

Rauhut, Daniel; Lingarde, Svante

Conference Paper

Child Poverty in a Regional Perspective: A Study of Sweden 1990 and 2010

53rd Congress of the European Regional Science Association: "Regional Integration: Europe, the Mediterranean and the World Economy", 27-31 August 2013, Palermo, Italy

Provided in Cooperation with:

European Regional Science Association (ERSA)

Suggested Citation: Rauhut, Daniel; Lingarde, Svante (2013) : Child Poverty in a Regional Perspective: A Study of Sweden 1990 and 2010, 53rd Congress of the European Regional Science Association: "Regional Integration: Europe, the Mediterranean and the World Economy", 27-31 August 2013, Palermo, Italy, European Regional Science Association (ERSA), Louvain-la-Neuve

This Version is available at:

<https://hdl.handle.net/10419/123856>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Child Poverty in a Regional Perspective: A Study of Sweden 1990 and 2010.*

Daniel Rauhut ^a & Svante Lingärde ^b

Abstract

When welfare is analysed in Sweden the analysis is usually made at the national level; when the analysis is not done on the national level, the local level is in focus to illuminate differences between municipalities. Studies on poverty are no exception. The regional level contains a lot of information which is needed to understand the dynamics of poverty. Without this information it is difficult to fight or mitigate poverty. The previous research focusing on i) regional aspects of poverty and, at the same time, ii) child poverty is very limited. The aim of this paper is to analyse child poverty in Sweden 1990 and 2010 in a regional perspective.

A multivariate cross-section OLS regression model will be used to estimate factors causing child poverty in a regional perspective. The chosen method enables to control for a subset of explanatory variables and examine the effect of a selected independent variable when estimating the factors causing child poverty in a regional perspective. This study uses data collected from Statistics Sweden (SCB), the National Board of Health and Welfare (Socialstyrelsen), the Swedish Social Insurance Agency (Försäkringskassan) and the National Employment Service (Arbetsförmedlingen). The data used is regional macro data, which does not contain information on single individuals. The regional share of children living on economic assistance in Sweden is used as the dependent variable while the regional share of foreign born population, regional unemployment rate, the regional share of single parents, regional sickness leave, regional mean personal income and mean regional transfers per person are used as independent variables.

The findings indicate that old industrial regions experience a high presence of child poverty. These regions experience an obsolete economic structure and an obstructed structural change in the economy. High unemployment, a high share of early retirement and sickness leave and relatively high welfare transfers to the population. The statistical analysis shows that when the share of foreign born increases in the regional population, so does the regional share of children living on economic assistance; being unable to enter the labour market is the most probable reason. Higher incomes lower the regional share of children living on economic assistance.

JEL: I32, J18, R59

Keywords: Child poverty, regional differences, deindustrialisation, income

* The authors are indebted to Björn Gustafsson for his comments on an earlier version of this paper and to Elisabetta Troglia for producing the maps in this paper.

^a University West, Dept. of Social and Behavioural Studies, 461 86 Trollhättan, Sweden, daniel.rauhut@hv.se

^b Malmö University, Dept. of Health and Welfare, 205 06 Malmö, Sweden, svante.lingarde@mah.se

1. Introduction

A majority of the previous studies on child poverty describes and analyses the situation and the development at the national level (Socialdepartementet 2001, 2004; Salonen 2002, 2012; Rauhut et al. 2006). Beside these national studies several studies have focused on the development of child poverty at the municipal level. Comparisons are sometimes also made between municipalities. The organisation *Save the Children* ('Rädda Barnen') shows in several yearly reports that children growing up in wealthy suburban municipalities – such as Danderyd, Täby and Vellinge – are less exposed to poverty than children who grow up in suburban municipalities with high unemployment (Botkyrka) or areas connected with social stigma – such as Rinkeby in Stockholm or Rosengård in Malmö (Salonen 2002, 2012, Angelin & Salonen 2012).

Studies focusing on regional differences are limited. Only a few studies have been made on the regional dimension of poverty in Sweden and they only mention child poverty briefly (Rautio 2002, Dahlberg et al. 2008).

A report from *Save the Children* shows that it is mainly three groups of children who are on the margins of the general welfare policies in Sweden and thereby especially exposed to poverty: children with an immigrant background, children in the suburbs of the metropolitan areas and children with a single parent. The differences between children are also marked – and the gaps are increasing – between the poorest and the richest groups of children, between municipalities and between areas within one and the same town. The main conclusion made in the report is that child poverty to a great extent has become a metropolitan problem, which includes housing segregation as well as economic and social exclusion (Salonen 2012).

As research so far has neglected the regional perspective on child poverty this study attempts to start filling the white spot on the scientific map. The aim of this paper is to describe and analyse the regional dimension of child poverty in Sweden 1990 and 2010. Consequently, the limited research with this perspective will make this paper an explorative study. This paper suggests four questions to be answered: (1) What is the state of art in research on the regional dimension? (2) In which regions is child poverty high and low? (3) Why is child poverty higher in some regions and lower in others? (4) What causes child poverty in a regional analysis?

The 'region' in this paper refers to the administrative unit 'län'.¹ Child poverty will be measured by an indirect indicator: the share of persons aged 0-17 living on economic assistance in a regional population. Different indicators measure different aspects of poverty (Kangas & Ritakallio 1998), and it is not possible generally to say that one indicator is a better measure than others.² To define child poverty as the number of persons aged 0-17 living on economic assistance in a regional population has one clear methodological advantage as no changes in definitions or classifications have been made during the studied period.³ The definitions on several of the used variables used in the analysis here – unemployment, income, transfers and sickness – have changed between 1990 and 2010. Although the use of harmonised data have corrected and adjusted the information in the indicators it is well known that it is difficult to conduct longer historical analysis methodologically. For some indicators information is simply missing: for married couples the divorce rate can be used as a proxy-variable for family dissolution, but this kind of information is missing for unmarried but cohabiting couples.

