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THE EMERGENCE OF A SWEDISH UNDERCLASS? WELFARE STATE RESTRUCTURING, INCOME INEQUALITY AND RESIDENTIAL SEGREGATION IN MALMÖ, 1991-2008*

by Simone Scarpa

Recent political and academic debates in Sweden have been dominated by a view of urban problems as endogenously generated by the spatial concentration of individuals with similar ethnic and socioeconomic characteristics within the same neighbourhoods. The impact of welfare state retrenchment on income inequality and residential segregation instead remained an under-investigated and somehow neglected issue in recent research. This paper aims at filling this gap by analysing income inequality dynamics in Malmö in the period 1991-2008. This city offers an interesting case of analysis, given the high rates of social problems compared to other Swedish cities. The results reveal that the increase in income inequality in Malmö has been especially due to the reduced redistributive impact of the Swedish welfare state. Furthermore, the increase in residential segregation by income can be attributed to the parallel increase in city-wide income inequality rather than to an alleged increase in neighbourhood sorting.

I dibattiti politici degli ultimi anni, in Svezia, sono stati incentrati sul problema della segregazione residenziale e, in particolare, sul grado in cui in cui la concentrazione di individui svantaggiati negli stessi quartieri contribuisce al perpetuarsi dell'esclusione sociale. Pochi studi hanno invece analizzato le conseguenze delle recenti riforme del welfare state sulle disuguaglianze sociali e sulla segregazione residenziale nelle città svedesi. Quest'articolo mira ad esaminare questo nesso prendendo in considerazione l'andamento delle disuguaglianze sociali nella città di Malmö tra il 1991 e il 2008. Malmö rappresenta un caso studio interessante dal momento che questa città è caratterizzata da un'alta concentrazione di problemi sociali rispetto alle altre città svedesi. L'analisi svolta nell'articolo mostra che l'aumento delle disuguaglianze sociali è stato in primo luogo determinato di una riduzione delle capacità redistributive del welfare state svedese. In secondo luogo, la crescita della segregazione residenziale va soprattutto attribuita all'aumento delle disuguaglianze sociali invece che all'aumento dei livelli di omogeneità sociale dei quartieri della città.

1. Introduction

Since the change in the government in September 2006, when the Social Democrats lost the elections after having governed the country for almost all of the post-war era, the Swedish welfare state underwent considerable changes by means of various cost-containment reforms. The effects of these reforms remained largely under-scrutinized

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by recent academic research which, in many cases, continued to emphasize the alleged resilience of the Swedish model to political changes at the government (Lindbom, 2008; Bergh, Erlingsson, 2009). Notable exceptions in this regard have been two studies recently published in Swedish which presented a rather gloomy picture of recent welfare state developments. The first study (Björklund, Jäntti, 2011) indicated that, while Sweden is still characterized by lower inequality than other Western countries, the increase in the last two decades has been much higher than elsewhere. This study substantially replicated the findings of two OECD reports (OECD, 2008; 2011) which identified a cause for the increase in inequality in the reduced redistributive impact of the tax and welfare benefit systems. In this respect, according to the second of the aforementioned studies (Ferrarini *et al.*, 2012), the generosity of various types of benefits has recently fallen below the OECD average for the first time ever.

Whereas academic research has only belatedly begun to acknowledge the magnitude of recent welfare state developments, a shift has been clearly visible in the public and political debates of the last years, as a result of the importation of the underclass debate from Anglo-Saxon countries (Davidsson, 2010). In the last years, Swedish social policy debates have in fact turned their attention to three interrelated social problems: the growth of welfare state dependency, the lack of integration of immigrants into "mainstream" society and the consolidation of "areas of outsiderness" (in Swedish: *utanförskapsområden*), resulting from the spatial concentration of disadvantaged groups (immigrants in particular) within certain distressed neighbourhoods of largest urban areas.

Drawing from these recent debates, this study aims at investigating the relationship between income inequality, welfare state restructuring and social-polarization tendencies in Malmö, the third largest Swedish city, in the period 1991-2008.

There are two main reasons for the decision to focus the analysis on an urban scale and on the city of Malmö in particular.

Firstly, the emergence of an underclass issue in Sweden seems to question the view that, on account of the mitigating effect of welfare systems, urban poverty is not only less acute in European cities but also less spatially-concentrated and, therefore, less visible than in American counterparts (e.g. Hamnett, 1996; Le Galès, 2002). The mitigating effect of the welfare state on urban poverty should be expected to be particularly intense in Swedish cities, given the wide range and the high level of benefits and services provided to citizens, but this does not seem to be (or it is no more) the case in this country.

Secondly, Malmö offers an interesting case of analysis since this city is considered to be the most striking example of spatial concentration of urban problems in the Swedish context. In the last two decades, the local labour market has been performing poorly, compared to other Swedish large cities. Notwithstanding this, Malmö continued to grow in population, especially after the opening of the Öresund-bridge (2000) which enhanced its attractiveness to high-skilled professionals working in Copenhagen, because of the lower local real estate prices, but also to foreign-born individuals already residing in the country, because of its geographical proximity to continental Europe. The social sustainability of such a pattern of urban development seems nevertheless to be compromised by the persistence of high rates of welfare dependency and poverty as well as by the recent rise in crime and social unrest (e.g. the riots of April 2007 in the immigrant-dense district of Rosengård).

