

WORKING
PAPERS
FROM
DEPARTMENT
FOR
STATISTICS
ON
INDIVIDUALS
AND
HOUSEHOLDS

POPULATION
AND
LIVING
CONDITIONS

**ARBEIDSNOTAT
FRA
AVDELING
FOR
PERSONSTATISTIKK**

**BEFOLKNING
OG LEVEKÅR**

7/1992

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

**Part 1
Plenary Lectures**

CENTRAL
BUREAU
OF STATISTICS
OF NORWAY

FORORD

I denne serien samles notater innen feltet befolkning og levekår som har krav på en viss allmenn interesse, men som ikke presenterer avsluttede arbeider. Det som presenteres vil ofte være mellomprodukter på vei fram mot en endelig artikkel eller publikasjon, eller andre arbeider som forfatteren eller avdelingen er interessert i en viss spredning av og å få kommentert. Når de er ferdig bearbeidet, vil noen av arbeidene bli publisert i andre sammenhenger.

Synspunktene som presenteres er forfatterens egne, og er ikke nødvendigvis uttrykk for for SSBs oppfatning.

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 necessarily reflect the policies of the Central Bureau of Statistics of Norway.



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Report
from
Multidisciplinary Research Conference
on
Poverty and distribution

Oslo, November 16-17, 1992

Plenary lectures

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?

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.

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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 Bureau 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.

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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.

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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, Örebro, 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)

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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

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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.

**MULTIDISCIPLINARY RESEARCH CONFERENCE ON POVERTY AND
DISTRIBUTION**

**SORIA MORIA CONFERENCE CENTRE
OSLO**

16 and 17 November 1992

**WHY AND HOW DO WE STUDY POVERTY IN
INDUSTRIALISED WESTERN COUNTRIES? VARIOUS APPROACHES TO THE
STUDY OF POVERTY.**

**Professor Jonathan Bradshaw
University of York**

INTRODUCTION

It is a very great honour to have been invited to present the first plenary paper at this conference. Before I say anything else I want to congratulate the Central Bureau of Statistics for mounting this conference. I hope that they will recognise from the degree of interest shown by this powerful representation of the international poverty research community how much we all appreciate their initiative. It is in a way extraordinary that this, the first really good international conference on poverty for many years, is organised by the Central Statistics Bureau of Norway, a country with only 4 million people and by all the comparative evidence rather little poverty. It is an indication of the quality of this country, its welfare state, the sophistication and liberal traditions of its political elite, its commitment to the value of social science.

I have had academic links with Norway for many years and you can imagine what a relief and a contrast it has been to me coming to this country from Britain during the Thatcher years. It has been breathtaking to observe the (relative) size of the Norwegian social science research effort and the seriousness with which policy makers interest themselves in the results of applied social research. In contrast in Britain during the last ten years we even had one Secretary of State for Social Security who in June 1989 announced the "end of the line for poverty", that living standards had improved so much since the early part of the century and the prewar period, that poverty had no longer any real meaning and "that individuals and organisations concerned with poverty were merely pursuing the political goal of equality" (Speech text 11 May 1989). The word poverty is still almost entirely avoided in Government documents and the research programmes they fund do not include research on either poverty or the poor.

In the light of this it is with a sense of unworthiness and considerable trepidation that I have approached writing this paper. While I was pleased to be told that I was going to be invited to give a plenary on the subject of the study of poverty this immediately dissipated when I was informed of the title of my talk - and specifically saw the question - WHY? I am afraid that my paper is inevitably too UK centric, draws too much on my own personal research and in many other ways is a first shot.

WHY STUDY POVERTY?

Of all the interrogatives - what, how, when, where, why - the latter is invariably the most profound and difficult to answer. I will deal with the how question in the second part of my talk. However I must attempt to say something in answer to the question why?

Personal experience, values and self interest

Behind the preoccupation of every social scientist there is something personal. Given the whole huge range of the potential fields of enquiry why do we focus on what we choose to focus on? For some of you it will be because you yourselves were poor - some of you may still be, but I doubt it. Others will be motivated by your values, your beliefs about fairness and justice, concern at inequality and deprivation, outrage at the waste and suffering associated with poverty and so forth.

Some of us may claim to have no particular value commitment to the study of poverty - we do it because it is interesting, there is money in it, governments fund research on the subject, we can build academic careers on the study of poverty and so forth. You may remember the seminal paper by the American sociologist Gans (1972) who using Mertonian functional analysis identified fifteen functions of poverty which he argued helped to explain its persistence. One of these was that it gave work to "poverty warriors" including social scientists.

Tradition

Some of us came into the study of poverty because we were trained into it. In the UK context anyone who studied social policy in Universities in the late 1960s and 1970s was weaned on the subject. The traditions of the British discipline of social policy have their origins in the efforts made to reform the Poor Law by the Webbs and others and the pioneering empirical studies of Booth and Rowntree, of poverty. Indeed the first serious efforts at establishing social facts were concerned with poverty, its measurement and causes and a desire to attack moral evils and "to elevate the physical condition of workers". The subject of social policy is the welfare state and the welfare state had been established in Britain after the war to abolish Beveridge's five giants, including want (poverty). In the late 50s just as we were learning about how poverty had been abolished by the welfare state there emerged a totally new critical view. Fabian socialist academics passionately committed to social reform and possessing enormous empirical energy and a new conceptualisation of the issue, won our allegiance. The best people in our subject

were studying poverty. We became activists in the single issue pressure groups that were formed at that period and through research and action sought to influence policy. We were stimulated of course by influences then from across the Atlantic, the American War on Poverty, the Civil Rights Movement, Saul Alinsky and the potential of community action.

There then came a period of intellectual disillusion for many of those bright committed spirits. It was partly a function of the fact that government had taken over the study of the subject with huge national surveys that the independent researchers felt they could not compete with. Then there was a sense of frustration at the failure of social reform to solve the problem. Some people became convinced that poverty must be a behavioural problem, a cultural problem locked into the patterns of poor peoples behaviour, not amenable to structural change. Others despaired of social reformists measures and immersed themselves in the critical analysis of social policy - they used research on poverty but did not contribute to it and in general despised those of us who were still beavering away in a social reformist mode. Then there were others who moved on to other and equally important social issues housing, health, community care, crime. Many, making their living by research, followed the money and, in Britain at least, in the last 15 years it has not been going into poverty research.

Poverty is a categorical need

Poverty is a categorical need, that is a need which must be met in order for a person to develop properly as a human being. These needs which a human cannot do without are overriding and include, health nutrition and shelter. They are the "irreducible absolutists core in the idea of poverty" (Sen 1983) and they are overriding because they are inherent to the need itself and to our nature as human beings and not instrumental to some other purpose (Megone 1983). Of course there is a good deal of disagreement about what constitutes a categorical need. Some philosophers do not accept that such things exist at all (Barry 1965) and others have added to the list of categorical needs such elements as autonomy or the capacity or freedom to choose (Doyal and Gough 1991) and ability to participate (Townsend 1979). The assertion that poverty is a categorical need gives us very little help in determining whether or not it exists. However it gives the poor a moral claim for action - we have an obligation as fellow human beings to meet the needs of the poor. The moral imperative is in the essence of the concept (if that it not a tautology). If we describe someone as poor we are saying that (subject to some reservations about the cause of their poverty and their liberty to be poor if they want to) they are in need and that need should be met. It is therefore extremely important to use the words poor and poverty with some precision. I could never reconcile myself to those who used as a measure of poverty in the UK a level (supplementary benefit level plus 40 percent) which included nearly a third of the population. Not only did that proportion seem too high even in the UK but it meant that my obligation to meet need was overwhelming! Peter Townsend's classic definition of poverty is

"Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average family or individual that they are in effect excluded from ordinary living patterns, customs and activities". (Townsend 1989)

This seems to imply that it is a degree of difference from the norm that defines poverty. Poverty is not inequality. It is a degree of inequality that is unjustifiable in a given society at a given time. On the other hand, in the UK at least, I find it difficult to understand poverty in terms of marginal or vulnerable groups. This may be the language of Scandinavian poverty but it diminishes the importance of the issue in the British context.

Poverty and society

Poverty is not merely a problem experienced by an individual or a group. It is an externality, we all suffer from it. Poverty is associated with all the most important social problems: disease, early death, abuse and neglect of children, marital disharmony and break-down, out of wedlock births, separation, divorce, low educational attainment, early school leaving, early home leaving, early childbirth, delinquency and crime, mental illness, mental handicap, unemployment, low paid and insecure employment, racial and gender disadvantage, homelessness, poor housing, inner city dereliction, personal insecurity, debt, stress, drabness and neglect.

The association between poverty and these problems is not inevitable and the direction of the association is not always clear - poverty can be both a cause and an effect. Commonly poverty is associated with not one but many other problems and deprivation is multiple. But an assault on poverty is an assault on most other social problems. Indeed an assault on poverty may be the most direct or only means of solving many of these other problems. Thus there is evidence that in industrialised societies the main improvements in health are to achieved now not by spending more on health or even in behaving more healthily but in improving the living standards of the poor and reducing the stresses associated with inequalities (Quick and Wilkinson 1991, Townsend, Davidson and Whitehead 1992).

Paupers or poverty?

In order to deal with these problems we need to understand the nature of poverty. For example there has been a very long standing dispute about whether poverty is fundamentally a structural problem or a behavioural one - one that can be ascribed to the behaviour of the poor. These arguments have taken on a variety of forms over time. In modern times there has been the 'Culture of Poverty' ascribed to the work of Oscar Lewis which argued that the poor had their own norms and values which were also pathogenic. It was no good giving the poor money,

poverty could only be broken into by education and social work. This view had some influence in the American War on Poverty but in Britain, at least, has not carried much credence. Nevertheless we have had concern about Transmitted Deprivation and the Cycle of Deprivation. It took a huge research programme in the 1970s in the UK to convince a Conservative Secretary of State that poverty was not being passed from generation to generation by maladaptive child rearing (and dysgenic breeding) (Brown and Madge 1982). Now the most recent formulation of these behavioural explanations for poverty is in the idea that there is an underclass cut off from the norms, values and behaviour patterns of wider society, detached from the disciplines of regular employment, and 'normal' family life, criminalised, ghettoised and dependent on social security and other state benefits - a carriage in a train of progress moving in the wrong direction, dragging the rest of us backwards, a threat (Smith 1992). What dependence can be reduced, what are the influences on labour supply behaviour, how can the "sullen apathy of dependence" (to coin a phrase used by one of our recent conservative ministers) give way "to the sheer delight of personal achievement"?

There may in the USA be some justified cause for alarm at the concentration of poverty in black communities, in inner city ghettos with very high levels of lone parent-hood, drug addiction, prostitution and criminality but it is probably not the experience of most European poverty.

Poverty as diswelfare

Poverty is one of the most extreme symptoms of the failure of our economies. Whether they are liberal free market capitalist, corporatist managed economy or central state managed they are failing if there is poverty. Poverty is not just a symptom of failure it is a diswelfare, of capitalism at least, a consequence of economic progress and restructuring. The costs of those diswelfares do not fall equally and in order to justify those costs, provide for security against them, strengthen the power of the weak and vulnerable, provide human capital, a secure social environment and a stable political environment in which an economy can thrive, the state must be concerned to provide an infrastructure of benefits and services aimed to meet these diswelfares and reduce poverty.

Thus we study poverty because it is one of the most obvious symptoms of the failure of our welfare states. This is an assertion often denied by those countries whose social security systems were not so explicitly designed to abolish want and which put a higher value on solidarity or income replacement than poverty relief. Nevertheless whatever the origins and intentions it is surely a most important goal of any welfare state to reduce poverty and if it is failing to do so it is important to find out why. Furthermore understanding differences in the level of pre transfer poverty in different countries and seeking to understand and explain the relative effectiveness and efficiency with which they tackle poverty is potentially an important means of discovering how to tackle it better.

In particular there has been a sharp increase in poverty (and inequality) in the UK during the last decade. We still do not fully understand the reasons for this and in particular the balance between demographic causes, changes in labour demand and supply and changes to the tax and benefit system. We certainly do not know nearly enough about the social consequences of this poverty and its long term affects on human beings.

In conclusion we study poverty because it is bad - bad for adults, bad for their children and bad for society. We study poverty in order to reveal it, to understand it, to explain it and to encourage and assist, both by direct and indirect means policy makers, to do something about solving it.

HOW IS POVERTY STUDIED?

There are three elements to this question. What methods are used to study poverty, what conceptual frameworks inform the study of poverty and what particular preoccupations dominate the research agenda? All these elements interact of course in practice. Thus the conceptualisation of poverty influences the methods used to study it. The preoccupations of policy makers and academics studying the subject determine the research agenda and the methods employed.

The papers written by you for this conference attest to the range and variety of the approaches to the study of poverty and I cannot cover the whole range in the rest of my talk.

Concepts

For nearly a century now social scientists have sought to define and measure poverty. That effort has passed through a number of intellectual phases. As each has given way to the next there has been a tendency to dismiss the past. There are a variety of ways of classifying these approaches. In the UK we tend to contrast absolute or minimum subsistence approaches to poverty which dominated the prewar period with the new conceptualisation of the relativist school in the post war (or perhaps more accurately post the 1960s) period. The prewar school used budget standards methods to measure living standards. The post war school has used a variety of measures including income distribution analysis and social indicator methodologies. However this simple dichotomy is an over simplification.

There are approaches to the study of poverty that lie somewhat in between the dichotomy between relative and absolute. One approach measures poverty not in relation to the average but to a standard which may or not vary as living standards change. Thus the US poverty standard was originally formulated on the basis of the proportion of a budget devoted to food. In the UK, the official definition of poverty for many years was a standard based on the rates of social assistance. Some critics thought that this was far too low and below participation standard and others (mainly the government) objected to it because when they increased benefits in real terms the numbers in poverty increased.

