounts are very low. So, the marginal tax rate for low income workers is essentially 30 percent. High income workers, with income above the median, pay central government taxes as well. They face marginal tax rates of between 30 and 55 percent.

[23] Using cross-section data on disposable income from the Luxembourg Income Study, and applying the same poverty definition as we use, Bradbury and Jäntti (2001a) calculated that the share of disposable income poor in Sweden in 1992 to be 3.7 percent. Our cross-section measure for 1992 is 5.8 percent (see Table 1). Using similar methods, the Swedish poverty rate in 1995 was estimated at 2.6 and 2.7 percent, respectively, by UNICEF (2000) and Förster (2000). Our cross-section estimate for 1995 is 4.1 percent (see Table 1). Thus, our low measure of poverty actually lies above the level of poverty reported in previous studies. This difference is most likely due to the fact that previous studies have been based on "tax units" as opposed to households. Our study uses the new RTB family definition, which is more similar to the definition of a household used in most other countries.

remains (approximately) constant from year to year. Hence, the time series profile of the repeated cross-sections does not contain any information on the life-cycle pattern of poverty.

The fairly smooth, downward trends in the shares of poverty reported in Table 1 are indicators of the life-cycle profile of poverty, but they do not reflect the true profile, since they are clouded by other time varying and cohort effects and since our cohort represents an average of children born in five different years.[24] To obtain a more precise picture of the life-cycle profile of child poverty we have pooled the samples of all children (in LINDA) aged 0 to 17 in each year from 1991 to 2004. Each child's poverty status (in a particular year – since we have multiple observations for most all children) is regressed onto a set of age dummies. The coefficients from this regression are then used to produce a life-cycle profile for child poverty. This profile is shown in Figure 1.

We have also calculated the share of children aged zero that are poor in each year. We then taken the average of these 14 annual shares, and we have plotted this average in Figure 1. This is repeated for children aged 1, 2, 3, and so on. These averages can also be viewed as non-parametric estimates that net out cohort and year effects. They are (for all intents and purposes) identical to the shares predicted from the regression with age dummies, except for children aged zero.

Figure 1 tells us that (on average) 8.6 percent of all children are born into poverty. The average poverty rate then drops to about 7.5 percent among 1-year old children. After which, it declines (monotonically) to about 3.8 percent among 17-year olds.

Families with small children work less and, although generous, the Swedish parental leave insurance system does not compensate parents fully for lost labor income. In short, it is not surprising that families with young children are poorer, since they have less labor income.[25] As their children age and start at daycare or school, parents can re-enter the labor force and continue their own career development.

Children aged 17 have the lowest poverty rates. Once again, this can be readily explained by typical life-cycle considerations. The parents of these children are now older and have had

[24] For example, in 1991 our cohort is on average 2 years old, since it is made up of children born between 1987 and 1991 (i.e., aged 0 to 4).

[25] It is not clear, however, that all of this income loss is welfare decreasing. Labor income is traded for time at home with children, which may be beneficial to their development. Many families plan their consumption and saving decisions prior to having children so that they can smooth consumption over this period. Some market goods and services can be replaced with home production.

many years to advance their careers in the labor market. Older brothers and sisters have left home, which means that parental resources are not spread as thinly across their children. Children are allowed to work (with some restrictions) from age 15. Thus, many have declared income of their own, which increases their family incomes and lowers their poverty rates.

Returning to Table 1, we see that the dramatic rise in unemployment experienced in Sweden during the early 1990's was not accompanied by a rise in child poverty. At first glance, one might conclude that this is merely a sign that the Swedish welfare state succeeded in cushioning children from negative income shocks, and indeed, this is part of the story. However, we also see that the median needs adjusted income (in real terms) dropped every year from 1991 to 1995. This means that our poor children are (on average) worse off in 1995 than they were in 1991 and that some children who would have been classified as poor previously are now not included. This, of course, is the main drawback of using a relative as opposed to an absolute poverty definition.[26]

4. Persistence of Poverty

Is poverty a permanent or transitory state? The number of years lived in poverty are reported in Table 2. Of all of the children in our cohort, 49.3 percent have been market poor and 74.4 percent after-tax poor for at least one year during their childhood. These numbers imply that the majority of children in Sweden rely at some point during their childhood on government transfers to avoid falling into poverty. Despite these transfers, 21.3 percent of our children have been disposable income poor at least once in their lives and 2.0 percent have been disposable income poor for 7 years or more, i.e. more than half of their childhood is spent in poverty. We will refer to these children as the chronically poor.[27]

Existing definitions of chronic poverty have been largely determined by the characteristics of the data used. Our definition is similar to the one used by Walker and Ashworth

[26] If we, instead, us a constant, absolute measure of poverty, namely 50 percent of the 1991 median disposable income, then the share of children in our cohort categorized as poor is 0.06, 0.06, 0.04, 0.04, 0.05, 0.05, 0.06, 0.05, 0.06, 0.04, 0.04, 0.02, 0.02, 0.02. The share of children in our cohort receiving welfare support each year (a moving, absolute measure) from 1991 to 2004 is 0.11, 0.11, 0.12, 0.11, 0.10, 0.11, 0.10, 0.08, 0.07, 0.06, 0.05, 0.04, 0.05, 0.05.

[27] The share of chronically market poor children is 18.3 percent and chronically after-tax poor is 34.9 percent.

(1994).[28] Using data from the Panel Study of Income Dynamics, they found that 12 percent of American children were poor for 7 or more years during their childhood.

Hill and Jenkins (2001) used 6 years of the British Household Panel Survey and defined chronic poverty in two different ways. They first counted the number of children who had been poor every year for all 6 years. They found that 2.4 percent of children aged 0 – 5, 1.5 percent of children aged 6 – 11 and zero percent of children aged 12 – 17 had experienced chronic poverty. Then, they gave each child his or her average income (i.e., they smoothed incomes over the 6 year period) and the calculated the share of children who fell below the poverty line in all 6 years. This resulted in 14 percent, 8.2 percent, and 2.9 percent of chronically poor children in each respective age group.