The paper is structured as follows. In the following section, the key issues in the construction of the Swedish underclass debate will be identified and it will be pointed out

why the emergence of such a debate represented an unexpected social policy development in Sweden. In the third section, the dataset used for the analysis will be introduced and the main characteristics of the population of Malmö will be described. In the fourth section, the extent to which trends in individual income inequality in Malmö in the period 1991-2008 have been affected by disparities between and within groups defined in relation to ethnic background and labour market participation will be examined. The fifth section will take into account household income inequality and it will analyse changes in the contribution of different income components, and of welfare transfers in particular, to total inequality. The sixth section will investigate to what extent, in the period in question, changes in neighbourhood income inequality can be explained as a consequence of changes in city-wide income distribution or as a consequence of an increase in the propensity of individuals with similar socioeconomic characteristics to live in the same neighbourhoods. Discussion and conclusions will be given in the seventh and final section of the paper.

2. The emergence of a underclass debate in Sweden

Mainstream comparative social policy research has traditionally assumed that the Swedish welfare state tends to be resistant to, or even immune from, distributive conflicts between wage-earners and welfare recipients thanks to its "universalistic" institutional structure (Esping-Andersen, 1990; Korpi, Palme, 1998). Contrary to this expectation, however, recent social policy debates have increasingly revolved around the issue of decreasing the tax burden on wage-earners while reducing benefits for welfare recipients (Korpi, Tåhlin, 2011). The results of last national elections seemed, indeed, to have been especially determined by the incapacity of left wing parties to reconcile the demands of these two groups which had previously joined forces in a same political coalition (Lindvall, Rueda, 2012). Meanwhile, right wing parties have been able to attract middle-class voters by criticizing the excessive generosity and costs of the welfare benefit system.

An argument that facilitated the establishment of this view has been the identification of the underclass (*utanförskap*) with ethnic minority groups, in line with a well-established tendency to explain social inequalities as predominantly, if not exclusively, structured along ethnic lines (Schierup, Ålund, 2011). Perhaps the most evident consequence of the influence of such an "ethicized" view of urban problems has been the entrance of an openly xenophobic party (the Swedish Democrats) into the parliament, after the election of September 2010. This event indicated that Swedish migration policies became subject of criticism by a significant part of the population. Since 1972, Sweden adopted a ban on labour immigration, with the purpose of giving priority to the employment of previously underutilized segments of the native-born labour force (Bucken-Knapp, 2009). Labour market protectionism was accompanied by a more liberal approach towards asylum seekers and refugees. In the last two decades, non-Western immigrants have nevertheless met increasing difficulties in integrating into the labour market and there is evidence that their high rates of unemployment and welfare dependency contributed to inter-ethnic tensions with native-born citizens as well as to undermining the traditional basis of support for the welfare state (Eger, 2010).

From the end of the 1990s, a view of socio-spatial polarization tendencies as being exclusively generated by ethnic divisions within society has also replaced previous government-sponsored interpretations of residential segregation as the outcome of

economic rather than ethnic inequalities (Andersson, 1999). The concentration of high unemployment and welfare dependency in certain immigrant-dense neighbourhoods of largest urban areas seems to have laid the ground for a redefinition of urban problems as being endogenously generated by the spatial proximity between individuals with similar ethnic and socioeconomic characteristics. This neighbourhood-centric perspective influenced social policy developments, as indicated by the shift towards area-based approaches to urban policy (Andersson, 2006), but also academic research, as shown by the wave of recent studies paying overwhelming attention to the issue of whether neighbourhood social composition is able to affect, or not, a range of individual behaviours and outcomes of residents (Andersson *et al.*, 2007; Galster *et al.*, 2008; Musterd *et al.*, 2008; Urban, 2009; Andersson, Musterd, 2010; Galster *et al.*, 2010). On the other hand, the role played by exogenous or "extra-neighbourhood" factors in contributing to the spatial concentration of social problems figured only on the margins of political and academic debates. As it has been argued, in these debates, «residents are linked with geographical areas, but the marginalisation of these areas is disconnected from wider structures and processes in society» (Schierup, Ålund, 2011, p. 55).

The aim of this study is to precisely focus on an extra-neighbourhood factor which may have contributed to the emergence of socio-spatial polarization tendencies in Swedish urban areas: income inequality. As mentioned before, this issue seems to have gained recently prominent attention although no research investigated its relationship with residential segregation in the Swedish context. Still, a recent stream of research indicates that increases in income inequality may be conducive to increases in residential segregation (Watson, 2006; 2009; Reardon, Bischoff, 2011).

In the following pages, an analysis of income inequality dynamics in Malmö will be developed by taking into account the three aforementioned and intersecting "axes" of polarization: between individuals in employment and welfare recipients, between native-born and foreign-born individuals and between socially-integrated and distressed neighbourhoods. The scope of the analysis will be, in the first place, to investigate how income inequality across social groups and neighbourhoods evolved in the period in question. In the second place, it will be examined to what extent income inequality dynamics have been affected by welfare state restructuring processes. Thirdly, it will be analysed to what extent changes in income inequality operated as a precondition for changes in residential segregation patterns.

3. Data sources and description

The data for this paper are drawn from the Longitudinal Integration Database for Health Insurance and Labour Market Studies (LISA) which is based on register-based data from Statistics Sweden and contains yearly longitudinal and geographical information on demographic characteristics, labour market situation, income and education of all individuals of 16 years of age and older residing Sweden from 1990 to 2008. Data on the population of Malmö in 1991 and 2008 were extracted from this dataset[1].