There is also the distinguished school pioneered mainly by Dutch scholars of measuring poverty using subjective indicators such as whether people feel poor. Clearly in answering this type of question respondents may be employing a minimum standard reference or a relative one. Van Praag will be presenting a paper on these methods at this seminar.

In the end all notions of poverty are more or less relative including the concept of minimum subsistence. There is only one rational conceptualisation of poverty and that is that it is a relative state. Without a relative notion it is impossible to reconcile using the same word to describe a level of living in the third world and industrialised societies and in industrialised societies at different times. Furthermore even the most rigid application of subsistence approaches to poverty are in fact relative in some sense. Rowntree never suggested that people should be expected to live on his budgets, they were as Veit Wilson (1986) has shown a rhetorical advice and he changed his standards over time.

Methods

So how is poverty studied methodologically? Why, using the full range of methods available to the social sciences, of course! Though this answer may be formally true it is probably rather misleading. Given the preoccupation of the research on poverty with its prevalence, how this changes over time and with the characteristics of the poor, the vast bulk of the research on poverty has tended to be quantitative, large scale, survey research. In contrast there are rather fewer examples of studies based on qualitative, ethnographic or observational techniques.

Certainly the predominant method of the pioneers of poverty research were large scale surveys. Indeed Seebohm Rowntree (1922, 1941) in his first two surveys of poverty undertook population surveys of working class households in York. In the first survey in 1899 the science of probability sampling had not been invented and although there was an understanding of sample research by his second survey in 1936 he did not trust it. Indeed it was only after he had compared the results of a 10 per cent sample of his 1936 survey with his population results and found them to be more or less identical was he satisfied and used a sample for his last study in the 1950s (Rowntree and Lavers 1952).

Ever since Rowntree poverty research has tended to rely on the collection of income (and less often expenditure data) on large samples of the population. These may be large annual cross sectional sample surveys of the population designed for other purposes such as the UK Family Expenditure Survey whose primary purpose is to provide data for the Retail Price Index. Or they may be special adhoc single purpose surveys designed for poverty research. Some countries base most of their quantitative analysis of poverty on administrative (tax or social security) records. Continuities in poverty overtime have been studied using cohorts (the UK has had a series of surveys of birth cohorts which have been followed up from time to time). Our understanding of the dynamics of poverty has been advanced more recently by surveys

of panel samples which have enabled episodes, spells, continuities and escapes-from and flows into poverty to be studied. Duncan will be presenting a paper at this conference based on these methods.

Because large scale surveys are extremely expensive, poverty research has become increasingly dominated by Government funded surveys. In the UK Townsends's seminal survey of poverty was funded by a charitable trust (the Joseph Rowntree (Seebohm's father) Foundation), the Breadline Britain Survey was funded by a television company. All other substantial empirical effort on the subject has been mounted by the Government. One consequence of this is that there has been a continuous, enervating and arcane dispute between Government and its critics about the methods used and the results published. This has included disagreement about the appropriate poverty threshold, the equivalence scales, the definition of income, whether it should be before or after housing costs, the unit of analysis and so on.

One of the major and most welcome developments in recent years is that this research effort has become increasingly comparative.

Comparative poverty research

The European Commission has financed three studies in 1976, 1983 and 1989 of the perceptions of poverty the results of which are summarised in chart 1.

UNICEF are at the moment engaged in a comparative study of what has happened to child poverty and deprivation in industrialised countries, which includes detailed case studies of trends in seven countries (Cornia 1990, Bradshaw 1990).

Deleeck (1991) and colleagues from seven EC countries collaborated in mounting comparable surveys of poverty which are still producing some very interesting results, some to be presented at this conference.

There have been a variety of attempts to exploit existing micro social data from a number of countries in order to study poverty.

Rainwater, Rein and Schwartz (1986) were among the first people to use micro data from several countries UK, USA and Sweden. The European Commission as part of its Programme to Combat Poverty commissioned an analysis of the number of people and proportion of the population living in poverty. Respondents in each country were asked to reanalyse their own surveys using common definitions and count the number living below 50 per cent of the average. Estimates using this method were produced for 1975, 1980, and 1985 (O'Higgins and Jenkins 1989).

The Luxembourg Income Study is the most ambitious study of this kind. At Luxembourg a coalition of researchers led by Smeeding and Rainwater have accumulated and made comparable 60 or more variables from national surveys. The number of countries is growing and now eighteen countries including some former Eastern block countries are included. Two waves of the data are available

(circa 1980 and circa 1985) and a good deal of the analyses published to date have been about poverty - poverty gaps, poverty numbers and the impact of social security and taxation policy on poverty and inequality (Mitchell 1991). More recently the LIS estimates of poverty have begun to take account of the value of services in kind (health education and housing subsidies) which for reasons that have not been satisfactorily explained to me has produced some quite startling changes in the UK's position in the league table.

These studies have tended to adopt as their poverty threshold 50 percent of average income but it is already clear that the results obtained and the relative performance of different countries is very sensitive to the threshold being used. The European Commission (1991) in their final report on the second European poverty programme point out that fixing the poverty threshold at 40 per cent of the average instead of 50 per cent is sufficient to reduce the numbers in poverty in Europe from 50 million to 26 million. The results also tend to be sensitive to the equivalence scales used, whether poverty numbers (the numbers living below a threshold) or poverty gaps (the distance between their income and the threshold is taken) and the stage in the countries business cycle that the data covers.

However the data has been extremely useful in comparing poverty and inequality before and after transfers in the countries in LIS. Mitchell in her excellent book (1991) based on the 1980 sweep concluded on the basis of their outcomes in poverty relief and inequality that Esping Andersen (1990) had miscast the UK and Australia as Liberal Welfare States. In a more recent study Mitchell and Bradshaw (1992) have undertaken a poverty analysis of the 1985 sweep. (Unfortunately while Norway was included in the first sweep there are no results for Norway in the second sweep.) Table 1 gives the percentage of persons living below various poverty lines post transfer (ie after the impact of taxes and benefits). This shows the consistent position of the US with the highest percentage of poor regardless of the threshold while other countries move about the league table, for example Sweden moves from third to first as the poverty threshold rises. Table 2 compares the composition of the poor post transfer using the 50 per cent level. Except in the case of Sweden and Netherlands lone parents and families with children dominate the poor population with particularly high levels of poverty among families with children in the UK. Single people are the largest group in Sweden and Netherlands, lone parents in Germany and Canada and pensioners in Luxembourg. Table 3 compares the rank ordering on poverty numbers with the rank ordering on poverty gaps. On poverty gaps the UK appears to do rather less well comparatively than on poverty numbers . The explanation for this is not yet clear, especially given the safety net of the UK income support system and the fact that it is contrary to Mitchell's earlier study which had the UK good on gaps and poor on numbers! What is needed now is more work on how and why the differences observed occur. One of the great challenges of comparative research is to be able to link the analyses of micro

data to an understanding of the determinants of the primary distribution and detailed knowledge of the operation and interaction of taxes and benefits in different countries.

Apart from the quasi technical difficulties with LIS and the other micro data sets these studies rely on the analysis of income. Income is probably only a crude indicator of standard of living. The fact that a family in country A has an income below 50 per cent of the average, while a similar family in country B has an income above the threshold does not necessarily tell us that B is better off than A. I have already mentioned the need to take account of the value of services in kind in assessing poverty. The country B family may need to spend part of their income on health care and education, which is free in country A. Furthermore housing may be cheaper or of higher quality in country A possibly because of direct subsidies. But as well as services in kind these studies of income fail to pick up differences in the cost of living in different countries. In particular, though comparisons of disposable income take account of the impact of direct taxes, they fail to cover indirect taxes and charges (in the UK it is the massive shift from direct taxation to more regressive indirect taxation that has been the main cause of the unprecedented increase in inequality since 1979). More profoundly, what money can buy does not fully encompass the whole range of elements of a standard of living. It does not take account of the quality of a neighbourhood. It does not incorporate a feeling for the working environment. It does not take account of the political and cultural environment to which people have access. It cannot reflect the quality of personal relationships or the personal and economic insecurity felt or experienced. It does not take account of skills and qualifications. In fact it says really rather little important about people as emotional human beings or about them as souls.

Poverty is not only about shortage of money. It is about rights and relationships: about how people are treated and how they regard themselves; about powerlessness, exclusion and loss of dignity. Yet the lack of an adequate income is at its heart" (Faith in the City 1985)

Social indicators

It was in an effort to get away from income definitions of poverty and encompass a wider range of resources that contribute to a living standard, as well as to operationalism the concept of social deprivation that Townsend (1979) pioneered the use of social indicators in his deprivation index. Instead of counting people with income below a threshold he counted people who lacked one or more of a list of twelve items that included items that sought to represent social participation. He claimed that scores on the index fell as income increased and that there was a point on the income distribution - a poverty threshold - where deprivation scores increased sharply. Critics of Townsend denied that they could identify his threshold and argued that items in his index were arbitrarily chosen, not necessarily indicators of poverty[®]but a consequence of unconstrained choice. Some of these criticisms were taken into account in later work by Townsend in

London (Townsend, Corrigan and Kowarzik 1987, Townsend and Gordon 1991) and in the work of Mack and Lansley (1985). Mack and Lansley drew up an index of items which more than 50 per cent of the population considered to be necessities and only included them as lacking if the respondent said that they wanted them and could not afford them. Mack and Lansley mounted their survey twice in 1983 and 1990 and it is interesting that in the second survey the index had changed slightly and that the proportion of people lacking items had also changed (see table 4).

Expenditure

An alternative approach to the study of poverty with a long tradition has been the analysis of expenditure rather than income. The case for looking at expenditure is that there are reasons to believe that it is a better indicator of permanent command over resources, taking into account the capacity to utilise savings, assets and borrowing and the impact of the repayment of debt on living standards. Also analysis of the pattern of expenditure enables a richer exploration of different patterns of consumption at different income levels than available with a single indicator of income.

The analysis of expenditure has its origins in the work of Engel and the most extensive work using expenditure data to explore living standards has been in the USA. The poverty line in the USA was based on the work of Orshansky (1969) on the proportion of the budget spent on food. In the context of research on budget standards extensive use has been made of S curve analysis - the attempt to identify a threshold on the distribution of income where expenditure on more and more gives way to expenditure on luxuries or better and better. Our attempts to identify thresholds using UK data did not prove very successful - they did not seem to exist at all for some commodities and for others they were difficult to ascribe to a particular income level (Bradshaw, Morgan and Mitchell 1987). However we have made considerable use of the analysis of expenditure. Including the deductive simulation of a budget from the pattern of expenditure of families with children (Bradshaw, and Morgan 1987), the study of the actual expenditure of families with children with an unemployed head (Bradshaw and Holmes 1989) and more recently (inspired inter alia by the work in Norway of Borgeraas and his colleagues) we have set out to rediscover the methods pioneered by Rowntree of using budget standards to explore living standards (Bradshaw, Hicks and Parker 1992). These were relegated to the scrap heap in the UK in post war poverty research because of their association with minimum subsistence standards (and no doubt also because they are fantastically tedious to derive and keep up to date). However we believe that an inventory of goods and services can produce a measure of living standards, not just a minimum subsistence one, but also one that represents a level of social participation, and one that is not wholly random or normative but is based on good behavioural evidence. Budget standards have the capacity to bring the analysis of living standards alive, and can be used and adapted by the person in the street and policy makers in a way that many other measures of living standard cannot. We have used budget standards methods to

derive an estimate of the income required to achieve a modest but adequate and a low living standard for a variety of family types. From these we have been able to calculate equivalence scales, the direct costs of a child, the cost of a lone parent and to relate the level of benefits paid to a low cost budget (they appear to be more adequate for pensioners than they are for families with children).

Budget standards methodology has potential in comparative research. Rather in the same way that purchasing power parities are used to control for variations in the cost of living, it should be possible to take a common budget, price it, estimate the income required to purchase it and determine the proportion of the population without access to that income or various proportions of it.

The level of sophistication of the analysis of income poverty is fairly advanced at both national and comparative levels. At national level the use of social indicator methods has been established and there are examples of attempts in international comparative research to use them. The analysis of expenditure is advancing at national level but there are very few examples of comparative studies of expenditure. However the biggest gap from the UK and comparative perspective in the study of poverty is in our understanding of what poor people think and feel.

The experience and consequences of poverty

We have yet to develop research on the experience and consequences of poverty that uses measures that are reliable and valid enough to use in large scale comparative research. However smaller scale case based studies in the UK have been very illuminating in explaining labour supply behaviour (McLaughlin, Millar and Cooke 1989), take-up behaviour (Craig 1991), poverty and health behaviour (Graham 1989), and patterns of money management (Pahl 1989) and stress (Bradshaw and Holmes 1989) and in explaining the behavioural concomitants of poverty.

To illustrate the kind of study that can come out of these more in depth studies let me briefly mention some findings from a detailed study of unemployed couples with children in Tyne and Wear (Bradshaw and Holmes 1987). In order to assess the well-being of the parents in the sample the Malaise Inventory was employed. This is an adaptation of the Cornell Medical Index and was developed by Rutter (Rutter, Tizard and Whitmore 1970) to measure stress in mothers with handicapped children. It consists of 24 questions which indicate social or emotional well being. Rutter took the view that scores in excess five or six were at the top of the normal range and anyone scoring above this showed signs of excessive stress. There were 55 couples in our sample. We found that the mean score for men was 5.7 at the top of the normal range and 44 per cent scored in excess of six. The women's scores were significantly higher than men's with nearly half scoring in excess of six with a mean of 7.2. Of the women 84 per cent admitted "getting worried about things" and 63 per cent "often feeling miserable and depressed". There appeared to me no

correlation between the scores of partners either negatively or positively. We sought to relate variation in stress of both the men and women to other factors. The only significant relationship found was between the stress level of the women and the level of debt. This is perhaps not surprising as other evidence in the study showed that the mothers carried the vast bulk of the responsibility for managing the household budget.