5. Severity of Poverty

Throughout this paper, we define children as being poor if their needs adjusted income is below 50 percent of the median needs adjusted income. Although this is, probably, the most frequently used definition of poverty in the literature; it is still a somewhat arbitrary choice. Here, we want to investigate the importance of this choice by investigating the impact of using exactly 50 percent as the cutoff point, as opposed to some other percentage, on the incidence of child poverty.

To do this, we construct two new groups of children. Those with incomes less than 40 percent of the median are labeled the "severely" poor. We will also look at children who are better off than those in our baseline, but have less than 60 percent of the median. These children are labeled "at risk" of being poor, i.e., they find themselves only a small distance above the benchmark poverty line, so that a negative income shock may push them below the poverty line.

These two new groups are presented together with our baseline poor in Table 3. Although the differences between these three measures differ somewhat over time, on average, 2.0 percent of children are severely poor, 4.2 percent are poor, and 9.3 percent are at risk of becoming poor. On average, there are 2.2 percentage points more children who are poor than who are severely poor. The largest difference, however, is between those who are poor and those who are at risk of becoming poor. The average difference is 5.1 percentage points.

[28] Actually, Walker and Ashworth (1994) use a taxonomy of poverty comprised of 6 definitions; transient, occasional, recurrent, persistent, chronic and permanent (see p. 122).

Table 4 presents the number of years spent in each of our three categories. Less than one percent of the children in our sample are severely poor for 7 or more years, i.e. severely chronically poor. The average number of years spent in severe poverty is 0.28 years, in poverty is 0.59 years and at risk of being poor is 1.30 years. Once again, we see that the largest absolute difference is the difference between the average number of years spent in poverty between those who are poor and those who are at risk of becoming poor. We, therefore, conclude that our baseline measure of poverty does well at capturing the number of poor children. But we miss the large portion of children who risk falling into poverty, which suggests that policy makers may need to have two numbers in hand: the number of poor and the number who are "at risk" of becoming poor.[29]

6. Flows into and out of Poverty

The stock of poor children in any year consists of two groups of children; those who were poor last year and those who have just entered into poverty. By examining the flows into and out of poverty and not *just* the stock of poor, we may be able to distinguish between different mechanisms that drive observed changes in the level of child poverty (at least in a broad sense). For example, the flow into poverty may be due to either cyclical unemployment or to a particularly family unfriendly policy. The flow out of poverty may signal an upturn in employment or it could be due to better policies that fight poverty. The onset of a poverty trap could manifest itself as a long term decrease in the flow out of poverty.

In Table 5, we report the flows into and out of poverty for our cohort and for yearly cross-sections of all children. Two simple identities illustrate how we calculate these flows. The first identity, $poor_t = stayers_{t-1,t} + inflow_{t-1,t}$, states that the stock of poor in year *t* is equal to those who were poor in year *t-1* and remain poor in year *t* plus the flow into poverty between years *t-1* and *t*.

The second identity, $poor_t = poor_{t-1} + inflow_{t-1,t} - outflow_{t-1,t}$, states that the stock of poor in year *t* is equal to the stock in year *t-1* plus the inflow less the outflow. Since we already know the stocks and the inflows, we can readily calculate the outflow between any two years. Note that our cross-sectional results are based on a sample of all children in year *t-1* who we also observe in year *t*. Once that is done we discard this sample and draw a new sample in year *t* and follow these children into year *t+1*, and so on. In essence, our cross-section estimates are based on

[29] Our suggestion echoes Recommendation 8 in Atkinson et al. (2002).

overlapping, two-year panels of children sampled from the entire population of children. We include these estimates in order to contrast them with the estimates from our cohort (panel data).

It is, perhaps, easier to interpret these inflows and outflows if we look at them graphically. Figure 2, plots the stock of poor, stayers, inflows and outflows from poverty for our cohort of children for the years 1991 to 2004. The large drop in poverty observed between 1991 and 1993 was due to a large decrease in the flow into poverty. A subsequent and roughly equal drop in the outflow occurred between 1993 and 1994. Between 1996 and 1999, the flows into poverty tended to be somewhat larger than the outflows, which pushed poverty up. Poverty then falls until 2004 as this trend is reversed. Between 1993 and 2001, the number of stayers trended slowly upward, implying that the length of an average poverty spell increased.

A remarkably different picture arises when we compare our panel data with the cross-section data (see Figure 3). Poverty rose by 3 percentage points (73 percent) between 1995 and 2001 in our sample of all children (in LINDA), while it was relatively stable for our cohort of children. The difference in the levels of poverty in our cohort and in the cross-section remind us, once again, how important the life-cycle pattern of poverty is for children, as are year and cohort effects.

7. Multiple Spells

Another intrinsically dynamic question that we would like to address is whether or not our children suffer from single or multiple poverty spells. In Table 6, we see that 78.7 percent of our cohort never experience poverty; 14.2 percent experience only one spell of poverty. This spell, however, may last up to 14 years. About 7.1 percent of our children experience at least 2 and at most 5 distinct spells in poverty.

How should we view or interpret the existence of multiple poverty spells? One probable reason for having multiple poverty spells is that we have chosen a fixed percentage of the median income (here 50 percent) and then defined all children as poor if they do not surpass this threshold. But what if a child has 49 percent of the median in year *t*, followed by 51 percent of the median in year *t+1*, and 49 percent once again in year *t+2*? According to our measure, this child is poor, not poor, and then poor once again. That is, he or she has experienced two distinct spells of poverty spread out over 3 years. But, in actual fact, this child's economic situation has not really changed by much during these 3 years. It is quite likely that many of the multiple spells

that we observe are simply due to those children that have incomes, which fluctuate from year to year somewhere near 50 percent of the median income.

This is something that we can test for. To do this, we take the 1318 children in our sample who have experienced 2 or more spells of poverty. We then change the definition of poverty to 60 percent of the median income and calculate a new set of poverty statistics for these children. The new set of poverty spells experienced by this sub-sample of our children is reported in Table 7. The results of this experiment do not support the idea that multiple spells are caused by small movements around our benchmark poverty line. Only 245 of the 1318 children (i.e., 19 percent) experience only one poverty spell after we raise the poverty line to 60 percent of the median.