2. Previous research on regional patterns of child poverty

Rautio (2002) analyses the regional expenditures on poverty during the period 1920 to 1955. He finds significant regional differences and the highest expenditures are found in the northernmost regions. The results imply that the regional economic structure had a significant impact on the regional expenditures on poverty: agrarian regions had significantly lower expenditures than industrial regions. During the period analysed in the study the northernmost regions did have a significant excess of births, and this additional labour could not be employed by neither the industry nor the service sector later on. At this time a national labour market did not exist. The surplus population had to find a living as small holders (agricultural sector).

¹ *Län* is an administrative unit between the local *municipalities* and the national level represented by the *government*.

² The term *indirect measures* usually relates to different kinds of income indicators; given a certain income it can be assumed that the individual or the household can uphold a certain material standard. The *direct measures* focus on what the individual in reality owns and consumes (Socialstyrelsen 1997).

³ The variable income has changed at several occasions over time when it comes to definition and classification. The same is true for the consumption unit scale. This creates a methodological problem in the analysis. It must also be kept in mind that changes in the average income in a municipality or region will change the number of poor. According to Aguilar and Gustafsson (1993) there are fewer recipients of economic assistance in municipalities with a high average income and vice versa. This is also valid for regions.

The population supported by poor relief 1920-1955 was significantly younger in the northernmost regions than in the rest of the country. Rautio (2002) also finds evidence for a higher share of women working outside the domestic sector in regions with lower expenditures on poverty. He also finds a similar negative correlation between the share of children aged 0-15 in the regional population and the expenditures on poverty. According to Rautio (2002) this is due to smaller cohorts born in the 1930's and the introduction of a universal child allowance in 1948. The negative correlation between the share of children and expenditures on poverty remains however unexplained by Rautio (2002).

Dahlberg et al. (2008) analyse the regional number of persons dependent on economic assistance from 1990 until 2007. The highest shares were found in the regions of Västernorrland, Gävleborg, Västmanland, Örebro, Södermanland, Östergötland and Skåne in 2007, where between 4.51 and 6 percent of the population had economic assistance. The lowest share was found in the region of Halland (2.5 per cent). The explanations given for these results by Dahlberg et al. (2008) are differences in the demographic structure, regional variation in the implementation of sickness benefits, regional differences in unemployment and in the share of refugees entitled to the so called *introduction benefit* (introduktionsersättning) from the government. Their conclusion is that a majority of the recipients of economic assistance are relatively close to the labour market in the sense that their incomes from work constitute a majority of their disposable income. There is however a very well-defined group of the recipients who are very distant from the regular labour market and their share of the recipients have increased (Dahlberg et al. 2008).

During the period 1990-2005 families with children, foreign borns and single parents dominated the recipients of economic assistance in Sweden. The share of children 0-17 years old who grew up in household living on economic assistance was the highest in Västernorrland, Gävleborg, Dalarna, Västmanland, Örebro, Södermanland, Östergötland and Skåne in 2007. Between 7 and 9 per cent of the children grew up in households with economic assistance. The lowest shares of children (less than 5 per cent) growing up under such conditions were found in Halland and Norrbotten. Dahlberg et al. (2008) stress the strong correlation between the regional share of persons living on economic assistance and the regional share of children living in households with economic assistance.

The study by Renato Aguilar and Björn Gustafsson from 1993 can also be mentioned in this literature review. The empirical material is from the mid-1980s and focus on the municipal

determinants of economic assistance. The divorce rate has a major impact on the number of recipients, while the share of foreign born in the population had no statistically significant effect. Nor did they find any effect of unemployment on the need of economic assistance, but a strong correlation between unemployment where the persons did not have qualified to the unemployment insurance (Aguilar & Gustafsson 1993).

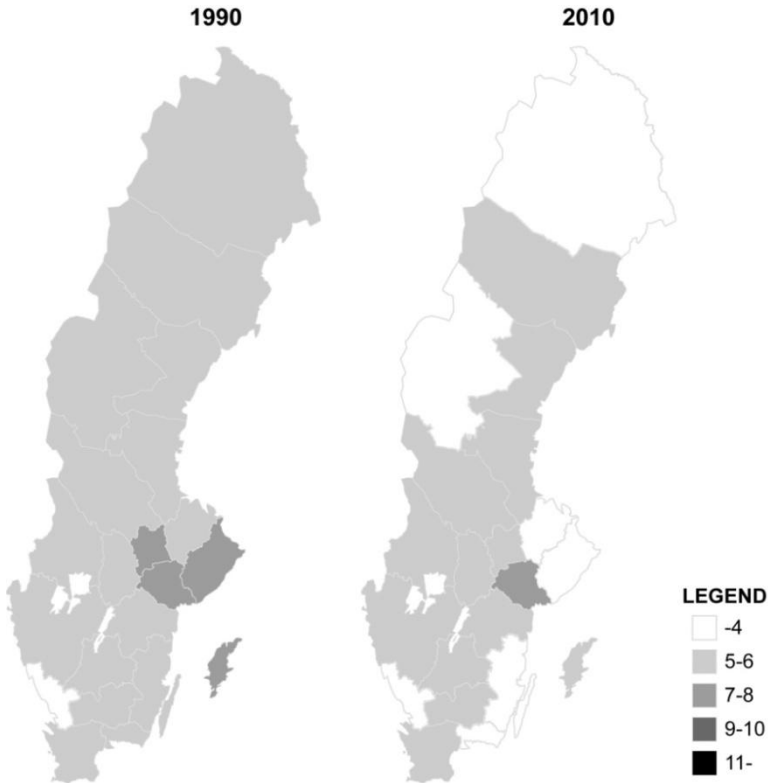
Several studies have focused on income based child poverty, but these studies only analyse the development at the national level (see e.g. Gustafsson et al 2003, Jonsson 2001 and Oxley et al 2003). Gustafsson et al. (2013) analyse child poverty at the town district level and the findings suggest that districts with a high share of adults who are dependent on economic assistance also have a higher presence of child poverty.