In this study we used activity diaries to assess the behaviour patterns of the families and the striking finding from this was the high proportion of the time they spent at home. Apart from school hours children spent only ten per cent of their time outside the house and women and men 14 and 15 per cent respectively. Television was the major indoor activity taking much of the waking hours. A serious constraint on going out was the expense, particularly the cost of transport. Among the items identified in the Mack and Lansley study as necessities by more than half the population, our families 37 percent could not afford meat or fish every day, 53 percent two pairs of waterproof shoes, 52 percent new not second hand clothing, 22 percent a warm waterproof coat, 25 percent a best outfit for special occasions, 70 percent regular outings for the children and 75 percent one week holiday away from home. We concluded

"the picture that emerges from this detailed study of family lives is one of constant restriction in almost every aspect of people's activities....The lives of these families and perhaps more seriously the lives of the children in them are marked by the unrelieved struggle to manage, with dreary diets and drab clothing. They also suffer what amounts to cultural imprisonment in their home in our society in which getting out with money to spend on recreation and leisure is normal at every other income level" (p138)

Using more than one measure

Some of the most recent interesting work on poverty has attempted to compare and contrast the results produced using some of the many approaches that have been used to measure poverty. This research has a base in the conceptual challenge of Ringen (1988) that the link between direct measures of poverty (consumption) and indirect measures of poverty (income) has been neglected in research. There is the work of Deleeck and his colleagues in their seven country study some of which is reported in another paper at this conference. Ringen (1987) used a variety of different types of indicators of deprivation from a Swedish survey to explore the interaction of different approaches. Hagenars and de Vos used Dutch data to compare the prevalence of poverty using a variety of measures. Hutton (1991) sought to develop an index of poverty using data from two sources integrated at an aggregate level. Erikson and Uusitalo (1987) have used level of living data to explore the living standards of a sample over a wide range of indicators including health, employment, income, education level, social relations, family relations, recreation, security and political participation. Townsend and Gordon (1991) developed an index of multiple

deprivation that drew on 77 indicators of material and social deprivation.

Bouwnecht and Bradshaw (1993) have assessed the value of a range of measures using British data. Their sample was divided into 20 distinct family types. Thirteen different kinds of measures of poverty were derived. They covered the percentage below various proportions of mean and median income and expenditure, food expenditure ratios, fixed costs ratios, income to expenditure ratios, an index of relative deprivation, numbers at or below the assistance benefit levels and poverty gaps. These measures were assessed for their stability by rank ordering the level of poverty across the range of family types. Then the measure were assessed to see to what extent poverty on one measure accurately predicted poverty on another. The results of this indicate that the official minimum is the single variable that best represents all the other measures. Ironically this is the measure that has been abandoned by official statisticians in the UK (though it is still being carried on by non government researchers). The measure that produced results and rank ordering most unlike the other measures were the fixed costs ratio and the relative deprivation index. The latter succeeded in predicting no more than a maximum of half the poverty indicated by any of the other variables.

These types of study which seek to evaluate the representativeness of different measures of poverty may in time result in the establishment of one or more measures that are generally accepted as the best measures for national and comparative research. However I suspect that search is for a holy grail. As Deleeck (1991) has argued poverty is essentially an ambiguous notion - relative, gradual, multidimensional.

There is in fact no single measure that can be used in all circumstances. As I suggested at the start, how poverty is studied, the method used, depends on the conceptual framework and the dominant preoccupation of the researcher or the research sponsor. (For an excellent recent critical review of research on living standards see Brownlee 1990)

FINAL COMMENTS

I was given the impossible task of tackling two very difficult questions in this opening session. My attempt to answer the question - Why study poverty ? attempted an answer that covered the personal motives of the researcher, our moral obligations as citizens, the interests of society and our need to understand poverty in order to evaluate the effectiveness of policy. My attempt to answer the how question led to a partial and personal review of research on poverty. I have tried to avoid stealing the thunder of the speakers who come after but I hope that what I have said is enough to get this conference going - and not confuse it utterly!

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University of York
9 October 1992

**POVERTY LINES AND EQUIVALENCÉ SCALES
A THEORETICAL AND EMPIRICAL EVALUATION**

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**This paper has earlier been published in
Poverty Measurement for Economies in
Transition in Eastern European Countries
(ed. J. Kordos), Warsaw 1992**

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POVERTY LINES AND EQUIVALENCE SCALES A THEORETICAL AND EMPIRICAL EVALUATION

This paper is written in the framework of the Program "Enhancement of Family Budget Surveys to Derive Statistical Data on Least Privileged Groups in the European Community". We are grateful to EUROSTAT and in particular to Mrs. L. Barreiros and her staff for their support. The results given in this paper do not reflect the official opinion of EUROSTAT. As the data set used in an experimental sample, not representative for any country's population, the numerical results are just intended as empirical illustrations of the methodological arguments.

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Abstract

In this paper we describe and evaluate various poverty line concepts and family equivalence scale systems. Both on the basis of theoretical and empirical arguments we select one poverty line concept and one family equivalence scale system. We also analyse an extension of the family equivalence scale system by taking into account several other household characteristics in addition to household size.

1. Introduction

In recent years economists became interested in the poverty phenomenon. A recent survey is given by Callan and Nolan (1991). Until the seventies it was mostly denied for Western countries that there might be a substantial and persistent poverty problem. Since the American studies (Garfinkel, Haveman (1977)) and the more theoretical contributions by Sen (e.g.1976), the study of poverty is a respectable issue. This pertains also to the European Community, which sponsors a rather extensive program on poverty which has now entered its second decade.

Before we can answer the question how many households (or individuals, or children) are poor in a given country and the subsequent development and assessment of aggregate measures for the degree of poverty in a country, there is a preliminary but fundamental question: how can we recognize a poor household from a non-poor one? Mostly this is solved by specifying a net household income, which we denote by y_p and which we call the poverty line. If the household under consideration has an income smaller than y_p then it is counted as poor.

Now the primary question is where to fix the poverty line. There are a number of definitions suggested and put into practice, e.g., in the U.S.A and Europe. The difficulty with defining the concept of a poverty line is that poverty is a feeling and not an objective situation. Of course, it has to do with "command over commodities": we may describe a household's budget either in terms of a commodity vector x or more concisely by a net income level y (at given prices), but how can we decide whether the level thus described causes a feeling of poverty"? Some households will feel "poor" with it whereas others won't. One way to solve this problem is to appoint some experts who define the poverty line right away, in terms of income, a commodity basket or a specific food-share level, where we make use of Engel's law that the food-share falls with rising income. This approach is called the objective approach. It has paternalistic undertones. The other approach is to discover what level individuals associate with the poverty line for themselves. This is the so-called subjective approach. Both

approaches are based on the implicit assumptions that:

- a) similar individuals will use the same threshold income to define their situation as poor or non-poor,
- b) the lack of well-being expressed by A when he calls himself at the poverty line is comparable and equal to the lack of well-being expressed by B when he says to be at the poverty line.

Both assumptions come down to the assumption that inter-individual welfare comparison at the borderline poverty/non-poverty is feasible. Frequently the distinction is made between "poverty" and "severe poverty". Less often we speak of "near poverty" or "being well-off"¹⁾. In those cases it is natural to assume inter-individual welfare comparability throughout. We notice that this is ordinal comparability in the sense of Sen (1976).

The discussion on poverty lines is frequently mixed up with a choice for a family equivalence scale. Indeed intuition dictates that a two-person household poverty line will be lower than the corresponding four-person line. Let us denote the two lines by $y_p(2)$ and $y_p(4)$ respectively. The equivalence scale is $e(4) = y_p(4)/y_p(2)$ where we take the two-person household as the reference unit. The choice of this equivalence system is rather basic to the estimation of poverty in this population, however. We face here a second issue. The first issue is the definition of $y_p(2)$ and the second issue which we will consider separately is the choice of the equivalence system $e(\dots)$. In the following section we shall list and evaluate a number of well-known poverty line concepts $y_p(2)$. Then, in Section 3 we shall consider some approaches to equivalence scales. In Section 4 we shall see how various poverty measures behave when combined with different equivalence scale systems. In Section 5 we shall consider the robustness of various poverty measures. In Section 6 we look for

1) The latter line is neatly illustrated by the Dutch social security system where there is a social insurance against sickness, unemployment and disability for the people who are not well-off. The "well-off" line is a specific income level. Above that level people have to buy their health insurance at the private market.

the possibility of differentiating equivalence scales to other variables than merely the household size. The line of reasoning will be supported by empirical results derived from a provisional²⁾ household budget survey conducted in a European country. In Section 7 we derive some conclusions with respect to the poverty definitions and equivalence scales to be employed.

2. Poverty Line Concepts

In this section we describe a list of well-known poverty line concepts, where we assume that households are equal except for their income. This assumption is made to abstract from the interference of the complicating family equivalence system, the discussion of which we postpone to the next section.

A) The objective lines

- 1) The First Decile Line (y_{fd}). Let $F(y)$ be the household income distribution function, then y_{fd} is the first decile, i.e., there holds $F(y_{fd}) = 0.10$.
- 2) The Half Median Line (y_{hm}). Let $F(e^\mu) = 0.5$, then $y_{hm} = \frac{1}{2}e^\mu$.
- 3) The Beckerman line (y_b : see Beckerman (1978)). Here the poverty line is equal to the per capita income ³⁾ \bar{y} , that is, $y_b = \bar{y}$.
- 4) The Food-Share Line (y_{fs}). Given the empirical fact that the food-share $F/y = g(y)$ is a decreasing function of y , the poverty line corresponds with a specific food-share value α . then y_{fs} is the solution to $g(y_{fs}) = \alpha$ where α is taken at $1/3$, for instance. This is the Canadian approach.

2) The self-employed and rural population (about 30%) is not yet included in this data set.

3) Here we suppose that all households are two-person households because according to the original Beckerman method, where we abstain from the "equal households" assumption, the poverty line for a two-person household is set equal to the per capita income, whereas the poverty lines for the other household sizes are derived with the aid of family size equivalence scales.

B) *The subjective lines*

5) The Subjective Poverty Line (y_{spl} : see Goedhart et al. (1977)).

Individuals are asked the so-called "Minimum Income Question" (MINQ) which goes as follows:

"In your opinion what must be the absolute minimum net income amount for a household like yours to be able to make ends meet? per week / month / annum.

Please underline the period you refer to."

The resulting answers, say y_{min} , depend on income and empirically the following log-linear relation is estimated

$$\ln y_{min} = \alpha_0 + \alpha_1 \ln y_c + \varepsilon \quad (1)$$

where y_c stands for the respondent's current income and ε for a normally distributed error term. It follows that individuals with $y_c < y_{min}$ do not consider themselves as being in the situation "to make ends meet", while individuals with $y_c > y_{min}$ do. A natural border line is then the income level y_{spl} for which $y_{min} = y_c$. Solving (1) we find:

$$\ln y_{spl} = \frac{\alpha_0}{1 - \alpha_1} \quad (2)$$

6) The Levdan Poverty Line⁴⁾ (y_{lpl} = see Goedhart et al. (1977)).

The LPL is a generalization of the SPL. Instead of one verbal label ("making ends meet") k (usually $k=5$ or 6) labels are supplied, ranging from "very bad" to "very good" (the "Income Evaluation Question" (IEQ)). The answers by household i are denoted by c_{i1}, \dots, c_{ik} . Its log-average is $\mu_i = \frac{1}{k} \sum_j \ln c_{ij}$ and its log-variance $\sigma_i^2 = \frac{1}{k-1} \sum_j (\ln c_{ij} - \mu_i)^2$.

Empirical evidence shows that μ depends on current income of the respondent, whereas σ^2 does not. In practice there holds:

4) The LPL is called after its place of origination at Leydan University.

$$\mu = \beta_0 + \beta_1 \cdot \ln y_c + \varepsilon \quad (3)$$

where ε stands for a normally distributed error. Usually, σ^2 is set equal to its sample average.

The verbal evaluations are translated in numerical values according to the following rule:

$$U(c; y_c) = N\left(\frac{\ln c - \mu(y_c)}{\sigma}; 0.1\right) \quad (4)$$

where $N(\dots)$ stands for the standard normal distribution.⁵⁾ The function U is called the "Welfare Function of Income" (WFI). Arguments for this specific transformation are spelled out in Van Praag (1991).

According to the LPL concept a household is called poor if the evaluation of total household income is below a certain level of welfare described by the WFI. For instance, let us choose 0.4, which corresponds to a verbal welfare label between "bad" and "insufficient" income on the six-level verbal scale. Then the following equation holds for the corresponding income level $y_{0.4}$:

$$U(y_{0.4}; y_c) = 0.4 \quad (5)$$

It follows that (5) is solved by looking at the inverse equation

$$\frac{\ln y_{0.4} - \mu(y_c)}{\sigma} = u_{0.4} \quad (6)$$

where $u_{0.4}$ is the 40% normal quantile ($= N^{-1}(0.4)$). Using (3) and setting $y_{0.4}$ equal to y_c we get the following specification for the LPL04 poverty line:

$$\ln y_{lpl} = \frac{\beta_0 + \sigma \cdot u_{0.4}}{1 - \beta_1} \quad (7)$$

We observe the resemblance with (1) and (2) which, as we shall see, is no coincidence.