An alternative hypothesis concerning multiple poverty spells is that of poverty spell dependencies, which are often viewed as evidence in support of the existence of poverty traps. Here, we have to be clear about what we mean when we use the term poverty trap. One could say that those who are long-term or chronically poor are "trapped" in poverty. But what we mean is the following; A poverty trap (spell dependency) is when an individual is somehow damaged by his or her first poverty experience (here, of course, we're actually talking about the child's parents). When we say "damaged", we mean that that those who have experienced a single spell of poverty are more likely to fall into poverty a second time all else equal (i.e., controlling for all observable and unobservable differences between families). Something about the experience of being poor once raises your probability of becoming poor again.

In our data set, those who were (for example) born poor have a higher probability of being poor in every subsequent year up to and including 2004. This remains true even if we condition on numerous observable characteristics. The main drawback of the methodological approach we have adopted in this paper (arguably the *only* drawback) is that we cannot control for unobservable heterogeneity. That is, we cannot determine whether this higher probability of being poor is due to unobservable heterogeneity or to spell dependencies (poverty traps). To do that, we would need to put more structure on the problem, e.g., adopt a structural model similar to the statistical models used by Hansen and Wahlberg (2004), Fertig and Tamm (2007) and others.[30]

[30] Hansen and Wahlberg (2004) make a convincing case for the existence of spell dependencies for Swedish adults, while Fertig and Tamm (2007), using the same methodology as Hansen and Wahlberg (2004), find no significant spell dependencies among children in the German Socio-Economic Panel. They argue that their data is biased against

We, therefore, leave this as an open question for future research. It is important, however, to understand why we should care about spell dependencies. The policy implication of spell dependencies is to fight poverty early and hard, so as to avoid larger costs down the road. In our context, this means larger transfers to families with young children. Of course, such a policy is consistent with our life-cycle pattern of child poverty even in the absence of poverty traps. Several of our findings, however, actually downplay the potential importance of such dependencies in this context. First, poverty is not an absorbing state. We do not see an increasing trend in the number of poverty stayers over time (see Figure 2 and Figure 3). Second, we know that the majority of children that experience multiple spells are still better off (i.e., spend fewer years in poverty) than those who are chronically poor (see column 3 in Table 6).

A third, more likely explanation of the existence of multiple spells would simply be that some families have quite volatile incomes and that movements in and out of poverty are, more often than not, associated with significant changes in a family's circumstances. Bradbury, Jenkins and Micklewright (2001b) reach a similar conclusion for the 7 countries included in their study.

8. Who Are the Poor?

In this section, we identify who the poor children are. Are they all children living in single parent families? Are they all born abroad? Are their parents sick or unemployed, newly divorced, or recently deceased? We can address these types of questions using information about the children and their families taken from the LINDA database described in Section 2. Table 8 lists the variables (along with descriptive statistics) included in the panel data set that we use to identify common characteristics of poor children.[31]

We know the *Sex* of the child and whether or not the child was born in Sweden or *Born Abroad* (italics denote variable names). The remaining variables concern characteristics of one or more of the parents or for the family unit as a whole. For example, we know the *Household Size* and how many *Children* are in the household. We have created a variable called *Parent Age*, which refers to the age of the oldest adult household member in 1991. We have also created a

finding spell dependencies, since information on the parents' poverty spells before the birth of their children is missing. The same would be true for our data set.

[31] Please note that we are not looking for the "causes" of poverty in this exercise. We are merely trying to identify who the poor children are, or, more precisely, to look for observable characteristics shared by poor children.

variable called *Immigrant Share*, which is the share of adult household members that were born abroad. We then take this variable and break it down into four categories: (1) immigrant share = 0, (2) > 0 & < 0.33, (3) >= 0.33 & < 0.66 and (4) >= 0.66 & <= 1. This enables us to interpret the coefficient on the variable *Immigrant Share* in a more logical fashion.[32]

In order to identify the educational characteristics of poor children's families, each child has been assigned the highest *Education* achieved by a single family member. Families are classified into five *Family Type*s: (1) married, which includes same-sex partnerships, (2) cohabitating, where both are parents to at least one child in the family, (3) single father, (4) single mother, and (5) other. In these single parent households, there may be a cohabitating step-mother or step-father, but since they are not married and do not have children together, these two adults are not linked to each other as family members when applying the RTB family definition.[33]

Other variables include the share of disposable family income derived from *Sick* insurance and/or benefits and whether or not at least one family member has been *Unemployed* at some point during the year. If *Unemployed* = 1, then we also know whether or not someone in the family has collected *Unemployment Insurance* (A-Kassa), minimum *Unemployment Benefits* (KAS), and/or participated in a *Labor Market Program* at some point during the year.[34]

Other variables include whether or not the family has received *Welfare* during the year. We have information on *Student Aide*, which tells us if one of the parents has been studying at college or university. We also know if they have been enrolled in an *Adult Education* program aimed at obtaining (for example) a high school equivalency diploma.

In Sweden, family members can receive aide for *In-Home Care* of children or adult family members that suffer from long-term illnesses. *Handicap Benefits, Work Injury Benefits* and *Disability Pensions* are available to individuals who meet the necessary requirements. For all of these variables, we know whether or not at least one family member has received each type of support. Lastly, if a child's parent dies, before he or she turns 18, then the child will automatically begin to receive a *Children's Pension*.

[32] We don't feel that it makes much sense to ask the question: How does the poverty risk change if we increase the share of adults in the household that are born abroad by 1 percent? The immigrant share variable is not a continuous one. In practice, the most common values of *Immigrant Share* are 0.25, 0.33, 0.5, 0.66, 0.75 and 1. So instead, we ask: How does the poverty risk change if you have one parent born abroad or two parents born abroad?

[33] In practice, this means that (for some children in single parent households) we will be underestimating the available resources within the household.

[34] KAS was removed in 1999, so we only have data on minimum employment benefits up until 1998.