3. The children amongst the recipients of economic assistance

An indirect measure of absolute poverty is to use a politico-administrative budget line. The budget line for economic assistance constitutes such a politico-administrative budget line. The economic assistance can be assumed to provide the recipient with a minimum, but still enable him or her to survive. No attention to social aspects of poverty is given in the budget line for economic assistance (Rauhut 2011).

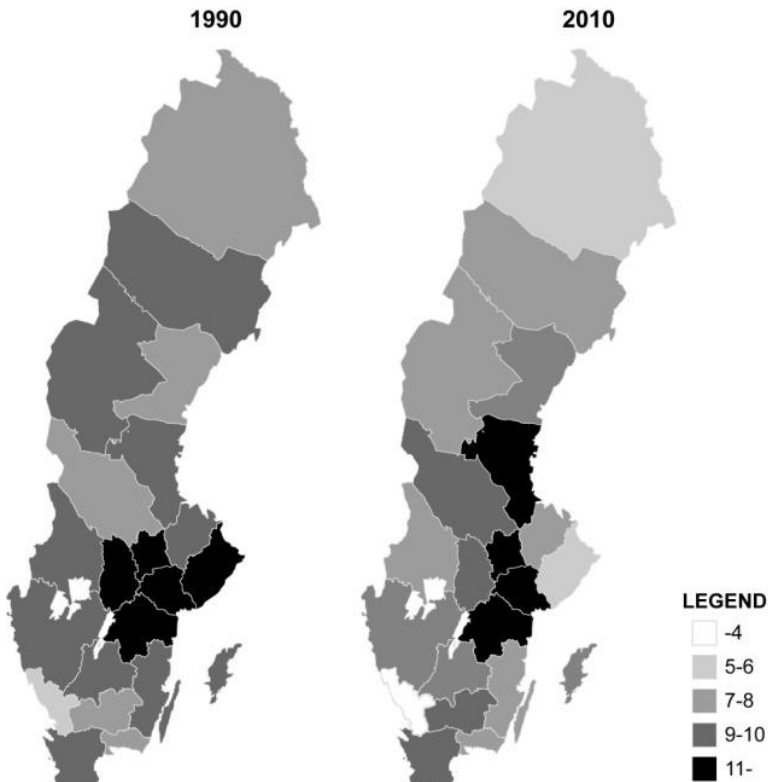
Before the economic crisis in the early 1990s the highest shares of recipients of economic assistance were found in the Stockholm region and the regions of Södermanland, Västmanland och Gotland. This has all changed 20 years later. Now the highest shares of recipients of economic assistance are found in the industrial regions of Södermanland, Östergötland, Örebro, Västmanland, Dalarna and Gävleborg.

Map 1 The regional share of recipients in per cent of the regional population 1990 and 2010



Source: The database of the National Board of Health and Welfare (Socialstyrelsen)

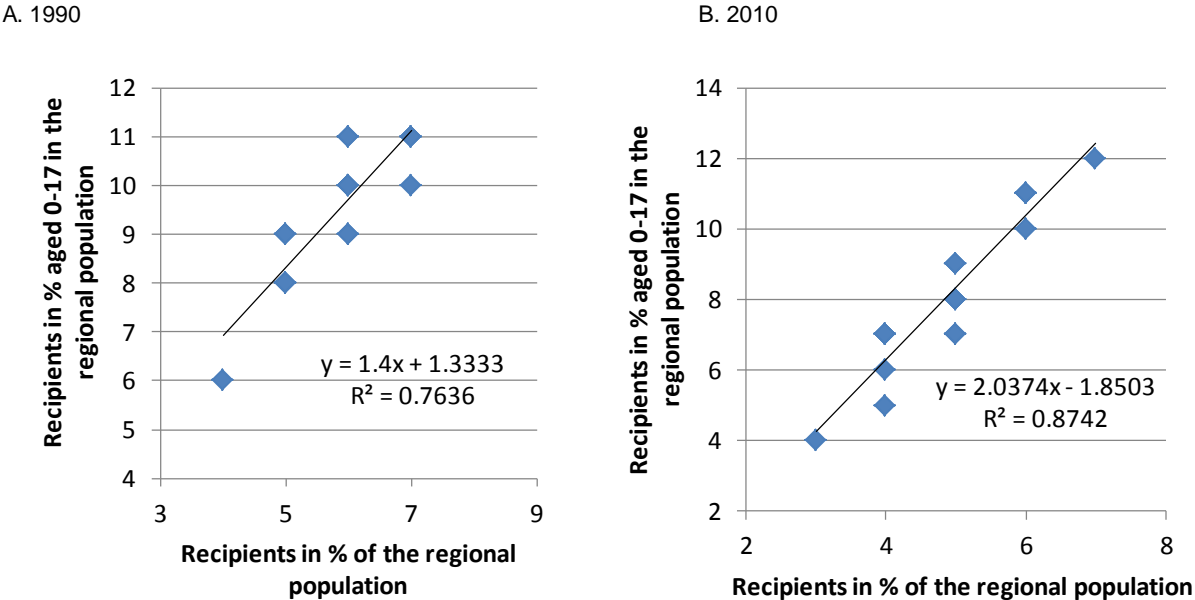
Map 2 The regional share of recipients of economic assistance aged 0-17 of the regional population 1990 and 2010.



Source: The database of the National Board of Health and Welfare (Socialstyrelsen)

About 11 per cent of the children 0-17 in the regional population lived in households receiving economic assistance in 1990. The regions with the highest shares were Stockholm, Södermanland, Östergötland, Örebro and Västmanland; in the regions of Uppsala, Gotland, Gävleborg och Skåne approximately 10 per cent of the children 0-17 years old lived in households that received economic assistance 1990. In 2010 10-12 per cent of the children aged 0-17 lived in households with economic assistance in the regions of Södermanland, Östergötland, Örebro, Västmanland and Gävleborg. These regions were prosperous and experienced very high economic growth during the golden industrial era in the 1950s and 1960s.