⁵⁾ Notice that (4) as such is just a translation of verbal labels, not requiring any cardinality assumption.

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Similarly we may define the LPL05 line where $u_{0.4}$ in (7) is replaced by $u_{0.5}$ ($= 0$). The LPL05 line corresponds to a verbal label between "insufficient" and "sufficient" on the six-level verbal scale.⁶⁾

7) The Centre for Social Policy Poverty Line (y_{csp} : see Deleeck (1980,1989)). Deleeck poses also an attitude question based on verbal labels. He supplies six verbal labels ("with great difficulty", "with difficulty", "with some difficulty", "rather easily", "easily" and "very easily") and he asks the respondent to classify the own household's economic situation according to one of the six labels. The households classifying themselves as "with some difficulty" are identified as being at the poverty line. He also uses the answer to the MINQ and he defined $y_p = \min(y_c, y_{min})$ as the poverty line assessment of that respondent. Finally, the average of the y_p values of all "with some difficulty" households is identified as the poverty line y_{csp} .⁷⁾

When we evaluate these poverty line concept, we may distinguish ten criteria which have been elaborated in Van Praag, Flik (1991). For illustration we refer to the First Decile concept, after which we give a brief discussion of the other concepts. The criteria are:

1) Information value

The F.D. line has only limited information value. By definition the poverty ratio is 10% of the population. It only gives a value of the poverty line.

2) Effect of income distribution changes

How does the poverty ratio react to changes of the income distribution over time. Here again the F.D. line is non-informative. Similarly, it gives no clue for comparing the

⁶⁾ We notice that the same procedure remains to make sense if we replace the standard normal distribution function $N(\dots)$ by another increasing function $G(\dots)$.

⁷⁾ In practice the y_p values outside a 2σ interval are dropped.

income distributions of two different populations.

3) Mixing of populations

Consider the case of the German union. Before union both West- and East-germany had their 10% poor according to the F.D. concept. After union there is a tremendous shift; East-Germany becomes the poor part of the German union and nearly all West-German poor are no longer poor. Overall poverty in the German union would not have risen. The poverty line itself has fallen dramatically. This example shows that the F.D. measure has rather unexpected and undesirable consequences. As the mixing of national distributions into one European distribution is the ultimate aim of the European union, F.D. line is not attractive to measure poverty in this sense.

4) Internal consistency

The question is interesting whether the individuals who are classified as poor (i.e. below y_p) according to the poverty line are also classifying themselves as poor and whether the individuals who are classified as non-poor are looking at themselves as non-poor. This is an empirical question. There is no reason why the F.D. measure should conform to individual opinions. However, if we admit for various degrees of poverty, corresponding to

$$F(y_{p_1}) = 0.10, F(y_{p_2}) = 0.20, F(y_{p_3}) = 0.30$$

or, more generally,

$$F(y_{\alpha}) = \alpha \%$$

Then by calibration we could probably find a value of α , such that internal consistency would not be too strongly violated.

5) Flexibility

Is the concept flexible in the sense that by variation of one or two parameters it may define various degree of poverty, i.e., severe poverty, poverty, near-poverty? It is obvious from the above that variation of α , say 10, 20 and 30%, renders the concept flexible.

6) Robustness

Any statistical measure is subject to statistical fluctuations. In this case the F.D. line may be computed in two different ways. The income distribution may be either assessed on the basis of a relatively small sample from the population or one may use the income distribution as assessed from taxation or census figures.

In the sampling case it is obvious that the F.D. line can only be estimated; as for any estimate there will be a certain shady interval about the value y_p , a confidence interval. This implies in terms of the poverty ratio that it is most probable that y_p will correspond to 10%, but that in reality only 8% or 12% may be below y_p . The width of the confidence interval, and especially the size of the population within that income bracket determines the reliability of the poverty line. The degree of reliability of the poverty line has political importance as it defines the number of poor. The less reliable the poverty line, the more uncertainty there will be about the number of poor. The robustness of measures may only be assessed empirically. We return to it in Section 5.

If we use tax data of the whole population the statistical reliability itself will be high. However, then the chance on other errors is considerable.

7) Systematic errors

If tax data are strongly underestimated due to individual tax cheating, then the use of tax data will yield a too low poverty line. The chance of underreported data from an anonymous sample is certainly much smaller. 8)

Secondly, it is a well-known fact that low income earners are

8) Among others Kapteyn, Kooreman and Willemse (1988) showed that respondents may underestimate their total household incomes as respondents tend to forget fringe benefits, quarterly allowances, tax reliefs, etc.. However, in the household budget surveys, households are asked to record all their money receipts during a considerable period of time. So in this case the income data available is very accurate. We also think that the income amount, taken as a frame of reference by the respondent when answering the subjective poverty questions module can be treated as a reliable frame of reference because this module has been offered to the households after the income-data-recording-period.

frequently not obliged to pay taxes and then they will not appear in the tax files as well. General census data do not contain many details, if any, on incomes.

8) Cost of data collection

For a sample costs are rather small. For tax data it depends on the price which is demanded by the statistical authorities.

9) Actuality of data collection

In principle poverty data should be actual. Statements based on data from the past, say several years ago, are not very valuable.

If one uses a sample, it is possible to incur a delay of only three months and to have rather frequent surveys. One may follow developments rather closely. With taxation or census data the maximum frequency is an annual one with a delay of several years, say three years as a rule.

10) Intuitive plausibility

A final aspect, not to be ignored, is intuitive plausibility. In many countries of the EC public opinion does not accept that 10% of the population would be poor, as the factual evidence derived from knowledge of society does not confirm it. Then the poverty line y_{fd} is just seen as an artificial construct, which does not conform to the institution of individuals and social interest groups. In that case it should be a matter of public consensus how α is chosen, e.g., at $\alpha = 15\%$, 5% , etc.

According to these ten criteria it is possible to evaluate the performance of the F.D line. Notice that we still assume a homogeneous population. We get the following listing.

POVERTY LINES AND EQUIVALENCE SCALES...

The First Decile Line -Preliminary evaluation.

Evaluation

	<u>sample</u>	<u>tax data</u>
1. Information value	very limited	very limited
2. Distributional change	reacts badly	reacts badly
3. Population mixing	reacts badly	reacts badly
4. Internal consistency	no	no
5. Flexibility	yes	yes
6. Robustness	no	yes
7. Systematic errors	less probable	very probable
8. Cost	low	price dependent on authorities
9. Actuality	yes	at least 3 years delay
10. Intuitive plausibility	no	no

Similar evaluation can be made for the other poverty line concepts. The comparative evaluations are given in Table 7.1 at the end of this paper, after that we have got a picture of some empirical aspects⁹⁾

The Half Median Poverty Line

Evaluation

1. It has information value as it is not a priori determined how many poor there are. However, if the inequality (as measured by the log-variance) of the income distribution is approximately constant, it can be shown that the poverty ratio will be about constant as well.
2. Its reaction to distributional change is of mixed quality. If all incomes change proportionally by γ % then the poverty line changes by γ % as well. If low incomes are increased, the number of poor will decrease according to this measure.
3. The reaction to population mixing is less extreme than for the F.D.-line, but the same problem is present.

⁹⁾ For all methods except for the food-share method.

4. No internal consistency.
5. There is flexibility if the value $\frac{1}{2}$ is replaced by α .
- 6/10. Similar as for F.D-line.

The Beckerman Poverty Line

Evaluation

1. This measure is informative.
2. See remarks for Half Median-line.
3. See Half Median.
4. No internal consistency.
5. No flexibility.
- 6/10. Similar as for 10%-line.

The Food-Share Poverty Line

Evaluation

1. Informative: yes.
2. Independent of distributional change.
3. Depending on population mix, as feeding habits and definitions of food vary between populations.
4. Internal consistency: no.
5. Flexibility: yes.
6. Robustness empirical analysis needed.
7. Systematic errors: very probable due to problems of food definition.
8. Cost: high due to need of extensive budget surveys.
9. Actuality: low.
10. Intuitive plausibility: limited.

The Subjective Poverty Line

Evaluation

1. Information: yes.
2. Distributional change: If all incomes change proportionally, y_{spl} will change in the same direction, but less than proportional.
3. Fairly immune to population mixing, provided that the verbal

label "*making ends meet*" is similarly understood in the two populations to be mixed. There are indications that this assumption is not justified. We will return to this issue in Section 4 of this paper.

4. Internal consistency.

The measure is based on self-evaluation. Internal consistency is therefore supposed to be high.

5. Flexibility: no. The outcome hangs on the interpretation of the expression "*making ends meet*".

6. Robustness will be based on empirical analysis.

7. Systematic errors: slight underestimation due to forgotten incidental income components.

8. Cost: low.

9. Actuality: yes.

10. Intuitive plausibility: yes.

The Levden Poverty Line

Evaluation

1/2. See SPL.

3. Population mixing: see SPL. There is strong evidence up to now that there is comparability of verbal labels between populations.

4. Internal consistency: see SPL.

5. Flexibility through the choice of the threshold welfare value.

6/10. See SPL.

The Centre for Social Policy Poverty Line

Evaluation

1/2. See SPL, LPL.

3. Sensitive to population mixing, because an average is taken.

4. Internal consistency: yes.

5. Flexibility is possible if one takes various verbal labels.

6. Robustness: empirical analysis needed.

7. Systematic errors: not probable; it is necessary to utilize a representative sample.

8/10. See SPL, LPL.

3. Family Equivalence Scales

Traditionally it is assumed that a larger households needs more income than a small household to reach the same welfare level. Let $c(u; fs)$ be the household cost to reach welfare level u for a household with family size fs , then

$$\frac{c(u; fs)}{c(u; fs_0)} = e(fs) \quad (8)$$

is the equivalence scale where household size fs_0 is taken to be the reference.

In practice there are difficulties to calculate this scale system. First we have the administrative scales; a good example is the OECD-scale. The scale is completely based on the intuitive feelings of some experts. Another example is the historical scale developed by Rowntree (1942). A second approach is based on the food-share $F/y = g(y, fs)$ where it is assumed that households with equal food-share are equally happy. A variant considered in EUROSTAT-studies¹⁰⁾ is proposed by Van Ginneken (1982). He assumes that food expenditures F is related to income y_c and family size fs as

$$\ln F = \alpha_0 + \alpha_1 \cdot \ln y_c + \alpha_2 \cdot \ln fs \quad (9)$$

Then the food-share follows

$$\ln(F/y) = \alpha_0 + (\alpha_1 - 1) \cdot \ln y_c + \alpha_2 \cdot \ln fs \quad (10)$$

It follows that if the households have family sizes fs_1 and fs_2 and incomes y_{c1} and y_{c2} , then the two incomes are "equivalent" if

$$\frac{y_{c2}}{y_{c1}} = \left[\frac{fs_2}{fs_1} \right]^{\alpha_2 / (1 - \alpha_1)} \quad (11)$$

Notice that due to this specification the scale does not depend on the food-share level.

Thirdly, the subjective family equivalence scale defines the incomes of the two households as equivalent if the two households

10) In these studies the VG scale is used in the derivation of the First Decile, the Half Median and the Beckerman poverty line.

evaluate their welfare by the same verbal labels (good, bad, etc.). If these verbal labels are translated according to a function $N(\dots)$ (or $g(\dots)$) this leads to equal numerical values. It has been found that

$$\mu = \beta_0 + \beta_1 \ln y_c + \beta_2 \ln fs \quad (12)$$

and that σ does not depend on either fs or y_c . It follows that the equivalence scale becomes

$$\frac{y_{c2}}{y_{c1}} = \left[\frac{fs_2}{fs_1} \right]^{\beta_2 / (1 - \beta_1)} \quad (13)$$

Similar scales may be constructed on the basis of the MINQ, as there holds empirically¹¹⁾

$$\ln y_{\min} = \gamma_0 + \gamma_1 \ln y_c + \gamma_2 \ln fs \quad (14)$$

Some scales have been derived on the basis of neo-classical demand systems where prices are demographically adjusted (see e.g. Panek, Szulc (1991)). The basis used are time-series data. It is doubtful whether we may assume that preferences and the attained welfare evaluations remain the same over a sequence of several years. A typical neo-classical scale is quoted from the most useful survey paper by Whiteford (1985).

As an example to illustrate the methodologies empirically we present in Table 3.1 the numerical scales as they have been derived for one sample of a European country. As the sample is non-representative for that population we do not disclose the country in order to avoid too quick and unwarranted conclusions with respect to the poverty in that country.

¹¹⁾ In the Deleeck-framework equivalence scales are derived directly by comparing incomes corresponding to a specific verbal statement for various household sizes.

Table 3.1 Various equivalence scales

	OECD	VG	LPL ¹²⁾	Neo-class ¹³⁾
single	0.59	0.59	0.81	-
couple	1.00	1.00	1.00	1.00
couple with 1 child.	1.29	1.37	1.13	1.15
couple with two children	1.59	1.71	1.24	1.29
couple with three children	1.88	2.02	1.32	1.42

We notice that the subjective scale is a very flat scale. It is a matter of debate whether family equivalence scales as a function of family size should be steep or flat. The V.G. scale may be approximated by a function $(fs/2)^\alpha$ with $\alpha=0.77$ while the LPL-scale corresponds to about $(fs/2)^{0.31}$. Theoretically, there is no reason to choose one or the other. Empirically it boils down to the question whether household costs are mostly variable or fixed with respect to family size.