All of these variables can be viewed as child and/or family characteristics that one may believe affects a child's chances of growing up poor or not. To identify the poor, we use these data in a logistic regression with the binary variable *Poverty* (see Table 8) as the dependent variable. The data are pooled, so that we have at most 18,518 (individuals) * 14 (years) = 259252 observations for each variable. County and year dummies are included as controls. Odds ratios and robust standard errors (clustered on individuals) are reported in Table 9.[35]

Neither the sex of the child nor the child's age in 1991 affects the child's poverty status. Parental age, on the other hand, does matter. Having older parents lowers the probability of being poor, which is consistent with the life-cycle pattern of child poverty discussed earlier.

Being born abroad also matter. This raises the odds ratio of being poor to 1.70 (see column (1) in Table 9), which implies a 70 percent higher risk of being poor for children born abroad than for children born in Sweden. Our alternative measure, the share of adult household members that are born abroad, produces even higher odds ratios. If a child has one parent born abroad, then his/her poverty odds ratio is between 2.17 and 3.30 (see columns (2) – (4) in Table 9). If both parents are born abroad, then the child's poverty odds ratio is between 3.06 and 5.86. Taken together, these results imply that children in immigrant families are strongly overrepresented among poor children.

Children living in larger households are also more likely to be poor than those living in smaller households. In column (3), we test an alternative measure of family size, namely the number of children in the family. This also produces a higher risk of being poor, although the odds ratio is half that found on the household size variable.

There are several reasons why we might find that household size matters. The first would be that parents with a fixed income must spread that income more thinly across all of their children. Second, having more children may mean that one participates less in the formal labor market. Both of these types of arguments reflect what would normally be thought of as proximate causes of poverty. Keep in mind, however, that this result may also be an artifact of our formula for calculating the needs adjusted income of each child (i.e., the equivalency scale). Perhaps we have underestimated the true returns to scale in meeting children's needs found in large families?

[35] Some families contribute more than one child to the probability sample. Each child from the same family always has identical values on all variables except for one's own sex, age and country of birth. These variables may vary across siblings. We remove 137 children from these regressions, so as not to give more weight to families that contribute more than one child to the probability sample.

Another important indicator of poverty is family type. If we use married parents as the reference group, then the poverty odds ratios for children living in single father households run from 3.65 to 6.20 and for children in single mother households they range between 2.28 and 3.56. These odds ratios, however, must be treated as upper bounds on the true odds ratios, since the RTB family definition introduces a clear upward bias by understating the true amount of resources available to children with parents that do not live together. Whether or not a child's parents are married or cohabitating does not seem to matter much (if at all) for his or her poverty status.

Low education status also appears to be a major characteristic of the parents of poor children. Those children who have parents who have not completed the full 9 years of grade school (*Education1*) have poverty odds ratios between 1.74 and 2.75. Those who have completed 9 years of elementary school, but not high school (*Education2*) have poverty odds ratios between 1.68 and 1.86. The reference group (*Education4*) consists of those parents who have a 3- or 4-year high school degree, which is the median education level in our sample.

Some very important "positive" results also appear from this analysis. Those on welfare tend to run only a marginally higher risk of being poor (if at all). This implies that they are indeed receiving a fair amount of help. Those children who have parents who are going to college, university, or are enrolled in some other form of adult education, do not run a higher risk of being poor. Also, children in families in which some family member has health problems, a handicap, or has been granted disability pension do not run a higher risk of becoming poor.[36] Lastly, children whose parents pass away receive the necessary economic support from the state so as not to run the risk of becoming poor.

Another important finding is that children who have at least one parent that has suffered from a spell of unemployment during the year do not appear to run a higher risk of becoming poor. However, this average result hides some important differences among different types of families. Most workers in Sweden have worked long enough and have paid fees into the unemployment insurance system; so that when they become unemployed they receive generous payments from the unemployment insurance system.[37] Children of these workers actually have a

[36] We have not, however, taken into consideration that the disabled may have higher living costs due to their disability. We, therefore, risk understating poverty in this group.

[37] Currently, the replacement rate is 80 percent for the first 200 days up to a ceiling of 20,075 SEK per month. After that, the replacement rate falls to 70 percent. Unemployed workers are eligible for unemployment insurance for a

lower than average risk of being poor, with a poverty odds ratio of 0.44 (see column (4) in Table 9).

There is a group of workers (mainly young and recent immigrants) who have not paid into the system or have not worked long enough to qualify for unemployment insurance. Instead, these people receive the lowest possible unemployment benefit and their children have a poverty risk equal to the baseline risk. Once insurance and/or benefits are exhausted, people are placed into some sort of labor market program. These are the long-term unemployed and their children have a poverty odds ratio of 2.30.[38]

9. Who Are the Chronically Poor?

For most children, poverty appears to be a transitory state. But for 2 percent of our sample, it is a more permanent condition. Does this "permanency" depend upon a particular set of observable family characteristics? If so, is this set of characteristics different from that of the transitory poor?

To answer these questions, we run a series of logistic regressions similar to those reported earlier in Section 8. Now, however, we only look at those children who have been poor at least once during their childhood. These poor children are then placed into two distinct groups: the chronically poor, who have been poor for 7 or more years, and the temporarily poor, who have been poor for at most 6 years.[39] Table 10 presents the results of this experiment.

There are three observable family characteristics that help us to identify the 2 percent chronically poor children. The two most important characteristics are the share of adults born abroad in the household, i.e., the immigration status of the child's parents, and parents with unusually low education. Chronically poor children also tend to come from larger families. These three characteristics tend also to be correlated with one another.

Perhaps surprisingly, children living in single parent households do not have higher chronic poverty odds ratios than children living with both parents. This result is probably due to a combination of parental actions (e.g., working more, going back to school, re-marrying) and to

total of 300 days. Many workers have additional insurance provided through their employment contracts (see Sjögren Lindquist and Wadensjö, 2006).

[38] Keep in mind that we may be underestimating the actual importance of unemployment as a proximate cause of child poverty since we do not have a proper measure of unemployment spells, underemployment, discouraged workers, or job search. What we have are payments made from the unemployment insurance system and from labor market programs. We can only use these as partial indicators of unemployment. Some people may be unemployed and find themselves outside of these two systems.