[1] The year 1991 was chosen as the starting year because only from that year data have started to be collected through tax and administrative registers and are therefore comparable across years.

Table 1. Individuals with 16 years or older included and excluded from the analysis and prime-age adults (aged 25-54), by labour market attachment, by country of birth, Malmö, 1991 and 2008

Country of birth	Individuals with 16 years or older						Prime-age adults (aged 25-54)					
	1991			2008			1991			2008		
	Included	Excluded	Total	Included	Excluded	Total	In employment	Out of employment	Total	In employment	Out of employment	Total
Born in Sweden	159,505 (99.4%)	1,025 (0.6%)	160,530 (100%)	156,685 (97.5%)	3,983 (2.5%)	160,668 (100%)	62,361 (86.2%)	10,009 (13.8%)	72,370 (100.0%)	64,287 (82.0%)	14,104 (18.0%)	78,391 (100.0%)
Western Europe Nordic countries	10,587 (95.7%)	477 (4.3%)	11,064 (100%)	11,150 (67.9%)	5,281 (32.1%)	16,431 (100%)	3,970 (70.1%)	1,690 (29.9%)	5,660 (100.0%)	3,157 (32.7%)	6,490 (67.3%)	9,647 (100.0%)
Outside Western Europe (OWE)	23,932 (94.7%)	1,342 (5.3%)	25,274 (100%)	54,022 (88.4%)	7,109 (11.6%)	61,131 (100%)	9,441 (55.5%)	7,566 (44.5%)	17,007 (100.0%)	19,748 (50.5%)	19,371 (49.5%)	39,119 (100.0%)
Total	194,024 (98.6%)	2,844 (1.4%)	196,868 (100%)	221,857 (93.1%)	16,373 (6.9%)	238,230 (100%)	75,772 (79.7%)	19,265 (20.3%)	95,037 (100.0%)	87,192 (68.6%)	39,965 (31.4%)	127,157 (100.0%)

Given the comprehensiveness of the Swedish welfare state which, by law, is obliged to provide a social assistance to anyone without means of support, it is conventional practice to exclude individuals lacking a registered income from the analysis in Swedish register-based studies (Hedberg, 2009). Individuals lacking any information on disposable income are treated as having emigrated from Sweden without registering their emigration or as employed in the underground economy.

As shown in TAB. 1, the share of individuals lacking a registered income has increased in Malmö from 1.4% in 1991 to 6.9% in 2008. The reason of this increase can be largely attributed to the opening of the Öresund-bridge which was reflected in a growth in the number of cross-border commuters residing in Malmö but working in Copenhagen, where their taxable income is registered. In TAB. 1, individuals have been divided into three subgroups in relation to their country of birth: born in Sweden, born in Western Europe and in other Nordic countries and born outside Western Europe (OWE). In the remained of this paper, foreign-born individuals will continue to be divided into these two groups which are characterized by different levels of labour market attachment. In Malmö (as elsewhere in Sweden), OWE-individuals are characterized by higher unemployment rates and lower incomes than other foreign-born individuals (Salonen, 2012). Between 1991 and 2008, the share of OWE-individuals doubled (from 12.8% to 25.5%), while Western European individuals increased from 5.6% to 6.9%. Almost one third of Western European immigrants, slightly more than one tenth of OWE-individuals, and 2.5% of the Swedish-born had no registered income in 2008 and they have been excluded from the dataset. However, as explained below, it possible that a number of cross-border commuters remained in the dataset even after the exclusion of these individuals from the dataset.

4. Ethnic background, labour market participation and changes in individual income inequality

The purpose of this section is to analyse empirically changes in individual income inequality in Malmö between 1991 and 2008 by focusing on prime-age adults (aged 25 to 54 years). These individuals constitute an age-group on the margins of recent social policy debates in Sweden since they have a stronger attachment to the labour market and a lower level of welfare dependency than young adults and the elderly. For instance, the prime minister Fredrik Reinfeldt recently argued that unemployment should not be seen as a social problem concerning "ethnic Swedes" belonging to this age-group (Dagens Nyheter, 2012). This section aims precisely at assessing to what extent the increase in income inequality among prime-age adults living in Malmö in 1991 and in 2008 can be attributed to a widening of disparities between or within groups defined in relation to ethnic background and labour market participation. Ethnic background has been defined as in the previous section. Individuals who earned more than a basic amount defined by the Swedish law[2] and tied to the price index have been defined as "in employment". Those who instead earned less than this amount have been defined as "out of employment".

TAB. 1 indicates that the employment rate decreased both among native-born and foreign-born individuals between 1991 to 2008. Still, the reason why the employment rate of Western European and Nordic prime-age adults more than halved (from 70.1% to

[2] This basic amount (*prisbasbelopp*) was equivalent to 32,200 SEK in 1991 and to 41,000 SEK in 2008.

32.7%) needs to be explained by the large proportion of Danish cross-border commuters in this group. These individuals reside in Malmö, work in Copenhagen but at the same time have exceedingly small registered incomes in Sweden (e.g., because they receive welfare transfers). Given the incompleteness of these data, individuals born in Western European and in other Nordic countries will be excluded from the analysis.