A peculiar but thoughtful contribution to the discussion of equivalence scales and the "defense" of a flat scale is made by Pollak (1991) and by Pollak and Wales (1979). We quote Pollak (1991, page 36):

"As Pollak and Wales (1979) point out, this implies that 'if a family chooses to have three children and \$12000 when it could have had two children and \$12000, then a revealed preference argument implies that the family prefers the alternative it chose'. This link between unconditional preferences and unconditional choices suggests a potential problem with any 'equivalence scale' implying that, at equal levels of expenditure, smaller families are better off than larger families. In the absence of government subsidization of families with children (e.g., through the tax

12) We notice that the SPL-regression equation and the μ -equation yield almost the same regression coefficients.

We find

$$\mu = 5.7685 + 0.4238 \ln y_c + 0.1768 \ln fs \quad R^2 = 0.57 \quad N = 1917$$

(38.3) (29.8) (13.8)

$$\ln y_{\min} = 5.6925 + 0.4338 \ln y_c + 0.1730 \ln fs \quad R^2 = 0.52 \quad N = 1917$$

(34.0) (27.5) (12.2)

(where the t-values are between brackets). Hence the derived family equivalence systems are virtually equal.

13) According to the Barten model in Whiteford (1985). The value for a single-person family was not given.

system or through child allowances), if smaller families were better off if contraception were free and perfectly effective, then fertility would be zero".

Or in plain words, if households are free in their choice also with respect to household size then households with equal incomes but different family sizes are equally happy. Following this argument there is no room for equivalence scales. There is much to say in favor of this from a logical point of view. The only welfare differences between households of different size may be caused by underestimation of the future costs of children at the time of conception. This underestimation may stem from incomplete knowledge about the cost of children or by unforeseen changes in the future environment, e.g. the family's economic situation changes, education cost is increased by government, etc.

The upshot of this discussion is that we expect fairly flat equivalence scales. Theoretically they may be even negative, e.g., for farmers families where children provide cheap labor. Notice, however, that Podgórski (1990) found for Poland (1989) a rather steep subjective family equivalence scale (exponent 0.51). This is indeed evidence for Pollak's thesis, as in Poland contraception is not "free and perfectly effective". Moreover, due to the major changes in society and economic environment any parental prediction of the impact of future children on household is likely to have been falsified.

4. Three Equivalence Scales Applied to Various Poverty Lines

The proof of the pudding which family equivalence scale is most reasonable is delivered rather easily. Let us assume a specific poverty line differentiated to family size as $y(1), \dots, y(6)$. As we already pointed out in the introduction, such a line should be evaluated by the same verbal label by the corresponding households, as verbal labels are assumed to describe levels of satisfaction. As verbal labels are transformed into numbers, the same should hold for the corresponding numerical evaluations. We notice that this holds irrespective of the specific transformation

from labels to numbers which is chosen. Hence the argument does not require an assumption of cardinal utility; it does require interpersonal comparability in an ordinal sense.

Let us now consider for our data set for seven poverty line concepts which welfare evaluations are attached to them, using equation (4) where μ also depends on family size. We employ three equivalence scale systems, viz. the Van Ginneken-scale, the OECD-scale, and the subjective LPL-scale¹⁴⁾. The results are presented in Table 4.1.

Table 4.1 Welfare evaluations of the family size dependent poverty lines.

First Decile	(VG)	(OECD)	(LPL)	Half Median	(VG)	(OECD)	(LPL)
Fam size							
1	0.38	0.41	0.60		0.27	0.29	0.52
2	0.62	0.61	0.60		0.50	0.49	0.52
3	0.74	0.72	0.60		0.63	0.61	0.52
4	0.81	0.79	0.60		0.71	0.68	0.52
5	0.85	0.84	0.60		0.77	0.75	0.52
6+	0.88	0.90	0.60		0.81	0.83	0.52
Beckerman							
	(VG)	(OECD)	(LPL)	SPL	(VG)	(OECD)	(LPL)
Fam size							
1	0.34	0.36	0.57		0.30	0.33	0.53
2	0.57	0.57	0.57		0.53	0.53	0.53
3	0.69	0.68	0.57		0.66	0.64	0.53
4	0.77	0.75	0.57		0.74	0.72	0.53
5	0.82	0.80	0.57		0.79	0.78	0.53
6+	0.86	0.87	0.57		0.83	0.85	0.53

¹⁴⁾ For the SPL and CSP concepts the own scales are instead of the LPL-scale.

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LpL04	(VG)	(OECD)	(LPL)	Half Median	(VG)	(OECD)	(LPL)
Fam size							
1	0.20	0.22	0.40		0.50	0.53	0.65
2	0.40	0.40	0.40		0.72	0.72	0.72
3	0.53	0.52	0.40		0.82	0.81	0.76
4	0.62	0.60	0.40		0.88	0.86	0.76
5	0.69	0.67	0.40		0.91	0.90	0.76
6+	0.74	0.76	0.40		0.93	0.94	0.80

LPL05	(VG)	(OECD)	(LPL)
Fam size			
1	0.28	0.30	0.50
2	0.50	0.50	0.50
3	0.63	0.62	0.50
4	0.71	0.69	0.50
5	0.77	0.75	0.50
6+	0.81	0.83	0.50

We stress that absolute values in that table are not so relevant. What matters is, that in the F.D.-column VG-correction for family size would imply that a one person household evaluates his F.D.-line as "bad" (0.38), while a 6-person household evaluates his corresponding F.D.-line by "about very good" (0.88). Irrespective of whether one believes in a cardinal welfare interpretation of these numbers, such a difference is unacceptable, when the correction is applied to make the numbers equal. Not unexpectedly, because the LPL-scale has been constructed in such a way, the values are equal per column if the LPL-correction is applied. Our conclusion is that income-corrections should be based on the Leyden equivalence scales.

The correction clearly plays a crucial role for the size and the composition of the poor population. We present in Table 4.2 the poverty ratios, when calculated for different fs-corrections. We consider households, individuals and children as distinct observation units.

Table 4.2 Poverty ratios based on various scales

	VG-scale	OECD-scale	LPL-scale
<u>Households</u>			
First Decile	10.00	10.00	10.00
Half Median	3.92	4.05	6.44
Beckerman	6.77	7.16	8.21
SPL	5.11	5.26	6.67
LPL04	1.90	2.02	3.37
LPL05	4.16	4.32	5.81
CSP	19.64	19.81	17.57
<u>Individuals</u>			
First Decile	12.30	11.71	6.54
Half Median	5.74	5.55	3.96
Beckerman	8.69	8.76	5.27
SPL	6.94	6.73	4.16
LPL04	2.72	3.08	1.92
LPL05	5.91	5.81	3.51
CSP	24.14	23.93	14.51
<u>Children</u>			
First Decile	16.29	16.09	3.42
Half Median	8.28	8.03	1.83
Beckerman	12.32	12.27	2.54
SPL	9.75	9.33	2.00
LPL04	3.95	4.55	0.40
LPL05	8.56	8.19	1.53
CSP	32.02	31.59	12.11

The general tendency is that the VG-scale is the steepest, then the OECD, while LPL/SPL is the flattest scale. As a result the application of the VG-scale points at small households as the poor ones, while the LPL-scale points at small households. Consequently, the poverty ratio with respect to households rises when changing from VG to LPL, while the poverty ratio with respect to individuals falls (this holds even more for the poverty ratio of children). This is very clearly seen by considering the

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following Table 4.3.

Table 4.3 The low income group according to the First Decile method

hh. size	VG-scale		OECD-scale		LPL-scale	
	poor hh. as % of all hh. in category	poor hh. as % of all poor hh.	poor hh. as % of all hh. in category	poor hh. as % of all poor hh.	poor hh. as % of all hh. in category	poor hh. as % of all poor hh.
1	6.68	21.16	8.51	26.97	20.53	64.68
2	8.46	24.83	8.46	24.84	7.50	21.87
3	11.54	19.98	10.33	17.90	4.97	8.56
4	12.04	17.02	9.19	13.00	2.49	3.50
5	17.81	9.44	16.87	8.95	2.09	1.10
6+	35.75	7.57	39.36	8.34	1.37	0.29
Total	10.00	100.00	10.00	100.00	10.00	100.00

We see, for instance, that 35.75% of all households with six or more than six persons would live in F.D.-poverty when the VG-scale is used. For the OECD-scale this would be 39.36%. For the LPL-scale it is just a tiny 1.37%. Accordingly, 21.16% of all poor households would be single person households according to the VG-version, but it would be 64.68% when the LPL-scale is applied. The OECD-scale takes an intermediate position. Similar results are found for all other poverty variants.

Looking at Tables 4.2 and 4.3 we see that the equivalence scale specification does not only influence the composition of the poor population, but its size as well. The poverty according to the Half Median method almost doubles from 3.92% to 6.44% and poverty according to Beckerman increases from 6.77% to 8.21%, if we apply the LPL-scale instead of the VG-scale.

It follows from Table 4.1 that, if poverty lines should be evaluated by the same verbal label irrespective of household size¹⁵⁾, then the LPL-scale (or the SPL-scale which for this data set is virtually identical to it) should be applied. Moreover, it

¹⁵⁾ This seems a minimal requirement for equivalence scales.

follows as a by-product that the SPL corresponding to a welfare evaluation of 0.53 may be identified analogously to LPL04 and LPL05 as the LPL053 scale. The wording of the SPL-terminology "*the minimum income to make ends meet*" appears to correspond, at least for this data set, to the welfare level 0.53 on the WFI-scale¹⁶⁾.

Applying the WFI evaluation and the LPL-scale system (and the SPL and CSP scales for the corresponding methods) we may then order the various poverty concepts according to severity and we find:

Table 4.4 Welfare values corresponding to different poverty lines.

LPL04	LPL05	Half M	SPL	Beckerman	First D	CSP ¹⁷⁾
0.40	0.50	0.52	0.53	0.57	0.60	0.72

It follows from Table 4.4 that LPL04 is the most severe and CSP the most lenient poverty concept. As the numerical IEQ-WFI transformation may be replaced by any monotonic transformation, it follows that even for those not accepting a cardinal interpretation of the WFI the severity order given above is still uniquely defined.

5. Robustness of the Poverty Line

A quite different problem when defining a poverty line is its statistical reliability or robustness. If the poverty line, based on statistical observations, has a wide confidence interval around it, it implies that also the resulting poverty ratio, the fraction of poor in society, has only limited credibility. There is likewise a confidence interval around the poverty ratio. For part of the population it is uncertain whether they are in or out of

16) We obtained other figures for other national data sets, varying from 0.33 to 0.65. This implies that the SPL-wording has widely differing emotional connotations in different countries.

17) For a two-person family.

poverty. This part should be as small as possible.

The way in which we establish confidence limits is by application of the well-known "bootstrapping" method¹⁸⁾. Our basic sample consists of 2302 households. This is called our pseudo-universe. Now we construct 100 pseudo-samples each of size 2302. They are constructed by drawing 2302 times at random from the pseudo-universe with replacement. For each pseudo-sample we may calculate the poverty line. Given that pseudo-samples vary, also the resulting poverty line will vary. Let us denote the average poverty line at \bar{y}_p and its standard deviation over 100 observations (corresponding to 100 pseudo-samples) by σ_p ; then we may define the confidence interval of the poverty line as the interval $(\bar{y}_p - 2\sigma_p, \bar{y}_p + 2\sigma_p)$. It follows then that we may also calculate the number of people in poverty for each pseudo-sample. Specifically, it is interesting to compute the number for the lowest value $(\bar{y}_p - 2\sigma_p)$ and the highest value $(\bar{y}_p + 2\sigma_p)$ in the confidence intervals, and subsequently to compute the difference. We find the following table for the original methods (so, the First Decile method with the VG scale, and so on).

Table 5.1 Robustness of various poverty line concepts

First Decile	% difference high-low	Half Median	% difference high-low
total	4.12	total	1.55
1 member	4.80	1 member	1.37
2 members	2.35	2 members	1.23
3 members	1.85	3 members	0.51
4 members	6.89	4 members	2.65
5 members	8.39	5 members	2.56
6+members	7.89	6+members	7.54
Beckerman		SPL	
total	2.81	total	3.21
1 member	2.90	1 member	5.35
2 members	0.91	2 members	2.80
3 members	3.39	3 members	2.11
4 members	3.11	4 members	1.63
5 members	8.45	5 members	1.81
6+members	7.01	6+members	0.00

¹⁸⁾ See also Flik and van Praag (1991).

LPL04

total	1.90
1 member	4.60
2 members	0.93
3 members	0.72
4 members	0.21
5 members	0.28
6+members	0.00

CSP

total	8.81
1 member	9.30
2 members	9.47
3 members	8.32
4 members	4.30
5 members	5.57
6+members	34.38

LPL05

total	3.23
1 member	5.19
2 members	3.40
3 members	1.98
4 members	0.91
5 members	2.09
6+members	0.00

From the bootstrap method analysis it can be concluded that there is a remarkable variation in the reliability of the various measures. Restricting ourselves to the "subjective" measures we notice that the LPL04 scores the best with an unreliability of only 1.90% of the population. Then follows the SPL measure with 3.21%, while the CSP gives an uncertainty for 8.81% of the population. In terms of robustness LPL04 should be preferred.

6. Differentiation of Equivalence Scales with Respect to More Characteristics

It is very well conceivable and also politically defensible to correct net household incomes also for other factors than family size. Here we shall give some (preliminary) results. Notice that the LPL (and SPL) equivalence scales are constructed by explaining the IEQ-construct μ (or the SPL-response y_{\min}).

We found

$$\mu = 5.7685 + 0.4238 \ln y_c + 0.1768 \ln f_s \quad R^2 = 0.5672 \quad (15)$$

(38.3) (29.8) (13.8) N = 1917

where the t-values are written between brackets. It follows that the equivalence scale is proportional to $f_s^{0.1768/(1-0.4238)}$.