[39] The baseline risk of being chronically poor, given that you have experienced at least one year of poverty is 9.5 percent.

welfare state policies like those mentioned earlier in Section 2.1. The main conclusion that arises from this analysis is that immigrant status is more important than family type or employment status for predicting chronic poverty.[40]

10. Conclusion

The purpose of this paper has been to study (empirically) the dynamics of child poverty in Sweden. We found that Sweden had only a slightly lower share of market poor children than most other industrialized countries, but a remarkably lower share of disposable income poor children. This is accomplished through transfers and not through the tax system. From the viewpoint of poor children, the Swedish tax system is strongly regressive.

We also documented a distinct life-cycle profile for child poverty. Approximately 8.6 percent of all children are born into poverty. The average poverty rate then drops to about 7.5 percent among 1-year old children. After which, it declines (monotonically) to about 3.8 percent among 17-year olds.

In our cohort of children (born 1987 – 1991), 49 percent have been market poor at least once and 74 percent have been after-tax poor at least once during their childhood. This implies that most children rely at some point in their lives on government transfers to keep them from falling into poverty. Despite these transfers, 21 percent of our children have been disposable income poor at least once during their childhood and 2 percent have been disposable income poor for 7 or more years. We also note that there appears to be a large number of children who are "at risk" of becoming poor and we suggest that policy makers should have this number in mind along with the standard poverty statistics when considering policy measures.

Children in Sweden are largely protected (economically) from a number of quite serious events, such as parental unemployment, sickness and death. In this sense, the Swedish welfare state appears to be a remarkable success story. Events such as family dissolution and long-term unemployment do push children into poverty, but for most of these children, poverty is only temporary. Single mothers, for example, are overrepresented among the poor, but not among the chronically poor. Children with immigrant parents, however, are strongly overrepresented among the chronically poor; as are children whose parents have unusually low educations.

[40] Once again, our measures of unemployment may lead us to understate the importance of unemployment, particularly among the chronically poor, since unemployment is highly correlated with both low education and immigrant status.

On the whole, Sweden's family policies appear to be quite successful in combating child poverty. It remains to be seen, however, how the Swedish welfare state will approach the problem of chronic poverty among immigrant children.

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Table 1. Share of Children Living in Poverty, Unemployment and the Poverty Line, 1991-2004.

year	market poor		after-tax poor		disposable income poor		total[a] unempl. (in %)	poverty line[b]
	cohort	all	cohort	All	cohort	all		
1991	0.24	0.22	0.44	0.44	0.062	0.054	5.2	46735
1992	0.25	0.25	0.41	0.44	0.057	0.058	10.7	46374
1993	0.25	0.28	0.42	0.47	0.034	0.044	14.8	44107
1994	0.24	0.29	0.41	0.48	0.033	0.050	15.7	43414
1995	0.22	0.27	0.39	0.46	0.033	0.041	14.7	42528
1996	0.20	0.26	0.35	0.43	0.037	0.045	14.1	42622
1997	0.19	0.26	0.35	0.42	0.044	0.053	13.1	42831
1998	0.19	0.26	0.35	0.43	0.040	0.049	10.8	44189
1999	0.19	0.26	0.35	0.43	0.052	0.064	9.7	44761
2000	0.18	0.26	0.33	0.41	0.047	0.067	7.9	47321
2001	0.18	0.26	0.32	0.41	0.046	0.071	6.9	48645
2002	0.16	0.26	0.28	0.39	0.037	0.069	6.8	52607
2003	0.16	0.27	0.28	0.40	0.036	0.066	7.1	53263
2004	0.16	0.28	0.28	0.40	0.035	0.067	7.6	54306
annual averages	0.20	0.26	0.35	0.43	0.042	0.057	10.4	46693

a) Total unemployment = open unemployment plus those in labor market programs, % of labor force. Downloaded from the Swedish Labor Market Board's (AMS) homepage on February 1, 2008; http://www.ams.se/admin/Documents/ams/arbdata/arb2007h.xls.

b) In 1991 SEK.

Table 2. Number of Years Spent in Poverty by Children Born 1987-91.

years spent in poverty	market poor	after-tax poor	disposable income poor
0	0.507	0.256	0.787
1	0.093	0.114	0.089
2	0.063	0.074	0.045
3	0.050	0.060	0.024
4	0.040	0.057	0.017
5	0.035	0.048	0.010
6	0.029	0.041	0.007
7	0.028	0.041	0.007
8	0.025	0.039	0.004
9	0.021	0.038	0.003
10	0.021	0.036	0.002
11	0.018	0.036	0.001
12	0.019	0.036	0.001
13	0.019	0.038	0.001
14	0.032	0.085	0.001
mean # years in poverty	2.80	4.98	0.59
(s.d.)	(4.09)	(4.86)	(1.63)
share chronically poor (>= 7 years poor)	0.183	0.349	0.020

Table 3. Share of Children Born 1987-91 Living in Severe Poverty, 1991-2004.

	disposable income poor		
Year	40% of median	50% of median	60% of median
1991	0.032	0.062	0.115
1992	0.029	0.057	0.111
1993	0.016	0.034	0.076
1994	0.016	0.033	0.074
1995	0.016	0.033	0.075
1996	0.017	0.037	0.081
1997	0.023	0.044	0.092
1998	0.020	0.040	0.084
1999	0.023	0.052	0.123
2000	0.019	0.047	0.119
2001	0.019	0.046	0.113
2002	0.017	0.037	0.081
2003	0.017	0.036	0.080
2004	0.017	0.035	0.078
averages	0.020	0.042	0.093

Table 4. Number of Years Spent in Severe Poverty by Children Born 1987-91.

	disposable income poor		
years spent in poverty	40% of median	50% of median	60% of median
0	0.878	0.787	0.644
1	0.064	0.089	0.109
2	0.022	0.045	0.068
3	0.012	0.024	0.046
4	0.008	0.017	0.033
5	0.005	0.010	0.023
6	0.003	0.007	0.017
7	0.002	0.007	0.015
8	0.002	0.004	0.011
9	0.001	0.003	0.009
10	0.001	0.002	0.007
11	0.001	0.001	0.006
12	0.000	0.001	0.005
13	0.000	0.001	0.004
14	0.000	0.001	0.004
Mean # years in poverty	0.28	0.59	1.30
(s.d.)	(1.05)	(1.63)	(2.54)
Share chronically poor (>= 7 years poor)	0.007	0.020	0.061