Three different inequality measures will be used: the Gini coefficient, the Theil index (*T*) and the Mean Log Deviation (*MLD*). The Gini coefficient can be formally expressed as:

$$Gini = \frac{2}{\bar{y}n^2}\sum_{i=1}^{n} i\,(y_i - \bar{y})$$

where n are the individuals indexed by i, their income is given by y_i, mean income of the population n is denoted by $\bar{y}$ and i is each individual's rank in the income distribution. The Gini coefficient is a measure sensitive to inequality in the middle of income distribution while the *T* is more sensitive to inequality at the top of the distribution and the *MLD* to inequality at the bottom of distribution (Cowell, 2011). Unlike the Gini coefficient, the *T* and the *MLD* are based on logarithm functions and can be decomposed into between-group and within-group components. Between-group components estimate inequality when disparities within groups are suppressed. Within-component estimate inequality when disparities between groups are suppressed. Before decomposition, the *T* and the *MLD* can be written as:

$$T = \frac{\sum_{i=1}^{n}\left(\frac{y_i}{\bar{y}}\right) log\left(\frac{y_i}{\bar{y}}\right)}{N}$$

$$MLD = \frac{\sum_{i=1}^{n} log\left(\frac{\bar{y}}{y_i}\right)}{N}$$

In order to be decomposed, the population n needs to be divided into k mutually exclusive subgroups, each one with n_k individuals and $\bar{y}_k$ mean income. A difference between the *T* and the *MLD* is given by the fact that the *T* is influenced by each subgroup's share of total income while the *MLD* is influenced by each subgroup's share of total population. Therefore, the *T* and the *MLD* can be decomposed as follows:

$$T = \frac{1}{n}\sum_{k=1}^{K} n_k\left(\frac{\bar{y}_k}{\bar{y}}\right) log\left(\frac{\bar{y}_k}{\bar{y}}\right) + \sum_{k=1}^{K} T_k\left(\frac{\bar{y}_k n_k}{\bar{y}n}\right)$$

$$MLD = \sum_{k=1}^{K}\left(\frac{n_k}{n}\right) log\left(\frac{\bar{y}}{\bar{y}_k}\right) + \sum_{k=1}^{K} MLD_k\left(\frac{n_k}{n}\right)$$

where the first terms in the two equations capture the between-group component of inequality and their second terms measure the within-group components of inequality.

Despite the risk of redundancy in results, the use of three different measures will allow a more accurate interpretation of income inequality trends. Furthermore, the use of

two entropy measures focusing on the opposite extremes of income distribution will compensate for the bias due to the possible presence of cross-border commuters with exceedingly low registered incomes (which may result in dispersion at the bottom of income distribution).

In TAB. 2, all three measures indicate a strong increase in inequality which was stronger at the bottom of income distribution (+78.6% in the *MLD* between 1991 and 2008) than at the top (+58.0% in the *T*) and at the middle (+32.7% in the Gini coefficient). The between-group components of the *T* and the *MLD* indicate an increase in index values and as a proportion of total inequality. Labour market-related disparities continued to contribute more than ethnic-related disparities to total inequality. In particular, labour market-related disparities came to account for over one fifth of total inequality in 2008. Despite the increase, the contribution of ethnic-related disparities continued to contribute for a smaller share of total inequality.

Table 2. Inequality in disposable income between prime-age individuals (25-54 years of age) in Malmö: Gini coefficient, Theil index (total, between-group and within-group components), Mean Log Deviation (total, between-group and within-group components), 1991 and 2008

	Inequality measure	Index value 1991	Index value 2008	Share of total 1991	Share of total 2008
Total	Gini coefficient	0.244	0.324	–	–
	Theil index	0.139	0.220	100%	100%
	Mean Log Deviation	0.153	0.273	100%	100%
			In employment/Out of employment		
Between-Group	Mean Log Deviation	0.019	0.050	13.9%	22.7%
	Theil index	0.022	0.061	14.6%	22.3%
			Swedish-born/OWE		
	Mean Log Deviation	0.005	0.015	3.3%	6.6%
	Theil index	0.005	0.015	3.2%	5.7%
			Theil index		
Within-Group	In employment	0.027	0.044	19.4%	20.2%
	Out of employment	0.093	0.126	66.7%	57.1%
	Swedish-born	0.116	0.153	83.2%	69.5%
	OWE	0.019	0.053	13.4%	23.9%
			Mean Log Deviation		
	In employment	0.067	0.123	43.6%	45.0%
	Out of employment	0.064	0.089	41.8%	32.7%
	Swedish-born	0.109	0.155	71.2%	56.9%
	OWE	0.024	0.070	16.0%	25.7%

All groups experienced an increase in within-group disparities and these components continued to explain a larger share of total inequality than between-group disparities. The

contribution of the within-group components nevertheless decreased on account of the increase in the contribution of the between-group components. The *T* index values indicate that dispersion at the top of income distribution among the Swedish-born and among individuals out employment continued to account for the largest shares in inequality. However, within-group disparities among individuals in employment and among OWE-individuals came to account for larger shares of total inequality in 2008 than in 1991. The *MLD* values instead show that, in both years, dispersion at the bottom of income distribution accounted for a larger share of total inequality among individuals in employment than among those out of employment. No differences with the *T* can be found in relation to the relative importance of ethnic-related within-group disparities.

5. Welfare state retrenchment and changes in household income inequality

The decomposition analysis developed in the previous section found that, looking at between-group disparities, the increase in inequality among prime-age adults in Malmö in the period 1991-2008 has been especially due to an increase of labour market-related rather than ethnic-related disparities. However, within-group disparities continued to account for a larger proportion of total inequality than between-group components.

The increase in magnitude of labour market-related disparities seems to indicate that the redistributive capacity of the Swedish welfare state may have been at least partly weakened by recent restructuring processes.