It is not unreasonable to hypothesize that needs also depend on age, irrespective of family size. When people are young they are collecting and aspiring a list of consumer durables, e.g., a house and furniture. Later on in life one has the things one needs and consequently the need for new purchases will fall. Obviously, family size is also positively correlated with age up to a certain age. When people are growing old, family size is shrinking again. As age is not a perfect correlate of *fs*, it may have its own effect on needs; it is worthwhile to try the following specification:

$$\mu = \beta_0 + \beta_1 \cdot \ln y_c + \beta_2 \cdot \ln fs + \beta_3 \cdot \ln age + \beta_4 \cdot (\ln age)^2 \quad (16)$$

We have *lnage* instead of *age* and insert a square to capture a first rising and then falling relationship. Estimation of the equation yields

$$\begin{aligned} \mu = & 3.0285 + 0.4122 \cdot \ln y_c + 0.1488 \cdot \ln fs + & (17) \\ & (3.5) \quad (28.8) \quad (11.0) \\ & 1.6150 \cdot \ln age - 0.2225 \cdot (\ln age)^2 & R^2 = 0.5746 \\ & (3.5) \quad (-3.6) & N = 1917 \end{aligned}$$

Indeed, we find a first rising and then falling relationship in age with a maximum at the age of about 38 years. Notice also that the coefficients of $\ln y_c$ and $\ln fs$ have hardly changed compared to the earlier specification.

Similarly, we have add a regional differentiation. The European country consists of three regions. We take the third region as the reference region and define two dummies REG1 and REG2, being one for a household living in the first and second region respectively. Moreover we added three "number of earners dummies": ONE if either the head of the household or the spouse is working (part-time or full-time), ONETWO if both are working and at least one of them has a part-time), and finally TWO if both are working in a full-time job. For an unemployed couple all dummies are zero.

We estimated the following equation:

$$\begin{aligned}
 \mu = & 3.2580 + 0.3716 \cdot \ln y_c + 0.1656 \cdot \ln fs \\
 & (3.8) \quad (24.3) \quad (12.4) \\
 & + 1.7042 \cdot \ln age - 0.2265 \cdot (\ln age)^2 \\
 & (3.7) \quad (-3.7) \\
 & - 0.1573 \cdot \text{REG1} - 0.0912 \cdot \text{REG2} \\
 & (-8.8) \quad (-4.8) \\
 & + 0.0332 \cdot \text{ONE} + 0.0903 \cdot \text{ONETWO} + 0.1303 \cdot \text{TWO} \quad R^2 = 0.5984 \\
 & (1.8) \quad (3.4) \quad (5.2) \quad N = 1917
 \end{aligned}$$

Notice the remarkable stability and significance of the earlier estimates. We see that a person living in the reference region needs about $\exp(0.0912) = 9.5\%$ more than a person living in the second region and even 17% more than a person living in the first region to reach the same welfare level under *ceteris paribus* conditions. Partly this may be attributed to differences in price levels, especially in housing, between the three regions. Partly, it will be due to preference differences as the people living in the reference region might be less easily satisfied than the people living elsewhere. We are unable to identify from these data the two factors separately.

Finally, addition of the "number of earners dummies" reveals that, for instance, a two-(full-time)-breadwinner family needs about 13.9% more than a family without workers under *ceteris paribus* conditions in order to reach the same welfare level. All of these effects are intuitively very plausible.

Now it is possible to construct a four-dimensional equivalence scale, correcting for family size (*fs*), age (*a*), region (*r*), and number of breadwinners (*b*) simultaneously, which is presented in Table 6.1.

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Table 6.1 *fs/a/r/b* differentiated equivalence scale¹⁹⁾

Region 1:

zero workers

1.000	1.200	1.336	1.441	1.528	1.603
1.061	1.274	1.418	1.529	1.622	1.702
1.095	1.315	1.463	1.578	1.674	1.756
1.110	1.333	1.483	1.600	1.696	1.780
1.111	1.334	1.485	1.602	1.699	1.782
1.103	1.324	1.474	1.590	1.686	1.769
1.088	1.306	1.454	1.568	1.663	1.745
1.069	1.283	1.428	1.540	1.633	1.714
1.046	1.256	1.397	1.507	1.599	1.677
1.021	1.226	1.364	1.472	1.561	1.638
0.995	1.195	1.329	1.434	1.521	1.596

one worker (parttime or fulltime)

1.054	1.266	1.408	1.519	1.611	1.690
1.119	1.343	1.494	1.612	1.710	1.794
1.155	1.386	1.542	1.664	1.765	1.851
1.170	1.405	1.563	1.686	1.788	1.877
1.172	1.407	1.565	1.688	1.791	1.879
1.163	1.396	1.554	1.676	1.777	1.865
1.147	1.377	1.533	1.653	1.753	1.840
1.127	1.353	1.505	1.624	1.722	1.807
1.103	1.324	1.473	1.589	1.685	1.768
1.077	1.292	1.438	1.551	1.645	1.726
1.049	1.259	1.401	1.512	1.603	1.682

Region 2:

zero workers

1.111	1.334	1.484	1.601	1.698	1.781
1.179	1.415	1.575	1.699	1.802	1.890
1.217	1.461	1.625	1.753	1.859	1.951
1.233	1.480	1.647	1.777	1.885	1.977
1.235	1.482	1.649	1.779	1.887	1.980
1.226	1.471	1.637	1.766	1.873	1.965
1.209	1.451	1.615	1.742	1.848	1.939
1.187	1.425	1.586	1.711	1.815	1.904
1.162	1.395	1.552	1.675	1.776	1.863
1.135	1.362	1.515	1.635	1.734	1.819
1.106	1.327	1.477	1.593	1.690	1.773

¹⁹⁾ For each region (number of worker combination an age (25, 30, ..., 75)) family size (1, ..., 6) block is presented.

one worker (parttime or fulltime)

1.171	1.406	1.564	1.688	1.790	1.878
1.243	1.492	1.660	1.791	1.899	1.993
1.283	1.540	1.713	1.848	1.960	2.057
1.300	1.561	1.737	1.873	1.987	2.085
1.302	1.563	1.739	1.876	1.989	2.087
1.292	1.551	1.726	1.862	1.975	2.072
1.275	1.530	1.703	1.837	1.948	2.044
1.252	1.503	1.672	1.804	1.913	2.007
1.225	1.471	1.637	1.765	1.872	1.965
1.196	1.436	1.598	1.724	1.828	1.918
1.165	1.399	1.557	1.679	1.781	1.869

Region 3:

zero workers

1.284	1.542	1.716	1.851	1.963	2.060
1.363	1.636	1.821	1.964	2.083	2.186
1.407	1.689	1.879	2.027	2.150	2.256
1.426	1.712	1.905	2.055	2.179	2.286
1.428	1.714	1.907	2.057	2.182	2.289
1.417	1.701	1.893	2.042	2.166	2.272
1.398	1.678	1.867	2.014	2.136	2.241
1.373	1.648	1.834	1.978	2.098	2.201
1.344	1.613	1.795	1.936	2.053	2.154
1.312	1.575	1.752	1.890	2.005	2.103
1.278	1.534	1.707	1.842	1.953	2.050

one worker (parttime or fulltime)

1.354	1.625	1.809	1.951	2.069	2.171
1.437	1.725	1.920	2.071	2.196	2.304
1.483	1.780	1.981	2.137	2.266	2.378
1.503	1.804	2.008	2.166	2.297	2.410
1.505	1.807	2.010	2.169	2.300	2.413
1.494	1.793	1.995	2.153	2.283	2.395
1.474	1.769	1.969	2.124	2.252	2.363
1.447	1.737	1.933	2.085	2.212	2.321
1.417	1.700	1.892	2.041	2.165	2.271
1.383	1.660	1.847	1.993	2.113	2.217
1.348	1.618	1.800	1.942	2.059	2.161

Region 1:

two workers, at least one parttime

1.155	1.386	1.542	1.664	1.764	1.851
1.225	1.471	1.637	1.765	1.872	1.965
1.264	1.518	1.689	1.822	1.932	2.028
1.282	1.538	1.712	1.847	1.959	2.055
1.283	1.540	1.714	1.849	1.961	2.058
1.274	1.529	1.701	1.835	1.947	2.042
1.257	1.508	1.678	1.811	1.920	2.015
1.234	1.481	1.648	1.778	1.886	1.979
1.208	1.450	1.613	1.740	1.846	1.937
1.179	1.415	1.575	1.699	1.802	1.891
1.149	1.379	1.535	1.656	1.756	1.842

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two fulltime workers

1.230	1.477	1.644	1.773	1.880	1.973
1.306	1.567	1.744	1.882	1.995	2.094
1.348	1.618	1.800	1.942	2.059	2.161
1.366	1.640	1.824	1.968	2.087	2.190
1.367	1.642	1.827	1.971	2.090	2.193
1.357	1.629	1.813	1.956	2.047	2.177
1.339	1.607	1.789	1.930	2.046	2.147
1.315	1.579	1.757	1.895	2.010	2.109
1.287	1.545	1.719	1.855	1.967	2.064
1.257	1.508	1.679	1.811	1.920	2.015
1.224	1.470	1.636	1.764	1.871	1.963

Region 2:

two workers, at least one parttime

1.283	1.540	1.713	1.848	1.960	2.057
1.361	1.634	1.818	1.961	2.080	2.182
1.405	1.686	1.876	2.024	2.147	2.252
1.424	1.709	1.902	2.052	2.176	2.283
1.425	1.711	1.904	2.054	2.178	2.286
1.415	1.699	1.890	2.039	2.162	2.269
1.396	1.676	1.865	2.011	2.133	2.238
1.371	1.646	1.831	1.975	2.095	2.198
1.342	1.611	1.792	1.933	2.050	2.151
1.310	1.572	1.750	1.887	2.002	2.100
1.276	1.532	1.705	1.839	1.951	2.047

two fulltime workers

1.367	1.641	1.826	1.970	2.089	2.192
1.451	1.741	1.938	2.090	2.217	2.326
1.497	1.797	2.000	2.157	2.288	2.400
1.517	1.821	2.027	2.186	2.319	2.433
1.519	1.824	2.029	2.189	2.322	2.436
1.508	1.810	2.014	2.173	2.305	2.418
1.488	1.786	1.987	2.144	2.273	2.385
1.461	1.754	1.951	2.105	2.233	2.343
1.430	1.716	1.910	2.060	2.185	2.293
1.396	1.676	1.865	2.012	2.133	2.238
1.360	1.633	1.817	1.960	2.079	2.181

Region 3:

two workers, at least one parttime

1.483	1.780	1.981	2.137	2.266	2.378
1.574	1.889	2.102	2.268	2.405	2.523
1.624	1.950	2.169	2.340	2.482	2.604
1.646	1.976	2.199	2.372	2.516	2.640
1.648	1.978	2.202	2.375	2.519	2.643
1.636	1.964	2.185	2.357	2.500	2.623
1.614	1.937	2.156	2.326	2.466	2.588
1.585	1.903	2.117	2.284	2.422	2.541
1.551	1.862	2.072	2.235	2.371	2.487
1.514	1.818	2.023	2.182	2.314	2.428
1.476	1.771	1.971	2.126	2.255	2.366

two fulltime workers

1.580	1.897	2.111	2.277	2.415	2.534
1.677	2.013	2.240	2.417	2.563	2.689
1.731	2.078	2.312	2.494	2.645	2.775
1.754	2.106	2.343	2.528	2.681	2.813
1.756	2.108	2.346	2.531	2.684	2.816
1.744	2.093	2.329	2.512	2.665	2.796
1.720	2.065	2.298	2.478	2.629	2.758
1.689	2.028	2.256	2.434	2.581	2.708
1.653	1.985	2.208	2.382	2.527	2.651
1.614	1.937	2.156	2.326	2.467	2.588
1.573	1.888	2.101	2.266	2.404	2.522

7. Conclusions

In this paper we have looked at various matters concerning poverty lines and family equivalence scales. The Table 7.1 gives an evaluation of six poverty line concepts combined with three different family size equivalence scales based on both theoretical and empirical arguments presented in this report and in Van Praag and Flik (1991).

Our main conclusion are:

- 1) The family equivalence scale correction should be of the Leyden type if respondents should evaluate well-being corresponding to their poverty line in similar verbal terms.
- 2) The individual welfare function approach by means of the Income Evaluation Question (IEQ) is simple, cheap and yields plausible (and reliable) results. We do not have experience with Eastern Europe Countries and it is well conceivable that responding the IEQ question becomes difficult in situations with high inflation and disequilibrium in the consumer market (rationing). However, all other measures become equally hard to interpret.
- 3) The various poverty lines, with application of the Leyden equivalence scale, may be ordered according to severity with the aid of the WFI welfare values:

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LPL04	LPL05	Half M	SPL	Beckerman	First D	CSP
0.40	0.50	0.52	0.53	0.57	0.60	0.72

4) It was shown that more-dimensional equivalence scales are practically estimable and applicable (see also Panek, Szulc (1991)).