Table 5. Flows In and Out of Poverty, 1991-2004.

	panel data				cross-section data			
year	poor	stayers	inflow	outflow	poor	stayers	inflow	outflow
1991	0.062				0.054			
1992	0.057	0.028	0.029	0.034	0.058	0.028	0.030	0.026
1993	0.034	0.018	0.016	0.039	0.044	0.023	0.021	0.035
1994	0.033	0.017	0.016	0.017	0.050	0.022	0.028	0.022
1995	0.033	0.016	0.017	0.017	0.041	0.021	0.020	0.029
1996	0.037	0.019	0.018	0.014	0.045	0.022	0.023	0.019
1997	0.044	0.021	0.023	0.016	0.053	0.025	0.028	0.020
1998	0.040	0.024	0.016	0.020	0.049	0.026	0.023	0.027
1999	0.052	0.025	0.027	0.015	0.064	0.027	0.037	0.022
2000	0.047	0.027	0.020	0.025	0.067	0.035	0.032	0.029
2001	0.046	0.029	0.017	0.018	0.071	0.038	0.033	0.029
2002	0.037	0.020	0.017	0.026	0.069	0.038	0.031	0.033
2003	0.036	0.020	0.016	0.017	0.066	0.037	0.029	0.032
2004	0.035	0.020	0.015	0.016	0.067	0.038	0.029	0.028

Table 6. Multiple Spells.

number of spells	share of cohort	average number of years poor (s.d.)	average spell length = average years poor/ number of spells
0	0.787	0	0
1	0.142	1.95 (2.06)	1.95
2	0.050	3.97 (2.48)	1.99
3	0.016	5.41 (2.18)	1.80
4	0.004	6.30 (1.84)	1.58
5	0.001	7.31 (1.42)	1.46

Table 7. Multiple Spells Experiment.

	50% of median	60% of median
number of spells	frequency	frequency
0	n.a.	0
1	n.a.	245
2	934	544
3	292	384
4	79	130
5	13	14
6	0	1
number of individuals	1318	1318

Table 8. Descriptive Statistics for Panel Data, 1991-2004.

Variable	Mean (s.d.)	Median	Min	Max	Total # Obs.
Poverty (poor = 1)	0.04 (0.202)	0	0	1	259252
Years Poor	0.59 (1.626)	0	0	14	259252
Chronic Poor	0.02 (0.141)	0	0	1	259252
Sex of child (female = 1)	0.49 (0.500)	0	0	1	259252
Age of child in 1991	1.96 (1.402)	2	0	4	259252
Household Size	4.17 (1.127)	4	1	15	259252
Children	2.14 (1.111)	2	0	12	259252
Parent Age	39.8 (7.317)	39	18	80	258486
Born Abroad (yes = 1)	0.02 (0.126)	0	0	1	259252
Share of Adult Household Members Born Abroad	0.07 (0.180)	0	0	1	258597
1: Immigrant Share = 0					219025
2: Immigrant Share > 0 & < 0.33					15576
3: Immigrant Share >= 0.33 & < 0.66					18710
4: Immigrant Share >= 0.66 & <= 1					5941
Highest Education in Household	4.22 (1.292)	4	1	7	257966
1: Grade School < 9 years					1791
2: Grade School 9 or 10 years					15356
3: High-School <= 2 years					69402
4: High-School > 2 years					72673
5: College < 3 years					37495
6: College >= 3 years					58423
7: Graduate School					2826
Family Types					259241
1: Married (including partnerships)					156954
2: Cohabitating (both are parents to at least one child in household)					48210
3: Single Dad (cohabitating step-mom may be present – but no child together)					7610
4: Single Mom (cohabitating step-dad may be present – but no child together)					45726
5: Other					741
Sick	0.03 (0.081)	0	0	0.99	259240
Unemployed	0.27 (0.444)	0	0	1	259252
Unemployment Insurance	0.23 (0.424)	0	0	1	259252
Minimum Unemployment Benefits	0.02 (0.154)	0	0	1	148144
Labor Market Program	0.12 (0.322)	0	0	1	259252
Welfare	0.08 (0.274)	0	0	1	259252
Student Aide	0.06 (0.246)	0	0	1	259252
Adult Education	0.06 (0.235)	0	0	1	259252
In-Home Care of Adult	0.003 (0.05)	0	0	1	259252
In-Home Care of Child	0.04 (0.194)	0	0	1	259252
Handicap Benefits	0.007 (0.08)	0	0	1	259252
Work Injury Benefits	0.01 (0.108)	0	0	1	259252
Disability Pension	0.05 (0.212)	0	0	1	259252
Children's Pension	0.02 (0.125)	0	0	1	259252

Table 9. Who Are the Poor?

	(1)	(2)	(3)	(4)
Sex (female = 1)	1.016	1.030	1.040	1.047
	(0.045)	(0.046)	(0.046)	(0.052)
Age in 1991	1.004	1.015	1.018	1.033
	(0.017)	(0.017)	(0.017)	(0.020)
Parent Age	0.894**	0.888**	0.939**	0.852**
	(0.016)	(0.016)	(0.017)	(0.021)
Parent Age^2	1.001**	1.001**	1.001**	1.002**
	(0.000)	(0.000)	(0.000)	(0.000)
Born Abroad	1.702**			
(or)	(0.227)			
Immigrant Share1 (= 0)		Ref.	Ref.	Ref.
Immigrant Share2		1.475**	1.759**	1.566**
		(0.113)	(0.130)	(0.136)
Immigrant Share3		2.709**	2.596**	3.297**
		(0.168)	(0.159)	(0.237)
Immigrant Share4		3.240**	3.064**	5.856**
		(0.288)	(0.262)	(0.929)
Household Size	1.504**	1.521**		1.446**
(or)	(0.030)	(0.031)		(0.036)
Children			1.235**	
			(0.024)	
Education1	2.751**	1.937**	2.089**	1.743**
	(0.395)	(0.267)	(0.285)	(0.255)
Education2	1.863**	1.707**	1.806**	1.684**
	(0.148)	(0.129)	(0.135)	(0.149)
Education3	1.108	1.115	1.144*	0.992
	(0.064)	(0.063)	(0.065)	(0.075)
Education4	Ref.	Ref.	Ref.	Ref.
Education5	0.611**	0.630**	0.613**	0.571**
	(0.049)	(0.050)	(0.048)	(0.055)
Education6	0.473**	0.497**	0.478**	0.503**
	(0.035)	(0.037)	(0.035)	(0.055)
Education7	0.404**	0.383**	0.370**	0.477*
	(0.131)	(0.124)	(0.119)	(0.150)
Married/Partners	Ref.	Ref.	Ref.	Ref.
Cohabitating	1.134	1.200**	1.244**	1.063
	(0.075)	(0.079)	(0.084)	(0.076)
Single Father	5.575**	6.196**	3.650**	4.007**
	(0.514)	(0.571)	(0.314)	(0.532)
Single Mother	3.313**	3.556**	2.280**	2.813**
	(0.212)	(0.224)	(0.127)	(0.208)

