ARBEIDSNOTAT FRA AVDELING FOR PERSONSTATISTIKK

BEFOLKNING OG LEVEKÅR

Report from Multidisciplinary Research
Conference on Poverty and Distribution
Oslo, November 16–17, 1992

Part 5
Parallel Session 4
Poverty – Development and Duration

FORORD

I denne serien samles notater innen feltet
befolkning og levekår som har krav på en
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PREFACE

This series contains papers within the field
of population and living conditions. The
papers are expected to be of some general
interest, and presents work in progress, or
other notes worth a limited distribution.

    The views expressed in this paper are
those of the author(s) and do not neces-
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Report

from

Multidisciplinary Research Conference

on

Poverty and distribution

Oslo, November 16-17, 1992

Parallel session 4
Poverty - development and duration

November 16th and 17th 1992 the Central Bureau of Statistics, Norway arranged a multidisciplinary research conference on poverty and distribution in Oslo.

The aim of the conference was

* to present and discuss various approaches and methods in the study of poverty and distribution,

* to present and discuss results of Norwegian and foreign investigations of the scope of poverty, its distribution and development, its causes and remedies, and

* to identify relevant areas for research on poverty in Norway and other countries.

Researchers from more than twenty countries participated. The conference partly consisted of plenary lectures and discussions, and partly of parallel sessions where individual participants had the opportunity to present and discuss their own papers.

The conference report includes the lectures of the main speakers and the papers presented at the the conference, and consists of seven issues of Working papers from Department for Statistics on Individuals and Households. The first one includes the lectures given in the plenary sessions, while the others includes the papers from each of the parallel sessions:

1 Plenary lectures
2 Paralell session 1. Approaches to the study of poverty. Subjective and objective indicators of poverty.
3 Parallel session 2. Income and consumption. Distribution and poverty.
4 Parallel session 3. Who are the poor? Comparisons between groups and countries.
5 Parallel session 4. Poverty - development and duration.
6 Parallel session 5. The welfare state, distribution policy and poverty.
7 Parallel session 6. Less developed countries: Who are the poor, where are they located and why are they poor?

Multidisciplinary Research Conference on Poverty and Distribution
Soria Moria Conference Center, Oslo

Programme

November 16th:

10.30 - 10.45	Opening
10.45 - 11.45	Prof. Jonathan Bradshaw, University of York, Britain: Why and how do we study poverty in industrialized western countries. Various approaches to the study of poverty. Lecture and plenary discussion.
11.45 - 12.45	Lunch
12.45 - 13.45	Prof. Bernard M.S. van Praag, Erasmus University, Netherlands: How poor are the poor? Relative and absolute poverty. Subjective and objective indicators of poverty.
13.45 - 14.00	Pause
14.00 - 15.00	Prof.Lee Rainwater, Harvard University USA: Who are the poor? The distribution of poverty. Comparisons between various groups and various countries.
15.00 - 15.15	Pause/coffee
15.15 - 17.15	Parallel sessions with presentations and discussions of contributed papers.
17.15 - 18.15	Prof.Greg Duncan, Ann Arbor, USA: Poverty's development and duration. Panel studies.
19.30	Get-together
20.00	Festive dinner

November 17th:

08.45 - 11.00	Parallel sessions with presentations and discussions of contributed papers.
11.00 - 11.15	Pause/coffee
11.15 - 12.15	Prof.Stein Ringen, University of Oxford, Britain: The welfare state, distribution policies, and poverty. Analyses of measures and policies to combat poverty.
12.15 - 13.15	Lunch
13.15 - 14.30	Presentation of International Research and statistical Programmes on Poverty.
14.30 - 14.45	Pause
14.45 - 15.45	Panel discussion. Challenges and possibilities facing poverty research focusing on data requirements.
15.45 - 16.00	Conclusion and closing led by a representative of the Central Bureau of Statistics.

RESEARCH CONFERENCE ON POVERTY AND DISTRIBUTION
OSLO, NOVEMBER 16-17, 1992

Parallel session 1
Approaches to the study of poverty. Subjective and objective indicators of poverty.

Session leader: Dr. philos Lars Gulbrandsen, INAS, Norway

Mr. Karel Van den Bosch, UFSIA, Belgium: Poverty and Social
    Security in Seven Countries and Regions of the E.C.

Prof. John Veit-Wilson, Dept. of Applied Social Science, England:
    Confusions between Goals and Methods in the Construction & Use
    of Poverty Lines.

Mr. Arne S. Andersen and mr. Jan Lyngstad, Central Bureau of
    Statistics, Norway: Payment problems or poverty? Norwegian
    households 1987 - 1991.

RESEARCH CONFERENCE ON POVERTY AND DISTRIBUTION
OSLO, NOVEMBER 16-17 1992

Parallel session 2.
Income and consumption. Distribution and poverty.

Session leader: Mr. Ib Thomsen, Central Bureau of Statistics,
    Norway.

Mr. Thor Olav Thoresen, Central Bureau of Statistics, Norway: Child
    Care Subsidies and Effect on Distribution.

Ms. Hilde Bojer, Department of Economics, University of Oslo,
    Norway: Gender, occupational status and income inequality in
    Norway.

Prof. Leif Nordberg and Rec.ass. Markus Jäntti, Åbo Akademi
    University, Finland: Statistical inference and the measurement
    of poverty.

Dr. Jolanda van Leeuwen, Erasmus University Rotterdam, The
    Netherlands: The Leyden Poverty Line when Prices are Income-
    Dependent. Abstract

Dr. Jørgen Aasness and Ms. Jing Li, Central Bureu of Statistics,
    Norway: A microsimulation model of consumer behavior for tax
    analysis. Abstract

Mr. Ib Thomsen and Mr. Dinh Quang Pham, Central Bureau of
    Statistics, Norway: An application of latent Markov models to
    estimate response errors from repeated surveys.

RESEARCH CONFERENCE ON POVERTY AND DISTRIBUTION
OSLO, NOVEMBER 16-17 1992

Parallel session 3.
Who are the poor? Comparisons between groups and countries.

Session leader: Ms. Gunvor Iversen, Central Bureau of Statistics, Norway.

Dr. A. Jan Kutylowski, Poland: Distribution of subjective income deprivation in Poland 1981 -1990.

Ms. Iulie Aslaksen, Central Bureau of Statistics, Norway and ms. Charlotte Koren, INAS, Norway: A women's perspective on poverty: Time use, income distribution and social welfare.

Dr. Björn Gustafsson, Göteborg University, Sweden and Dr. Ludmilla Nivorzhkina, Rostov University, Russia: Relative Poverty in two egalitarian societies. A comparison between Taganrog, Russia during the Soviet era and Sweden.

Mr. Lars B. Kristoffersen, NIBR, Norway: Social Indicators of Child Poverty.

Ms. Randi Kjeldstad, Central Bureau of Statistics, Norway: Pre valence and Change in Low Income among Male and Female Singles and Lone Parents in Norway through the Nineteen Eighties.

Mr. Børge Strand, Central Bureau of Statistics, Norway: Regional location of Poverty in Norway.

Dr. Hans de Kruijk, Erasmus University, The Netherlands: Location of poverty in Pakistan.

RESEARCH CONFERENCE ON POVERTY AND DISTRIBUTION
OSLO, NOVEMBER 16-17 1992

Parallel session 4.
Poverty - development and duration.

Session leader: Dr. Kari Skrede, INAS, Norway.

Dr. R. Muffels, Tilburg University, The Netherlands: The Evolution
    of poverty according to objective and subjective standards.

Mr. Kjell Jansson, Statistiska Centralbyrån, Ørebro, Sweden: Low
    income per year is not enough to measure poverty.

Prof. Dr. Bea Cantillon, UFSIA, Belgium: The "zero-sum crisis":
    the stability in the distribution of income and welfare in a
    period of economic crisis.

Mr. Jon Epland and Mr. Leif Korbøl, Central Bureau of Statistics,
    Norway: Duration of Poverty in Norway in the 1980s. Some
    longitudinal results from the Norwegian socio-economic panel
    (NSP)

RESEARCH CONFERENCE ON POVERTY AND DISTRIBUTION
OSLO, NOVEMBER 16-17 1992

Parallel session 5.
The welfare state, distribution policy and poverty.

Session leader: Mr. Knut Halvorsen, NKSH, Norway.

Dr. Ivar Lødemel, FAFO, Norway: European Poverty Regimes.

Dr. Jørgen Elm Larsen, The Danish Equal Status Council, Denmark:
    Poverty debate and poverty research in Denmark.

Mr. Tapio Salonen, Sosialhögskolan, Sweden: Social assistance in
    a longitudinal perspective.

Mr. Sven-Åke Stenberg, Swedish Institute for Social Research,
    Sweden: Welfare Dependence in the Welfare State: A Cross-
    Generational Study in Post-War Sweden.

Dr. Lutz Leisering and Dr. Wolfgang Voges, Bremen University,
    Germany: Poverty produced by the welfare state. An application
    of longitudinal analysis.

Mr. Peter Whitesford, University of York, United Kingdom: Assessing
    the Impact of Anti-Poverty Policies: - the Australian
    Experience

RESEARCH CONFERENCE ON POVERTY AND DISTRIBUTION
OSLO, NOVEMBER 16-17, 1992

Parallel session 6.
Less developed countries: Who are the poor, where are they located and why are they poor ?

Session leader: Mr. Bjørn K. Wold, SSB, Norway

Mr. Mohamed Ould Abba, Ministry of Plan, Mr. Sidna Ould N'Dah, National Statistical Office, Mauretania: Le Profil de la Pauvrete en Mauretanie: Questions Conceptuelles, Instruments et Principaux Resultats.

Mr. William Bender and Mr. Simon Hunt, Ministry of Plan, Luanda, UNICEF, Luanda, Food Studies Group, University of Oxford, Angola & Great Britain: Poverty and Food Insecurity in Luanda.

Mr. Christian Grootaert, World Bank, USA: The evolution of welfare and poverty during structural change and economic recession - the case of Cote d'Ivoire 1985-88.

Mr. Wilson Mazimba and Mr. Emmanuel Silanda, Central Statistical Office, Zambia: Some indicators of poverty in Zambia.

Mr. Sidna Ould N'Dah, National Statistical Office, Mauretania: Enquete Permanente sur les Conditions de Vie des Menages en Mauretanie.

Mr. Jeannot Ngbanza and Mr. Perkyss Mbayndoudjim, ECAM, Bangui, Central African Republic: Mesure de la Pauvrete: Les Travaux en Cours en Republique Centrafricaine.

The evolution of poverty according to objective and subjective standards

Paper for the Multidisciplinary Research Conference on Poverty and Distribution, November 16-17, Oslo, 1992.

by Ruud Muffels

Abstract

The paper deals with the evolution of poverty using data from the Dutch Socio-Economic Panel. The data cover the period 1985 to 1988. The paper is particularly focused on a comparison of objective and subjective poverty standards as regards the incidence of poverty at one point in time as well as across time. In the first part of the paper the issues are dealth with whether income-based and consumption-based poverty standards must be conceived as being complemetary to each other or as being mere substitutes. The analyses show that being deprived not necessarily means being in income insecurity according to the income-based standards. Income and consumption deprivation obviously refer to quite distinct concepts of poverty. The conclusion must be that a multi-method approach of poverty, in which evidence is collected on both, income-based and consumption-based standards is needed to gain insight into the complex relationships that condition the prevalence of poverty. From the panel evidence it becomes clear that either which poverty line is taken, about *twice* as much people are at risk during the four years period (1985 to 1988) than at any particular year. So, income mobility appears to be quite high. This is confirmed by the results of the mobility and duration analyses on *income poverty*, which show that mobility into and out of income poverty is quite high over the years. At the same time it emerges from the duration analysis, that permanent subsistence insecurity is quite high too. In the four years under observation, about 40 to 50% of those who became poor in the first year of a spell remained poor during the whole observation period and obviously, they failed to escape from income insecurity. However, the outcomes differ quite a bit across the various poverty lines.

Tilburg, October 1992.

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1. Introduction.

The interest in literature for the issue of poverty is as persistent as poverty itself. Even in advanced countries like the Netherlands with an elaborate system of social security, quite a lot of attention and debate is addressed to the issue. However, this assertion is valid only, since the concept of poverty itself has been subject to scientific evolution. Because, if the word "poverty" is preserved for situations of "absolute" poverty portrayed with terms like "destitution", "physical survival" or "visible hardship", it seems out of order to address so much attention to the issue in affluent societies as has been and still is done. It then appears misplaced to focus on the subject against the background of widespread starvation through famine and violence. But even if one adopts the "absolutist" view on poverty, in the operationalization of the concept of poverty or in the definition of the poverty line $z^*(x)$, "relativity" can hardly be avoided because one has to specify the function that relates the variables x to the threshold level z^*. Even if these variables refer to diet standards or calory tables (Orschansky, 1965) the threshold values will be determined by the specific natural and social conditions in society. Hence, there is, a priori, no reason why these conditions and thus the threshold values will not change over time nor change in function of variations in conditions across societies (cf. Sen, 1983). The "absolute" poverty line in Somalia or Ethiopia will therefore likely differ from the one in former Yugoslavia. So, even the adherents of an "absolutist" notion of poverty like Sen is supposed to be, stress the relative elements in the "absolute" poverty thresholds.

Likewise, the "absolute" budget standards used in the famous late nineteenth poverty study of Booth in London and in the notorious Rowntree studies in York in 1899, 1936 and 1951, appeared to include relative elements. The budget standard defined in the early Rowntree studies was based on nutritional and other requirements necessary to relieve the individual from "hunger and starvation". In the replication study of Rowntree in 1936 and even more so in 1951 it was recognised that the "basket of goods" should contain not only goods such as food, clothes and shelter, but also goods like a newspaper and membership of a labour union, which were hitherto not considered to belong to the minimum basket. Hence, the standard itself appears to be subject to change due to changes in standards of living which had taken place during the pre-war period.

Nonetheless, few would challenge the view that the face of poverty in poor countries appears to be quite distinct from that in affluent societies, so the definition should reflect both, "absolute" and "relative" aspects of poverty.

The evolution of the poverty concept may therefore be delineated in ascertaining that in the course of time a move took place from *absolute* notions to *relative* notions of poverty. The content of the concept of pover-

ty moved into a relative direction while it was recognized that the views on the "absolute" minimum standards of living are sensitive to changes in economic well-being itself. It also became more relative as it was recognized that the subjective evaluation or the feelings of deprivation matter. These feelings of deprivation correlate with objective conditions but the association needs not be perfect. The focus on the subjective aspects of poverty refer to the utilitarian tradition of poverty research which has acquired firm ground in Dutch poverty research practices. This interest in the subjective aspects of poverty did not mean that poverty had a purely subjective or individual meaning, though it implied that the common perceptions, views or opinions about a minimal standard of living in society determine the level of the poverty-line to family type (consensual approach).

These changes in the definition of poverty have been reflected in "new" terms such as *subjective poverty* (e.g., Goedhart, Halberstadt, Kapteyn & van Praag, 1977), *subsistence insecurity* (e.g., Deleeck & Berghman, 1980) and *relative deprivation* (Runciman, 1966; Townsend, 1979; Mack & Lansley, 1985).

The distinction between "absolute" and "relative" definitions appears to be a very important one. From a policy perspective this is evident, whereas if an absolute view on poverty would be defended, the eradication of poverty could be pursued by stimulating economic growth and relieving people from "famine and starvation". In affluent societies, there would probably be no poverty issue. However, if a "relativist" view on poverty is adopted, poverty will persist in affluent societies to the extent that inequality remains present. This brief review of the debate on the "absolute" and "relative" conceptualization of poverty reveals that views, as regards the definition of poverty, widely differ according to the judgements of "experts" involved. In quoting Atkinson (1989) that "the choice of the poverty line is a matter about which views may differ", the point is stressed that the choice of a definition implies "normative judgements" about the most appropriate poverty-line. However, the assertion of Atkinson was only based on the many views expressed in the debate on "poverty-indices", being composite *income* measures.

Yet, if the poverty-line z^* would not have been defined *unidimensionally*, as being a function of income or money resources alone, $z^*=Z(y)$, but *multidimensionally*, as being a function of income and any other vector of dimensions not being income or money resources, $z^*=Z(y,z)$, the task of defining poverty becomes even more arduous. Judgements may not only differ on how y should be measured but also on the choice of the dimensions included in the vector z and if consensus would exist on that issue, on the measurement of the various dimensions. If additionally poverty would not have been defined in terms of y measuring the level of resources, but in terms of $U(y)$ and $U(y,z)$, the utility or welfare at-

2

tached to income and the vector z, the views on the definition of poverty would vary even more.

The idea behind the "multi-method" approach is, that there is no unique definition of poverty which is capable of predicting exactly and objectively where and when an individual or household is poor. Yet, if the researcher wants to provide scientific knowledge on the distribution and evolution of poverty in society, which is uninfluenced by normative judgements, the choice of poverty standards should be based on the idea that the poverty standards used, are representative for the wide range of views and definitions of poverty.

2. The choice of the poverty-lines

The choice of the poverty-lines to be used in the analyses is, nevertheless, not an easy task. The choice will be based on the idea that poverty is always measured, directly or indirectly, in terms of *low welfare or low utility*, where welfare may be measured in terms of income, consumption, deprivation or capabilities (Sen, 1976). In welfare-economic literature, poverty is considered to be a state of low welfare. With regard to the measurement of welfare a distinction is made between direct and indirect methods of welfare measurement (Kapteyn, 1985). The traditional economic approach of *indirect* measurement of welfare refers to the concept of "revealed preferences" (preferences are deduced from the utility-based consumption decisions of individuals and households). The *direct* method refers to the concepts of direct measurement of preferences by means of direct questioning. Either, the respondent is asked to evaluate the income that corresponds to a *minimum* welfare level, with wordings like "absolutely necessary to make ends meet", or the respondent is asked to evaluate the income that corresponds to various welfare levels, with wordings like, "very good", "good", "sufficient","insufficient", "bad" and "very bad" (Kapteyn, Goedhart, Van Praag et al.,1977; Deleeck, Berghman, 1980; Van Praag, Halberstadt, Kapteyn, 1978).

Yet, in the article of the sociologist Ringen (1990), the distinction between direct and indirect approaches of defining and measuring poverty refers to consumption-based methods (direct approach) and income-based methods (indirect approach), respectively. In order to avoid confusion, the terms direct and indirect are reserved for the method of measurement of poverty in *welfare* terms, where welfare may be measured in terms of consumption or income. In this paper both, direct and indirect approaches will be applied. From the set of direct approaches, the consumption-based deprivation poverty line (SDL) and the income-based subjective poverty line (SPL) have been applied. From the set of indirect approaches, the national social minimum income standard (NSMI) and the European statistical minimum income standard (ESMI) have been utilized.

3

Because of limitations in the data set of the Dutch Socio-Economic panel, which does not contain information on consumption, the budget approaches remain out of scope and question the "representativity" of the choice set. However, it has been postulated that the inclusion of a *deprivation index* will, at least partly, reflect the set of consumption approaches.

The so-called *poverty-indices* approach will only, indirectly, be embodied in the selected poverty-lines. The "poverty indices" embrace three aspects of poverty: the proportion of poor in society, the relative poverty gap and the income inequality amongst the poor (cf. Sen, 1983; Ravi Kanbur, 1984; Hagenaars, 1985). Because the composite character of these *income poverty indices* may hamper the insight in the separate components, which are considered to be equally important, evidence will be presented on separate components, such as the head-count ratio and the poverty gap ratio. The component of income inequality amongst the poor will not be captured, though evidence will be presented on the distribution of poverty, broken down to population categories. This analysis will provide evidence on the "inequality of poverty *risks*" amongst the poor.

In the sequel, the four poverty lines that will be utilised in this paper, will be explained briefly.