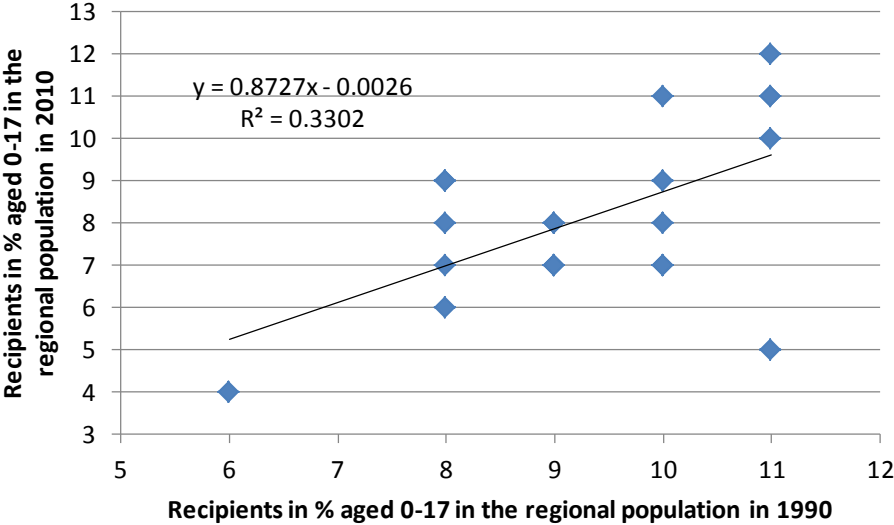
Figure 1 The share of recipients in the regional population and the share of recipients aged 0-17 in the regional population 1990 and 2010 (N=21).



Source: Own estimations from the database of the National Board of Social Welfare

A very strong correlation exists between the share of recipients in the regional population and the share of recipients aged 0-17 in the regional population for both 1990 and 2010 (figure 1). Furthermore, there is a strong correlation between the regions which showed a high share of recipients of economic assistance aged 0-17 in 1990 and in 2010 (figure 2). The regions with a high share of recipients of economic assistance aged 0-17 in 1990 also experienced this in 2010.

Figure 2 The correlation between the regional share of recipients of economic assistance in 1990 and in 2010 (N=21).



Source: Own estimations from the database of the National Board of Social Welfare

The economic crisis during the 1990s marks the end of the deindustrialisation process the Swedish economy has been undergoing since the end of the 1960s. Today regions such as Södermanland, Östergötland, Örebro, Västmanland, Dalarna and Gävleborg have an obsolete branch structure and an unfinished structural change (Eðvarðsson et al. 2007). In these regions the industrial sector decreased significantly during the economic crisis in the 1990s. While the service sector recovered quickly, the industry and manufacturing sector did not (Rauhut & Kahila 2008). Today these regions suffer from high unemployment rates (young adults, immigrants, persons aged 50+), high sickness leave, a high share of early retirements and a high share of social transfers to the population (Rauhut & Kahila 2012). Factors like these usually generate a significant need for support by society (Salonen 1994, Rauhut 2013), and therefore it is not very surprising to find such high shares of children aged 0-17 amongst the regional recipients of economic assistance in these regions

4. Income standard

An indirect measure of relative poverty is the share of population with less than 50 per cent of the median of the disposable income. Children who grow up in households with a disposable income less than 50 per cent of the median disposable income can be considered poor in relative terms. Income standard is frequently used in surveys on the economic standard in a household and this indicator has been developed by Statistics Sweden. This indicator is created by dividing the disposable income of a

household by an indicator expressing its expenditures. This indicator is based upon the assumption that all members in a household have similar consumption and have similar consumption patterns (Gustafsson et al. 2003). This kind of assumption is practical, but problematic to deal with. Furthermore, this indicator reveals no information on 'stop gap' activities, i.e. if the household is selling assets to keep up consumption. We do not know if the parents decline own consumption to favour their childrens' consumption, nor do we know if the household is self-providing in any sense. Lastly, we get no information on why the income differences exist, which is of outmost importance when analysing income poverty (Rauhut 2011)⁴. Kangas och Ritakallio (1998) argue that if the half median income is used as an indicator of poverty, it is important to understand that the share of poor in the population will be related to the general income distribution in the country rather than to the changes in income by the poor. When the income distribution is changed, so will the number of poor.

The income statistics is not presented by region or by municipality in the Statistics Sweden database, but by five categories of municipalities: metropolitan municipalities (storstäder), suburban municipalities (förortskommuner), major cities (större städer), commuter municipalities (pendlingskommuner) and other municipalities (övriga kommuner). Metropolitan municipalities (storstäder) refer to cities with more than 200 000 inhabitants (Stockholm, Göteborg, Malmö and Uppsala). Suburban municipalities (förortskommuner) refers to municipalities where at least 50 per cent of the night population commute to a work in another municipality and that the commuting is headed to one of the metropolitan municipalities. Municipalities with a population between 50 000 and 200 000 inhabitants are classified as major cities (större städer). Commuter municipalities (pendlingskommuner) refer to municipalities (other than suburban municipalities) where at least 40 per cent of the population commute to a work in another municipality. Municipalities not belonging to these first four categories are classified as other municipalities (övriga kommuner). A municipality can only belong to one of these five categories.

Low income is defined as the income level of a person who lives in a household with a disposable income per consumption unit less than 60 per cent of the median for all households. High income is defined as the income level of a person who lives in a household with a disposable income per consumption unit more than twice as high as the median for all

⁴ Aspects such as human capital, discrimination, the negotiation power of trade unions, class, family, wealth, talent, cohort effects, luck and health have an impact on differences in incomes (see Rauhut 2011 for an overview).

households. The scale of consumption units is a standardised measurement on what individuals are *assumed* to consume, not what they consume in reality (SCB 2012).⁵

How has the disposable income per consumption unit developed between 1991 and 2010? In table 1 the disposable income per consumption unit for persons over 20 years old increases by 32 to 38 per cent in all municipal categories. Although this implies a general increase in wealth, such a conclusion should not be made. In tables 2 and 3 it is obvious that such a general increase is a statistical illusion.