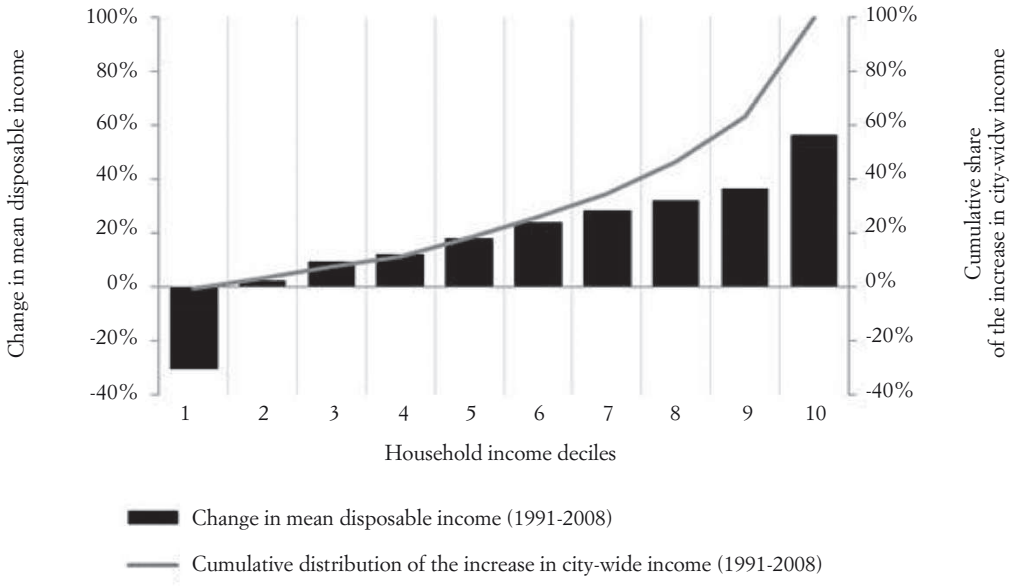
In comparative research, the main cause of the alleged resilience of the Swedish welfare state to institutional change has been in fact identified in the encompassing nature of social insurance institutions which «pool the risks and the resources of all the citizens and thus create converging definitions of interests» (Korpi, Palme, 1998, p. 682). As mentioned before, recent social policy developments seem nevertheless to have been characterized by an increasing divergence between such the interests of wage-earners and welfare recipients.

This section focuses on changes the distribution of different income components across households differently positioned in the income distribution. In particular, the aim is to investigate how the level of coverage of welfare state programmes evolved between 1991 and 2008 and whether recent social policy developments may have been accompanied by an intensification of targeting of befits and social transfers on certain social groups.

Incomes have been household-size weighted by dividing total household disposable income by the square root of the household size. Income deciles have been then defined on the basis of this equivalized household disposable income in a manner whereby 10% of all households fall into each decile.

FIG. 1 illustrates changes in the mean equivalized disposable household income for each decile between 1991 and 2008 and the cumulative distribution of the city-wide growth in disposable income across household deciles. The figure indicates that high-income households (and the tenth in particular) benefited from the highest increase, while households belonging to the first decile even suffered from a decrease in income. During the same period of time, the aggregate income of the city of Malmö rose but this growth was unevenly distributed. Over one third of the city-wide growth was concentrated in the tenth decile while the economic situation of households belonging to the first decile worsened in spite of increasing prosperity in the city.

Figure 1. Change in mean equivalized disposable household income and cumulative distribution of the citywide growth in disposable income, by household income deciles, Malmö, 1991- 2008 (values for 1991 have been adjusted to 2008 prices)



TAB. 3 shows changes in the distribution of Swedish-born and OWE-individuals belonging to different age-groups across household deciles between 1991 and 2008. Four age-groups have been taken into account: minor children (below 18 years old), young adults (18-24 years old), prime-age adults (25-54 years old) and elderly (more than 54 years old). Swedish-born and OWE-individuals have defined as before, with the exception of children who have been considered as Swedish-born when both their parents are Swedish-born and as OWE when both their parents are OWE (children who do not fall into these definitions have been excluded). The Swedish-born became more concentrated in the top deciles between 1991 and 2008. However, prime-age adults moved slightly downward in the income distribution (with a growth in the lowest three deciles and a decrease in the highest two), while a polarization trend is observable among young adults (with an increase of the shares at the bottom but also at the top of income distribution, with the exception of the tenth decile). This age-group also show the highest concentration in the first three deciles in 2008. Swedish-born children remained the age group most concentrated in the highest three deciles while Swedish-born elderly have climbed upward in the income distribution, with an increase of the shares in the middle (fourth to sixth) and top (seventh to tenth) deciles. Compared to Swedish-born, OWE-individuals became more concentrated in the three lowest deciles, with the exception of the elderly who became more compressed in the middle of the distribution as a consequence of a decline of the shares in first decile and in the highest three deciles. Interestingly, and unlike Swedish-born children, OWE-children became more concentrated in the bottom of income distribution.