Sick	0.889	0.753	0.711*	0.812
	(0.151)	(0.130)	(0.121)	(0.199)
Welfare	1.129*	1.017	1.166**	0.726**
	(0.057)	(0.051)	(0.057)	(0.043)
Student	1.036	0.989	1.105	0.884
	(0.062)	(0.060)	(0.066)	(0.080)
Adult Education	0.645**	0.616**	0.626**	0.577**
	(0.039)	(0.037)	(0.037)	(0.045)
In-Home Care of Adult	0.449*	0.482*	0.464*	0.145
	(0.157)	(0.169)	(0.163)	(0.146)
In-Home Care of Child	0.578**	0.599**	0.649**	0.503**
	(0.065)	(0.068)	(0.073)	(0.078)
Handicap Benefits	0.673	0.703	0.740	0.689
	(0.195)	(0.208)	(0.215)	(0.248)
Disability Pension	0.769*	0.672**	0.682**	0.480**
	(0.079)	(0.071)	(0.070)	(0.085)
Work Injury Benefits	0.340**	0.349**	0.333**	0.269**
	(0.108)	(0.112)	(0.106)	(0.128)
Children's Pension	0.263**	0.253**	0.282**	0.208**
	(0.050)	(0.047)	(0.052)	(0.050)
Unemployed	1.029	0.950	0.957	
(or)	(0.038)	(0.035)	(0.035)	
Unemployment Insurance				0.439**
				(0.024)
Unemployment Benefits				1.054
				(0.084)
Labor Market Program				2.297**
				(0.114)
Individuals	18518	18518	18518	18509
Observations	255940	255940	255940	145965
Pseudo R^2	0.078	0.091	0.075	0.101

Logistic regression. Dependent variable = *Poverty* (yes = 1, no = 0). Regression command in STATA = *logistic*. Year dummies included. County dummies included. Coefficients are odds ratios. Robust standard errors (clustered on individuals) in parentheses; * significant at 5%; ** significant at 1%.

Table 10. How Do the Chronically Poor Differ from the Temporarily Poor?

	(1)	(2)	(3)	(4)
Sex	1.080	1.088	1.092	1.101
	(0.121)	(0.122)	(0.123)	(0.125)
Age in 1991	1.052	1.059	1.061	1.061
	(0.044)	(0.044)	(0.045)	(0.045)
Parent Age	1.013	1.001	1.017	1.007
	(0.044)	(0.044)	(0.044)	(0.054)
Parent Age^2	1.000	1.000	1.000	1.000
	(0.000)	(0.000)	(0.000)	(0.001)
Born Abroad	0.734			
(or)	(0.253)			
Immigrant Share1		Ref.	Ref.	Ref.
Immigrant Share2		1.499*	1.574**	1.497*
		(0.240)	(0.250)	(0.248)
Immigrant Share3		2.070**	2.037**	2.258**
		(0.274)	(0.268)	(0.334)
Immigrant Share4		2.196**	2.169**	2.838**
		(0.342)	(0.335)	(0.913)
Household Size	1.209**	1.219**		1.204**
(or)	(0.049)	(0.051)		(0.056)
Children			1.167**	
			(0.042)	
Education1	2.910**	2.122**	2.163**	1.942**
	(0.728)	(0.513)	(0.523)	(0.500)
Education2	1.444*	1.306	1.314	1.133
	(0.234)	(0.206)	(0.207)	(0.206)
Education3	1.069	1.080	1.082	0.955
	(0.119)	(0.119)	(0.119)	(0.148)
Education4	Ref.	Ref.	Ref.	Ref.
Education5	0.442**	0.445**	0.439**	0.414**
	(0.094)	(0.094)	(0.093)	(0.096)
Education6	0.588**	0.590**	0.579**	0.675
	(0.092)	(0.092)	(0.090)	(0.147)
Education7	0.336	0.295	0.285	0.242
	(0.288)	(0.249)	(0.240)	(0.229)
Married/Partners	Ref.	Ref.	Ref.	Ref.
Cohabitating	0.887	0.979	1.039	1.044
	(0.117)	(0.131)	(0.141)	(0.143)
Single Father	0.957	1.115	0.929	1.177
	(0.204)	(0.239)	(0.190)	(0.331)
Single Mother	0.703*	0.804	0.685**	0.785
	(0.100)	(0.113)	(0.089)	(0.125)

Sick	0.194**	0.170**	0.170**	0.296*
	(0.072)	(0.064)	(0.064)	(0.155)
Welfare	0.615**	0.530**	0.552**	0.481**
	(0.072)	(0.061)	(0.064)	(0.059)
Student	1.007	0.981	1.029	0.773
	(0.105)	(0.103)	(0.109)	(0.114)
Adult Education	0.692**	0.654**	0.654**	0.623**
	(0.075)	(0.070)	(0.070)	(0.082)
In-Home Care of Adult	0.501	0.574	0.578	dropped
	(0.261)	(0.299)	(0.300)	
In-Home Care of Child	0.993	1.032	1.053	0.906
	(0.213)	(0.224)	(0.227)	(0.259)
Handicap Benefits	0.728	0.718	0.716	0.722
	(0.407)	(0.410)	(0.411)	(0.543)
Disability Pension	0.474**	0.445**	0.449**	0.619
	(0.110)	(0.106)	(0.106)	(0.918)
Work Injury Benefits	0.998	1.152	1.127	1.082
	(0.615)	(0.713)	(0.696)	(0.813)
Children's Pension	0.421*	0.413*	0.436*	0.267**
	(0.146)	(0.143)	(0.149)	(0.133)
Unemployed	0.561**	0.511**	0.510**	
(or)	(0.044)	(0.040)	(0.040)	
Unemployment Insurance				0.456**
				(0.048)
Unemployment Benefits				0.842
				(0.121)
Labor Market Program				0.833*
				(0.072)
Individuals	3940	3940	3940	3932
Observations	53375	53375	53375	30213
Pseudo R^2	0.070	0.079	0.077	0.085