3. Operationalization of the poverty line

3.1. Subjective Deprivation poverty Line (SDL)

First, an attempt is made to apply a direct measurement approach of poverty based on the elaboration of a *consumption* index (Muffels and Vriens, 1991). Building further on the deprivation-index approach of Desai & Shah (1985), a so-called subjective deprivation scale (SDS) and a subjective deprivation poverty line (SDL) has been elaborated.

The deprivation index score (SDS) is defined for every head of household in the sample. It is defined as the weighted sum of the deprivation score of each consumption item out of a large set of items or indicators of the actual living conditions of people in society (the list of items is given in appendix 1). The deprivation score reflects the weighted sum of disutilities (have-nots) and utilities (haves) over the entire set of items included in the index. The weights for each item represent the welfare contribution of these "have-nots" and "haves". The weights are considered to be dependent on the proportion of people in the *"reference group"* of the person possessing or lacking the item. Deprivation is higher the more a good, the individual *lacks*, is *possessed* in the reference group of the person. Deprivation is lower the more a good, the individual *possesses*, is *lacked* in the reference group of the person. Theoretically, the method is derived from the "Preference Formation" theory of Kapteyn (1977). It

4

takes account of the various dimensions of the living conditions (so-called life resources) and tries to assess to what degree households take part, consume or participate according to these dimensions or, if not so, are deprived of it. It is a deprivation standard which rests not just on the measurement of the deprivation of life resources in the household but also on the measurement of the respondent's welfare assigned to the set of goods and activities of which the index of life resources consist. The weights are dependent on the good being a "have" or a "have-not" and being a "necessity" (need) or a "non-necessity" (want). From this, one may conclude that the index is a kind of subjectively assessed measure of deprivation. However, as it is based on the perceptions of all households in the sample, it is rather a kind of *intersubjective* measure.

Next, a deprivation poverty line (SDL) has been calculated by way of implementation of the following survey question, the so-called life resources evaluation question (LREQ). This question is posed in the questionnaire, directly after the battery of questions on the actual living conditions on the basis of which the deprivation index score (SDS) had been calculated.

" If you consider the way in which your household lives at the moment, would you consider your household as poor, or in fact as rich, or as somewhere in between? You may answer by giving a score to your situation. A score of 1 means that you consider your household as being very poor, a number of 10 means that you consider your household as being very rich".

In the next step a regression model is estimated in which the answers on this LREQ are assumed to be determined by a set of variables indicating the needs and wants of the household, the level of economic resources and the financial situation. The model assumes that the score on the LREQ is determined primarily, by the score on the deprivation index, which is assumed to reflect the (inverse) of the consumption welfare of the household. Next, a set of variables such as income, age of the head, family composition, family status and financial stress factors (perception of current financial situation, financial expectations) are added to control for unobserved "life resources" indicators. In the final step the poverty line is set where the current life resources of the household are evaluated with the schoolmark 5.5, the midpoint of the scores between 5 and 6 on the scale ranging from 1 to 10. The households for which the current life resources are evaluated with 5.5 are supposed to be the experts which are best aware of the minimum needs of the household. As with a school mark in the Netherlands, it is assumed that a score of 5.5 indicates the dividing line between a "satisfactory" and an "unsatisfactory" score, in this case as regards the evaluation of one's current life resources indicating the living conditions of people.

From the estimation of the regression model it appears, that the evaluation of the life resources in terms of assigning a schoolmark between 1 and 10 is influenced by the level of consumption welfare, by the marital status of the head, by reference group factors and by financial stress factors. Given the individual scores on these variables for each household and making use of the parameter estimates of the regression model (estimated on the whole sample), the SDL poverty-line can be calculated for every household in the sample. In this paper two poverty lines associated with different evaluation levels are calculated, the SDL standard corresponding to an evaluation level of 5.5 and the SDL poverty-line corresponding to an evaluation level of 6. Within the Dutch schoolsystem the schoolmark 6 is supposed to represent the verbal qualification "satisfactory". Because the extended list of 45 items was submitted to the respondents for the first time in October 1988, the SDL measures (SDL-5.5 and SDL-6) could be calculated for 1988 only.

3.2. Subjective poverty and the SPL

Secondly, a direct measurement method based on *income* has been applied. According to this approach, persons are considered to be poor when their actual income is below a level of income which corresponds to a minimum level of welfare. The income that corresponds to the minimum welfare level is acquired by means of direct questioning. As such, the so-called Subjective Poverty Line is based on views of all households on the minimum income they need to acquire a certain minimum standard of welfare (Goedhart, Halberstadt, Kapteyn, Van Praag, 1977; Colassanto, Kapteyn, van der Gaag, 1984; Kapteyn, Kooreman and Willemse, 1988; Muffels, Kapteyn, Berghman, 1990). For the purpose of measuring that income a question is included in the questionnaire on the absolute minimum income a household needs in order to make just ends meet. This question is called the Minimum Income question (MIQ).

" Which after tax monthly income do you consider to be the absolute minimum for your household in your circumstances? In other words: if you had any less you would not be in a position to make ends meet."

The answers to the MIQ appear to be related to a number of determining variables. Based on the preference formation theory (Kapteyn, 1977), the model used in this research, assumes a close relationship between the answers on the MIQ and family composition (costs/need factors), current household income (influences of habit formation) and reference group characteristics (reference group influences). As might be expected the household's minimum income appears to be higher the higher the actual income of the household is.

6

The poverty line is then set where the actual household income equals the minimum income reported with the MIQ. Again, each household's income is compared to the level of the Subjective Poverty Line for that household. If disposable household income is below the Subjective poverty line a household is considered to be poor. In Muffels, Kapteyn, Berghman et al. (1990) a number of SPL models have been estimated, quite simple ones where the model variables just consist of actual income and family size, and more complex ones where a correction is made for selectivity bias with regard to the measurement of income and where other variables are added to the model such as family composition (age and rank order of the children) and reference group factors. In this paper a correction is made for selectivity bias and the model includes family composition and reference group variables[1].

3.3 Subsistence insecurty

According to indirect definitions of poverty, people are considered to be poor or subsistence insecure if they do not have at their disposal sufficient resources in order to achieve a particular minimum level of subsistence. Poverty then becomes operationalized as the situation in which the disposable income of a household is below a "subsistence income minimum". According to these income approaches, poverty is both, *defined* and *measured*, in terms of an indirectly assessed yardstick of welfare being income. In our research two different kinds of indirect income poverty standards are applied: the national social minimum income standard (NSMI), and the European statistical minimum income standard (ESMI).

3.3.1 The National Social Minimum Income standard (NSMI)

Although no official poverty line exists in The Netherlands, the level of the lowest social security benefits in the General Social Assistance Act (ABW) might be considered to represent a minimum income level required for households to live in security of subsistence. This mimimum income level is generally referred to as the "*social minimum*". The method is developed in Berghman, Muffels, De Vries, Vriens (1988) and in Muffels, Kapteyn, Berghman et al. (1990) and will be referred to as the National Statistical Minimum Income approach (NSMI).

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[1] The model applied in this thesis is a slightly modified version of the model applied in Dirven, Berghman (1991). Parameter stability is still assumed, a correction for selectivity bias connected with item non-response of income has been implemented but instead of fixing the regressors for family size, age and reference group at a value for a particular year, they are calculated for every year separately.

7

The calculation of this poverty line for every type of household in the sample is based on the benefit levels of the "General Social Assistance Act", the family allowance schemes and the study grants schemes. The calculation of the poverty line levels for the various household types in the years 1985 and 1986 is explained in more detail in Muffels et al. (1990, pp. 127-135). The levels of the social assistance benefits depend on the composition of the household the person lives in, the age of the person, and whether or not the person shares an income with others in the household. In determining the NSMI levels also holiday allowances, incidental benefits, family allowances and student grants have been included in the calculations. For every household in the sample a NSMI ("Social Minimum Income") has been calculated on the basis of the conditions set out in these statutory benefit schemes. Next, each household's disposable income has been compared to the NSMI levels corresponding to that type of household. If disposable income is below the NSMI poverty line, a household is considered to be poor. In reality, households may indeed have an income below the safety net the "social minimum" is supposed to be, because of a reduction in the level of benefits (sanction regulations, payment of credit commitments, capital income ceilings) or because of non-take up of benefits (underconsumption of social security benefits the household is entitled to but for whatever reason does not want or dares to claim). Underreporting of income could of course be another reason. Yet, only information is used from households reporting on an extensive list of 27 income components on which information is collected in the questionnaire (Kapteyn, Melenberg, 1990). The NSMI standard is to a certain extent based on a kind of social or political consensus, or so to speak on the views of experts (politicians) on the minimum income level their society is prepared to guarantee in order to safeguard subsistence.

3.3.2. European statistical minimum income standard (ESMI)

The poverty standard which has been used in research commissioned by the European Community (second poverty programme) to measure the extent of poverty in Europe is based on the idea of setting the poverty line at a level which corresponds to a certain fraction of median equivalent disposable income in every country. The line used in this paper follows O'Higgins and Jenkins (1989). Standardization of household income means, correcting for differences in welfare due to differences in household composition. These differences can be expressed in a so-called equivalence scale for various household types. Various equivalence scales are distinguished in literature. The equivalence scale proposed by O'Higgins and Jenkins is explained before and implies assigning an equivalence factor 0.7 to each additional adult in the household and 0.5 to each additional child. Again, if the household's disposable income falls

8

below this poverty line, the household is considered to be poor. The poverty standard will in the sequel be referred to as the European statistical minimum income standard (ESMI).

3.4. Evaluation

Implicitly, some arguments are already given for the use of four poverty lines simultaneously. The NSMI poverty line is applied because it enables to test the aim of policies to guarantee an adequate minimum income. Yet, it would be dangerous to use solely this standard. A downward adjustment of the politically guaranteed minimum income amounts in the Social Asistance schemes would lead to the situation that poor households having labour or social security income from outside social assistance would see their income rise above the level of the "social minimum" though their income did not change at all. Hence, the poverty rate would decrease as a result of the fall in the minimum income levels. This would clearly be an artefact of the NSMI line which for that reason is not considered to be a very good yardstick of poverty. Therefore, the subjective poverty line approach has been embraced to represent an income poverty standard that is not directly affected by policy making.

In the European setting there is a growing need for comparative poverty research. Yet, so far, neither the NSMI nor the subjective poverty line are very adequate to base comparative research on. Therefore also the ESMI method, as developed by O'Higgins & Jenkins (1989) has been applied.

One major drawback of this standard is related to the use of uniform equivalence scales. It means that welfare differences between households because of differences in size and composition are assumed to be the same in every member state. It has been shown that this assumption is not very likely met in reality (Deleeck, Van Den Bosch, De Lathouwer, 1991).

That a household is in subsistence insecurity according to the ESMI standard does not necessarily mean that the household is also in deprivation poverty. Having a low income not necessarily implies experiencing an insufficient "standard of living" in terms of consumption or general living conditions. Living conditions are determined by a lot more aspects than income alone. For that reason a multidimensional poverty line has been applied alongside the other poverty-lines.

4. Data and operationalization.

The analyses carried out in the study are based on the data sets of individuals of the Dutch Socio-Economic Panel (SEP). The datasets of 1985 to 1988 are matched by the personal identification number.

9

To be able to calculate the incidence of poverty at individual level, the household income and the poverty line at household level are assigned to every person in the household. If the household lives in poverty, it is assumed that all persons in the households live in poverty. This assumption implies that the household is considered to be the consumption unit and not the individuals within households. In welfare economic terms, this meets the assumption of a "joint utility function". The same procedure is followed for other variables at household level, such as the socio-economic status of the head of household, the marital status of the head, the age, education level, number of children and so on. From the perspective of analyzing the dynamics of poverty or change in general, it is very important to take into account changes in household composition, because family composition often changes fundamentally over the years for various reasons, such as birth and death, children leaving home, divorce or separation and marriage or remarriage. Because these changes often alter family well-being considerably, limiting the analysis of poverty dynamics to the household level appears to be inappropriate. A proper way to deal with the issue of the choice of the level of analysis is to switch the analyses from the household level to the individual level.

Dynamic analyses of poverty can then be carried out at individual level taking into account household characteristics. This approach is followed in section 7 on poverty dynamics. For a more detailed operationalization of all variables used in the analysis the reader is referred to Dirven, Berghman (1991).

5. The situation in 1988

From Table 1 it appears that in 1988 a sizeable minority of the population, ranging from 6%, according to the NSMI standard, to 22% according to the highest deprivation standard (SDL-6), lives in insecurity of subsistence or relative deprivation. It also becomes clear that the average individual poverty gap, defined as the income shortfall of the household income (y) to the poverty line (z)[2], amounts to approximately 20% for the deprivation standards and 25% for the income poverty standards.

According to the NSMI standard, 7.9% of all households and 6.2% of the population have an income below the "subsistence minimum" in 1988. The high proportion of poor by the NSMI standard seems at first sight surprising. When first confronted with it some years ago, the hypothesis of "non-take up" was formulated, which issue is interesting from

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[2] The poverty gap is defined here as $(y-z)/z$, where y represents household income and z represents the household poverty line. The poverty gap is calculated for every household in the sample. In the next step the poverty gap is assigned to each person in the household. In table 5.1 the average individual poverty gaps are given.

a scientific point of view since little is known about the "causes" of non-take up (Berghman, Muffels, 1988). There is some evidence that "non-take up" appears to be important, even after taking into account temporary reductions in the benefits because of "credit commitments", repayment schedules, recovery of "mortgage" credits", incomes or means tests as well as work tests (cf. van Oorschot, 1991). In a number of earlier publications the issue of "non-take up" became apparent in the presence of relatively high poverty rates within particular categories of the population. It appears, that particularly persons living in households having income from means-tested benefits (social assistance schemes), have high poverty risks presumably due, at least partly, to high "non-take up" rates.

It becomes apparent from Table 1 that in 1988 19% of all households and 12% of the population was living in a situation of subjective subsistence insecurity. At the same time 11% of all households and 10% of the population was living in a situation of relative deprivation according to the low SDL standard (SDL-5.5).

Table 1. Poverty ratios and poverty gaps for five poverty lines, data from the Dutch Socio-Economic Panel, 1988.

| Poverty standards | Poverty ratios (in %) | | Poverty gaps in % of poverty line | |
	Househ (N)	Pers (N)	Househ (Np)	Pers (Np)
Consumption stand.				
SDL 5.5	10.6 (4,329)	9.6 (11,244)	22.0 (459)	21.0 (1,079)
SD 6 ·	23.2 (4,329)	20.2 (11,244)	21.0 (1,004)	21.0 (2,276)
Income stand.				
SPL ·	18.6 (4,687)	12.3 (12,582)	24.0 (870)	25.0 (1,547)
NSMI	7.9 (4,745)	6.2 (12,787)	26.0 (373)	26.0 (787)
ESMI	7.5 (4,759)	9.4 (12,808)	27.0 (359)	24.0 (1,203)

N= the total number of households or persons in the sample
Np= the number of *poor* households or *poor* persons

The difference between the figures for the household and the individual may be attributed to the unequal distribution of poverty to household size. Subsistence insecurity according to the minimum income standard occurs more frequently with smaller households than with larger households. The reverse holds for the ESMI poverty standard, for which the percentage of poor households (9.4%) is higher than the population percentage (7.5%). This has to be attributed to the rather steep e-quivalence scale of the European minimum income standard. The equivalence scale for large households appear to be much larger in case of the ESMI standard than in case of the NSMI standard. This is depicted in Figure 1 below (E=elderly, A=adult, C=child, 1P=one-parent).

Figure 1.

Figure 1. Equivalence scales by household type
for three poverty lines

1 Adult = 1.0

Household types

— ESMI   — SPL   — NSMI
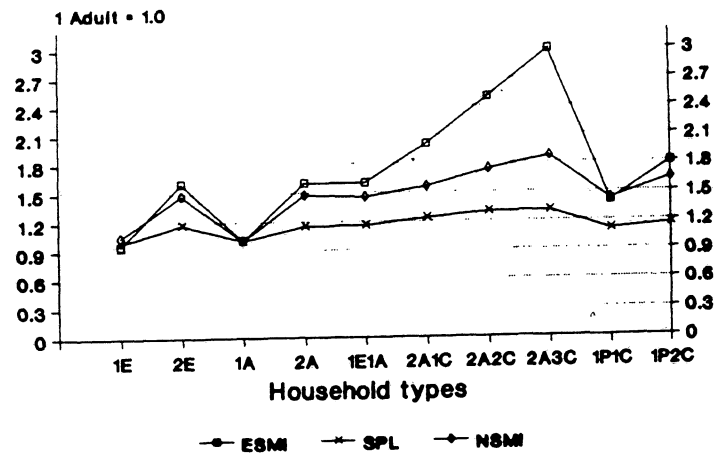
Apparently, from the evidence in Table 1, insecurity of subsistence and relative deprivation show to be related, though the relationship seems not at all perfect. Not every person living in insecurity of subsistence appears to be relatively deprived, and at the same time it turns out that part of the population in security of subsistence live in deprivation poverty (cf. Table 2). Only 29.9% of all "insecure" by the European standard also belong to the "deprived poor" by the deprivation poverty line (SDL-5.5). On the other hand, some 7.6 to 8.5% of the secure by the income standards, turn out to have an income below the deprivation threshold. However, if the high deprivation standard is used (SDL-6), it emerges that more than 50% of the ESMI-insecure also belong to the SDL-insecure, and some 17 to 19% of those living in subsistence security belong to the deprivation poor. The relationship between the income standards shows to be much stronger. The cross classification of the national minimum income standard to the SPL standard and the European income standard shows that about 86% of the NSMI-insecure also belong to the subjective poor (SPL) and more than 60% also belong to the ESMI poor. About 45% of the SPL-poor also belong to the NSMI-poor, but only 37% belong to the ESMI poor. All in all, it emerges, that the consumption-based deprivation standards reveal quite different results in terms of poverty incidence in the population than the income poverty standards. The concepts of income poverty show to be closely associated while the association of these with the consumption-based deprivation indices appears to be rather weak. For that reason a *multi-method approach* was proposed to take account of the conceptual differences between the various poverty-lines.

12

Table 2. The relationship between deprivation-poverty and income-poverty in 1988 (N=13,771).

| | SDL-5.5 (in %) | | SDL-6 (in %) | |
	Deprived	Not-Deprived	Deprived	Not-Depr.
SPL				
Insecure	23.0	77.0	48.2	51.8
Secure	7.8	92.2	17.1	82.9
NSMI				
Insecure	27.6	72.4	50.7	49.3
Secure	8.5	91.5	18.9	81.1
ESMI				
Insecure	29.9	70.1	52.3	47.6
Secure	7.6	92.4	17.6	82.4

In Table 2 the focus was on the bivariate relationship between income and deprivation poverty. To gain a better insight in the variables that determine this bivariate relation, an explorative multivariate analysis has been carried out on the relationship between income and deprivation poverty. For that purpose a logistic regression model was estimated. For the dependent variable a categorical variable was chosen: "being deprived or not". As independent variables, first, a variable indicating income poverty according to the NSMI and SPL standards was implemented, named "poverty status". Next, some variables were implemented which from earlier findings proved to be significant indicators of poverty (Muffels, Kapteyn, Berghman et al., 1990; Dirven & Berghman, 1991), such as the number of children in the household, the number of employed, the age of the head of the household, the education level of the head, the gender of the head and the head's marital and socio-economic status. Finally, the household income has been added to the model equation, reflecting the effect of "lack of resources" on deprivation poverty. The results are given in Table 3. A separate model has been estimated for both, the low (SDL-5.5) and high (SDL-6) deprivation standard. Because the results turn out to be very similar for both models, only the results for the SDL-5.5 model are presented. The fit of the model indicated by the pseudo R^2 value (McFadden, 1984) and the significance level of the parameter estimates appear to be quite good.

The exponent values in the last column represent the conditional probabilities for being in deprivation poverty. Values below 1 indicate a proportional lower probability of being in deprivation poverty compared

to the reference category (indicated with the figure 0), and values above 1 indicate a proportional higher probability.