Table 1 Disposable income per consumption unit for persons over 20 years old. Median value, 1000's SEK by municipal category, 1991 and 2010.

	1991	2010	change
<i>metropolitan</i>	153.4	211.7	+38%
<i>suburban municipalities</i>	173	229.4	+33%
<i>major cities</i>	151	200	+32%
<i>commuter municipalities</i>	147	203.6	+38%
<i>other municipalities</i>	143.9	197.9	+38%

Source: Statistics Sweden database

The share of persons in households with an income lower than 60 per cent of the median of the disposable income has increased in all municipal categories between 1991 and 2010. In the metropolitan municipalities and the suburban municipalities this group has increased by 141 per cent and 129 per cent between 1991 and 2010. For the other municipal categories the increase is smaller, but still significant. This group of low income earners contains young adults, persons with a foreign background and single parents. When incomes are decreasing the children in these households will face a relatively higher risk of growing up in poverty (Socialstyrelsen 2007, 2010).

⁵ The consumption unit scale is a measurement which takes the household structure into account. All expenditures will not increase proportionally with the number of persons in the household and this is controlled for in the consumption unit scale. If the expenditure is divided by a consumption unit for the household it is possible to compare expenditures in different kind of households. The consumption unit weights are the following: single adult and the first adult in a married/cohabiting couple is 1.00, spouse/cohabiting partner is 0.51, additional adult in the household is 0.60, first child aged 0-19 is 0.51, second and more children aged 0-19 are given the weight of 0.42 (SCB 2012).

Table 2 The share of persons over 20 years old in households with an income lower than 60 per cent of the median disposable income. Median value, 1000's SEK by municipal category, 1991 and 2010.

	1991	2010	Change
<i>metropolitan</i>	6.3	15.2	+141%
<i>suburban municipalities</i>	4.1	9.4	+129%
<i>major cities</i>	7.5	12.9	+72%
<i>commuter municipalities</i>	8.2	11.1	+35%
<i>other municipalities</i>	8	12.6	+58%

Source: Statistics Sweden database

While the share of persons with low incomes has increased so has the share of persons with high incomes. Although the share of high income earners has increased in the metropolitan municipalities and the suburban municipalities, the increase is even larger, 338 per cent, in the commuter municipalities. The increase of high income earners is also significant in major cities and other municipalities (100 per cent and 123 per cent).

Table 3 The share of persons over 20 years old in households with an income higher than 200 per cent of the median disposable income. Median value, 1000's SEK by municipal category, 1991 and 2010.

	1991	2010	Change
<i>metropolitan</i>	6.4	10.3	+61%
<i>suburban municipalities</i>	9.5	10.8	+14%
<i>major cities</i>	3.3	6.6	+100%
<i>commuter municipalities</i>	1.3	5.7	+338%
<i>other municipalities</i>	2.2	4.9	+123%

Source: Statistics Sweden database

It was noted earlier that an increase in the general income inequality will manifest itself as an increase in the number of poor (see Kangas & Ritakallio 1998). In tables 2 and 3 this is clearly the case. The changes in the general income distribution cannot be derived to just an increase of the share of persons with a low income, but also to an increase in the share of persons with a high income. When using income as an indicator on poverty no information is given on why the income changes have occurred.

The disposable income of a household depends on the total work incomes as well as social transfers. During the last 20 years these have changed significantly. The share of social transfers in total household incomes has increased since 1975 while the share of incomes from work has decreased (Jansson et al. 2004). For families with children the share of social transfer incomes has increased even more (Gustafsson et al. 2003).

It is possible to assume that the decrease in the share of disposable income originating in work is related to the changes in employment after the economic crisis in Sweden in the early 1990s. Three marked changes in the employment structure have been observed: (1) The metropolitan areas and the Jönköping region have experienced an increase in employment; a minor increase in employment is observed in coastal towns and university towns, while rural and peripheral areas have experienced significant decreases in employment since the crisis in the early 1990s (Persson et al. 2004). (2) The matching problems in the labour market have increased since the beginning of the 1990s. The jobs that disappeared in the traditional industrial regions were found in traditional 'Fordist' production in manufacturing and industry, while the new jobs have emerged in the knowledge based and 'post-Fordist' service sector. A consequence of this has been a regional polarisation where employment and incomes have decreased in the traditional industrial regions while the opposite development is found in the expansive metropolitan regions (Johansson & Persson 2001). (3) Many of the new jobs that have been created in the expansive service sector are now poorly paid low status jobs. The share of fixed contracts, where the employment only lasts for a limited period, is higher in this sector than in the labour market as a whole. This will create an economic insecurity for those working under these conditions. The share of fixed contracts has increased over time. Young adults and persons with an immigrant background have usually few other employment possibilities besides jobs with fixed contracts (Åslund et al. 2006, Ekberg 2006, Pettersson 2006). Furthermore, it must be kept in mind that a higher share of persons are studying in 2010 than in 1990 – especially young adults and persons with an immigrant background – which also makes them more dependent on transfers while studying.

5. A statistical analysis

The structural change in the economy which Sweden has experienced in the form of de-industrialisation has led to difficulties for young adults and persons with an immigrant

background to establish themselves at the labour market. Both groups show a high relative unemployment.

The earlier discussion also noted that the income differences in society have increased with the result that many people find that they cannot consume goods and services in a way they perceive that the surround population does. The children suffer from their parents' unemployment, sickness and low incomes; children of relatively young parents and of persons with immigrant background are also hit and experience a higher risk of poverty simply because their parents have not managed to establish themselves at the labour market. Children of single parents are especially exposed to poverty risks.