Table 7.1 Comparative Evaluation of Poverty Line Concepts

	FD ²⁰⁾		HM ²⁰⁾			BE ²⁰⁾			SPL			LPL			CSP		
	1 ²¹⁾	2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3						
information	-	- -	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
inc. distr. change	-	- -	+--+	+--+	+--+	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
mixing of pop.	-	- -	+--+	+--+	+--+	- - -	- - -	- - -	+++	+++	+++	+++	+++	+++	+++	+++	
internal cons. ²²⁾	-	- -	- - -	- - -	- - -	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
flexibility ²³⁾	+	++	+++	+++	+++	- - -	- - -	- - -	+++	+++	+++	+++	+++	+++	+++	+++	
systematic err.	+ -	+ - -	+ - -	+ - -	+ - -	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
cost	+ -	+ - -	+ - -	+ - -	+ - -	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
actuality	+ -	+ - -	+ - -	+ - -	+ - -	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
plausibility	-	- -	- - -	- - -	- - -	+ - -	+ - -	+ - -	+ - -	+ - -	+ - -	+ - -	+ - -	+ - -	+ - -	+ - -	

20) For the "systematic errors", the "cost" and "actuality" criteria a "+-" is given; "+" corresponds based on a sample and a "-" corresponds to computations based on tax data.

21) 1-LPL scale (or SPL/CSP scale), 2-OECD scale and 3-Van Ginneken scale.

22) A comprehensive empirical evaluation of the feature of internal consistency has not been given in this report. We refer to Van Praag, Flik (1991).

23) We found (see footnote 16) that SPL and CSP correspond to different welfare levels in different countries. This implies that the verbal one-level terminology is emotionally understood differently in different countries. The measures are not flexible as they are based on one level only, so that no continuous interpolation is possible.

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THE POOR IN COMPARATIVE PERSPECTIVE

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Prepared for
International Research Conference of Poverty and Distribution
Central Bureau of Statistics
November 16-17, 1992

THE POOR IN COMPARATIVE PERSPECTIVE

Members of modern societies use a wide range of goods and services to effect their participation in social relations, and their sense of social identity. As a part of common cultural understandings members assume the necessity for particular material underpinnings to their activities in carrying out the social roles which constitute participation in their communities.¹

Because these are highly stratified societies the level of economic resources available to individuals and families varies greatly. People have a lively sense of what different levels imply in terms of both with whom an individual is likely to participate, and the kind of activities in social participation which are feasible.

The definition of poverty adopted by the European Community in 1984 reflects a conception of poverty grounded in an understanding of the nature of social stratification in prosperous industrial societies:

The poor shall be taken to mean persons, families, and groups of persons whose resources (material, cultural, and social) are so limited as to exclude them from the minimum acceptable way of life in the member state in which they live.

This paper summarizes several studies concerned with cross-national comparisons of poverty in the recent past. In the first part I report poverty rates in fifteen countries currently

¹ This paper summarizes findings reported in the following LIS Working Papers:

B. Buhmann, Lee Rainwater, Gunther Schmaus and Timothy Smeeding, "Equivalence Scales, Well-Being, Inequality, and Poverty: Sensitivity Estimates Across Ten Countries Using the Luxembourg Income Study (LIS) Database," *Review of Income and Wealth*, June 1988.

Lee Rainwater, "Poverty and Equivalence as Social Constructions."

Lee Rainwater, "Poverty in American Eyes," *Koelner Zeitschrift fuer Sociologie*, forthcoming 1993.

Lee Rainwater, "The Social Wage in the Income Packaging of Working Parents."

available in the Luxembourg Income Study database. To define a poverty line I use a consensus measure of poverty -- half of median disposable income adjusted for family size. The adjustment is made using an average equivalence scale, one very close to several countries, official scales.

Next I consider what kind of theoretical underpinning the relative poverty definition commonly used in Europe finds in the sociological perspective, examine the question of the income elasticity of the poverty line, and the implications for poverty measurement of different assumptions about what family equivalence means.

Finally, I return to the Luxembourg Income Study database to examine income packaging, (that is, the role of different income sources) in accounting for country variation in the poverty rates of working families with children.

Poverty Rates in Fifteen Countries

The Luxembourg Income Study database includes surveys conducted in the 1980s in fifteen Western European and North American countries, Australia, and Israel. The microdata includes a wide range of variables on detailed income sources and demographic and socioeconomic characteristics. Table 1 presents poverty rates in these countries during the 1980s. In ten of them we have two surveys, one from around 1980 and one from around 1986. I find that the poverty rates at the two times correlate quite highly (around .85 overall, and as high as .94 for persons living in families headed by a person under 60 years of age). Therefore to highlight country differences I have averaged the two surveys.

I have arranged the countries into two clusters, European and not, and within each cluster ranked them from low to high poverty rates.

The northern Continental European countries are clustered quite closely together with low

poverty rates overall, and for families with a nonelderly head. Ireland stands out as having a much higher rate for the nonelderly.

There is much more variation among these countries in the poverty rates of older families ranging from five percent or less in Belgium, Norway, the Netherlands and Sweden to more than ten percent in Luxembourg, Germany, Switzerland, the United Kingdom and Italy.

Table 1
Poverty Rates by Age of Head and Family Type

	All persons:			In Families with Children:		
	Total	60 +	18-59	Total	Couples	Solo Mother
Belgium *	3.8					
Luxembourg *	5.0	11.5	4.2	4.6	3.8	15.1
Norway	5.0	5.4	4.2	4.1	2.2	17.0
Germany	5.7	10.4	4.5	3.6	2.8	19.9
Netherlands	5.9	3.7	6.0	5.4	5.1	8.9
Sweden	6.7	4.5	5.2	3.8	3.3	7.5
Switzerland *	7.7	16.3	5.9	3.7	2.0	23.8
France	7.8	9.4	7.7	7.0	6.2	22.0
United Kingdom	8.9	11.4	8.1	9.5	8.3	21.7
Italy *	9.9	15.8	8.7	10.6	10.3	18.2
Ireland *	13.0	9.8	13.5	14.7	14.1	30.3
Israel	10.5	23.0	8.2	9.1	8.7	19.4
Canada	12.1	17.2	11.5	12.5	8.9	47.5
Australia	12.7	21.7	12.6	13.0	9.0	57.4
United States	16.8	22.8	15.8	18.4	11.0	53.2

* One survey; in other countries average of two surveys.

Note: The poverty line is one-half of median equivalent income. Equivalent income is defined as disposable income divided by the square root of family size.

There is a very wide range in solo mother poverty rates in Europe with the Netherlands and Sweden having fewer than ten percent poor and ranging upwards in the other countries to highs of 24

percent in Switzerland and 30 percent in Ireland.

The four non-European countries have generally higher poverty rates, although Israel's rates are only slightly higher. The rates for older families are closer to each other and to some of the European countries but those for families with children overlap with only a few European countries. The United States has much higher rates than Australia and Canada which in turn have mostly higher rates than in Europe.

It is in solo mother families that one finds the greatest contrast. Australia, Canada and the United States have rates around fifty percent; Ireland stands very high at thirty percent, and the other countries range downward to lows below ten percent.

What Poverty in Rich Countries Means

A common issue in defining poverty has to do with whether poverty is an absolute or relative matter. But, this focus obscures a more important underlying issue -- whether poverty is fundamentally a social or an economic condition.

I argue that a correct approach to the study of economic well-being and family equivalence must proceed from a sociologically grounded understanding of the interpenetration of material and social well-being in modern societies. Two perspectives contend in characterizations of economic well-being, the contrast being most apparent in conceptions of poverty. One emphasizes economic status; that is, people's command over goods and services. An economic standard of poverty determines an income sufficient to provide a particular level of consumption of goods and services. Implicitly, the output of consumption is a given level of utility or satisfaction. One does not try to measure utility or satisfaction directly since this may involve subjective elements which are not relevant to the public policy issues involved.

A sociological standard of socioeconomic well-being is focused not on consumption but on social participation. It is participation in social activities which confers utility. In this social perspective the problem of low income in relatively affluent societies is not seen as a problem of low consumption *per se*. The issue is the consequences of the inability to consume at more than an extremely modest level. It is argued that without a requisite level of goods and services individuals cannot participate as full members of their society. Thirty years ago Michael Harrington observed that there is "a language of the poor, a psychology of the poor, a world view of the poor. To be impoverished is to be an internal alien, to grow up in a culture that is radically different from the one that dominates society ... [The poor] need an American Dickens to record the smell and texture and quality of their lives."

To make this argument implies that poverty is essentially a matter of social standing or social class. Poverty in this view is a persistent shortfall of resources which results in a person's not being able to act out mainstream social roles. It leaves aside the issue of transitory poverty which could conceivably strike people of any social class. (Although we would expect the working class to be most vulnerable to episodes of transitory poverty.)

Sociologists have argued that social behavior is oriented to conceptions people have of the "standard package" of goods and services that obtains in a society at a given time. The standard package is the pattern of consumption characteristic of average members of the society -- in social class terms, the stable working class and the lower middle class.

From this perspective a social minimum is defined as a certain minimum of possessions in order for the family to meet cultural definitions (as opposed to the mere legal definitions) of a family. Thus, if a family's income is insufficient to supply the required minimum we may well call them poor.

Nothing in this conception of well-being implies that its definition is merely subjective, or even that well-being is defined consensually. Rather the argument is that objectively people cannot carry out the roles, participate in the activities, maintain the social relations, that are definitive of mainstream

members of society if their resources (over some period of time) fall short of a certain minimum.

The argument that relative poverty is objective is central. Otherwise this approach to poverty can be seen as simply a question of "how people feel" and therefore somehow not real--at least to those who do not accept sociology's central tenet about social facts.

With respect to the issue of family equivalence -- that is how need varies by family composition, the logic of the social definition of economic wellbeing outlined above implies that what one wishes to establish are possibilities for equivalent social participation. Economists will see this as a shift in preferences as family size increases. From a more sociological point of view it can be argued that equivalence scales must take into account the contribution to the construction of the family's lifestyle by the participation of additional family members. That is, we want an equivalence scale which defines need in terms of the income necessary for the maintenance of particular kinds of lifestyle rather than the maintenance of a particular level of material consumption.

Establishing socially relevant definitions of economic well-being can proceed by asking the experts -- that is, the members of society -- through the use of survey questionnaires. Several studies have sought to establish levels of living as defined by the public. For example, in the summer and fall of 1989 a U. S. Gallup survey asked:

People who have income below a certain level can be considered poor. That level is called the "poverty line." What amount of weekly income would you use as a poverty line for a family of four (husband, wife, and two children) in this community?

The average answer was 24% higher than the official poverty line at that time. This amount was a little bit less than half of the median household income in 1988. The official poverty count was missing more than 12 million people whom the public would call poor--the official poverty rate was 13% while the public's poverty line defined 18% of all Americans as poor.

There is no time series of survey questions asking about people's perception of a poverty level of income which could be used to determine the income elasticity of the poverty line. However, for 40

years the Gallup poll asked a question about how much income is necessary for a family of four to get along. The level of living tapped by this question is somewhat higher than that of poverty. Since it is significantly below the average level of living in the society, however, it would seem reasonable to conclude that the income elasticity of this "get along" amount is a good estimate of the income elasticity of the poverty line.

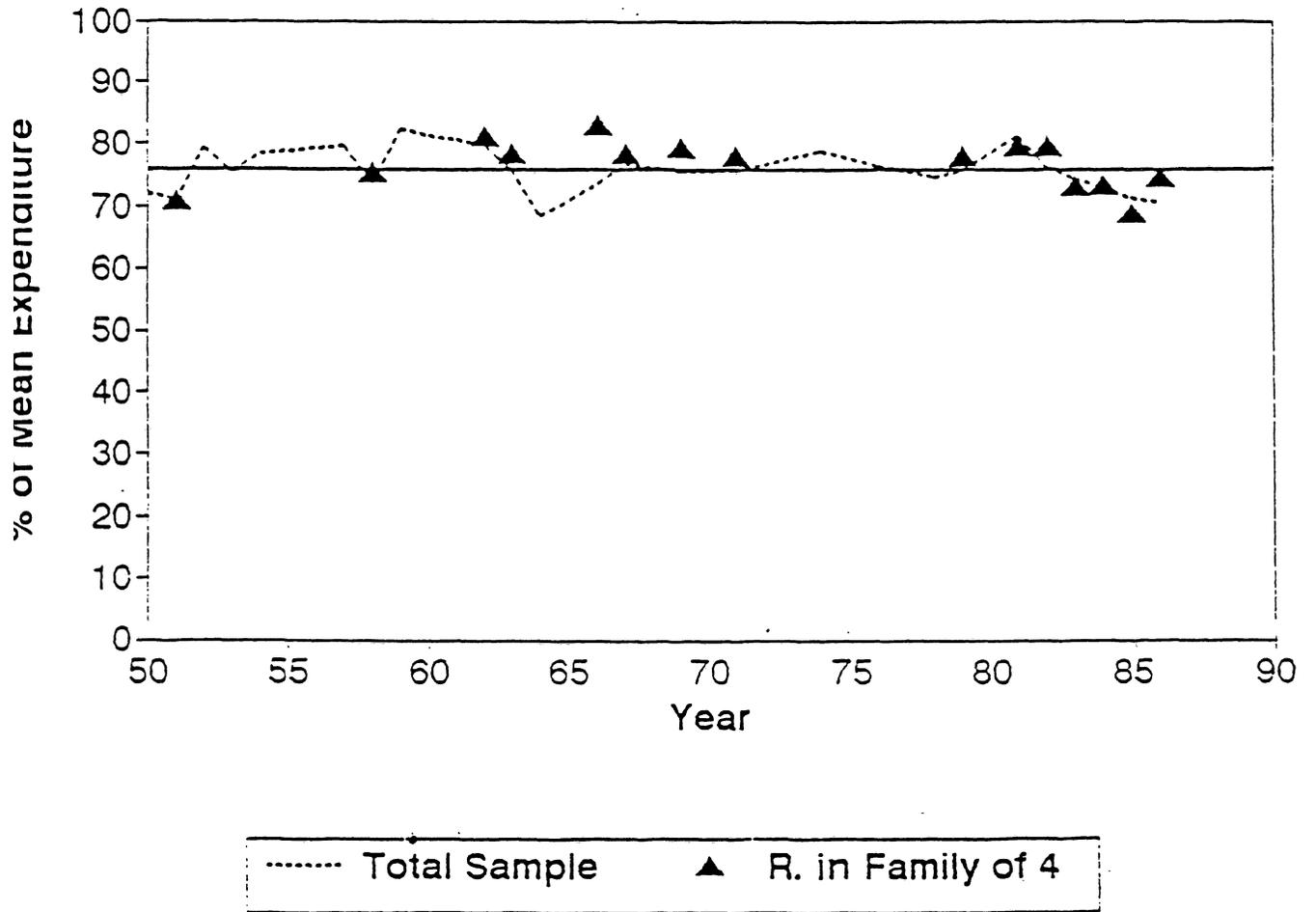
Common sense suggests that the income elasticity of the poverty line (and of levels of economic well-being generally) is less than one. If average incomes rise those who participate in the rise should all feel better off. This implies that people's perception of how much income is necessary to get along increases more slowly than average incomes. If the income elasticity of economic well-being is less than one this would imply that as average income rises social inequality would decrease. Indeed, this assumption was often made in popular writing about the social impact of economic growth in the post World War II period.