First, consider the income variable which is measured in thousands of dutch guilders. The exponent value of 0.96 for the SDL-5.5 model indicates that an increase in annual income with 1,000 dutch guilders (representing an average increase in income of 2.4%) will decrease the risk of being in deprivation poverty with 4%. The effect of income in this model proves to be much lower than the effect of income if the estimation results are examined of a similar model estimated on the ESMI standard (exponent value of income is 0.66). In the ESMI model a 1,000 Dutch guilders increase, which represents an average increase of income of 2.3%, causes the probability of being poor to fall with 44%. The conclusion is that the probability of being poor according to the SDL standard has a much lower association with income and turns out to be much more associated with other variables such as being unemployed or being divorced. The results suggest that income and consumption deprivation are rather dissimilar concepts. It seems to be justified to consider consumption-based and income-based standards as complements instead of as substitutes.

To gain further insight into the relation between deprivation and income poverty consider the exponent values of the "poverty status" variable. The poverty status variable is assumed to measure the *subsistence insecurity* of the respondent according to an objective (NSMI) and subjective standard (SPL). The insecure/secure category of this variable represents those people living in subsistence *insecurity* by the NSMI standard, but who at the same time live in subsistence *security* by the SPL. This category may be referred to as the "subsistence insecure, subjective secure" population category. The exponent value is 4.4 which indicates that the probability of being in deprivation poverty for this "insecure/secure" group is 4.4 times higher than the probability of being in deprivation poverty for the reference category which is the "secure/secure" group (subsistence secure, subjective secure).

In the model estimations concerning the European standard (ESMI), the exponent values both, for this category and for the other categories of the poverty status variable appear to be much higher. This means, that the relation of subsistence insecurity with being at risk of poverty by the European *income* standard, turns out to be much stronger than the relationship of subsistence insecurity with *deprivation* poverty. However, the probability of being in deprivation poverty is still considerably lower for those living in subsistence security, either by the national social minimum income standard or the subjective poverty line.

Table 3. Estimation results of a logistic regression model of deprivation poverty, 1988.

Variables in the equation	SDL-5.5 Parameter Estimates	Sign. level	Exponent
Poverty status (NSMI/SPL)			
- secure/secure	0	0	0
- insecure/secure	1.47	5.2*	4.4
- secure/insecure	0.28	2.0*	1.3
- insecure/insecure	0.05	0.3	1.1
Marital status			
- married	0	0	0
- divorced/separated	2.04	13.1*	7.7
- widow(ner)	0.69	3.6*	2.0
- unmarried	0.39	2.4*	1.5
Number of children	0.44	10.3*	1.5
Number of elderly	-0.00	-0.0	1.0
Number of employed			
- no employed	0	0	0
- 1 employed	-0.40	-2.8*	0.7
- >=2 employed	-0.39	-2.4*	0.7
Socio-economic status			
- employed	0	0.	0
- unemployed/retired	0.70	3.5*	2.0
- disabled	1.66	10.8*	5.3
- social assistance	1.40	6.2*	4.0
- no profession	0.69	4.2*	2.0
Education level			
- primary education	0	0	0
- secondary lower	-0.67	-6.4*	0.5
- secondary higher	-1.03	-10.4*	0.3
- tertiary	-1.53	-7.3*	0.2
- university	-0.61	-3.1*	0.5
Age class			
- <34 years	0	0	0
- 35-44	0.26	2.3*	1.3
- 45-54	0.67	4.8*	2.0
- 55-64	-0.26	-0.1	1.0
- 65-74	-1.19	-3.3*	0.3
- >=75	-1.03	-2.7*	0.4
Gender(1=male)	-0.11	-0.8	0.9
Household income/1000	-0.40	-9.7*	0.96

Log-likelihood = -2,393
Pseudo R^2 = 0.301
N = 10,969; Npoor = 1,031.
* = significant if t-ratio (coefficient/st. error)>=2

The deprivation standards, being *direct* standards and the relative minimum income standards (NSMI, ESMI), being *indirect* standards, turn out to be related though the relations are not at all perfect. The multivariate relationship of poverty with its determinants, obviously, differ across both types of poverty standards. To illustrate this further, a closer look at some other variables is needed. The evidence for the "marital status" variable" reveals, that persons living in households with a divorced or separated head, have a 7.7 times higher probability of being in deprivation poverty compared to persons living in households with a married head. Persons living in households with a disabled head or a head in receipt of a social assistance benefit, prove to have much higher risks of being in deprivation poverty than persons in households with an employed head. Note that these large effects of marital status and socio-economic status, occur indepently of the effect of income. Low deprivation risks are, on the other hand, characteristic for persons living in two-earners households, in households with a highly educated head or an elderly head. If these results are compared with earlier results with respect to the income poverty standards, it happens that the general picture is equivalent, though for some categories, such as the disabled, the elderly and the students, the differences between being at risk according to the income-poverty standards and according to the deprivation-poverty standards are quite large. For the disabled category the deprivation-poverty risks appears to be much higher than the income-poverty risks. The reverse holds for the elderly and the students

6. The incidence of poverty in the period 1985-1988

It appears that a slight decrease in the incidence of poverty between 1985 and 1988 occurs by the NSMI and ESMI poverty standards, while the SPL reveals a slightly upward trend in the incidence of poverty. Applying a standard loglinear approach (implemented in the SPSS-Loglinear routine), the results indicate that, except for the SPL, the trends turn out to be insignificant. The increasing trend for the SPL, which becomes manifest in 1987, may indicate that the Reform of the Dutch Social - Security system, as of 1 January 1987, resulted in increasing feelings of subsistence insecurity.

The poverty gaps by all poverty lines turn out to be very similar and quite stable over time. Except for the year 1985, the relative poverty gaps remain at a rather constant level of about 25% to 29% both, at individual and household level (cf. Dirven & Berghman, 1991).

16

Table 4. Poverty ratios and poverty gaps for three income poverty lines, 1985-1988.

Poverty standards	1985 %hh	%pers	1986 %hh	%pers	1987 %hh	%pers	1988 %hh	%pers
SPL	14.7	10.1	16.3	11.5	18.4	12.8	18.6	12.3
NSMI	8.7	7.3	7.5	6.6	-8.0	6.1	7.9	6.2
ESMI	8.5	11.1	8.2	10.5	8.5	10.2	7.5	9.4
Average poverty gaps in %								
SPL	21	23	24	26	24	25	24	25
NSMI	19	21	26	28	27	29	26	26
ESMI	21	20	26	24	26	23	27	24

% pers = % per person
% hh = % per household

7. Panel analyses on poverty

The results sofar, focused on the evolution of poverty at the level of population groups. Panel analyses on poverty which are based on a continuing monitoring of the same households over time, may inform us on the changes and evolution of poverty at the individual level. Only these kind of analyses can provide evidence on the *permanent* versus *transitory* nature of poverty and insecurity of subsistence.

7.1. Mobility analyses

First, some evidence will be presented on the upward mobility (moving out of subsistence insecurity), downward mobility (moving into subsistence insecurity) and persistent poverty (staying insecure). Therefore, in Table 5.5, the flows into and out of subsistence insecurity between 1985 and 1988 are presented for those persons who participated in the panel in both years, 1985 and 1988. That was the case for about 77.3% of all persons who have reported an income and have participated in 1985.

Table 5. Upward and downward mobility and persistent subsistence insecurity between 1985 and 1988.

Poverty	% Poor in:		Upward Mobility		Downward Mobility		Persistent insecurity		Relative mobility (Odd's ratio)	
	'85	'88	% all	% sec	% all	% insec		% all	% insec	
SPL	9.6	11.1	5.1	53.2	6.6	7.3	4.5	46.8	11.1
NSMI	6.7	5.1	5.4	82.0	3.9	4.2	1.2	18.0	5.0
ESMI	9.9	8.4	5.8	58.7	4.3	4.8	4.1	41.3	13.9

sec = security of subsistence
insec = insecurity of subsistence
% all = as a percentage of all persons
% poor in '85 = upward mobility + persistent poverty
% poor in '88 = downward mobility + persistent poverty

In Table 5. evidence is given on the transitory and persistent character of income poverty. Persistent income poverty is highest according to the SPL standard. Approximately, 47% of the subjective insecure in 1985 turn out to be still living in subjective insecurity of subsistence in 1988. The percentage of persistent poverty by the European standard is somewhat lower, 41.3%, but the lowest estimate is obtained from the NSMI standard. Only 18% of all persons insecure in 1985 are still insecure in 1988. It appears that the stability of the income poverty standards is highest for the SPL and the ESMI standard and lowest for the national social minimum income standard. This is confirmed from the evidence in the last column of Table 5. It gives the cross-product or odd's ratio, which represents a measure of association between income security in 1985 and 1988. The higher the ratio, the higher relative *stability* of the poverty standard is. The odd's ratio is the ratio of the odd's for the non-poor compared to the poor and the odd's for the poor compared to the non-poor. In case of a two by two crosstable, the odd's ratio is given by: (f11*f22/(f21*f12), where the f_{ij}'s are the frequencies of observations in the various cells and the numbers refer to the cell locations.

In percentages of the insecure and secure population respectively, upward mobility seems to be much higher than downward mobility. Upward mobility is highest for the NSMI standard. More than 80% of the NSMI-insecure move out of subsistence insecurity in the years between, while according to the subjective standard, only 53% of all persons were capable of escaping from subsistence insecurity. These percentage are much

18

higher than the percentages linked with movements *into* subsistence insecurity. Only 4% of those living in security of subsistence appear to move into poverty in the years between 1985 and 1988. This may likely give rise to the assessment that in the late 80's the numbers in "permanent poverty" are low compared to the numbers in "transitory poverty" and therefore policies should more focus on the issues of "transitory poverty" and "permanent wealth". One needs to be cautious, however, to draw these farreaching conclusions on the basis of these findings only, since the transition probabilities estimated in this classical mobility table may be biased because of the occurence of measurement error (see Hagenaars, 1990; Van de Pol, 1989).

To test the assumption that all changes have to be attributed to measurement errors, a stationary latent mixed Markov model with correction for measurement error is estimated (van de Pol, 1989)[3]. The model is given in (1) where the θ's are the proportions of the population belonging to chain s and being in state i,j,k,l on occasion 1,2,3 and 4 respectively. The π's represent the proportions of the population in latent chain or class s, the δ's represent the initial proportions in the states of latent chain s and the τ's the transition probabilities of the population within each chain s into the various states between the subsequent years. The *stationarity* restrictions reflect the general first order Markov assumptions. The transition from a state of income insecurity to income security or vice versa, is assumed to depend only on the state currently occupied and not on the duration of the spell in the initial state. The latter assumption is obviously a very strong one, because there is much evidence that the issue of duration dependency is important with respect to poverty (cf. Bane & Ellwood, 1986). The Mover- Stayer assumption reflects the case of two or more chains with one chain fixed as a stayer chain with unity transition probabilities for i=j and zero transition probabilities for i≠j.

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[3] Various models are estimated with PANMARK, a programme developed by van de Pol (1989).

$$\theta \frac{y1234}{sijkl} = \pi^y_s \, \delta^{y1}_{si} \, \tau^{y12}_{sij} \, \tau^{y23}_{sjk} \, \tau^{y34}_{skl}$$

Restrictions:

(1) Stationarity:

$$\tau^{y12}_{sij} = \tau^{y23}_{sjk} = \tau^{y34}_{skl} \tag{1}$$

(2) Mover-stayermodel:

$$\tau^{ytt+1}_{sij} = 1 \ \forall i=j; \ =0 \ \forall i \neq j$$

The model is tested for the most stable poverty line, the ESMI standard. If no real change occurs over time and all change would have to be attributed to measurement error, the one latent static chain model (with two categories, the secure and the insecure) should fit the data. The one chain model turns out to have a bad fit. Several models with various numbers of latent chains òr classes were estimated. The best fit was optained with a three latent chain model in which one chain was fixed as a *stayer chain*, though the standard errors appear to be rather large. According to van de Pol (1989) this may be attributed to the relative short observation period of four years.

It emerges from the estimation results that during the observation period of four years, some 11% of the population belong to a latent class of *"movers"* either moving from the poor to the non-poor or from the non-poor to the poor. Almost 41% of this class appear to be initially poor. About 41% of all people belong to a class of *"stayers"* either remaining "poor" or "non-poor" during the observation period and 48% belong to a class of so-called *"mobile stayers"*, either staying non-poor in the four years period or becoming poor in at least one of the four years period. A subject for future research would be be to find out (by means of applying logit models) which factors determine the probability of belonging to these latent population classes. All in all, it might be concluded that mobility appears to be high even after correction for unreliability.

The Markov model has an important drawback which is that the estimation is based on the assumption that the transition probabilities are stable over time and independent of the duration in the initial state. It means that the model accounts for "state dependency" (secure, insecure), but not for "duration dependency". In assuming that the transition probabilities are stable over time, the correction for "unreliability" erroneously not sort out the effect of "serial correlation" over time, due to duration dependency, and the effect of measurement error. If the effect of "duration dependency" would have been isolated from the effect of measurent error,

20

mobility would have turned out to be even higher than the model predicts.

Table 6. Estimation results of a latent mixed Markov model with three latent chains of which one chain is fixed as a stayer chain, annual information on four waves of the SEP panel, 1985-1988 (N = 6,206; standard errors between brackets).

| | Proportions in class s, π_s^r | Initial Prop. δ_{si}^{r1} | Transition probabilities, τ_s^r | | | |
| | | | One year | | Three year | |
			1. Ins.	2. Sec.	1. Ins.	2. Sec.
Chain 1.	0.11 (0.076)					
1. Insecure		0.41 (0.14)	0.67 (0.15)	0.32 (0.19)	0.59	0.41
2. Secure		0.59 (0.14)	0.46 (0.20)	0.54 (0.20)	0.58	0.42
Chain 2.	0.48 (0.61)					
1. Insecure		0.06 (0.12)	0.17 (0.20)	0.83 (0.20)	0.05	0.95
2. Secure		0.94 (0.12)	0.05 (0.09)	0.96 (0.09)	0.05	0.95
Chain 3.	0.41 (0.67)					
1. Insecure		0.04 (0.068)	1.00 (fix.)	0.00 (fix.)	1.00	0.00
2. Secure		0.97 (0.068)	0.00 (fix.)	1.00 (fix.)	0.00	1.00

Fit indices

df=6
Likelihood ratio = 3.55
Probability level = 0.74
Pearson χ^2 = 3.53
Probability level = 0.74

7.2. Duration of poverty

From the cross-section analysis it became apparent, that in each of the four years, some 6 to 7% of the population have to rely on an income below the social minimum income level (NSMI standard). Yet, the panel analysis shows that as much as 14.5% of the population are in poverty during one of the four years under observation. A similar finding is found for those living in subjective poverty (SPL). The annual figures show that 10 to 13% of the population have an income below the subjective subsistence level, while approximately 21% of the population live below the subjective minimum in at least one year. For the ESMI standard the per-

21

centages are 9 to 11% and 19.4% respectively. In all cases it appears that about *twice* as much people are at risk during the four years period than at any particular year. Table 7 presents some more information on the evolution of poverty over time.

Table 7. Evolution of poverty between 1985-1988.

Duration	SPL %	NSMI %	ESMI %
Total	100.0	100.0	100.0
Percentage in poverty in any year	78.8	85.5	79.6
Percentage in poverty in at least one year	21.2	14.5	19.4
Of which in poverty during:			
1 year	59.7	74.6	63.5
2 years	23.4	20.8	21.0
3 years	11.7	3.9	12.5
4 years	5.1	0.7	3.0
Number of poor	3,483	2,379	3,184
Total	16,405	16,411	16,431

Despite the large proportions of people who are at risk at income insecurity across time, in general *stability* seems to be more common than change. According to the NSMI standard, more than 85% of the population remain in security of subsistence during the whole period. According to the subjective standard, the percentage is slightly lower, 79%. Table 7 also shows that a very high fraction of the poor remained poor for only one year. About 60% by the SPL, and even 75% by the NSMI standard, appear to be in income insecurity for just one year. These figures suggest that income mobility is extremely high, particularly in case of the NSMI standard. Apparently, poverty and insecurity of subsistence are permanent situations for only a minority of the population. Permanent poverty does not present itself from these figures to be a major issue for policy makers, although the outcomes differ quite a bit across the various poverty lines. In the sequel,however, it will be shown that this general conclusion underestimates the issue of permanent poverty.

The method applied here follows Duncan (1984) but has one major drawback, which is that *censoring* is not taken into account. For the poor

22

it is not known at the start of the observation period in 1985, how long they were poor in the past (left censoring) and for the poor at the end of the period, it is not known how long they will remain poor in the future (right censoring). To solve this problem it is necessary to switch to a spell approach (Bane and Ellwood, 1983, 1986). A poverty spell is assumed to start if in year t-1 someone is non-poor but moves into poverty between t-1 and t. Because it is not known at what time exactly someone became poor in the intermediate period, only discrete time models can be applied. If the respondent is observed for more than two years, *multiple spells* of poverty may occur. The classical approach to deal with this kind of spell data is the standard discrete time *"life-table"* approach. More advanced continuous models for analyzing mobility are history event analysis, survival analysis techniques, duration models and failure time models (see Kalpfleisch and Prentice, 1980). For this reason and since the observation period appears to be quite short, just 4 years, it was not feasible to apply these duration models. Instead the *life table* approach was relied on. In Table 7 the life table estimates by the various poverty lines are given. The information is again at individual level. The standard errors of the survival estimates (exit rates) are not depicted but appear to be small (on average between 2 and 3%).

Again, Table 8 provides evidence on the high mobility amongst the poor, particularly in the first year of a spell beginning. Almost 50% of all spells, according to the NSMI line, terminate in the first year after a spell beginning. For the ESMI and SPL standards the percentages appear to be much lower but still show that spells tend to end in the first year of a spell. If the spell lasts longer than one year exit probabilities fall down quickly, particularly according to the NSMI standard. In case of the NSMI standard, the exit rate falls in the second year to 16%. These findings confirm our earlier conclusion that a large number of spells appears to be spells of short duration, although the outcomes differ again quite a bit across the various poverty lines. Compared to the evidence in Table 7, the correction for *"right censoring"*, turns out to lead to higher (cumulative) survival rates. According to the NSMI standard, after three years, 58% of all spells were terminated, 42% of all persons experiencing a spell remain poor during the whole observation period. According to the SPL and ESMI standard, the percentages of persons remaining insecure during the observation period are higher, 52% and 50% respectively. Again, the conclusion should be that the ESMI standard and the SPL standard appear to be more stable than the NSMI standard. All in all, it might be concluded that the outcomes on the mobility flows into and out of poverty appear to set the various poverty line definitions quite apart from each other.

23

Table 8. Duration of poverty spells according to three income poverty lines, 1986 to 1988.

Spells in yrs	SPL Nx	Tx	Qx Px	Cum	NSMI Nx	Tx	Qx Px	Cum	ESMI Nx	Tx	Qx Px	Cum
1	1378	350	0.34	0.66	1006	371	0.49	0.51	1330	332	0.32	0.68
2	329	46	0.20	0.52	129	13	0.16	0.42	399	78	0.26	0.50
3	74	0	0.20	0.52	17	0	0.16	0.42	123	0	0.26	0.50
$\alpha =$	0.79 (0.08)				1.15 (0.19)				0.78 (0.03)			

Nx = number of observations at beginning of spell
Tx = number of terminations of spells
Qx = exit rate
Cum Px = cumulative survival rate
α = indicator for duration dependency
standard errors of α between parentheses.

In Table 8, information is also included on the occurrence of "*duration dependency*". The existence of duration dependency is very important from a scientific as well as a policy perspective, because if "duration dependency" occurs, the probability of escaping poverty rises or falls with longer durations of poverty spells. In case of "negative duration dependency", the probability to escape from poverty falls with increasing spell durations and in case of "positive duration dependency", the probability to escape from subsistence insecurity rises.