Table 3. Population distribution across household deciles, Swedish-born individuals and OWE individuals, 1991 and 2008

	Household deciles	Children		Young adults		Prime-age adults		Elderly	
		1991	2008	1991	2008	1991	2008	1991	2008
Swedish-born individuals	1	1.4	1.3	12.0	12.4	5.2	6.1	6.0	1.5
	2	1.6	1.9	7.4	10.3	3.8	5.3	11.4	5.8
	3	2.0	1.9	6.9	7.5	4.0	5.0	12.1	10.1
	4	3.7	2.8	11.0	8.1	6.0	5.4	10.5	12.9
	5	6.6	5.6	11.5	10.5	8.3	8.0	9.5	11.6
	6	13.1	8.6	10.0	9.7	10.5	10.1	9.1	10.6
	7	18.9	15.2	8.4	8.8	12.9	12.9	9.2	9.1
	8	20.2	21.0	8.7	9.0	14.7	15.1	9.2	9.4
	9	18.6	22.6	10.5	11.3	16.6	16.4	10.5	11.8
	10	13.9	19.1	13.7	12.4	18.0	15.7	12.5	17.2
	Total	100	100	100	100	100	100	100	100
OWE individuals	1	10.6	12.3	25.2	26.2	14.1	16.5	13.2	5.6
	2	14.5	20.9	14.1	15.0	10.4	15.4	16.2	18.0
	3	14.5	14.4	9.4	9.6	10.0	9.8	15.2	18.5
	4	12.0	12.5	10.1	8.7	10.3	9.2	10.6	11.2
	5	12.1	11.3	9.7	10.3	10.9	10.1	8.5	10.4
	6	11.0	10.1	8.0	8.7	10.6	10.1	7.1	8.9
	7	11.2	8.3	7.8	6.6	10.7	9.5	7.6	8.1
	8	8.3	5.6	7.0	7.0	9.8	8.1	7.3	6.9
	9	4.1	2.9	4.9	5.6	7.8	6.8	8.1	6.7
	10	1.8	1.8	3.8	2.5	5.4	4.5	6.2	5.7
	Total	100	100	100	100	100	100	100	100

TAB. 4 illustrates changes in the distribution of four income types across household deciles: disposable income, labour market income and two types of social transfers which are meant to substitute labour market income. Employment-related social insurances include a number of contribution-based benefits which can be received in case of unemployment and sickness while means-tested benefits can be also received by individuals who have not previously contributed to their financing (e.g., social assistance). The values in the table indicate the percentage shares of each household decile of the aggregate sum of each income type in Malmö as a whole. All household deciles except the three highest ones have experienced a decrease in their shares of the aggregate disposable income. Looking at the shares of aggregate labour market income, the three highest household deciles gained the most, while the share of the second decile was the only one to remain invariable. Interestingly, it is possible to observe an opposite trend with regard to welfare transfers. Deciles from the sixth decile upward decreased their shares

of aggregate employment-related welfare transfers while deciles from the fifth decile onward saw their shares of aggregate means-tested transfers drop. Therefore, while the distribution of labour market income has become more concentrated in the highest deciles, welfare transfers have been increasingly targeted on the lowest deciles (with the exception of the first one). Changes in the distribution of income components thus resulted in a stronger dependence of low-income households upon the welfare state while well-off households experienced an increase in their shares of aggregate labour market income.

Table 4. Income distribution across household deciles, by income component, 1991 and 2008

Household deciles	Disposable income		Labour market earnings		Employment-related social insurances		Meanstested benefits	
	1991	2008	1991	2008	1991	2008	1991	2008
1	3.9	2.1	1.7	1.2	4.3	4.1	15.3	11.5
2	6.2	4.9	1.9	1.8	6.9	10.9	24.6	29.0
3	7.0	6.0	2.4	1.9	8.8	15.1	25.0	29.7
4	7.7	6.8	5.0	3.3	11.1	13.6	13.0	17.1
5	8.6	7.9	7.9	6.4	11.1	11.7	7.7	5.7
6	9.4	9.2	10.2	9.8	11.6	10.6	5.1	3.1
7	10.6	10.6	12.3	13.0	12.0	9.6	3.5	1.8
8	11.9	12.3	15.1	16.0	12.2	9.2	2.4	0.9
9	13.7	14.6	18.3	19.6	12.4	8.4	1.9	0.6
10	21.0	25.7	25.1	27.1	9.6	6.9	1.4	0.6
Total	100	100	100	100	100	100	100	100

The next step is to analyse how changes in the distribution of income components influenced total income inequality. Following Lerman and Yitzhaki (1985), the Gini coefficient can be interpreted as follows:

$$Gini = Q_c = \sum_{c=1}^{C} S_c G_c R_c$$

where Q_c is the contribution of each income component to total income inequality and can be partitioned into three factors: the share of each income component in total income (S_c), the Gini coefficient corresponding to the distribution of each income component (G_c) and the correlation between each income component and total income (R_c).

TAB. 5 shows the contribution of eight income components to changes in the Gini coefficient. Labour market income, employment-related social insurances and means-tested benefits are defined as before. The other five income components are: pensions, child allowances (whose amount is dependent upon the number of minor children),

student support, capital incomes and taxes (which can be regarded as negative incomes). Between 1991 and 2008, the household Gini coefficient increased of 34.5% (0.086 points). Labour market income inequality accounted for 66.7% (0.057 points) of the rise in the Gini coefficient while capital income inequality accounted for 32.8% (0.028 points). Among welfare transfers, pensions became more unevenly distributed while inequality continued to be especially offset by taxes (which reduced the Gini coefficient of – 0.107 points in 1991 and of – 0.106 points in 2008). Interestingly, employment-related social insurances changed from increasing to decreasing income inequality while means-tested benefits slightly reduced their capacity to counteract inequality. The main drivers of inequality in Malmö between 1991 and 2008 have thus been labour market earnings and capital incomes while social transfers, except for pensions, contributed to a reduction of the Gini coefficient.