A multiple regression model will be constructed to statistically estimate which factors have the greatest impact on child poverty. Child poverty will be measured as the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance. This will be the dependent variable ($B_{i,t}$) to be explained in the model. The following six independent variables will be used; the average income of work per person and region with a one year lag ($F_{i,t-1}$), the average social transfers per person and region with a one year lag ($T_{i,t-1}$), the share of foreign born in the regional population ($I_{i,t}$), the relative unemployment rate per region ($U_{i,t}$), the share of children who live with a single parent ($E_{i,t}$), and, finally, the regional sickness rate ($S_{i,t}$). The data for incomes and social transfers refer to data 2009 ($t-1$) and all other variables to data for 2010. Regions are denoted as i in the model. In order to express elasticities the natural logarithm has been calculated for all variables. The model can be formalised the following way:

$$B_{i,t} = \alpha + \beta_1 I_{i,t} + \beta_2 U_{i,t} + \beta_3 E_{i,t} + \beta_4 S_{i,t} + \beta_5 F_{i,t-1} + \beta_6 T_{i,t-1} + \varepsilon \quad (1)$$

The result from this model is shown in table 4 as model 1. This model is however not very good, which is the reason why the simplified models 2-5 have been estimated. In all models two variables explain the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance: the share of foreign born in the regional population and the average income of work per person and region with a one year lag. In model 5 the regional unemployment rate shows an almost statistically significant result.

Table 4 Multiple regression analysis. The dependent variable is the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance in 2010. *t*-values within brackets

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>C</i>	9,623 (1,501)	9,489* (2,118)	9,654* (2,368)	12,268** (3,162)	10,732* (2,626)
<i>Share of foreign born</i>	,684* (2,201)	,688* (2,510)	,693* (2,647)	,808** (3,081)	,652* (2,451)
<i>Unemployment</i>	,305 (1,002)	,298 (1,453)	,290 (1,573)		,353 ^a (1,937)
<i>Share of single parents</i>	,246 (1,157)	,244 (1,246)	,236 (1,337)	,308 (1,726)	
<i>Sickness rate</i>	-,012 (-,030)				
<i>Average income from work, SEK 1000's</i>	-,763* (-2,142)	-,759* (-2,431)	-,743* (-2,792)	-,878** (-3,343)	-,739* (-2,715)
<i>Average social transfers per person, SEK 1000's</i>	,032 (,105)	,032 (,107)			
<i>Adj.R2</i>	,354	,397	,434	,385	,408
<i>d.f.</i>	14	15	16	17	17
<i>D-W</i>	1,541	1,538	1,531	1,281	1,718

** Statistically significant at 1% nivån

* Statistically significant at 5% nivån

^a Statistically significant at 7% nivån

Models 1-4 all have problems with autocorrelation, which gives a misleading result⁶; model 5 does not suffer from autocorrelation. Model 5 can also explain almost 41 per cent of the linear causality between, on the one hand, the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance, and, on the other hand, the share of foreign born persons in the regional population, the regional average income of work per person and the regional relative unemployment.

Which information does model 5 contain? When the share of foreign born increases in the regional population with one unit the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance will increase by 0.652 units; when the average income of work per person and region, with a one year lag, increases with one unit the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance will decrease by 0.739 units. Both these coefficients are statistically significant at the 5% level, i.e. with at

⁶ Autocorrelation means that the residuals are correlated with each other. The result is that the precision in the prediction will be low (Andersson et al. 1994, Djurfeldt et al. 2010). The Durbin-Watson value (D-W) should be as close to 2 as possible, which is not the case in models 1-4. In model 5 the D-W value is close enough to 2 to not make the result misleading.

least 95% probability that they would be lower in the absence of a systematic connection between the variables.

The result for the relative regional unemployment has not a coefficient which is statistically significant at the 5% level (but at the 7% level); this result has a higher probability to be the outcome of chance. Nevertheless, when the regional unemployment rate increases by one unit the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance will increase by 0.353 units.

When comparing the result obtained in this study with the results displayed by *Save the Children* in Sweden (Rädda barnen) similar results are found. It must be stressed, however, that *Save the Children* in Sweden (Rädda barnen) analyse child poverty at either the national level or at municipal level; child poverty is analysed at the regional level in this study. Nevertheless, child poverty appears a problem of integrating foreign born into the Swedish society and the Swedish labour market in both studies. A further similarity is that child poverty is found in geographical areas with a low average income.

There are also differences in the results from the studies by *Save the Children* in Sweden (Rädda barnen) and the results found in this study. *Save the Children* in Sweden (Rädda barnen) argue that children in single parent households are more exposed to child poverty than children in households with both parents. This result is not confirmed here. One reason why the results in this study does not confirm that conclusion may depend on the fact that this study focus on the regional level while *Save the Children* in Sweden (Rädda barnen) focus on other levels. A second possible explanation may be that it is not living in a single parent household *per se* which increases the risk for child poverty, but that the household only has one income. If this is the case, then this aspect is dealt with in the income variable used in the model (which turned out to be statistically significant).

6. Concluding remarks

The aim of this paper is to describe and analyse the regional dimension of child poverty in Sweden 1990 and 2010. This kind of analysis has not previously been made which makes this paper explorative in some sense. The first question addressed the state of the art in research. Regional analyses on Swedish data are few. Two studies were found, of which one analyses

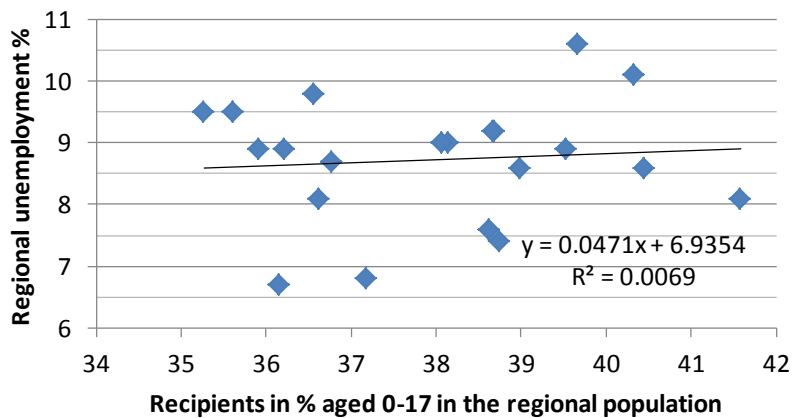
the period 1920-1955. The organisation *Save the Children* in Sweden (Rädda barnen) has in a number of non-scientific reports studied the structure and development of child poverty in Sweden at an aggregated national level and at a municipal level.