If it is assumed that the duration of poverty spells has a Weibull distribution, the occurrence of "duration dependency" may be investigated. In case of Weibull the survival function is given by:

$$S(t) = exp(-t^{\alpha})$$
$$\ln[-\ln S(t)] = \alpha . \ln t \qquad (2)$$

If the log minus log of the survival estimates is plotted against the log of time, a straight line will be found if the duration process indeed prove to be Weibull. In such a case, α can be estimated with OLS regression, where the time variable has to be weighted with the frequency of durations. In case of negative duration dependency the indicator α will be smaller than 1 and in case of positive duration dependency α will be larger than 1. In Table 8 the α's for the various poverty standards and the corresponding standard errors are given. Negative duration dependency is present with the SPL and the ESMI poverty line, which implies that the probability to escape from subsistence insecurity *falls* with longer durations of poverty spells. The α difference from one is significant because it exceeds the two times standard error interval. The reverse holds for the NSMI standard, for which α proves to be larger than 1, but which difference is not significant, because it falls within the two times interval of the standard error estimates. From Heckman and Singer (1982) it is well known that the duration effect may be overestimated because of the effect of *"unobserved heterogeneity"*. If the exit rate or hazard appears to be related to population group characteristics, part of the duration dependency effect has less to do with the autonomous time effect but more likely with unobserved differences between these groups.

The evidence across the three year period suggest that the issue of "persistent poverty" is of high relevance for current socio-economic policies. The percentage of the poor population that remain poor during the observation period is quite high, some 40 to 50%, though it differs quite a bit across the poverty lines. The proportion of "persistent poor" will presumably be even higher if information over more years would have been available. In the well-known article of Bane and Ellwood (1986), based on information of the PSID panel, it became clear, that over a period of 15 years, the bulk of the persons-years of poverty are accounted for by the long-term poor. However, the assessment of Bane and Ellwood with regard to the length of welfare spells is not unquestionable, because Blank (1989) found shorter spells of welfare use and less evidence for duration dependency.

8. Conclusions

In the first part of the paper the issues are dealth with whether income-based and consumption-based poverty standards must be conceived as being complemetary to each other or as being mere substitutes. From the analyses it became clear that being deprived not necessarily means being in income insecurity according to the income-based standards. Income and consumption deprivation obviously refer to quite distinct concepts of poverty. The conclusion must be that a multi-method approach of poverty, in which evidence is collected on both, income-based and consumption-based standards is needed to gain insight into the complex relationships that condition the prevalence of poverty.

At the same time, it became apparent from the cross-sectional information on the incidence of poverty in 1988, that problems of subsistence insecurity, subjective poverty and deprivation poverty present themselves as being widespread amongst the population. Even in the relatively wealthy Dutch society, they apparently could not be prevented by the operation of an elaborate social security system. Core determinants of the occurrence of poverty seem to be the conditions on the labour market and changes in family composition (marriage, separation, death of the partner).

Next, if the results on the trend analysis of poverty are looked at, it becomes apparent, that the incidence of poverty remains rather stable across the four year period. Also the poverty gaps show to be quite stable over time. Yet, if the panel evidence on poverty is examined, it becomes clear that either which poverty line is taken, about *twice* as much people are at risk during the four years period (1985 to 1988) than at any particular year. So, income mobility appears to be quite high.

This is confirmed by the results of the mobility and duration analyses on *income poverty*, which show that mobility into and out of income poverty is quite high over the years. At the same time it emerges from the duration analysis, that permanent subsistence insecurity is quite high too. In the four years under observation, about 40 to 50% of those who became poor in the first year of a spell remained poor during the whole observation period and obviously, they failed to escape from income insecurity. The outcomes differ quite a bit across the various poverty lines. The European standard (ESMI) appears to be the most stable poverty line, while the NSMI standard turns out to produce the highest mobility ratios. Nevertheless, mobility appears to be very high by all poverty lines even after correction for measurement error.

Those who succeeded in escaping from income insecurity seem to have moved out particularly in the first year of a poverty spell. For those who

26

were not capable of leaving poverty in the first year, the probability of leaving poverty falls very quickly in the years after. Again, because the stability of the various poverty lines differ quite a bit, the hazard or exit rates differ too. Nevertheless, the general picture appears to be very similar across the various poverty lines. Despite these similarities, it should be stated that the results on the cross-sectional as well as the panel analyses appear to be quite sensitive to the definition of the poverty line. For that reason the use of various poverty lines, simultaneously is highly recommended.

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28

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Appendix 1 The list of deprivation items

In the October wave of the Socio-Economic Panel of 1988 the following list of goods and activities is included (see Berghman, Dirven, Ter Huurne, Muffels, 1990).

The wordings are partly derived from Townsend (1987). The items wich are marked with a star have been excluded from the analyses because they were answered by a minority (less than 50%) of the sample of households. The question was posed to the head of households and the partner. Only the information is used from the head of household.

1. On average, one hot meal per day
2. A meal including meat, poultry or fish at least once every two days
3. Usually, enough food at home so as not to be hungry
4. Clothing which protects against cold and rain
5. Replacement of worn-out furniture with new furniture
6. Regularly buying of new clothes
7. Recreational goods such as sports equipment or a bicycle for the children*
8. A washing machine
9. A refrigerator
10. A telephone
11. Car
12. Home or personal computer
13. At least one week's annual holiday away from home (not visit to family)
14. Living in a well-maintained home
15. Sufficient heating in periods of cold weather
16. A home which is free from damp
17. Enough bedrooms to give each child older than ten years its own bedroom*
18. A WC of one's own in the home (not shared with other households)
19. A bath/shower of one's own in the home (not shared with other households)
20. Paying the rent or mortgage without problems
21. Paying the gas-, water and electricity-bill without problems
22. Garden, balcony or terrace
23. Consider the quality of products rather than the price
24. Home in well-maintained area
25. Living in an area with good shopping facilities
26. Live in an area with easy access to public transport
27. Live in a safe area
28. Live in an area with nursery/day-care centre for children (creche, community centre or club-house)*
29. Healthy working environment
30. Work entitling to a good supplementary company pension
31. Steady employment
32. Completed course of education after primary school
33. Completed course of education after secondary school
34. Regular contacts with family, friends or acquaintances
35. Having acquaintances, friends or family for diner at least once a month
36. Going out for the evening once every two weeks (without the children)
37. Contact with people in your area

30

38. Receive help from others when necessary
39. Membership of a social or cultural association (sport club, social club, music group etc.)
40. A life without money problems
41. Satisfaction with current life conditions
42. Live in an optimistic manner
43. In general live as yourself wish to do
44. Good health
45. Make good use of entitlement to public facilities/services

31

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31

Low income per year is not enough to measure poverty.

A study of distribution of poverty in Sweden including data about assets and debts.

by

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Abstract

It is not enough to have income as a measure on poverty. In this paper different poverty estimates which include financial assets are presented using Swedish data for 1990. A comparison is also made between a one year period and a two year period. The study shows that the poverty rate decreases by more than 50% when assets are included. There is also a significant decrease of the poverty rate when a two year period is studied. There is surprisingly small covariation when we compare households which receive social assistance with households which are classified as poor when we look at income for a whole year. About 40% of·those who received social assistance were classified as poor when looked at income per year. Only 20% of those who were classified as poor received social assistance. The result underlines that much more attention must be paid to the lower tail of the income distribution in order to make good estimates about poverty.

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Low income per year is not enough to measure poverty.
A study of distribution of poverty in Sweden including data from assets and debts.

Introduction

There are two common approaches when studying income distribution. The first approach considers income distribution for the whole population at a given time. The second considers income distribution over a life-time. A typical student can be classified as poor at a given time but if his education results in a higher income later in life then his life-time income will be over average.

There is no tradition in Swedish official statistics to show any estimates about poverty. There exists no official poverty estimate. A well-known commission in Sweden, Låginkomstutredningen, (low income commission) published several reports about the welfare situation in Sweden (Svenska folkets inkomster 1970). The tradition of publishing data about income distribution in Sweden has a wider approach than to study poverty. The concept is not poor people but people with a low income, and people with few resources. The resources are not only a matter of economic variables but also others like health, education and employment.

In the EC there are several statistical programs managed by the statistical bureau EUROSTAT. One of these programs has the task of measuring poverty in all member states. Many other countries outside the EC have traditions in poverty statistics. In the Agreement on European Economic Area (EEA-treaty) it is written that the EFTA countries in the future shall co-operate with EC with the same responsibility as the member states. This will lead to more poverty statistics in Sweden.

In this paper we analyse income distribution at a given time, 1990, and specially try to estimate poverty in Sweden. There has been several discussions about using an absolute value of poverty since the Rowntree study in the town of York in 1901(Rowntree). Should the absolute value remain constant or should it change as the evaluation proceeds. Should there rather be a relative estimate? (For further discussion see Sen and Townsend). Poverty estimates in this paper will deal both with relative poverty (less than 50% of the median value) and the absolute value of the poverty line. We will make a careful analysis of both the definitions of income and the population.

Three different statistical approaches are presented. The rate of poverty is calculated using an accepted method - 50% of the median value of adjusted disposable income. The two other poverty lines are derived from the standards used when giving social assistance.

One study found the poverty rate for all households in Sweden in 1984 was 12.7% (Gustafsson). In the study there were also some subjective estimates of the poverty line based on the opinions of the general public. In this case the poverty rate was 18.4%. In another report to the Ministry of Finance a new calculation about poverty was published for the period 1967-1987. Using the same data material for the same year, 1984, the poverty rate for all individuals was 11.1% (Jansson). The small difference was due to different definitions of income and population.

Data about income distribution at a given time is usually for a period of a whole year. This is unrealistic, for people below the poverty line the real-life income situation may be an every day problem but it may even be a problem for a period of weeks or months. By measuring poverty for a period of a whole year we reach other results than we do when we look at a special week or month. An individual can live in a household whith, for some period of the year, an income under the poverty line. If, during the same year, people in this household get money from employment then the income for the whole year may well be above the poverty line.

One measure of poverty is if people are living in a household that obtained social assistance during some part of the year. Some of these people will also be amongst those who are classified as poor for a whole year. But we will also show in this paper that some other will have an income higher than the poverty line when we look at income for the whole year.

To be poor is to lack resources. Resources are not only a matter of income. A household can have a higher consumption level with help from its own production (which is underestimated in the income statistics) despite very low income. A household can have assets and real estate like cars, houses with modern equipment and also financial assets even if their income is low. We cannot define these people as poor. If a household or a person in this situation is classified as poor then it is a question of a bad statistical definition.

2

In the second part the analysis of poverty is widened to include wealth. If we see poverty as a lack of resources in a wide range then we can also include assets and debts. This wealth may have been accumulated by savings or from other generations through inheritance. Different methods are presented to include wealth when calculating poverty.

In the final part we discuss what happens when the time period is two years instead of one. One reason to use a two year period is that the result is less dependent on wrong estimates when we have a longer period to analyse. We expect that the poverty rate declines.

Data

Data for this study originates from the Income Distribution Survey (HINK) that is managed by Statistics Sweden. The survey has a sample of 10 000 households and includes a two year panel. A household is usually in the sample two years. Data comes from three sources:

1. An interview concerning information about the composition of the household, employment and residence.
2. Administrative data from registers about income, transfers and taxes.
3. Information from the tax return form about capital income, different deductions, assets and debts of different kinds.

Disposable income is adjusted for all households with a national equivalence scale. This scale gives a value of 1.15 for a single adult, 0.75 for second adult and children of age 11 or older, 0.65 for children between 4-10 years, and 0.55 for children between 0-3 years.

The main population is estimated by the sample in which all individuals have been living in Sweden for at least 6 months. This means that people who died during July-December may be included in the survey. People doing national service are also included in the sample. Young people, 18 years or older, are defined as a household by themselves even if they are living together with their parents.

The official statistics on income distribution are published annually in three statistical reports. The most well known report for analysing income distribution is the report from the Income Distribution Survey, HINK(Statistiska meddelanden 1992). All figures published in the Statistical Report are based on household distribution.

Poverty - what ought to be measured

In this study we look at the population in two ways. First we use the definition that is used in the official statistics (POPULATION 1). For this purpose we will use the whole sample inclusive households which have not answered the interview. This can be done since all income data comes from administrative registers and from tax return forms which are collected for all individuals in the sample.

Secondly, we create a new population (POPULATION 2) of households and individuals where we have excluded the non response from the interview. In this net sample we have also excluded
- young people of age 18 or older who are living with their parents
- people who have economic support during the national service
- people who have not lived in Sweden for the whole year or have died during the year.

When the disposable income for these three categories is adjusted with the ordinary equivalence scale we argue that the estimates about their economic well-being will be misleading. Many of these individuals are, at least in part, supported by their parents or by the national budget. For people living less than a year in Sweden the adjusted income will be underestimated since the equivalence scale is for a whole year.

The analysis - part 1

In table 1 we see different results in the income distribution when we use households and individuals as the units we are studying. We use the population defined both as in the official statistics and as in Population 2.

The three categories excluded in POPULATION 2 (young people living with their parents, people doing the national service and people living a shorter period than a year in Sweden) are expected to have low incomes. The average value of adjusted disposable income increases when we exclude these categories. Looking at households, the average value rises from 80 300 to 84 100. The dispersion decreases, the value of the Gini-coefficient declines from 0.231 to 0.208. These differences are sigificant. There is no uncertainty due to sampling error because we use the same sample.

4

Table 1   Adjusted Disposable Income 1990 for Households and Individuals. Disposable Income defined as in the Swedish Official Statistics (DISP1)

	Average	Gini-coefficient	Coeffi-cient of Variation C.V.	Poverty rate: percent with income less than x% of median			Weighted Number	Un-weighted Number
				<40	<50	<60		
Population 1:								
Household	80 300	0.231	0.525	4.5	6.5	10.5	4 554 000	9 625
Individual	80 300	0.220	0.545	3.1	4.8	8.5	8 408 000	21 599
Population 2:								
Household	84 100	0.208	0.506	1.7	3.1	7.2	3 977 000	7 293
Individual	82 400	0.206	0.542	1.4	2.6	6.5	8 019 000	17 620

The differences are more evident when we focus on the poverty rate. When we examine 6.5% of the households in Population 1 have an adjusted disposable income that is less then 50% of the median value. When we use the definition of Population 2 we find that the poverty rate has decreased by half to 3.1%.

Individuals or households

There have been several discussions about using households or individuals as the observation unit in studies of income distribution. It is important to avoid the problem of differences in household composition in comparisons between countries or within one country at different times. In other topics about welfare and distribution of welfare we analyse individuals instead of households. A household of five individuals is then counted five times compared with a single person. In the following we will use individuals as the observation-unit.

There are two points that must be observed when using individuals as the observation unit. We still look at the households disposable income because all incomes within the household are collected to the household as an unit. What we assume with the statistics is that the economic welfare is the same for all members in the household. Still we have only observed one value of the disposable income for these members.

Secondly we do not know anything about the distribution within the household. (For further discussion see Jenkins 1991). We assume that the basic needs; food, housing, clothes and so on are supported for all members of the household depending on the individual needs. From a welfare point of view we say that this basic consumption is distributed fairly and evenly . The consumption surplus which a household can afford can however be distributed in an uneven way. We assume in this study that the distribution within the household is even. All persons in a household will have the same value of adjusted disposable income. We think that the influence on the result of an eventually uneven distributed consumption surplus is minor since we are dealing with households near the poverty line and therefore there is no space for a consumption surplus.

When we use individuals instead of households as the observation-unit we find changes in dispersion that can seem confusing. The Gini coefficient in Table 1 decreases and the coefficient of variation increases. This can be explained by the fact that Gini coefficient is more sensitive to changes in the middle and the coefficient of variation is more sensitive to changes at the top of the distribution.

The poverty rate decreases when we study individuals instead of households, 2.6% instead of 3.1% when we estimate the poverty rate at 50% of median value. The 6.5% value for households in Population 1 is two and a half times larger than the value for Population 2 and with individuals as observation-unit. This is remarkable since both estimates emerge from the same survey and can be used to present poverty.

These results are gained using traditional tools to measure dispersion and poverty with the definition of disposable income as it is defined in the official statistics.

The definition of disposable income used in Table 1differs a great deal from the recommendations in UN Guidelines. In this first definition of disposable income (DISP1) the gross interest is used and there is no value of income'from owner occupied houses. In DISP2 we adjust DISP1 by using the net value of interest and making an imputation of income for owner occupied houses. We also make adjustments for some tax subsidies for people living in owner occupied houses. This adjustment is of a technical matter ensure that income is comparable for all households and individuals. Despite it being a technical change it does influence the picture of distribution.(Jansson 1990)

Table 2   Adjusted disposable income 1990 for Households and Individuals. Disposable income = DISP2 definition. Population 2

	Average	Gini-coeffi-cient	Coeffi-. cient of Variation C.V.	Poverty rate: percent with income less than x% of median			Weighted Number	Un-weighted Number
				<40	<50	<60		
Population 2:								
Household :								
Sw.-scale	80 600	0.200	0.460	1.6	2.8	6.3	3 977 000	7 293
OECD-scale	92 600	0.196	0.459	1.6	2.7	6.1	3 977 000	7 293
Individual:								
Sw.-scale	78 500	0.201	0.488	1.5	2.6	6.0	8 019 000	17 620
OECD-scale	90 900	0.195	0.485	1.4	2.5	5.6	8 019 000	17 620

When we examine DISP2 we see lower values of adjusted disposable income compared with corresponding value in table 1 (80 600 compared to 84 100). The dispersion is also less when we use DISP2. The Gini coefficient changes from 0.231 to 0.200 for the household population using the Swedish equivalence scale. In table 2 we also show the value when we use the equivalence scale recommended by the OECD. (Single adult 1.0, second and subsequent adults 0.7, each child 0.5)

There is a notable difference in the average estimate when using the Swedish scale and the OECD-scale but the difference is very slight when we look at the dispersion. The Gini coefficient is somewhat higher when we use the Swedish scale. The poverty rate is nearly the same.

In the rest of this study we will continue to use the Swedish scale and the definition of disposable income connected to the UN Guidelines(DISP2).

Normative poverty line

A poverty line can be defined as the income level at which a household has a reasonable standard of living. This amount can be divided into two parts. First we have expenses for nutrition, clothes and some other basic consumption. This amount is calculated using the Swedish equivalence scale multiplied by a basic amount which is officially provided.

7

Secondly we have expenses for rent. Rent is calculated for different types of households and regions. This standardised value of rent is based on a standardised size that stipulates t two peoples to each room, excluding the living room.

Number in household	Number of rooms
1	1 and kitchen
2	2
3-4	3
5-6	4
7-	5

The value for this rent is than imputed by the statistical average value for this size and region.

Normative poverty line = Sw scale * basic amount + Standardised rent   (1)

By relating disposable income to this standardised poverty line we get a new measure of economic well-being. This ratio will be called Income Standard Normative (INCST-normative).[1]

INCST-normative = DISP2/ STANDARDISED POVERTY LINE   (2)

A household which has a disposable income on the poverty line will then have an Income Standard 1.0. A household with an income twice as high (Income Standard 2.0) can support another household of the same size. With the same population we can now see how many individuals there are living below this normative poverty line and compare the result with adjusted disposable income and the relative poverty line below 50% of the median value.

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[1]This approach has been presented in Sweden by Gustafsson (1987)

Table 3   Adjusted disposable income (Swedish scale) and Income Standard-normative 1990 Disposable income = DISP2 definition. Population 2

	Average	Gini-coefficient	Coeffi-.cient of Variation C.V.	Poverty rate: percent with income less than x% of median			Poverty rate percent with INCST < 1.0	Weighted Number	Un-weighted Number
				<40	<50	<60			
Population 2: Individual: Adjusted disposable income (Sw.-scale)	78 500	0.201	0.488	1.5	2.6	6.0		8 019 000	17 620
INCST-normative	1.86	0.195	0.481	1.5	2.5	5.7	4.2	8 019 000	17 620

The average value of Income Standard-normative in table 3 is 86% above the poverty line. The dispersion is nearly the same as for the adjusted disposable income. 4.2% of all individuals are living in households where the disposable income is below the poverty line.