Logistic regression. Dependent variable = *Chronic Poverty* (yes = 1, no = 0). Regression command in STATA = *logistic*. Year dummies included. County dummies included. Coefficients are odds ratios. Robust standard errors (clustered on individuals) in parentheses; * significant at 5%; ** significant at 1%.

Figure 1. The Life-Cycle Profile of Child Poverty.

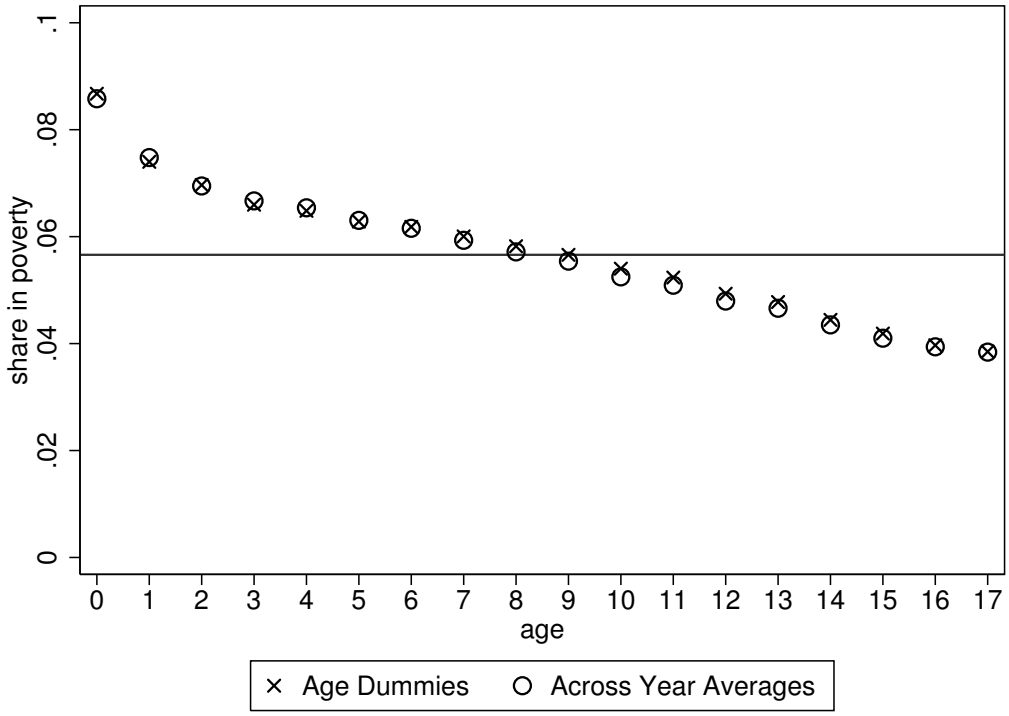

Figure 2. Inflows and Outflows, Panel Data (Our Cohort), 1991-2004.

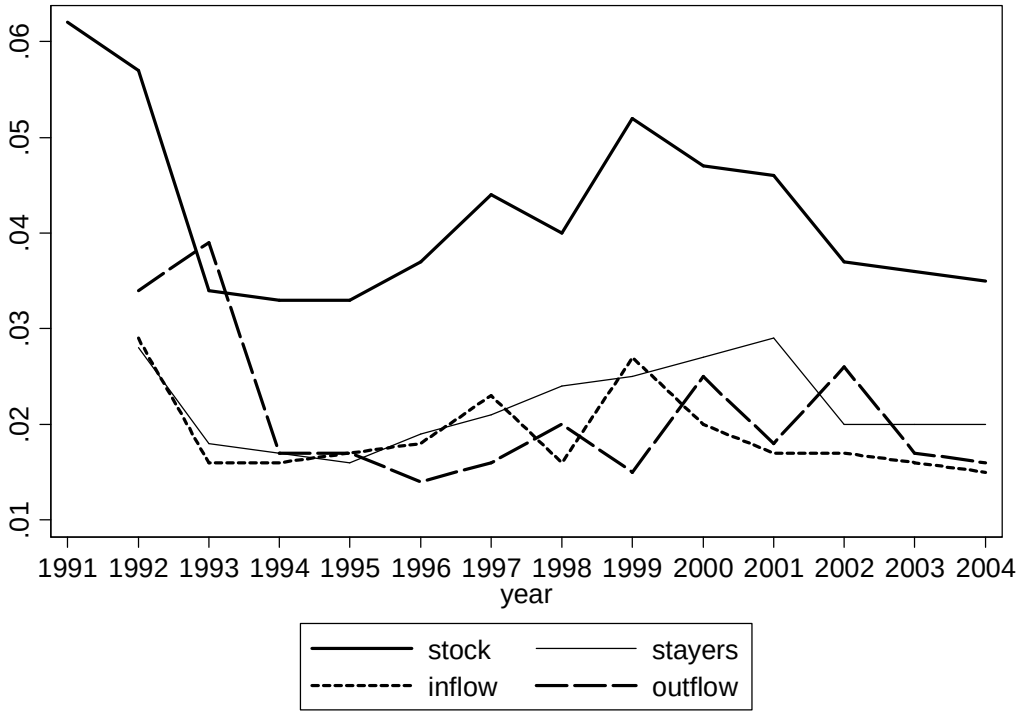

Figure 3. Inflows and Outflows, Cross-Section vs. Panel Data (Our Cohort), 1991-2004.