Table 5. Decomposition of the change in the household Gini coefficient: the contribution of eight income components, 1991 and 2008

Income components	Contribution of income components to the Gini coefficient			
	1991	2008	Change 1991-2008	
			Absolute v.	Percentage
Labour market earnings	0.329	0.386	0.057	66.7
Employment-related social insurances	0.016	–0.003	–0.019	–21.9
Means-tested benefits	–0.021	–0.017	0.004	4.5
Pension	0.006	0.026	0.020	23.8
Child allowance	0.000	–0.001	–0.001	–1.2
Study support	–0.003	–0.007	–0.005	–5.5
Capital income	0.027	0.056	0.028	32.8
Taxes	–0.107	–0.106	0.001	0.8
Total household Gini coefficient	0.248	0.334	0.086	100

6. Neighbourhood income inequality and residential segregation

The household-level analysis indicated that the Swedish-born moved upwards in the income distribution while OWE-individuals moved downwards and that household income inequality was especially driven by labour market earnings and capital incomes, which became more unequally distributed.

This section will focus on neighbourhood income inequality. Neighbourhoods have been identified in the Small Areas for Market Statistics (SAMS-areas) which represent the smallest and most reliable sub-municipal division available from Swedish official statistics.

TABB. 6 and 7 illustrate changes in labour market, demographic and socioeconomic characteristics of the neighbourhoods of Malmö, which have been divided into deciles. SAMS-areas have been firstly ordered by mean neighbourhood household income, from the lowest to the highest. Then, the population of Malmö has been divided into deciles starting

from the 10% residing in the neighbourhoods with the lowest mean neighbourhood household income and allocating the remaining part in the other deciles[3].

TAB. 6 shows that employment rates declined in all neighbourhoods, although this decrease was above the city-wide mean only in those belonging to the poorest three deciles and to the tenth one. However, in 2008, the first four neighbourhood deciles continued to be marked by lower-than-average employment rates while all the other deciles had values higher than in Malmö as a whole.

Changes in employment rates were reflected in changes in mean household incomes. The poorest five neighbourhood deciles experienced increases in disposable income and in labour market earnings which were lower than the city-wide average. All neighbourhood deciles experienced a decrease in their mean incomes from employment-related social insurances. Mean income from means-tested benefits instead fell in all neighbourhood deciles except for the first and the second. In particular, the increase was of about one third in the poorest neighbourhood decile, which was also the only one to experience a decline in mean labour market earnings. The increase in inequality has been thus associated with a stronger targeting of welfare state transfers not only on low-income households but also on the most economically deprived neighbourhoods.

Table 6. Employment rate for prime age adults (aged 25 to 54) and percentage change in mean annual household income (for four different income components: values for 1991 have been adjusted to 2008 prices) across neighbourhood deciles and in Malmö as a whole, 1991-2008

Neighbourhood deciles	Employment rate		Percentage change in average household income			
	1991	2008	Disposable income	Labour market earnings	Employment -related social insurances	Means-tested benefits
1	56.1	43.7	2.8	–7.9	–25.1	33.1
2	69.8	62.2	9.3	11.9	–18.4	15.9
3	77.9	70.7	15.4	20.2	–13.0	–2.8
4	80.7	75.3	20.6	32.7	–20.0	–13.6
5	84.0	79.3	24.9	31.9	–14.9	–30.4
6	86.6	82.0	29.8	48.0	–21.4	–28.7
7	85.8	83.3	34.3	46.3	–11.1	–32.6
8	88.9	85.6	36.2	22.2	–21.6	–41.0
9	92.0	86.1	34.5	32.8	–11.2	–18.4
10	91.6	84.3	37.6	34.2	–20.7	–1.3
Malmö	81.3	75.4	28.1	34.7	–18.4	–8.2

[3] The SAMS-areas whose populations are positioned on each decile cutting point have been allocated in the corresponding higher decile.

To what extent were these changes in the economic character of neighbourhoods also accompanied by changes in the composition of their resident population?

TAB. 7 indicates that, already in 1991, the poorest neighbourhoods of Malmö had a larger proportion of OWE-individuals than the city as a whole. In 2008, these neighbourhoods experienced a further rise in the proportion of OWE-individuals among all age-groups. For instance, in the first decile, the number of OWE-children was 6.2 times more than that of Swedish-born children in 1991 (a value 17.6 times higher than the city-wide average). In 2008, this ratio increased to 32.9 (a value 38.7 times higher than that of Malmö as a whole). Meanwhile, the same ratio decreased in the tenth neighbourhood decile from 7 times to 14 times lower than the city-wide average. A similar trend is observable among other age-groups, indicating that the widening of neighbourhood income inequality was reinforced by a spatial polarization along ethnic lines.