Poverty line with individual needs

Now we will look at the poverty line with an individual approach. The core of this approach are the regulations for giving social assistance in Sweden. These regulations or recommendations are published by the National Board of Health and Welfare in Sweden. As with the standardised poverty line the level is divided into two sub-amounts. The first sub-amount is nearly the same as in the standardised poverty line. Using the Swedish equivalence scale multiplied with the same basic amount as before we get the consumption level for different households. This amount should be enough for people to pay ordinary consumption. It does not allow for expenses for vacations and cars but there should be an allowance for some savings for future investments in durable and semi-durable goods like furniture, TVs and clothes.

To this amount we have added expenses for children's day-care, fees to the union and travel expenses in the local area e.g. by bus and subway.

The second sub-amount is the rent. This is estimated for each household and the amount will be the real cost. By calculating this we follow the main purpose of the regulations for local authorities when they pay social assistance.

This individual need approach can be criticised. First it doesn't take into account the fact that different households have different outlays for nutrition and so on. A household with two adults where only one of them is employed ought to have less expenses than if both of them were employed.

Second, the disposable income is defined with DISP2 where we count net capital income, interest outlays are withdrawn. This means that a household can have decreased its income by the interest paid for consumption debts, e.g. for its car. This is a cost for consumption which however not ought to influence the amount which shall be compared with the poverty line.

The individual poverty line also allows for expensive apartments since we do not have any upper limit for the rent. It is a question of an ethical judgement if a household can influence its poverty line by having, by free choice, a very high rent. Nevertheless, this is the day to day situation for the local authorities providing social assistance when people ask for help. In a program for people with economic problems authorities try to solve problems with expensive apartments. However we assume that this question of influencing the individual poverty line by the consumption level is a matter for people with higher income. They are in a better position to make a free choice. The influence will be more obvious on the measure of the total income distribution, like the Gini-coefficient, the coefficient of variation and share of top 10%. For the study of poverty we assume that this problem is less important.

INCST-individual = DISP2/ INDIVIDUAL POVERTY LINE (3)

When we use the individual poverty line we will expect that the average value will be less then the estimate from the normative line. People with higher income levels are able to invest some of their income surplus e.g. in a bigger house. With a higher cost of living the denominator in (3) would be larger and thus the Income Standard would be less.

Table 4   Income Standard-individual and Income Standard-normative 1990. Disposable income = DISP2 definition. Population 2

	Average	Gini-coeffi-cient	Coeffi-. cient of Variation C.V.	Poverty rate: percent with income less than x% of median			Poverty rate percent with INCST < 1.0	Weighted Number	Un-weighted Number
				<40	<50	<60			
Population 2:									
Individual:									
INCST-individual	1.55	0.181	0.431	1.1	2.0	4.2	8.5	8 019 000	17 620
INCST-normative	1.86	0.195	0.481	1.5	2.5	5.7	4.2	8 019 000	17 620

The average value in table 4 has decreased from 1.86 to 1.55, a significant reduction. The dispersion is also somewhat lower. This will be the case when the denominator increases relatively more for people with higher income. The number of people with an Income Standard less then 50% of median also decreases when we use the poverty line with the individual approach.

When we use the poverty line <1.0 we find however that the poverty rate increases more than twice the normative value. We know that people live in larger apartments than we assume when we use the normative value. This leads to higher rents and this will influence the denominator in the INCST-individual.

The influence of social assistance on poverty

One measure of the poverty rate is to look at people living in households that receive social assistance. In 1990 we find in our study that 4.7% of all individuals lived in a household that received social assistance. These individuals are not the same as those who constitute the poor in the earlier tables in this paper. Some of them will be the same but not all. We will now compare those who have received social assistance with a new poverty line.

We define a new Income Standard (INCST3) where we withdraw social assistance.

$$INCST3 = (DISP2 - Social\ Assistance)/INDIVIDUAL\ POVERTY\ LINE \qquad (4)$$

We now can analyse the influence social assistance has on the poverty rate.

11

Table 5 Poverty and social assistance 1990.
Disposable income = DISP2 definition minus social assistance. Population 2

Income Standard without social assistance
(INCST3)

		< 1.0	≥1.0	Total
social	yes	1.9	2.8	4.7
assistance	no	7.3	88.0	95.3
	total	9.2	90.8	100.0

A majority of those who received social assistance had an income level for a whole year, before receiving social assistance, above the poverty line. Only 40% of those who received social assistance had an income level below the poverty line. We also find that 7.3% had no social assistance but had an Income Standard (INCST3) less than 1.0. This means that nearly 80% of those who had income level below the poverty line did not receive any social assistance.

In 1990 we find 9.2% living in households with an income below the poverty line if we withdraw the value of social assistance. This can be compared with 8.5% when we included social assistance in disposable income. Social assistance only helped 0,7% over the poverty line. This means that 0,7/9,2 or 7,6% of the poor will be helped by social assistance to receive a income above the poverty line.

We know that people receive social assistance for shorter periods even if they have an income for a whole year which places them above the poverty line. We also find households that despite social assistance will be classified as poor by statistical methods.

There are several reasons why people with income levels below 1.0 don't obtain any social assistance.
- Some of them try to manage their situation themselves. They may not actually need any help. The situation may not be as bad as is shown in the income statistics.
- Some people may have problems but they receive help from relatives.
- Some people will not ask for help. They don't want to bestigmatised.

Our purpose in this study is not to evaluate the efficiency of the transfer system of social assistance. We have just made clear that income level alone is a bad measure of poverty when we compare it to means tested transfer.

12

The analysis - part 2
The influence of wealth on poverty

Most of the studies dealing with poverty analysis use only the income level. When we discuss the life cycle theory we find the income distribution much less uneven compared to a cross-sectional study of one year. This is one of the main points in the life cycle theory.

It is not only the income level that affects a family's possibility of having a good standard of living. We cannot talk about a poor family if it has all the essential commodities and some financial assets.

We will now look at poverty when we add values of assets to income. There is a kind of income accumulation which we find influences our results. We look first at financial assets which are connected to households. We start by adding just 20% of the financial assets. We then add 50% and 100% of the financial assets. From these assets we withdraw 1/12 of the disposable income which will represent the income from the last month to ensure that we don't count income twice.

After this we also look at the entrepreneurs and farmers and at the financial assets within their balance sheets. We will add 20% of these assets to the 100% of private financial assets.

Finally we add 20% of total net wealth instead of financial assets.

As can be expected the absolute poverty rate declines when we add the savings to household income. For the individual poverty line the rate decreases from 8.5% to 4.4% when we only look at the financial assets connected to the private household. .

Table 6   Income Standard-individual 1990 with wealth added.
Disposable income = DISP2 definition. Population 2

	Average	Gini-coefficient	Coeffi-cient of Variation C.V.	Poverty rate: percent with income less than x% of median			Poverty rate percent with INCST < 1.0	Weighted Number	Un-weighted Number
				<40	<50	<60			
Population 2:									
Individual:									
INCST-individual	1.55	0.181	0.431	1.1	2.0	4.2	8.5	8 019 000	17 620
INCST-individual:									
+ 20% financial assets	1.93	0.269	2.378	1.1	2.1	4.6	5.6	8 019 000	17 620
+ 50% financial assets	2.50	0.378	4.536	1.2	2.7	7.3	4.9	8 019 000	17 620
+100% financial assets	3.45	0.488	6.555	1.4	4.4	12.1	4.4	8 019 000	17 620
+ 20% financial assets in self-employment equipment	3.47	0.488	6.513	1.3	4.4	12.2	4.3	8 019 000	17 620
20% net wealth	2.46	0.332	1.863	1.3	3.3	10.2	4.6	8 019 000	17 620

If we then add further assets from private enterprises it does not influence the rate in a significant way. The same result appears if we use the net wealth instead of financial assets.

The relative poverty measure will also be influenced. Since we add savings to the income we get a more uneven distribution. This of course also influences the relative poverty rate. Notably we find that the proportion below 60% of the median value increases rapidly.

The analysis - part 3
Two-year period will decrease poverty

The most common way to study income distribution and poverty is to analyse cross sectional data for one year. When use a period of two years we expect to find a more even dispersion and also less people in poverty. We apply the panel design in the HINK-survey.

The first step is to use the same material when we compare the one year period with the two year period. We first exclude that panel in the 1990-survey which wasn't in the survey in 1989. The panel we will use has the number 16. We will also estimate the distribution of 1989 to show if there is a change in dispersion between these two years.

Table 7   Income Standard-individual. One year and two year period.
Disposable income = DISP2 definition. Population 2

	Average	Gini-coeffi-cient	Coeffi-.cient of Variation C.V.	Poverty rate: percent with income less than x% of median <40	<50	<60	Poverty rate percent with INCST < 1.0	Weighted Number	Un-weighted Number
Population 2:									
Individual:									
INCST-individual									
Panel 16 +17:									
1990	1.55	0.181	0.431	1.1	2.0	4.2	8.5	8 019 000	17 620
Panel 16 one year:									
1990	1.55	0.178	0.464	1.0	1.9	4.1	8.9	7 939 000	9 197
1989	1.51	0.171	0.338	0.7	1.4	3.8	8.6	7 988 000	11 642
1989/90(average)	1.53	0.175	0.401	0.9	1.7	4.0	8.8	7 965 000	20 839
Panel 16 two years:									
1989-90 (V1)	1.54	0.164	0.349	0.4	1.2	2.8	6.9	7 176 000	8 338
1989-90 (V2)									
unchanged house-									
hold composition	1.54	0.164	0.315	0.5	1.3	2.8	6.9	6 367 000	7 297

Using a two year period we find the sampling unit to be within the sample for both years. The households will be classified from the conditions in 1990 even if the classification was another the year before. In the first view (V1) we calculate the income for individuals who are within the household both 1989 and 1990. In the second view (V2) we also check that it is exactly the same people within the household both years.

First we find that the result forpanel 16 alone for 1990 differs from the result for panel 16 and 17 together which constitutes the base for 1990. The average is the same (1.55), but the dispersion for panel 16+17 in 1990 is wider taking the Gini-coefficient and compressed with the coefficient of variation. We also find 8.9% to be poor with panel 16 and 8.5% with both panel 16 and 17.

In this case we must analyse only panel 16 when we talk about 1990. But we have adisturbance in our analysis because there is a change in the distribution between 1989 and 1990. Panel 16 for 1989 differs from the panel 16 in 1990. When we compare the distribution and poverty for a two years period we must make the comparison with the average of panel 16 for both 1989 and 1990.

We find that the dispersion is wider when just look at one year. Taking a two year study the Gini coefficient decreases with about 6%, the coefficient of variation with 13% and the rate of poverty (less than 50% of median) decreases 27%. Finally the rate of people with incomes below the poverty line defined by INCST<1.0 has decreased from 8.8% to 6.9% which is a decline with 21%.

Finally we examine what happens if we only count people living in households where the household composition has not changed. It is notable that nothing happens, despite there being 1000 observations less and the population number declining from 7.2 millions to 6.4 millions. Obviously households with a changed composition are represented at all income levels.

Who are poor

In this section we will analyse who the poor are with the different definitions of the poverty line.[2] We will only look at disposable income defined in DISP2, this is nearest to the UN Guidelines.

In a life cycle approach we find three categories with a rather high poverty rate irrespective of the definition of poverty line. First we have young people, 18-29 years, second single parents and their children, and third people living in a household of cohabitant with three or more children. Even if we add different amounts from wealth to disposable income we don't change the fact that these categories all have a high rate of poverty.

Young single people who are unemployed are at the beginning of their adult life. If they are not studying then they are probably looking for a job and can be classified as unemployed. Of course they can have a hard economic situation.

We also find that single parents are over represented among the poor. This is also what we usually expect. Mostly it is single mothers and, specially when the children are young, it is difficult to change the income situation by working more. We also find cohabitant with three or more children have a high rate.

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[2]People are classified from the conditions which is actual for the head of the household.

Table 8   Poverty rate with different poverty lines 1990.
Disposable income = DISP2 definition. Population 2

	(1) Normative INCST	(2) Individual INCST	(3) ./.social- assistance	(4) (2)+ 20% financial assets	(5) (2)+ 50% financial assets	(6) (2)+100% financial assets	(7) (6)+ 20% selfempl. equip.	(8) (2)+20% of net wealth
Single:								
18-29	13.0	16.0	17.4	12.9	11.8	11.3	11.3	13.3
30-64	3.4	7.6	8.7	4.8	4.3	4.1	4.0	4.8
65-	6.6	21.1	21.5	7.2	6.8	6.5	6.5	6.8
with child	5.8	18.9	23.1	15.7	14.8	14.1	14.1	14.5
Cohabitant:								
18-29	0.9	0.9	1.2	0.9	0.9	0.4	0.4	0.4
30-64	1.4	2.4	2.4	1.5	1.3	1.0	0.9	0.8
65-	0.9	2.6	2.6	1.1	1.0	0.9	0.9	0.5
with 1-2 child	3.0	6.0	6.3	4.4	3.3	2.9	2.8	3.0
with 3- children	9.7	15.7	17.6	11.8	10.4	9.0	8.9	8.6
with child	4.7	8.5	9.2	6.3	5.2	4.5	4.4	4.5
All	4.2	8.5	9.3	5.6	4.9	4.4	4.3	4.6

Table 9   Poverty rate with different poverty lines 1990.
Disposable income = DISP2 definition. Population 2

	(1) Normative INCST	(2) Individual INCST	(3) ./.social- assistance	(4) (2)+ 20% financial assets	(5) (2)+ 50% financial assets	(6) (2)+100% financial assets	(7) (6)+ 20% selfempl. equip.	(8) (2)+20% of net wealth
18-64:								
employed:								
Blue collar Worker	3.0	6.3	7.4	5.2	4.5	4.2	4.2	4.2
Salaried:								
low level	1.2	5.8	5.9	4.0	4.0	3.7	3.7	4.4
middle and high level	1.4	3.7	4.0	2.2	1.8	1.3	1.3	1.8
Not classified	5.2	18.6	21.2	15.6	13.9	13.9	13.9	18.6
Farmers	34.5	32.2	32.2	21.1	15.2	12.0	8.6	3.6
Self-employed	18.5	28.4	28.4	21.9	18.5	16.5	15.8	14.9
Pensioners < 65	3.2	10.0	11.3	5.4	4.7	4.3	4.3	4.7
Students	39.0	49.6	54.9	39.7	37.0	33.7	33.7	41.0
Other not employed	32.4	39.9	62.5	38.7	38.1	38.1	38.1	39.2
All 18-64	4.3	8.0	8.9	6.0	5.2	4.7	4.6	4.8
All ≥ 65	3.4	10.7	10.9	3.8	3.5	3.4	3.4	3.3
All	4.2	8.5	9.3	5.6	4.9	4.4	4.3	4.6

In table 9 we add information about the employment status and we find the poverty rate very low among people living in a household where at least one member of the household is permanently employed, with one exception. The not classified households among the employed have a rather high poverty rate. We think that this class contains many young people who work only part of the year. In the interview they have not declared any occupation that enables them to be classified as worker or salaried.

People living in households classified as farmers and self-employed are extremely over represented among the poor. This is due to the problem of measuring income. Despite having a very high rate of income poverty we don't find any changes when we include and exclude social assistance. But when we include financial assets the rate declines very rapidly. The conclusion must be that we can not talk about poverty among these households in the same way as we talk about poverty among single mothers and among unemployed.

Students and other people not employed have a very stable high rate of poverty irrespective of the definition of the poverty line.

Single people older than 65 have a modest poverty rate when we look at Normative INCST. When we use the individual poverty level which depends on the individual rent, many single pensioners fall below the line, but when we add financial assets the poverty rate decreases again. We say that a pensioner is not poor if he or she has savings accumulated over a lifetime. It may be a free choice to have a more expensive house. We cannot classify these people as poor.

The panel 1989/90

In the same way as the total rate of poverty changed when we examined a two year period we will also find that the rate changes for different sub populations. We can imagine some difficulties in the analysis depending on the data quality. Some subgroups changes more than others.

Table 10 Poverty rate with one or two years period 1989/1990
Disposable income = DISP2 definition, Poverty Line: INCST-individual.
Population 2

	Panel 16+17 1990	Panel 16 1989	Panel 16 1990	Panel 16 1989/90 (V1)	Panel 16 1989/90 (V2)
Single:					
18-29	16.0	16.0	15.8	6.6	6.9
30-64	7.6	8.0	9.1	5.7	5.8
65-	21.1	26.0	22.1	22.5	21.6
with child	18.9	12.2	17.7	9.3	9.3
Cohabitant:					
18-29	0.9	4.1	1.2 ·	2.0	2.2
30-64	2.4	1.8	2.4	1.7	1.6
65-	2.6	2.8	2.5	2.0	2.0
with 1-2 child	6.0	5.4	6.3	5.3	5.5
with 3- children	15.7	17.3	16.6	13.3	13.9
with child	8.5	8.5	9.1	7.6	7.8
All	8.5	8.6	8.9	6.9	6.9

The first sub group in table 10 behaves as we can expect. Young single persons 18-29 years old have a poverty rate of about 16% for one year. This value is estimated for both 1989 and 1990. Taking a two year period we then find that the poverty rate declines dramatically, from 16% to below 7%.

For the next sub group, single 30-64 years, we find that the estimates for 1990 with both panel 16 and 17 differ slightly from the value when we only calculate with panel 16. For 1989 and 1990 we have a poverty rate of 8.0% and 9.1%. Compared to the 1989/90 value which is 5.7% we find a decline even for this sub group.

For the retired single person we do not get the same changes in the rate. In 1990 the rate was 22.1% for panel 16. In 1989 the rate for the same individuals was 26.0%. For the two year period 1989/90 the rate still is around 22%. We don't expect this group to change their income between two years. At the age of 65 or older we do not expect people to increase their income from work. Rather the opposite, people end their employment and receive less money.

For single parents we have the same magnitude of change as for single adults 18-29 years without children. The rate declines from 17.7% in 1990 to 9.3%. We have thus two groups, single 18-29 years old and single parents, whose poverty rate decreases substantially when we calculate for a two year period instead of one. The reasons can be

many - increased working hours, marriage or others. We must also be aware that there will be some wrong estimates in a survey. A panel study of this kind is more sensitive to bias depending on wrong estimates on e.g. family composition for the two years. However we find that the result seems to be robust when we compare the estimates of poverty rate using the both V1 and V2. The V2 estimate includes only individuals in households where there have been no changes in the composition of the household.

Table 11 Poverty rate with one or two years period 1989/1990
Disposable income = DISP2 definition, Poverty Line: INCST-individual.
Population 2

	Panel 16+17 1990	Panel 16 1989	panel 16 1990	panel 16 1989/90 (V1)	panel 16 1989/90 (V2)
18-64:					
employed:					
Blue collar Worker	6.3	6.4	6.3	5.2	5.4
Salaried:					
low level	5.8	5.9	5.6	3.5	4.0
middle and high level	3.7	2.6	3.7	2.2	2.2
Not classified	18.6	13.2	7.6	5.6	7.4
Farmers	32.2	34.8	37.1	33.2	33.3
Self-employed	28.4	24.6	30.5	25.8	24.1
Pensioners < 65	10.0	9.7	12.0	7.2	7.4
Students	49.6	38.7	47.4	6.5	6.7
Other not employed	39.9	31.1	52.7	35.9	37.6
All 18-64	8.0	7.5	8.4	6.0	6.1
All ≥ 65	10.7	13.4	11.1	10.9	10.3
All	8.5	8.6	8.9	6.9	6.9

For blue collar workers and salaried people we have the same direction of the change of the poverty rate. The changes are small both absolutely and relatively. Looking at the sub group 'Not classified' we also discover a problem. Using both panel 16 and 17 for estimating the poverty rate we find the rate 18.6%. Using only panel 16 we find it 7.6%. This is too large a difference for the estimate of the rate for the same year. It underlines out that there are problems with estimating inequality, specially at the tails of the distribution.