The second question was in what regions child poverty is high and low. Child poverty defined as the share of the persons aged 0-17 in the regional population who grow up in a household depending on economic assistance has generally decreased between 1990 and 2010. At the same time, the analysis shows that child poverty is at a constant high level in regions such as Östergötland, Södermanland och Västmanland, and that child poverty has increased in traditional industrial regions such as Dalarna, Gävleborg and Västernorrland during the same period.

The third question concerned why child poverty is higher in some regions and lower in others. The regions with the highest levels of child poverty suffer from an obsolete branch structure and an obstructed structural change in the economy. These regions experience many problems simultaneously and have done so since the crisis in the early 1990's. The problems these regions experience are high relative unemployment rates for marginal groups at the labour market (young adults, immigrants and persons aged 50+), high sickness leave, high early retirement rates and high social transfers to the households. If there are children in the household they will be exposed to poverty to a larger extent than children in regions with a modern economic structure that do not suffer from the multiple social problems.

The fourth question was what causes child poverty in a regional analysis. The results from the statistical analysis indicate that when the share of foreign born in the regional population increases, so will child poverty; when the average income of work increases child poverty will decrease. These results are confirmed by the findings in the reports of *Save the Children* in Sweden (Rädda barnen) at national and municipal level. The statistical analysis also suggests that an increase in regional relative unemployment may increase the regional child poverty, but the result is just below the threshold for being statistically significant.

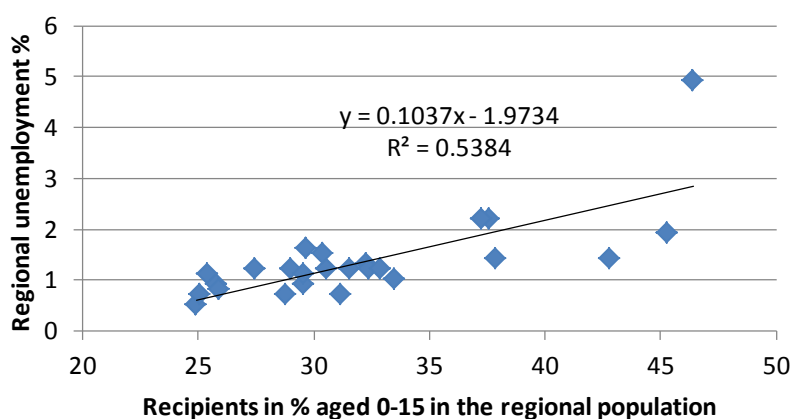
Figure 3 The correlation between share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance and unemployment in 2009



Source: own estimations from the databases of Statistics Sweden and the National Board of Health and Welfare

In a bivariate analysis between the relative regional unemployment rate and the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance for 2009 shows no correlation between the two variables (figure 3). Historically such correlation however exists (figure 4). One possible explanation is that it is unemployment without any financial support from the unemployment insurance which leads to an acute need of support by economic assistance rather than unemployment with coverage from the unemployment insurance (Aguilar & Gustafsson 1993).

Figure 4 The correlation between the share of children 0-15 years old amongst the recipients of poor relief and unemployment 1927



Source: own estimations from SOS Fattigvård and Statistisk Årsbok

This paper has shown that the structure and variation in the regional child poverty is complex as well as multifaceted. Some of the findings here suggest support for findings in previous studies, e.g. that the risk of child poverty is higher for children with foreign born parents and that children in households with low incomes are more exposed to poverty than children from median income and high income households. The paper has also identified that the share of the persons aged 0-17 in the regional population who grow up in a household which is depending on economic assistance are found in traditional industrial regions and that child poverty has increased in these regions between 1990 and 2010. This implies that not only individual problems influence the development of child poverty, but also structural problems in the welfare system appear to be significant.

References

Statistics

Arbetsförmedlingen (National Employment Service), www.arbetsformedlingen.se

Försäkringskassan (The Swedish Social Insurance Agency), www.forsakringskassan.se

Socialstyrelsens statistikdatabas (The National Board of Health and Welfare statistical database), www.socialstyrelsen.se

SOS Fattigvård

Statistiska centralbyråns statistikdatabas (Statistics Sweden statistical database), www.scb.se

Statistisk Årsbok

Literature

Aguilar, R. & Gustafsson, B. (1993) "Kommunerna och socialbidraget", *Statsvetenskaplig Tidskrift* 96(2):185-191

Angelin, A. & Salonen, T. (2012) *Lokala handlingsstrategier mot barnfattigdom*. Kommissionen för ett socialt hållbart Malmö

Andersson, G, Jorner, U. & Ågren, A. (1994) *Regressions- och tidsserieanalys*. Lund: Studentlitteratur

Dahlberg, M., Edmark, K., Hansen, J. & Mörk, E. (2008) *Fattigdom i folkhemmet*. Stockholm: SNS förlag

Djurfeldt, G., Larsson, R. & Stjärnhagen, O. (2010) *Statistisk verktygslåda*. Lund: Studentlitteratur

Eðvarðsson, I.R., Heikkilä, E., Johansson, M., Johannesson, H., Rauhut, D., Schmidt, T.D., Stambøl, L.S. & Wilkman, S. (2007) *Demographic Change, Labour Migration and EU-Enlargement – Relevance for the Nordic Regions*. Stockholm: Nordregio