Table 7. Ratio between OWE individuals and Swedish-born individuals across neighbourhood deciles and in Malmö as a whole, by age group, 1991 and 2008

Neighbour hood deciles	Children		Young adults		Prime-age adults		Elderly	
	1991	2008	1991	2008	1991	2008	1991	2008
1	6.15	32.89	0.41	1.57	0.91	4.08	0.26	1.64
2	1.94	7.50	0.19	0.55	0.50	1.18	0.17	0.81
3	0.59	2.85	0.14	0.41	0.28	0.63	0.10	0.48
4	0.47	1.41	0.11	0.30	0.21	0.49	0.06	0.25
5	0.38	1.02	0.11	0.23	0.22	0.41	0.07	0.17
6	0.19	0.43	0.08	0.15	0.14	0.21	0.05	0.13
7	0.12	0.34	0.07	0.14	0.12	0.21	0.04	0.13
8	0.14	0.19	0.07	0.10	0.13	0.18	0.06	0.08
9	0.07	0.15	0.03	0.10	0.08	0.19	0.02	0.10
10	0.05	0.06	0.04	0.05	0.06	0.11	0.03	0.06
Malmö	0.35	0.85	0.13	0.32	0.22	0.45	0.07	0.22

An increase in neighbourhood income inequality may be caused either by a widening in the income gap between rich and poor households or by changes in the ways in which households are distributed within a city, e.g., due to an increase in the propensity of households with similar incomes to reside in the same neighbourhoods. Following Chen *et al.* (2012), total neighbourhood inequality (I_T) can be defined as an additive function of inequality between neighbourhoods (I_B) and inequality within neighbourhoods (I_W):

$$I_T = I_B + I_W$$

This equation can be rearranged in order to express inequality between neighbourhoods in the following form:

$$I_B = I_T - I_W = I_T \times \left(1 - \frac{I_W}{I_T}\right)$$

where the where the term in parentheses on the right-hand side represents an index of economic segregation which is influenced by the degree of internal homogeneity of neighbourhoods in relation to total inequality in a city. The index of economic segregation in fact indicates that I_B may increase either as a consequence of an increase of I_T or as a consequence of a decline of I_W. This index varies from 0, when all neighbourhoods have an identical income distribution (which is also identical to the city-wide distribution), to 1, when households of each neighbourhood have identical incomes (and economic segregation is maximum). Therefore, as neighbourhoods become more internally homogeneous in terms of household income, I_W decreases while the index of economic segregation increases. A change in inequality between neighbourhoods in two points in time can be expressed as the log form of the sum of the change of its components:

$$\Delta ln(I_B) = \Delta ln(I_B) + \Delta ln(I_W)$$

TAB. 8 documents changes in total neighbourhood inequality, in between-neighbourhood inequality, in within-neighbourhood inequality and in the level of economic segregation in Malmö in the period 1991-2008. In this table, only SAMS-area with at least 100 inhabitants have been taken into account. In the period question between-neighbourhood inequality rose of 0.514 log points and total inequality among households contributed for 0.553 log points to this change but this effect was counteracted by a decrease in economic segregation by – 0.039 log points. The decrease in economic segregation was due to an increase in neighbourhood heterogeneity (which rose by 0.561 log points). Hence, the increase in neighbourhood income inequality in Malmö has not been a consequence of an increase in sorting by income in neighbourhoods but a consequence of the increase in income inequality among households in the city as a whole.

Table 8. Neighbourhood segregation indices for Malmö, 1991 and 2008

Neighbourhood segregation indices	1991	2008	Change in percentage points	Change in log points
Total neighbourhood inequality	0.133	0.230	73.8	0.553
Between-neighbourhood component	0.023	0.039	67.2	0.514
Neighbourhood Sorting Index (*NSI*)	0.176	0.169	–3.8	–0.039
Within-neighbourhood component	0.109	0.191	75.2	0.561

7. Conclusions

According to Charles Tilly, changes in the attitudes towards social inequalities tend to reflect changes in the patterns of social inequalities but they «exercise little independent influence on their initiation» (Tilly, 1998, p. 15). In a similar manner, this paper attempted to explain how the recent emergence of a underclass debate in Sweden may have reinforced and even offered some sort of legitimization for the process of widening inequality, but it should not be seen as the cause of its initiation. The e causes of the increase in inequality in

Sweden should be rather traced back to the restructuring of the welfare state which began before the recent emergence of a underclass debate.

Income inequality dynamics in Malmö have been, in this respect, illustrative of the consequences of the reduced redistributive effect of social transfers on income inequalities. For what concerns individual-level between-group inequalities, the data showed that the increase in inequality has been primarily due to an exacerbation of labour market-related rather than ethnic-related disparities. The household-level analysis indicated that OWE-individuals have especially suffered from a worsening of their socioeconomic conditions compared to the Swedish-born. At the same time, it has been found that social transfers became more strongly targeted on the bottom of income distribution. These two parallel trends may have contributed, on the one hand, to the consolidation of the view of welfare dependency as a social problem concerning only the most deprived individuals and, on the other, to an "ethnicization" of redistributive conflicts between wage-earners and welfare recipients. Another factor which may have contributed to the shifting conceptual ground of social policy debates in Sweden has been the increase of residential segregation levels. While studies of residential segregation in Sweden have predominantly focused on the extent to which the former operates as a contributing factor for inequality, the evidence presented in this paper suggests that the causal relationship is in the first place opposite. In fact, at least in Malmö, residential segregation seems to have primarily been an outcome of the increase in income inequality. No evidence has been found that the increase in neighbourhood income inequality has been associated with a stronger homogeneity of the social composition of neighbourhoods.

As mentioned in the introduction to this paper, Malmö perhaps represents an extreme case of socio-spatial polarization tendencies in Sweden. If further research will support these results and will find that income inequality operated as a contributing factor for residential segregation also in the other Swedish cities, the policy implication which may follow is that general welfare policy influencing income distribution, rather than area-based programs targeted at neighbourhoods, should be at the centre of current debates on residential segregation in Sweden.

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