For farmers and self-employed we have only modest decreases of the poverty rates. But for students we have the most remarkable changes. For one year we have about 50% of the students classified as poor. For a two year period the rate has fallen to 6.5%, less than the average value. Here again we can assume that we have problems with classifying people.

Some of these students which have been classified as poor in 1989 will probably have been supported by their parents. Part of the year they may have been living at home and thus they should have had another equivalence scale or another poverty line. Once again this is a sign that it is rather difficult to measure poverty.

Summary

The picture of income distribution and poverty is extremely dependent on what we project. In this study we analyse the official statistics from Sweden and we find that there is a wide range of results depending on definitions of the population, income concept and the poverty line.

Statistics on income distribution are often produced as if the situation was stable for a whole year. People living in institutions are often excluded. One reason is that we cannot make the income comparable with other people since they may receive financial support. This is usually the case for people living in nursing homes, homes for aged people, prisons and people in national service.

Compared to this defined population the definition of households at Statistics Sweden seems to differ. People in the national service are included in the official statistics. Young people aged over 17 are defined as separate households even if they are living together with their parents. They often have a good support from their parents, specially if they don't have any income. If they are studying at senior high school, then the parents have a responsibility to maintain their children until they are 20 years old.

Until there is a better definition of the household concept in the income statistics in Sweden we ought to show the distribution exclusive these young people living with their parents. We can look at these people in the same way as we do with people in institutions. We do not want them within a study of income distribution since we cannot adjust their disposable income in a fair way.

There is also an influence on the statistics for parents who have young people older than 17 at home. The statistics are underestimated. We do not have incomes for these young people living with their parents and we cannot make a fair equivalence scale for these households either.

21

The influence on the statistics is critical. Just excluding those young people living with their parents, people in national service, people living a shorter period than a year in Sweden and also those who died during the year will press the Gini coefficient from 0.231 to 0.208 and raise the average income level by nearly 5%. The rate of poverty using the 50%-median value as a poverty line decrease from 6.5% to 3.1%.

We also feel that in the official statistics there is a lack of judgement about the income definition. If we change the definition and make it closer to the UN Guidelines we put a new pressure on the Gini coefficient. If we use the Swedish equivalence scale we will have 0.200 on the Gini-coefficient and using the OECD-scale it will be 0.196. The poverty rate falls to 2.8% and 2.7%.

The same effects can be seen when we observe individuals instead of households. The dispersion will be less uneven and the poverty rate will also be less using individuals instead of households.

We find the poverty rate 8.5% when we try to establish an individual poverty line based on the Swedish regulations for social assistance. The regulations declare that a household should have a reasonable standard of living. The authorities establish some basic needs which include expenses for daily consumption and also some amount for future investments in furniture and other durable goods. The basic needs include fees to the union, expenses for child day-care and housing costs. This value can also be used as a poverty line.

Almost 60% of those who received social assistance did have an income (exclusive social assistance) for the whole year above the poverty line. Only 7% of those who were poor before social assistance was paid moved over the poverty line after receiving the assistance. The total rate of individuals who lived in households which received social assistance was 4.7%.

One of the most important points in this study is about including wealth in poverty studies. If people by their own choice or for other reasons have incomes below the poverty line but they have money in the bank we can not see at them as poor. They will not receive any social assistance and they may have a consumption level far above those people who have a low income and no savings. We find that the poverty rate declines substantially when we include financial assets. The poverty rate will decrease to about 4.4% instead of 8.5%.

If we establish a two year study we also find that income distribution will be more even and the poverty rate will be reduced. The Gini-coefficient will be 0.164, a decline with 6%. The poverty rate falls from 1.7% to 1.2% when we use the 50% of median value as the poverty line and it falls from 8.8% to 6.9% when we use an individual poverty line

When we compare the statistical poverty rate in this survey to those people who de facto have received help from the authorities we found a very small covariation. This indicates that we have problems when estimating income and establishing fair equivalence scales for people with low incomes. At the extremes of the distribution we must make greater efforts to achieve better estimates.

This problem with data quality at the extremes is not solely a problem for Swedish data. It ought to be problem for data from other surveys in other countries as well.

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The "zero-sum crisis": the stability in the distribution of
income and welfare in a period of economic crisis.

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INTRODUCTION

The empirical foundation for this study is provided by the evolution in the distribution of income and welfare across the population between 1976 and 1985, as this was measured in successive surveys conducted by the Centre for Social Policy of UFSIA (Deleeck et al., 1980 and Deleeck et al. 1986). These surveys provide no evidence of increased inequality or of an increase in the extent of poverty.

These observations appear to contradict current discussions which frequently refer to (but rarely provide empirical proof of) new poverty, increasing inequalities and growing social duality ([1]). These discussions reflect the general assumption that economic, political and socio-demographic changes ('economic crisis' and 'crisis of the family') have important negative consequences for the distribution of income and welfare. Together with increasing unemployment rates, significant reductions in income from labour or social security, and greater labour flexibility, the generalization of double incomes is said to distort the income distribution while divorce and a decreased willingness to marry are said to contribute to an increase in poverty([2]).

There are many possible explanations for the remarkable and paradoxical stability in the distribution of income and welfare in periods of economic crisis. These can be sought in the evolution of the primary personal income distribution (i.a. Fecher, 1987) and in the compensatory effect of social benefits (i.a. O'Higgins, 1984). We sought and found an explanation in the concurrence of socio-demographic and economic changes.

[1] Cfr. i.a. Room (1987); Ray (1984); Arts (1984); Vranken (1983 and 1986); SEVI (1986); Nicaise (1987).

[2] On the relationship between economic trends, income distribution and poverty see i.a. Ellwood and Summers (1986) and Blank and Blinder (1986).

A. THE LEVELLING OF THE VERTICAL DISTRIBUTION OF INCOME AND WELFARE IN TIMES OF ECONOMIC CRISIS

In the past decade there has been a change for the better in the inequality of income and welfare. Three successive surveys concerning the incomes of Flemish households (1976: 5,420 households, 1982: 4,840 households, 1985: 3,780 households) led the Centre for Social Policy to the following conclusions:

"From 1976 to 1985, in other words, during the crisis years, the average earnings, unemployment benefits and children's allowances have decreased in real terms, except for the lowest three income deciles; retirement benefits have risen considerably. There is no increase in the inequality of income distribution.

From 1976 to 1985 there has been no increase (rather a decrease) in the global number of people living below the subsistence level, the efficiency of the social security system has remained constant, and the poverty gap (the amount theoretically needed to provide everyone with the standard subsistence income) has not increased" (Deleeck et al, 1986, p. 14).

These conclusions can be verified in table 1., which presents a synthesis of a number of indicators for income and welfare of Flemish households (for more detailed information see Deleeck et al, 1986). The average available household income dropped by only 3% and after standardizing the household incomes for family size there is even a slight rise of 1%. At the lower levels of the distribution there was no increase in the number of people living below subsistence level. On the contrary, the four criteria for poverty which we employed all indicate a substantial reduction in the number of households living under the poverty or subsistence threshold. Concomitant with this the surveys of the Centre for Social Policy registers no increase of inequality, but a significant levelling of the distribution of income and welfare (by 18% and 19% respectively according to Theil and by 8% and 9% according to the coefficient of relative variation)([1]).

([1]) Placed in an international and historical perspective these results are much less 'surprising' than may appear at first sight. Most (national and international) studies of the evolution of income inequality in the postwar years report general stability (cfr. Wolfson (1986) for Canada; Kuznets (1974), Danziger and Plotnick (1977) for the US). Recently, for the Netherlands, De Kam and Pommer (1987) also detected no increase in social inequality during crisis years (for Sweden see Erikson et al, 1987). Moreover, the (unique) CSP data for Belgium are not contradicted by other sources (cfr. the fiscal income statistics, Fecher, 1987 and a descriptive survey by Marannes, 1987).

TABLE 1: Indicators of income and welfare distribution across the population
(Flanders, 1976-1985).

	1976	1985	Procentual difference
Average disposable households income *(x Bfr.per month)**			
- per household	57.596	55.676	- 3.3
- per capita	20.169	21.089	+ 4.6
- per equivalent unit **	46.358	46.826	+ 1.0
% below poverty lines			
- CSP-line 75 % ***(subjective standard)	7.3	6.0	- 17.8
- CSP-line 100 %(subjective standard)	22.9	21.0	- 8.3
- OECD-line ***(statistical standard)	28.9	23.5	- 18.7
- EEC-line(statistical standard)	8.8	5.3	- 39.8
Theil inequality coefficient			
- total disposable households income	.151	.123	- 18.5
- standardized total disposable households income	.105	.085	- 19.0
Gini inequality coefficient			
- total disposable households income	.306	.276	- 9.8
- standardized total disposable households income	.255	.225	- 11.8
Relative variation coefficient			
- total disposable households income	.558	.515	- 7.7
- standardized total disposable households income	.481	.438	- 8.9
Number of households in the sample	5084	3780	

Source: CSB-enquêtes (CSP surveys), 1976-1985.

* The 1976 amounts have been converted into 1985 prices.

** Standardization according to the OECD (1976) conversion scale. The values on this scale closely resemble the various relativity calculations for Belgium. They are also comparable with the geometrical average of the major scales developed abroad (Single person: 67; 2 adults: 100; +1 child: 125; +2 children: 145; +3 children: 160; etc.).

*** The CSP poverty line (Centre for Social Policy) is a subjective line which is defined in terms of the population's actual situation (Deleeck et al, 1986). The OECD and EC lines are statistical standards which define the minimum subsistence income as a percentage of the average family income (EEC: 50% of the average available income for a single person; OECD: 66,6% of the national per capita income for a single person).

B. THE LEVELLING OUT OF THE INTERGENERATIONAL DISTRIBUTION OF INCOME AND WELFARE

The chief explanation for the levelling out of the distribution of income and welfare undoubtedly lies in the diminished differences in income and welfare between the generations: with respect to income and welfare the situation of younger families deteriorated, that of the elderly improved.

This development is represented in diagram 1 (see also table 2). The summary indicator used comprises the percentage of households in the lowest standardized income quintile and the subcategorization of these households according to the age of the head of household. This diagram clearly shows the significant increase in the proportion of young families within the lowest standardized income category, and the simultaneous decline in the proportion of the elderly in the same category[1].

[1] The comparisons of welfare presented here are based on the standardized total available monthly household income. This notion of welfare does not take into account a) the concentration of income from assets among the elderly, which is not measured here, b) differing patterns of needs related to age (these are included in the social subsistence levels of the CSP, see below), c) more owner-occupiers among the elderly. Consequently, one must be cautious in interpreting the figures concerning the relative welfare of working people and the elderly. However, it is probable that a more complete concept of welfare would yield an even greater levelling out of differences between the generations than the above diagram indicates. It is generally known that during the past crisis decade the share of income from assets in the national income has risen considerably, while the evolution of the housing market allows one to deduce that, compared with 1976, fewer young workers are houseowners (for whom both the incidence and level of mortgage payments is higher) while the opposite is true for the elderly (cfr. below). The net share of income from capital in total income (before taxes) has increased from 13.1% (the lowest point in the seventies) to 23.7% in 1985 (NIS, *Statistische Studiën* (statistical studies), 1987, nr. 83).

DIAGRAM 1: Percentage of households in the lowest standardized income quintiles according to age of the head of household (Flanders 1976-1985).

% households in lowest
standardized income quintile
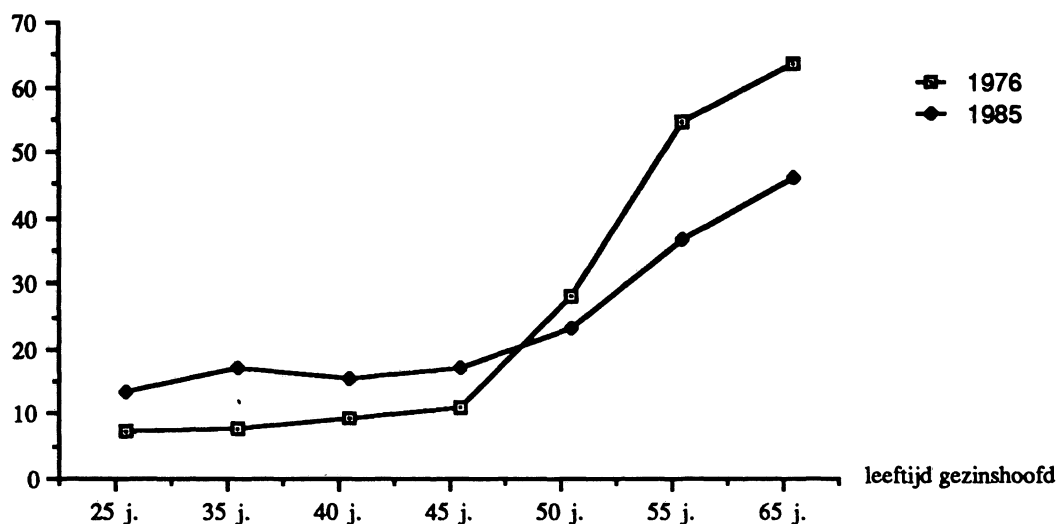
Source: cfr. table 2

The above findings, based on financial indicators, are corroborated by *indicators of a qualitative nature*. The CSP data show that from 1976 to 1985 the increase in the income level of the elderly corresponded with the latter also having less trouble in making ends meet (subjective poverty) and with the general improvement of their living conditions (cfr. table 3). Though our research indicates that both in 1976 and in 1985 the elderly enjoyed a lower standard of living than average we may safely conclude, on the basis of the (restricted) set of indicators applied, that there is a considerable levelling out of differences in living conditions between the working population and the elderly. An analysis of the housing market leads to a similar conclusion. Along with a real rise in family income their housing situation has also improved. Compared with 1976 more elderly people are home-owners. The opposite is the case for the younger working population (cfr. Meulemans, 1988).

As a natural consequence of the rise in income and welfare for elderly households and the concomitant decline in income and welfare for households on active age, the past decade was characterized by a *very significant reduction of income inequality between the categories of the elderly and the active population*. This can be deduced from the table below, which presents the total inequality in income distribution for Flanders in 1976 and 1985 decomposed into three components: the inequality of incomes within the category of the population on active age, the inequality of incomes among the elderly; and the inequality between the elderly on the one hand and the non-elderly population on the other hand. The measure of inequality is the Theil coefficient, calculated on the basis of data per household. The decomposition of total inequality into the contributions of the non-elderly population and the elderly indicates that the distribution of income between the two categories has evened out considerably: The inequality between the groups has been halved (cfr. table 4).

TABLE 2: Percentage distribution of households across quintiles of total disposable and standardized income, according to age of head of household (Flanders, 1976-1985).

Age of household head	quintile of actual income											
	1		2		3		4		5		T	
	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985
< 30 years	2.2	11.4	17.5	16.3	30.9	28.7	33.0	30.7	16.4	12.9	684	527
31-39 years	1.7	5.2	13.9	15.5	24.8	24.2	31.2	29.6	28.4	25.5	905	740
40-49 years	3.1	5.9	17.5	16.3	23.2	20.6	26.7	22.2	29.5	35.0	1060	725
50-59 years	7.7	13.1	26.3	22.2	21.0	21.0	16.9	18.0	28.1	25.7	866	671
60-64 years	29.9	27.5	27.6	31.4	20.0	16.3	9.6	12.7	12.9	12.1	395	338
65-74 years	61.6	46.8	23.8	27.6	7.3	11.3	3.4	8.1	3.9	6.2	806	468
75 years and over	74.2	68.9	14.9	17.3	3.5	8.7	3.8	4.2	3.6	0.9	369	312

Age of household head	quintile of standardized income											
	1		2		3		4		5		T	
	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985
< 30 years	5.8	11.8	15.3	16.0	21.0	22.7	30.0	28.6	27.8	20.8	684	524
31-39 years	6.2	15.4	20.8	19.0	23.4	20.4	23.0	25.5	26.6	19.7	905	740
40-49 years	7.6	14.0	19.1	19.0	26.6	19.0	25.9	22.2	20.8	25.8	1060	725
50-59 years	9.4	15.3	18.8	17.1	22.7	22.1	21.4	19.4	27.7	26.1	866	671
60-64 years	26.4	21.4	21.4	26.8	20.4	18.8	15.9	16.1	15.9	17.0	395	338
65-74 years	52.8	35.0	25.1	21.8	9.7	19.4	7.6	11.4	4.8	12.4	806	468
75 years and over	62.0	44.5	19.2	28.8	6.8	13.4	6.1	6.5	5.9	6.8	369	312

Source: CSP-surveys, 1976-1985.

TABLE 3: Percentage of households who own certain goods and services according to age of household head
(Flanders, 1976-1985).

	Bath/Shower		Telephone		Central Heating		car		Colour T.V.		% homeowners		% homeowners with mortgage		% owning a second home	
	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985
< 26 years	53.3	90.2	20.6	48.5	33.6	47.7	81.8	76.5	24.3	72.0	27.9	18.0	77.1	21.3	3.8	1.4
26-49 years	78.4	95.6	54.1	77.1	60.0	71.0	87.9	90.8	40.5	86.0	68.8	65.8	51.0	72.1	12.6	8.5
50-64 years	53.4	93.0	52.9	79.7	44.0	65.3	68.8	80.8	40.3	89.8	77.3	80.4	14.8	16.8	20.4	16.8
65-74 years	36.9	81.8	36.6	72.4	27.8	46.5	30.2	49.5	28.8	81.4	69.3	73.8	1.6	3.0	13.9	10.8
75 years and over	24.9	69.5	26.9	67.3	22.8	41.5	10.2	19.1	19.2	80.1	67.3	69.3	1.8	2.6	12.9	10.0
Total	63.1	91.1	47.7	75.5	47.1	63.4	68.1	77.2	36.4	85.5	69.0	69.2	29.9	40.6	14.4	10.9

Source: Meulemans, 1988 using CSP files 1976-1985.

TABLE 4: Decomposition of income inequality according to Theil, by non-elderly and elderly population (Flanders 1976-1985).

	Flanders 1976			Flanders 1985		
	Inequality (Theil)	Share in total inequality	Share in %	Inequality (Theil)	Share in total inequality	Share in %
Within the elderly category	0.190	0.023	15	0.129	0.018	15
Within the non-elderly category	0.094	0.083	55	0.096	0.082	67
Between elderly and non-elderly population	0.045	0.045	30	0.023	0.023	19
Total	0.151	0.151	100	0.123	0.123	100

Source: CSP-surveys, 1976 en 1985.

American and Canadian research findings (i.a. Preston, 1985; Danziger, Haveman and Plotnick, 1986 and SWPS, 1984) indicate that the increased welfare of the elderly and the decreased welfare of the young have also brought about a change in the poverty profile, with a rising proportion of young households.

For Flanders the data concerning the evolution of the age related poverty profile are less unequivocal. The *subjective* CSP (Centre for Social Policy) poverty criterion yields hardly any results confirming the increased proportion of poor young households. In spite of the diminished welfare of young families the incidence of poverty among these groups has barely increased. Conversely, the decreased risk of poverty among the elderly is less marked than the developments concerning income and welfare would have led us to expect (cfr. table 5). One discerns a slight shift towards younger age groups in the composition of the poor population, but this shift is very slight and is, moreover, chiefly a result of changes in the age structure in the population (with fewer elderly householders in 1985).

The reason for these results - which contradict the described developments in income and welfare - must be sought in the methods employed to define, operationalize and measure poverty. Between 1976 and 1985 the CSP poverty level evolved in function of the means of the age groups concerned: the "impoverished" young families have set their minimum income lower than before (i.e. they have cut their coat according to their cloth), the "more prosperous" elderly, by contrast, feel they need more income (Deleeck et al, 1986).