- Ekberg, J. (2006) "Försvårar arbetsrätten för invandrarna på arbetsmarknaden?", in Rauhut & Falkenhall (red.) *Arbetsrätt, rörlighet och tillväxt*. Stockholm: Institutet för tillväxtpolitiska studier
- Gustafsson, B., Johansson, M. & Palmer, E. (2003) "Barnens inkomststandard under 90-talets djupa recession och den följande återhämtningen", *Socialvetenskaplig tidskrift* 2003(1):3-23
- Gustafsson, B., Katz, K. & Österberg, T. (2013) "Boendesegregation, bakgrund och barnfattigdom", in Daniel Rauhut (red.) *En bok om barnfattigdom*. Lund: Studentlitteratur In print
- Johansson, M. & Persson, L.O. (2001) "Local labour market performance in the knowledge economy", in L.O. Persson (ed.) *Local labour market performance in Nordic countries*. Stockholm: Nordregio
- Jonsson, J.O. (2001) "Ekonomiska och materiella resurser", in Jonsson, Östberg, Evertsson & Låftman (red.) *Barn och ungdomars välfärd*. Kommittén Välfärdsboksut SOU 2001:55. Stockholm: Fritzes förlag
- Kangas, O. & Ritakallio, V.-M. (1998) "Different Methods – Different Results? Approaches to Multidimensional Poverty", in Andreß (ed.) *Empirical Poverty Research in a Comparative Perspective*, Ashgate
- Oxley, H., Dang, T.T., Förster, M.F. & Pellizzari, M. (2003) "Income inequalities and poverty among children and households with children in selected OECD countries", in Vleminckx & Smeeding (eds.) *Child well-being, child poverty and child policy in modern nations. What do we know?* Bristol: Policy Press
- Persson, L.O. et al. (2004) *Economic Renewal and Demographic Change*. Stockholm: Nordregio
- Pettersson, L. (2006) "Arbetets betydelse för välfärden", in Södersten (red.) *Den problematiska tryggheten – välfärdsstaten under tre decennier*. Stockholm: SNS förlag
- Rainwater, L., Smeeding, T.M. & Coder, J. (2003), "Poverty across states, nations, and continents", in Vleminckx & Smeeding (eds.) *Child well-being, child poverty and child policy in modern nations. What do we know?* Bristol: Policy Press.
- Rauhut, D. (2002) *Fattigvård, socialbidrag och synen på fattigdom i Sverige 1918-1997*. Stockholm: Almqvist & Wiksell International
- Rauhut, D. (2008) "Sociala processer och integration", in Cars & Engström (red.) *Stadsregioner och utvecklingskraft*. Stockholm: KTH
- Rauhut, D. (2011) *Den besvärliga fattigdomen*. 2:a uppl. Lund: Studentlitteratur
- Rauhut, D. (2013) "Barnfattigdomens orsaker", in Rauhut (red.) *En bok om barnfattigdom*. Lund: Studentlitteratur. In print

- Rauhut, D. & Kahila, P. (2008) *The Regional Welfare Burden in the Nordic Countries*. Nordregio Working Paper 2008:6
- Rauhut, D. & Kahila, P. (2012) "Youth Unemployment, Ageing and Regional Welfare: The Regional Labour Market Policy Response to Ageing in Sweden", *European Spatial Research and Policy* 19 (1):111-127
- Rauhut, D., Lingärde, S. & Alander, N. (2006) *Om barnfattigdom*. Stockholm: FoU-enheten Stadsledningskontoret
- Rautio, K. (2002) *Att vara fattig i storstaden eller att "ha sitt Amerika strax bortom grantopparna": Fattigvårdsutgifter i ett regionalt perspektiv 1920-1955*. Licentiatuppsats, Ekonomisk-historiska institutionen, Umeå Universitet.
- Salonen, T. (1994) *Välfärdens marginaler*. Stockholm: Publica
- Salonen, T. (2002) *Barns ekonomiska utsatthet under 1990-talet. Bidrag till ett kommunalt barnindex*. Rädda Barnen
- Salonen, T. (2005) *Barnfattigdomen i Sverige – årsrapport 2004*. Rädda Barnen
- Salonen, T. (2006) *Skilda uppväxtvillkor – En studie av ekonomisk utsatthet bland barn till ensamstående ur ett storstadsperspektiv*. Rädda Barnen
- Salonen, T. (2010) *Barns ekonomiska utsatthet*. Rädda Barnen
- Salonen, T. (2011) *Välfärd, inte för alla. Den ekonomiska politikens betydelse för barnfattigdomen i Sverige*. Rädda Barnen
- Salonen, T. (2012) *Barns ekonomiska utsatthet i Sverige. Årsrapport 2012*. Rädda Barnen
- SCB (2012) *Inkomstfördelningsundersökningen 2007*. HE 21 SM 0901, korrigerad version 2012-01-25
- Socialdepartementet (2000) *Välfärd vid vägsäl – Utvecklingen under 1990-talet*. SOU 2000:3. Fritzes
- Socialdepartementet (2001) *Ur fattigdomsfällan*. Slutbetänkande från Familjeutredningen SOU 2001:24
- Socialdepartementet (2004) *Ekonomiskt utsatta barn – En delrapport om kommunernas arbete med barnperspektivet i handläggningen av ekonomiskt bistånd*, Ds 2004:41
- Socialstyrelsen (1997) *Social rapport 1997*. SoS-rapport 1997:14
- Socialstyrelsen (2007) *Översyn av riksnormen*. Uppföljning och utvärdering. Stockholm
- Socialstyrelsen (2010) *Social rapport 2010*. Stockholm
- Åslund, O., Erikson, R., Nordström Skans, O. & Sjögren, A. (2006) *Fritt inträde? Ungdomars och invandrades väg till det första arbetet*. Stockholm: SNS förlag