Consequently, in the subjective method of poverty measurement the opposing developments relating to income and welfare do not, or only barely, translate into a shift towards a higher proportion of younger households in the poverty population, chiefly as a result of the 'preference drift effect'. This shift is clearly present when the preference

drift effect is eliminated and measurements are carried out with relative or statistical OECD and EEC methods. Analyzed according to these methods the CSP's data register a sharp increase in the incidence of poverty among the young and an equally sharp decline among the elderly (cfr. table 5). This leads to a doubling (with the OECD method) or even tripling (with the EEC method) of the proportion of families younger than forty in the category of households with an income below the poverty line.

TABLE 5: Evolution of the age profile of poverty and subsistence insecurity (Flanders, 1976 to 1985).

Age of household head	Incidence of poverty (subsistence insecurity) measured according to								Composition of the population living below the poverty line, measured according to:							
	SPC-75 %		SPC-100 %		OECD		EEC		SPC-75 %		SPC-100 %		OECD		EEC	
	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985	1976	1985
younger than 30 years	3.2	4.0	12.0	12.0	10.7	14.0	2.2	3.4	5.9	9.3	7.0	7.9	4.9	8.3	3.3	8.9
30-39 years	3.5	3.4	15.3	13.5	13.8	18.9	3.5	5.1	8.5	11.0	11.8	12.6	8.5	15.7	7.1	18.8
40-49 years	4.8	3.7	18.9	15.3	14.7	18.0	4.6	4.4	13.7	11.9	17.2	14.0	10.6	14.7	10.9	15.8
50-64 years	6.5	5.4	21.5	21.0	17.8	18.3	3.8	3.3	15.1	15.9	15.9	17.8	10.4	13.8	7.3	10.9
65-69 years	14.6	8.3	33.0	30.5	35.8	25.4	10.8	5.6	15.6	12.3	11.2	13.0	9.6	9.8	9.6	9.4
70-74 years	13.1	9.8	35.4	29.7	68.3	38.2	24.0	8.3	28.4	20.2	24.3	17.5	37.3	20.2	43.2	19.4
75 years and over	12.8	14.1	39.9	43.6	74.5	50.0	22.5	10.9	12.8	19.4	12.6	17.2	18.7	17.5	18.6	16.8
Total	7.3	6.0	23.0	21.0	29.0	23.5	8.8	5.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

N 1976 = 5.091

   1985 = 3.781

Source: CSP-surveys, 1976-1985.

C. THE STABILITY OF THE DISTRIBUTION OF INCOME AND WELFARE AMONG THE POPULATION AT ACTIVE AGE

Undoubtedly the extent and the consistency observed in the closing of the gap between the income profiles of the young and the elderly constitute one of the major developments since 1970. However, the significant improvement in the income and welfare of the elderly provides only a partial explanation for the levelling out of the distribution of income in times of economic crisis. Within the category of households on active age, too, there was no increase of income inequality. The inequality coefficient shows that the distribution of income among the households on active age presents about the same degree of inequality for the two years studied in our research. Moreover, table 6 indicates that the percentage of poor households line has not, or barely, increased, in spite of a considerable decline (by 7.5%) of average available income. The subjective CSP poverty standard registers a decrease and the statistical EEC standard measures stability; only the considerably more generous OECD standard measures slight an increase in the incidence of poverty among the population on active age.

TABLE 6: Indicators of the intra-generational income distribution (Flanders, 1976-1985).

	1976	1985
Average available household income (x BFr. per month)*		
-per household		
-non-elderly	66,937	61,656
-elderly	29,363	34,446
-per capita		
-non-elderly	21,138	21,080
-elderly	17,165	21,102
-per equivalent unit		
-non-elderly	51,149	49,297
-elderly	31,490	38,037
% living below the poverty line		
-CSP standard 75%		
-non-elderly	5.6	4.5
-elderly	12.6	11.3
-CSP standard 100%		
-non-elderly	18.6	17.2
-elderly	36.5	34.6
-Oecd standard		
-non-elderly	15.9	18.4
-elderly	69.3	41.8
-EEC standard		
-non-elderly	4.4	4.3
-elderly	22.5	8.9
Theil inequality index		
-Total available income		
-non-elderly	.094	0.96
-elderly	.190	.129
-between groups	.045	.023
-Standardized total available income		
-non-elderly	.081	.079

-elderly	.119	.081
-between groups	.018	.005
Gini inequality index		
-Total available income		
-non-elderly	.240	.242
-elderly	.322	.273
-Standardized total available income		
-non-elderly	.223	.216
-elderly	.255	.218
Relative variation coefficient		
-Total available income		
-non-elderly	.446	.456
-elderly	.720	.547
-Standardized total available income		
-non-elderly	.422	.423
-elderly	.552	.431
Number of households in the sample		
-non-elderly	3.845	2.950
-elderly	1.239	830

*the figures for 1976 have been converted into 1985 prices.

Source: CSP surveys, 1976-1985.

This stability is explained by the concurrence of *compensatory socio-demographic, economic and political changes*. The economic crisis occurred at a time when the size of families was decreasing and when double-income households were very much on the increase. These factors compensated for the generally weakened position of the younger households. The increase in the number of young people living alone and in the number of single-parent families has worked the other way: together with economic factors these exerted an upward pressure on inequality and the incidence of poverty. However, these latter developments were outweighed by the positive effect produced by the generalization of double incomes and the decreasing size of families: the result is a global stability in the income distribution and almost no change in the incidence of poverty (insecurity of subsistence).

Table 8 provides a picture of the effects of the socio-demographic changes on the income distribution and on the extent of poverty and insecurity of subsistence. This table answers the question: *how would the distribution of income have been in 1985 if the socio-demographic changes of the years between 1976 and 1985 had not occurred?*.

We developed three simulations for the year 1985, in which hypothetical income distributions were constructed under three different hypotheses. The *first hypothesis* assumes that the socio-demographic structure did not change. The *second hypothesis* assumes that the extent and the distribution of double incomes remained unchanged. The *third hypothesis* combines the first two and assumes that both the socio-demographic structure and the distribution of double incomes remained constant.

1. First simulation

In order to provide an accurate picture of the effects of socio-demographic changes on the distribution of income and welfare it would be necessary to create a hypothetical research population where divorced persons are reunited with their original partners, where

youngsters living alone go home to live with their parents, and where couples who would have had three children ten years ago actually had them in 1985. All this assumes the availability of panel data about the lives of individuals and families, or an extensive set of data about the socio-economic localization of socio-demographic changes (which type of youngsters left and leave their homes, which marriages ended and end in divorce, who remarries who, which couples had and have a third child ...). To these questions we have only extremely incomplete answers. The literature provides only very general conclusions. Divorce is probably dispersed across all levels of society, the tendency to leave home is greater among more highly educated young people with employment (cfr. Van den Bosch, 1987), the lower social classes marry earlier and have children sooner than the higher classes and the decline of fertility was probably more marked in the lower socio-professional classes than in higher ones. However, these tendencies are too general and insufficiently quantified to be useful for analysing the effects of the recent socio-demographic behavioral changes on the distribution of income and welfare.

In order to obtain some indication of the direction and the extent of the effects a simple *shift-share analysis* was carried out on the basis of the CSP database for 1976 and 1985 (for similar analyses see Kuznets 1974 and 1976; Dinwiddy and Reed, 1978; Blinder and Esaki, 1978; Traes and Walther, 1978; Danziger and Plotwick, 1977 and more recently Wolfson 1986; Hedderson and Harris, 1985; Danziger, Gottschalk and Smolensky, 1987; Bane, 1986).

The shift-share technique is applied in *three steps*:

1. the measurement of the socio-demographic structure in 1976, and of the relevant changes in the period from 1976 to 1985. The simulated socio-demographic changes can be found in table 7, which presents a classification of households according to life-cycle groups, i.e. according to type of household and age of the head of household. This shows the general individualization of the socio-demographic structure, especially among young people: more single young people, more couples without or with few children, more single parent families, fewer couples with three children or more, fewer multi-family households.

2. the creation through reweighting of a new (simulated) population with the same socio-demographic characteristics as the survey population for 1976;

3. the comparison of the actual income distribution of income in 1985 with the simulated distributions.

This technique allows us to measure changes in the income distribution which result from given shifts in the socio-demographic structure of the population. Underlying these are three important assumptions which must be taken into account when interpreting the figures. It is assumed that:

1. the income distribution does not affect socio-demographic behaviour;

2. the size of the various socio-demographic subcategories does not affect income and inequality within the categories;

3. the size of the various socio-demographic subcategories does not affect their socio-economic characteristics.

Table 8 presents the results of the calculations. In succession we measure the effects of the socio-demographic changes on the income and standardized income level of households, on the extent of poverty and insecurity of subsistence, and on income inequality.

Two conclusions follow:

1. The changes in socio-demographic structure (more single young people, more single parent families, fewer children, fewer complex households) negatively affected average income the degree of poverty and the rate of inequality. *On the hypothesis of an unchanged socio-demographic structure the level of income and welfare in 1985 would have been higher, the incidence of poverty lower, and the distribution of income and welfare less uneven.*

2. *However, these effects are not very important* (similar conclusions were reached in the US by Danziger, Haveman and Plotnick (1986) and Bane (1986)), the reason being that developments with positive and negative effects have partly compensated each other. The decreased number of children had a positive effect while the increased number of single young people and of one parent families had a negative effect (because both of these types of household are at the bottom of the income distribution and run a high poverty risk).

2. Second simulation

In order to measure the effects of the increase in double income households a method was adopted which differs from that applied above. *The actual situation in 1976 and 1985 is compared with the hypothetical situation in which the wives have no income at all.* For 1976 and 1985 we do not compare the total family income, but a hypothetical 'remaining family income' (the total family income less the wife's income). Compared with reweighing this method the advantage that the other (socio-economic) characteristics of the population remain constant, thus ensuring that the shifts in the socio-economic characteristics of single and double income households are also, implicitly, taken into account. In this sense the estimates are more accurate than the preceding one which assumed that the socio-economic characteristics of the various socio-demographic subcategories remain constant in time. However, the other two assumptions of the first simulation also apply to this one (the size of the various socio-demographic subcategories does not affect their income and the distribution of income and welfare does not affect socio-demographic behaviour).

From the simulation it can be deduced that *the increase in double income households has largely compensated for the negative effects of the crisis.* Without this increase in the number of double incomes the average family income would have dropped sharply, the poverty risk would have risen considerably, and the inequalities in the distribution of income would have certainly increased. *The effects are considerable* and confirm the suspicion that the remarkable stability in income distribution in times of economic crisis can be largely explained by the increased number of women on the labour market..

3. Third simulation

The third simulation allows us to *calculate the combined effect of the changes in the socio-demographic structure and the generalization of double incomes.* From this we can deduce that the negative effects of the increase in numbers of single young people and single parent families were overcompensated by the positive influence ensuing from the increase in the number of working women and the decrease in the number of children. *Without the (simulated) socio-demographic changes, all other things being equal, the past*

decade of crisis would have brought about a sharp decline in household's welfare (-7%), a marked increase of the poverty rate (+22 to 64%) and of income inequality (+5 to 16%).

TABLE 7: Socio-demographic structure of the population: classification of households according to type and age of household head (only those of working age) (Flanders, 1976-1985).

	1976	1985
Single < 30 years 30-49 years > 49 years	0.7 1.5 } 5.3 3.1	2.0 2.5 } 7.3 2.8
Couple < 30 years 30-49 years > 49 years	4.3 5.6 } 21.1 11.2	4.9 4.9 } 23.1 13.3
Couple + 1 child < 30 years 30-49 years > 49 years	5.2 10.5 } 18.1 2.4	4.2 11.4 } 18.6 3.0
Couple + 2 children < 30 years 30-49 years > 49 years	3.2 13.8 } 18.3 1.3	2.6 16.3 } 20.0 1.1
Couple + 3 or more children < 30 years 30-49 years > 49 years	0.4 11.4 } 13.0 1.2	0.5 9.3 } 10.4 0.6
Single parent families	1.6	2.2
Compound households < 30 years 30-49 years > 49 years	0.7 10.4 } 22.6 11.5	0.2 6.6 } 18.4 11.6
Total	100.0	100.0
Average number of persons per household Average number of children per household	3.55 1.32	3.21 1.09
Number of households in the sample	3.843	2.950

Source: CSP surveys, 1976-1985.

TABEL 8: Indicators of the effect of socio-demographic changes on the distribution of income and prosperity among families of working age:

Actual distribution and distribution under the hypothesis of unchanged socio-demographic structure (Flanders, 1976-1985).

	Actual distribution			Distribution under hypothesis I (1)			Distribution under hypothesis II (2)			Distribution under hypothesis III (3)		
	1976	1985	% difference	1976	1985	% difference	1976	1985	% difference	1976	1985	% difference
Average total available family income (x BFr./month) (4)												
- per household	66.694	61.656	- 7.5	66.694	63.263	- 5.1	59.485	50.327	- 15.4	59.485	51.861	- 12.8
- per equivalent unit	51.149	49.297	- 3.6	51.149	49.435	- 3.3	43.604	40.300	- 7.6	43.604	40.441	- 7.2
% on subsistence level												
- CSP-standard 75 %	5.6	4.5	- 19.6	5.6	4.1	- 26.8	7.0	8.9	+ 27.1	7.0	8.6	+ 22.8
- CSP-standard 100 %	18.6	17.2	- 7.5	18.6	16.6	- 10.7	28.0	34.8	+ 24.3	28.0	34.2	+ 22.1
- OECD-standard	15.9	18.4	+ 15.4	15.9	17.8	+ 11.9	23.0	38.6	+ 67.8	23.0	37.7	+ 63.9
Theil-coefficient												
- family income	.094	.096	+ 2.1	.094	.091	- 3.2	.096	.106	+ 10.4	.096	.104	+ 8.3
- standardized family income	.081	.079	- 2.5	.081	.076	- 6.2	.074	.089	+ 20.3	.074	.086	+ 16.2
Gini-coefficient												
- family income	.240	.242	+ 0.8	.240	.235	- 2.1	.239	.252	+ 5.4	.239	.250	+ 4.6
- standardized family income	.223	.216	- 3.1	.223	.214	- 4.0	.208	.224	+ 7.7	.208	.220	+ 5.6
Relative variation coefficient												
- family income	.446	.456	+ 2.2	.446	.442	- 0.9	.461	.490	+ 6.3	.461	.482	+ 4.5
- standardised family income	.422	.423	+ 0.3	.422	.412	- 2.4	.411	.464	+ 12.9	.411	.450	+ 9.5

1) Hypothesis 1: the socio-demographic structure of the sample population in 1985 equals that of 1976 (cfr. table 9).
2) Hypothesis 2: for both years, 1976 and 1985, new distributions were calculated under the hypothesis that the (married) women have no income.
3) Hypothesis 3: the socio-demographic structure of the sample population in 1985 equals that of 1976; for both years it is assumed that the (married) women have no income.
4) the 1976 figures have been converted into 1985 prices.

Source: CSP-surveys, 1976-1985.

D. SUMMARY AND CONCLUSIONS

The view that the socio-demographic changes of the last decade must entail greater income inequality and increased poverty appears to be as simplistic as the notion that increased unemployment automatically entails a dualisation of society and increased poverty. The fallacy lies in the fact that the (assumed) effects of socio-demographic developments are considered in isolation, detached from the (assumed) effects of economic processes, and vice versa. Our research proves that exactly *the conjunction of significant socio-demographic changes and economic processes helps to explain the observed stability in income distribution throughout the past economic crisis* : 'plus que ça change, plus que ça reste la même chose'.

The chief explanation for the global evening out of the distribution of income undoubtedly lies in the diminishing of income differences between the generations: *with regard to income and welfare the situation of younger families has deteriorated, that of the elderly improved.* These oppossite trends are chiefly the result of economic and institutional factors (higher unemployment rates, lower wages and unemployment benefits for the young, higher pensions for the elderly).

However, the marked improvement in income and welfare of the elderly is only a partial explanation for the remarkable stability of income and welfare inequality in times of economic crisis. Within the population on active age, too, income inequality has not increased (but rather decreased), and no increase has been measured in the incidence of poverty.
This stability is explained by the conjunction of socio-demographic, economic and political developments. It has been shown that if there had been no socio-demographic changes during the crisis period, all other things being equal, there would have been a sharp decline in welfare, a sharp increase of poverty rates and of inequalities. However, the negative effects of the economic crisis and of the increase in numbers of single people and single parent families have been overcompensated by the positive effect resulting from the increase in the number of working women and the decrease in the number of children. *Because the economic crisis and the destabilization of the family occurred in a period when double income households were becoming increasingly common and the number of children diminished, the (significant) individual income reductions did not, or hardly, translate into a global average decline in welfare at the level of the family. Moreover, this is also true for the lowest income categories.*

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DURATION OF POVERTY IN NORWAY IN THE 1980s.

SOME LONGITUDINAL RESULTS FROM

THE NORWEGIAN SOCIO-ECONOMIC PANEL (NSP)

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Preliminary version

"You will always have the poor among you"
(John. 12:8)

1. Introduction

One main purpose with this paper is to present a data set: The Norwegian Socio-economic Panel (NSP). A second purpose is to present some preliminary results from longitudinal analysis of the NSP. We have, due to time restraints, refrained from using sophisticated methodology. With very simple techniques, by straight forward cross tabulations, we manage to obtain interesting findings. We believe that further and more sophisticated analysis of NSP will shed new light upon a number of issues of interest for social scientists in Norway, not only on poverty, which is the theme of this paper.

The panel design has several advantages compared to cross-sectional surveys in the study of poverty. Since income distributions are relatively stable across time one may often get to believe that there is a great deal of permanence in the economic situation of households situated at the bottom of the distribution. When analyzing poverty rates, for instance, cross-sectional data gives no information of the mobility within the poverty group or to what extent the poverty group comprises the same households each year. By introducing the panel concept, however, we are not only able to study the dynamics of poverty on topics such as the duration of poverty and income flexibility among the poor, but also to what extent life-events taking place within the household increases or decreases the risk of poverty.

This is the first time results from longitudinal analysis of the NSP are published. The paper is organized as follows: In section 2 we give a description of our data, i.e. the NSP. A brief discussion of the poverty concepts we use is given in section 3, as well as a description of income concepts and equivalent scale. In section 4 some preliminary results are presented. Section 5 summarizes our findings.

2. Data

The socio-economic panel was first introduced i 1979 as part of The Level of Living Survey. Due to changes in household and income definitions in 1982, the panel has comparable data only from this year. The panel has been part of the Income Distribution Survey (IDS) annually since 1986. At present we have comparable data for six waves: 1982, 1986, 1987, 1988, 1989 and 1990.

The panel consists of a representative sample of ca 2400 core persons between 16 and 79 years old. The panel is rejuvenated every year by adding a sample of new panel members. The newcomers are drawn among youngs turning 16 years old during the survey year and immigrants to Norway the previous year. The panel is similarly adjusted by deleting core persons who either have emigrated, deceased or will pass the age limit of 79 years during the survey year. Household members splitting off (divorced, children moving out etc.) are dropped from the survey. The panel has detailed information about personal and household income taken from tax returns and other administrative registers. Household composition is based on interviews. In cases of non-response the household composition is estimated by using The Central Population Register. Table 1 gives a description of how the panel has developed in the period from 1982 to 1990. The table shows, for instance, that 1784 households (core persons) have participated in all six waves between 1982 and 1990. Similarly there are 2060 households which have participated annually between 1986 and 1990.

In addition to being a relatively small sample, the NSP has it's limitations as regards to the study of poverty. All individuals registered in the Central Population Register are in theory part of the sampling frame. In practice, however, individuals without a permanent address are not likely to be included in the sample. Although relatively small in numbers, these individuals are probably among the poorest in Norway. Nor are people living in institutions part of the survey. According to the Population Census about 50.000 individuals were institutionalized in 1990 (Weekly Bulletin 18/91). Particularly in a panel survey there are good reasons for including institutionalized persons, which we now consider. Institutionalization is often of limited duration, and by omitting this group we exclude ourselves from being able to analyze certain important events. Non-response would not be very serious, as most data in the NSP come from administrative registers.

The most important limitation, however, is the exclusion of core persons older than 79 years from the panel. The reason for not including the oldest members of the population was that The Level of Living Survey, for which the panel was originally drawn, was conducted only every four year. Due to both high non-response rate as well as high mortality rate in this group, the age limit was set to 79 years. Since the socio-economic panel has been conducted annually since 1986, and since non-response is adjusted for by using register information, this is no longer a valid argument for omitting the old. A revision of the panel design to include all age groups is under consideration. This, never the less, leaves out most households headed by persons 80 years or older. In 1990 about 6% of all households belonged to this category. Despite these limitations, the panel maintain it's representativity when compared to population figures for the ages between 16 and 79, as is shown in table 2.

To produce household statistics each individual in the panel has been given a weight equal to the inverse of probability.[1]

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[1] The sample probability is dependent on the number of persons older than 15 in the household. Since our aim is to produce frequency and not population figures we simply give household with one person older than 15 the weight 1.0, household with two persons older than 15 the weight 0.5 etc.

3. The choice of poverty and income concepts

There is not, and probably will not be, complete agreement on how to define poverty. Opinion differs as to whether one should measure poverty in absolute or relative terms or according to objective or subjective criteria. Our data clearly set limits on which definitions to use. Official poverty lines are some times based on a basket of necessities, which may be connected to an absolute definition of poverty. In Norway we do not have official poverty lines. We must also rule out subjective definitions of poverty as we have not (yet) included questions about own assessment of household economy in the NSP. We are restricted to define poverty solely on objective criteria. We have defined two poverty lines. The first poverty line is based on a political-administrative decision: the cut-off point is an equivalent household income equal to or less than the Minimum National Pension given to a single person in one year. In public debate in Norway the minimum pension is synonymous with low income, if not poverty. Our second operationalization of poverty define households as poor when their equivalent household income is less than 50% of the mean equivalent household income of all households. This definition is frequently used in other studies of poverty, for instance in the EC (Hagenaars et.al. 1992).

The equivalent scale used in this paper is the original OECD scale which gives the first adult household member the weight 1.0, the second adult 0.7 and children 0.5. Units of analysis are individuals (core members of the panel).

The income concept used is equivalent disposable income per. year per. household. Disposable income is gross income minus taxes. Gross income is the sum of wages and salaries, income from self-employment, income from property, and transfers received. We have chosen not to make deductions in income for private interest payments. There are two reasons for this. The first reason is that income of imputed rent of own dwelling is clearly underestimated in Norwegian tax data while mortgage payments and all other

4

interest payments are fully deductible. The second reason also has to do with peculiarities of the Norwegian tax system during the 1980s. Since private interest payments were fully deductible while marginal tax rates on net income was high, this served as an incitement to high-income household to reduce their net income by taking up loans. As a result there are very high correlations between the size of income and the size of interest payments. If interest payments are deducted from the disposable income one may therefore underestimate differences in welfare between low-income and high-income household (Lyngstad 1992).

4. Some results

4.1. Poverty rates in Norway: 1982 - 1990

Table 3 presents the poverty cut-offs for the two poverty lines chosen. Judging from the table the poverty lines are fairly close to each other. At the start of the decade the Minimum Pension poverty line was slightly more liberal than half the mean. Due to a stronger growth in disposable household income than in the minimum pension benefits, particularly in the mid-eighties, the half of mean cut-off surpassed the Minimum Pension and was 4% above it in 1990 (table 3).

Our poverty lines are confronted with empirical data in table 4. The table presents figures from The Income Distribution Survey (IDS) as well as the socio-economic panel (NSP). According to the IDS the poverty incidence has declined since 1982 when we look the poverty line based on the Minimum Pension. This comes as no surprise since the number of minimum pension recipients also declined in the period as more pensioners were eligible to occupational pension schemes (superannuation). For the half of mean poverty line the development is much more stable. Except for the years 1984 and 1985, when sample sizes were smaller than other years, the percentage of household below the poverty line only varies between 7% and 9% according to the IDS. The poverty figures based on

the socio-economic panel does not deviate much from those reported in the IDS. The panel shows, however, a sharper increase in the number of poor at the close of the decade compared to the IDS. An explanation for this is that a decline in poverty among the old will not be registered in the panel due to the age limit, while an increase in poverty among the young will be over-estimated (table 4).

4.2. Duration of poverty

One of the most interesting findings from the longitudinal analysis is the high rate of mobility in the poverty group. Tables 5 and 6 present the duration of poverty between 1986 and 1990 for the two poverty lines respectively. For the less generous Minimum Pension poverty line, slightly more than half of the households (54%) belonging to the poverty group in 1986 were still in poverty the next year (table 5). In other years the mobility was even higher. For those belonging to the poverty group in 1988, for instance, only 45% remained in poverty the next year. The risk of belonging to the poverty group seems to be further reduced the following years. For instance, of all households in poverty in 1986 only 24% were still in poverty two years later. The corresponding figures for other years vary from 19% (1987) to 31 % (1988). In an even longer perspective just 9% of those originally poor in 1986 were still poor four years later. However, these figures are uncertain due to a very small number of observations.

For the poverty line based on half the mean (table 6) the changes are more modest due to a more liberal poverty line. The high rate of mobility among the poor is never the less confirmed, as 40% to 45% of all poor households escape poverty after only one year of poverty.

With such a high rate of income transition among the poor a general conclusion may be that the number of permanent poor is likely to be very small in Norway. This assumption is further strengthened in table 7 which reports the poverty rate for all household in 1990

as well as the number of household which also experienced poverty in previous years. As can be seen, 9% of all household had a disposable income below the half of mean poverty line in 1990. However, only 4% of all households had experienced poverty the previous year as well. In 1990 less than 1% of all households had been continuously poor the last four years. The corresponding poverty rates for the Minimum Pension poverty line is even smaller. The high rate of mobility among the poor in Norway corresponds to findings in panel studies conducted in other European countries, for instance in Belgium and Germany (Deleeck, Cantillon & Van den Bosch 1991; Wagner & Rendtel 1991).

4.3. The propensity to return to poverty

A second aspect of mobility among the poor concerns the propensity for household to return to poverty after years of non-poverty. Panel data for the years 1986 to 1990 indicates that once having escaped from poverty, the risk of returning into poverty is relatively small. Using the poverty line based on the minimum pension, we find that 8 to 12% returned to poverty after one year of non-poverty, depending on which year one picks as one's point of departure (table 8). For the half of mean poverty line the percentage is even smaller, varying between 5% and 10% (table 9). Households returning to poverty becomes even smaller as years of non-poverty increases. Of those household which once belonged to the poverty group, but had since experienced three years of non-poverty, less than 1% returned into poverty the fourth year.

4.4. Income flexibility

How fares the poor when they outgrow poverty? Table 10 indicate that they hardly go from rags to riches. For households with an income below the half of mean poverty line in 1986, but above it the next year, 42% had a household income less than 25% above the poverty line, 19% had incomes from 25% to 49% above the poverty line, while 39% had

incomes at least 50% above the poverty line. The figures for later years indicate almost the same distribution, may be with an exception for the 1988 poor, who seem to be slightly less mobile upwards.

4.5. Temporary and longer-term poverty

Most households in Norway never experienced poverty between 1986 and 1990 according to our definition(s) of poverty. As table 11 shows, 84% of all household being panel members each year between 1986 and 1990, never fell below the half of mean poverty line. The corresponding figure for the Minimum Pension poverty line is 86%. In other words, the data suggest that about 15% of all household did in fact experience poverty at least once during the previous five years. This is a substantially larger number than what can be expected from examining cross-sectional data (cf. table 3). Never the less, Table 11 confirms that there are very few longer-term poor. Half of the households which at all experienced poverty during the five-year period between 1986 and 1990, experienced poverty for just one year.

In table 12 we present some figures according to household characteristics as well as duration of poverty. We have defined all households having experienced poverty for just one year as temporary poor, while household having experienced poverty for two or more years are defined as longer-term poor. The household characteristics refer to 1990. We have limited ourselves to present figures for the half of mean poverty line only.

Household with three or more children much more frequently appear as longer-term poor than households with fewer children. The smallest households (one person) as well as the largest households (five or more members) are much more often longer-term poor than other households. One-person households are also more often temporary poor than other households. Further, the incidence of poverty seems to be strongly correlated with the number of economically actives in the household. Household without economically active

8

members experience poverty much more often than households with economically active members. This is the case both for temporary as well as longer-term poverty.[2]

Looking at our results, one may find it tempting to claim that there is a tendency of feminization of poverty in Norway. The number of longer-term poor is twice as high for female headed household compared to male headed households. This point is also confirmed when we move to the classification according to household type. We find single parent households, of which 90% are headed by females, much more often as longer-term poor compared to other types of households. About 23% of all single parent household experienced poverty in at least two years in the period 1986 to 1990.

The appearance of temporary poverty is more frequent among the young, singles as well as couples.

Table 13 presents the share of households living in non-poverty, temporary poverty and longer-term poverty according to the same household characteristics as in table 12. We see, for example, that the majority of the longer-term poor are either singles, without economically active members in the household, or household headed by females.

4.6. Life-events and poverty

Panel data makes it possible to investigate consequences of certain life-events that occur within a household. In this section we only point at some interesting findings which are arrived at simply by comparing poverty rates in 1986 and 1990 for households which have changed size, composition or economic activity.

From table 14 we can see that the decision to leave home may not be a lucrative one,

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[2] We define a person as economically active if she or he has an occupational income greater than the minimum national pension benefit.

particularly if you become a single. 37% of persons living as singles in 1990, but lived with their parent household in 1986, have a disposable income below the poverty line. The number of these parent households being poor in 1986 was negligible. Those who left their parent household to become a couple in 1990 were better off, and the portion of poor, 8%, equals the average of all households.

Another event that is expected to increases the number of poor is when households with children split up from two-parent to single-parent households. According to our data the poverty rate before the split was below average of all households, while the rate is close to three times the average after the split.

Our data indicates that the disposable income of 10% of the households having one child in 1990 but none in 1986, were under the poverty line. Almost none of them were poor in 1986. The birth of the second or the third+ child did not increase the number of poor significantly.

Among households in our sample being singles in 1986 and changing to two-person households (couples) in 1990 the portion below the poverty line dropped from 13% to nil. We don't find the same drop among singles going to other (multi-person) households. One explanation for this may be the transition from young (single) women to single-parent household, a type of household which have high propensity to have income below the poverty line.

The data reveals interesting differences between old-age pensioners and other pensioners terminating their economic active life. The transition seems to bring very few old-age pensioners below the poverty line. The percentage below the poverty line in fact declined when they retired. For other pensioners, however, the percentage below poverty line increased considerably when they became economically inactive.

10

5. Summary and challenges

There is a vast potential for more sophisticated and more in depth research, e.g. life event analysis, based on the NSP data set, than what is presented in this paper. Despite our relatively crude approach to the study of change and continuity in poverty, we think that our findings are relevant, interesting and do have some significance. We are indicating that there is a considerable income mobility among the poor. Close to half of all poor households escapes poverty after just one single year of poverty, and only a small number of them ever fall below the poverty line again. Hence we conclude that the number of longer-term poor is likely to be small in Norway. It is, never the less, also a point worth mentioning, that the number of household falling below the poverty line at least once during the years 1986 to 1990, was twice the number reported in annual cross-sectional data. Among household types most likely to be longer term poor, single parent household are overrepresented, while young singles are more likely to be temporary poor.

Although NSP has existed for some time, it has been paid too little attention, it has very much been a by product of the annual cross sectional survey (IDS). We are now about to concept the very basic acknowledgement that a panel survey is something different from a cross-sectional survey, that it requires a "longitudinal approach" through out. The NSP is undergoing developments. Coverage will be reconsidered (institutionalized, split offs etc). The interview part of the survey will be improved (probably necessary to be able to cope with EEA requirements). Inclusion of questions which may put us in position to calculate subjective poverty measures, will be considered. Finally we will have to have a fresh look upon how to organize data. Important here will be to decide upon how to make data sets available for the research community, what data can be included, how to prepare data for e.g. life event analysis, how to define and organize spell files etc.

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Table 1. Development of the panel (core persons)
         1982 - 1990

	1982	1986	1987	1988	1989	1990
1982	2182	2014	1969	1872	1826	1784
1986	–	2336	2291	2160	2108	2060
1987	–	–	2357	2225	2171	2121
1988	–	–	–	2290	2235	2183
1989	–	–	–	–	2378	2316
1990	–	–	–	–	–	2383

Table 2. Comparisons between the Socio-economic Panel
        (NSP) and population figures. 1990

Age	NSP N	%	Population 1 Jan. 1991 N	%
16-24	448	18.8	591.176	18.3
25-29	205	8.6	325.518	10.1
30-39	468	19.6	624.755	19.4
40-49	431	18.1	572.858	17.7
50-59	276	11.6	384.094	11.9
60-69	308	12.9	402.671	12.5
70-79	247	10.4	326.447	10.1
SUM	2383	100.0	3.227.519	100.0

Table 3. Poverty lines in Norway 1982 - 1990. 50% of mean
         equivalent household income (A) and minimum national
         pension (B). Kroner

	Half of mean (A)	National Pension (B)	Ratio A/B
Year			
1982	29 040	31 236	93
1984	34 895	36 524	96
1985	37 809	39 224	96
1986	43 167	42 888	101
1987	48 665	45 724	106
1988	51 855	48 786	106
1989	53 217	51 174	104
1990	55 370	53 424	104

Table 4. Percentage of household with an equivalent household
income equal to or below the poverty line. The Income
Distribution Survey (IDS) and the Socio-economic Panel
(NSP) 1982 - 1990.

Year	Half of mean (A)		National Pension (B)	
	IDS	NSP	IDS	NSP
1982	7.1	6.4	10.7	9.8
1984	5.7		8.8	
1985	5.2		7.7	
1986	7.4	6.4	7.3	6.2
1987	8.7	7.7	5.9	5.2
1988	7.9	7.6	5.6	5.4
1989	7.8	8.5	6.0	7.2
1990	8.1	9.2	6.5	7.8

Table 5. Duration of poverty. Poverty line = National Pension

| Living in poverty | N | Still in poverty | | | |
		1 year later	2 years later	3 years later	4 years later
1986	90	53.5	23.8	8.9	8.9
1987	74	46.0	18.5	16.5	−
1988	90	45.0	31.3	−	−
1989	118	52.2	−	−	−

Table 6. Duration of poverty. Poverty line = half of mean

| Living in poverty | N | Still in poverty | | | |
		1 year later	2 years later	3 years later	4 years later
1986	94	62.6	37.9	17.8	13.7
1987	106	56.6	33.6	24.5	−
1988	122	54.6	38.1	−	−
1989	143	58.0	−	−	−

Table 7. Duration of poverty. Household below or equal to the poverty line in 1990, by years of poverty.

	Poverty lines	
	Minimum Pension	Half of mean
Households living in poverty		
All	7.8	9.2
Also below poverty line		
1989	3.2	4.4
1988	1.4	2.4
1987	0.6	1.4
1986	0.4	0.7
1982	0.2	0.2

Table 8. Transitions in poverty. Poverty line = National
         Pension. Households returning into poverty after
         years of non-poverty

| | Returning into poverty after | | |
	1 year of non-poverty	2 years of non-poverty	3 years of non-poverty
Living in poverty			
1986	8.7	3.9	0.8
1987	11.5	6.8	–
1988	8.0	–	–

Table 9. Transitions in poverty. Poverty line = Half of
         mean. Households returning into poverty after
         year(s) of non-poverty

| | Returning into poverty after | | |
	1 year of non-poverty	2 years of non-poverty	3 years of non-poverty
Living in poverty			
1986	4.6	5.1	0.7
1987	6.3	5.3	–
1988	10.0	–	–

Table 10. Flexibility of income. Household in poverty one
          year, but not the next year. Poverty line = half of
          mean. Per cent

| In po-
verty | N | All | Income as a percentage
of the poverty line | | |
			100-124	125-149	150-
1986	36	100	42.0	19.3	38.6
1987	53	100	45.5	15.1	39.4
1988	61	100	63.3	15.7	21.1
1989	70	100	40.6	21.4	38.0

Table 11. Frequency of poverty. 1986 - 1990. Percent

	Number of times below the poverty line					
	0	1	2	3	4	5
Poverty line						
National Pension	86.4	7.6	3.3	1.5	0.7	0.4
Half of mean	84.1	8.0	3.5	2.3	1.5	0.8

Table 12. Frequency of poverty. 1986 - 1990. Household
characteristics. Poverty line = Half of mean

	Not in poverty	temporary poor	longer term poor
1. All households	84.1	8.0	8.0
2. Number of children in the household			
No children	84.4	8.1	7.6
1	85.7	5.0	9.3
2	84.9	9.4	5.7
3 or more	73.2	10.6	16.2
3. Household size			
1	77.2	11.3	11.5
2	88.6	5.2	6.3
3	88.0	7.0	5.0
4	89.9	5.8	4.3
5 or more	81.5	8.4	10.0
4. Economically active(s) in the household			
0	69.5	12.7	17.9
1	86.2	7.8	6.0
2+	95.5	3.7	0.9
5. Sex of head of household			
Male	88.3	6.4	5.3
Female	75.5	11.2	13.3
6. Type of household			
Single			
16-44 years	67.7	18.8	13.4
45-64 years	87.6	4.1	8.3
65-79 years	82.5	6.3	11.2
Couples without children			
16-44 years	82.8	13.8	3.5
45-64 years	97.7	0.6	1.7
65-79 years	93.5	2.7	3.7
Couples with children Youngest child			
0 - 6 years	83.2	9.0	7.8
7 - 19 years	94.6	2.7	2.6
Single parents	64.0	13.5	22.5

Table 13. The composition of household, by poverty status. 1990

	Not in poverty	temporary poor	longer term poor
1. All households	100.0	100.0	100.0
2. Number of children in the household			
No children	70.9	71.4	67.1
1	12.6	7.8	14.4
2	12.4	14.5	5.7
3+	4.2	6.3	9.7
3. Household size			
1	33.8	52.0	53.1
2	29.8	18.4	22.2
3	13.7	11.6	8.3
4	16.4	11.2	8.2
5+	6.3	6.8	8.1
4. The number of economically active(s) in the household			
0	24.9	48.0	67.7
1	39.4	37.5	29.0
2+	35.6	14.5	3.3
5. Sex of head of household			
Male	70.3	53.7	44.9
Female	29.7	46.3	55.1
6. Type of household			
Single			
16-44 years	12.9	37.9	27.1
45-64 years	8.7	4.3	8.7
65-79 years	12.1	9.8	17.3
Couples without children			
16-44 years	3.7	6.5	1.6
45-64 years	8.8	0.5	1.6
65-79 years	11.8	3.8	4.9
Couples with children Youngest child			
0 - 6 years	13.1	15.0	13.0
7 - 19 years	14.6	4.5	4.2
Single parents	4.5	10.1	16.9
Other type of household	9.7	7.6	4.6

Table 14. Changes in household composition and poverty. 1986
and 1990. Poverty= half of mean

Changes in household composition	N	Percentage in poverty	
		1986	1990
1. All households	2135	6.4	7.6
2. Child leaves home			
- as single	63	2.3	36.5
- as couple	37	0.0	8.1
3. From two parents household to single parents	31	2.6	22.5
4. Arrival of a new child	233	6.1	9.8
- 1. child	66	1.2	9.8
- 2. child	103	8.3	9.3
- 3+. child	64	8.8	10.8
5. From single to multi-person household	83	10.5	9.6
- couple	30	13.3	0.0
6. From economically active to inactive	172	2.0	7.9
- old age pension.	96	2.0	1.0
- other pensioners	76	2.0	15.5