I have analyzed responses to the Gallup get along question from 1946 through 1986. The results indicate quite conclusively that the income elasticity of the get-along amount is one. That is, the average amount given by the respondents increases exactly proportionately to the increase in average incomes. Over a forty-year period, respondents indicate that they believe an income equal to three-quarters of mean household income is necessary for a family of four to get along. The common sense assumption is wrong (see Figure 1).

A similar survey approach can be used to establish family equivalence scales. Beginning in 1979 the Gallup data allow us to use a version of the minimum income question (MIQ) developed by Bernard van Praag -- "What is the smallest amount of money your family needs to get along in this community?" I have analyzed the seven surveys from 1979 to 1986 which have information on respondents' family income, age and size. Both age and size have sizeable effects on people's understanding of needed income.

FIGURE 1

Get Along Mean as a Percent of A Couple's Mean Expenditure



Analysis of each survey produces a highly consistent picture of need increasing steadily with age to the early forties and then decreasing steadily into old age. Figure 2 charts the coefficients for single years of age and the five year moving average of these coefficients. It is apparent there is a lot of noise, but smoothing shows the underlying relationship. The rates of increase and decrease are about the same. Controlling for family income and size, need increases about 0.8% a year to around age 40-45 and then decreases at the same rate to the late 60s.

This result suggest that individuals' judgements about how much their families need to get along assume that living is cheaper for younger and older people than it is for those in midlife. Through the broad middle years the age factor in need does not make a lot of difference in the distribution of well-being, but at the extremes it has important effects.

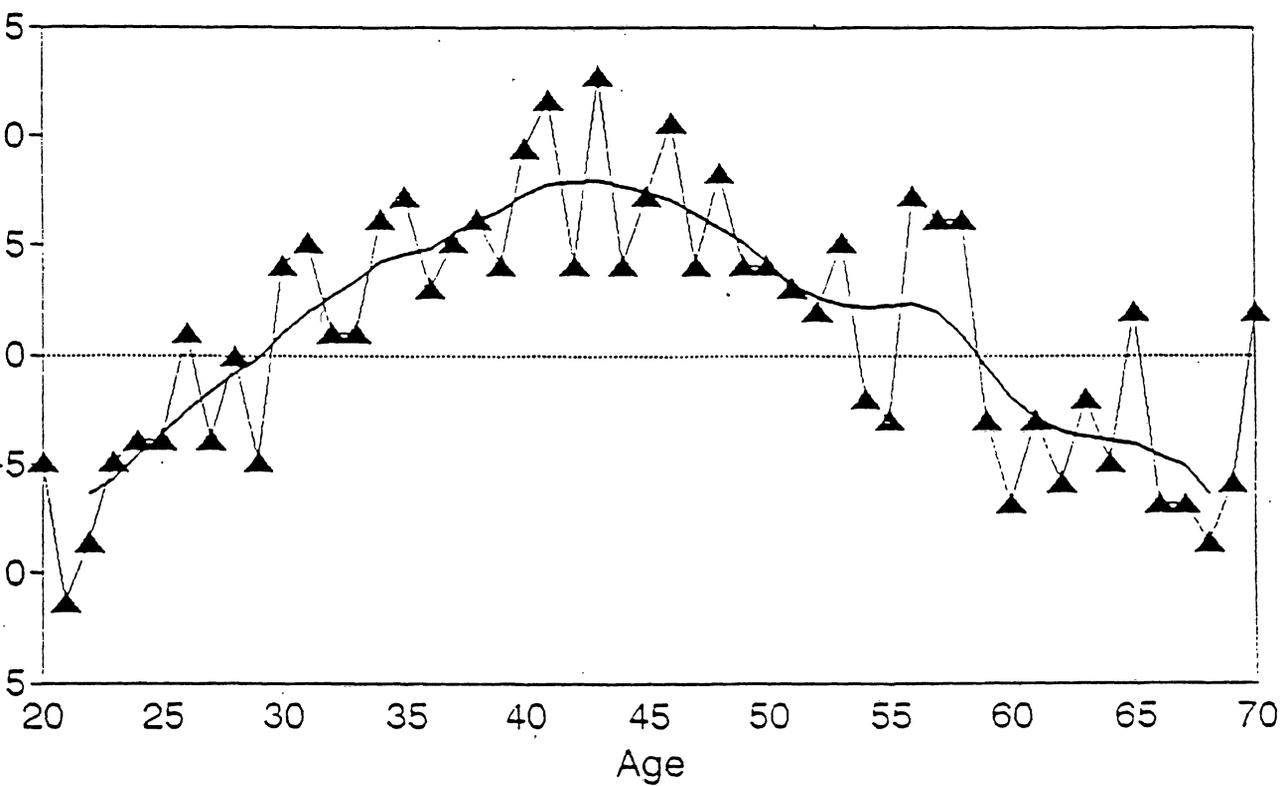
Responses to the get along question suggest that commonly used equivalence scales rather strongly exaggerate the amount of income needed by larger families compared to smaller ones. The equivalence elasticity for family size averages .326 and that for age -.012. The survey coefficients vary quite a bit, but with no particular pattern over this seven year period. It would be difficult to invent a theory which would entail changes in equivalence from year to year with no particular trend.

Simplifying we can say that need increases in proportion to the cube root of family size. Need decreases by about one percent for each year's difference between a person's age and 45. Someone in their early twenties needs about eighty percent as much as a 45 year old; someone in the late sixties needs about three-quarters as much.

We do not have to rely only on these seven Gallup surveys for estimates of size equivalence. Numerous investigators have used this approach to determine how people perceive need as a function of size. Two basic approaches have been taken. The MIQ approach which this Gallup question exemplifies has been used in other surveys in a wide range of countries. The second approach extends the idea of the Gallup question about a family of four by asking

FIGURE 2

Effect of Age on Get Along Amount (Controlled for Income and Family Size)



— MA5-Twice ▲ Single Year Dev.

questions which vary family size and level of living (poor, comfortable, rich, etc.).

The range of responses to the various questions tapping conceptions of need is summarized below:

Survey	Elasticity	
	Range	Mean
Seven U.S. Gallup 79-86	.26 - .42	.33
14 other US surveys	.19 - .43	.33
16 West European surveys	.12 - .40	.26

There is obviously considerable overlap between the U.S. and the European series. It will take more systematic research to determine whether there are stable and important differences among countries in size equivalence.

If one focuses on the maintenance of particular kinds of life style as family members combine goods, services and activities rather than on the maintenance of a particular level of material consumption, the lower elasticities elicited by a wide variety of different survey questions make sense. Expenditure-based scales tend to exaggerate need because an overly rigid pattern of consumption is assumed to be required to maintain economic well-being.

Given these considerations it seems not unreasonable to take .33 as the ballpark estimate for size equivalence following the sociological logic that has guided the analysis of this paper. Equivalent income (EI) can be defined as:

$$EI = Y / (S^{.33} * .99^{A-43}) \quad (3)$$

That is, equivalent income is defined as disposable income divided by the product of (a) the cube root of family size and (b) .99 compounded by the number of years difference between an

individual's age and 43.

Using the LIS database we have presented estimates of the effects of different scales using data from ten countries. We found that for some countries -- e.g., Israel, the Netherlands, the United States -- the poverty rate is not much affected by the size elasticity chosen. For other countries there are large changes in the rate -- for example in Norway in 1979 the poverty rate declines from 10.3% at an elasticity of .25 to 5.2% at an elasticity of .72. In general, poverty rates are lower at higher elasticities.

Table 3 shows effects of changing equivalence from the .33 level to .55 averaged over ten LIS countries. The two scales imply that need increases by the following ratios compared to a one person family:

	e=.33	e=.55
2 persons	1.26	1.46
3 persons	1.44	1.83
4 persons	1.59	2.14
5 persons	1.71	2.42
6 persons	1.82	2.68
7 persons	1.93	2.92

It is obvious that the main effect of changing elasticities is to alter the relative chances of small and large families to be counted as poor. The higher the elasticity the more large families are thought to need, and the less small families need. So, low elasticities increase the needs of small families (particularly single persons) vis a vis larger ones. With large elasticities families with two or more children are seen as particularly needy.

We find that the poverty rate of persons in couple families with two or more children averages a 50% increase, and the share of such persons among the poor increases by 78%.

Table 2
Effect of Changing Equivalence Elasticity
on Poverty Rate and Share of the Poor in Ten LIS Countries

	% Change in Rate	% Change in Share
Head under 60:		
Single Man	-30	-16
Single Woman	-38	-24
Solo Mother		
One Child	-30	-17
Two or more	10	32
Married Couple		
No Child	-21	-6
One Child	-4	13
Two or more	50	78
Head 60 and over:		
Single Man	-53	-40
Single Woman	-62	-49
Married Couple	-32	-18

To be read as follows: Changing size elasticity from .33 to .55 reduces the poverty rate of single men by an average of 30%, and their percentage share of the poor by an average of 16%.

At the other extreme, the poverty rate of non-elderly single persons decreases by about a third. Among the elderly, however, the declines are much greater -- over 50% for single elderly and about a third for elderly couples. Because the elderly have disposable incomes concentrated in the low to middle range, whether they are counted above or below the poverty line is very much affected by how need is defined.

Social Poverty Rates of Working Families

There are important differences among countries in the poverty rates of working families. These differences are a product of differences among countries in the inequality of earnings and of differences in the size of social transfers.

I will explore in eight LIS countries the role of the social wage -- that is, those social protection programs which are designed to supplement the income of working parents. The social wage is contrasted with other social protection programs which provide income when adults are not earners -- the so-called exit programs.

Social wage programs include temporary sickness insurance or legislated sick pay, child allowances, and other family benefits including advanced maintenance payments.

We find that in all eight countries the great majority of families with children have at least one earner. Only in the United Kingdom does the proportion of families with earners drop below 90%. For couples, the percentages range upwards from 94% earners, except in the case of the United Kingdom where 12% of married couple families have no earner.

We find a much wider range for solo mother families -- from 31% of Dutch solo mother families who have earnings, to a high of 90% for Swedish solo mother families. For this family type we note three clusters:

- very high proportions of non-earners in the Netherlands, the United Kingdom, Australia ranging upward from 56%,
- a middling group which includes Canada, Germany, and the United States, where around 70% of families have earners, and
- two countries with higher proportions, France at 83% and Sweden at 90%.

The previous section outline the evidence supporting a family equivalence scale based on age of head and a size elasticity of .33 rather than the 0.5 elasticity used in the first section. For

the analysis which follows this scale is used to define equivalent income and the poverty line

As might be expected (but with one exception) poverty rates are much, much lower in families with earnings than in families without earnings. That one exception is the Netherlands, where the poverty rates of non-earners is only slightly higher than that of earners. Both rates are extremely low.

Among working families poverty rates range from a low of 3% in Sweden to a high of over 14% in the United States. Only the United States has a double-digit poverty rate for families with earners, although Canada comes close with 8.8%. If we focus on couple families, we find the U.S. still high with a poverty rate of 9.5%, and Canada next with a much lower rate of 6.3%. Australia, France, and the United Kingdom are in the 4-5% range, and Germany, the Netherlands, and Sweden range downward from 3.4%.

Table 3

Poverty Rates by Earning Status and Family Type

Earning Status	Australia	Canada	France	Germany	Nether-lands	Sweden	United Kingdom	Uni Sta
All Families:								
None	84.2	89.9	69.6	51.5	5.3	22.5	29.8	97
Some	6.5	8.8	5.0	2.9	3.8	3.1	4.9	1
Total	14.3	13.3	7.1	4.9	4.0	3.5	9.8	2
Couples:								
None	76.8	89.9	81.7	41.6	4.9	34.9	36.1	8
Some	5.4	6.3	4.5	1.8	3.4	2.6	4.7	
Total	8.5	8.1	6.1	2.9	3.5	2.8	8.5	1
Solo Mothers:								
None	89.7	90.0	64.4	67.0	5.9	18.2	22.3	9
Some	25.3	33.4	10.7	26.9	12.3	5.2	6.8	4
Total	61.1	51.0	19.7	39.1	7.9	6.5	16.5	5

Among solo mothers there is much more variation, thus Sweden and the United Kingdom have poverty rates for solo mothers that are only slightly higher than those for couples, and the

rates in the Netherlands and France are also quite low at just over 10%. Australia, Canada, and Germany have much higher rates.

These differences in poverty rates of working parents hold when one examines the rate for families with one or two or three or more children. (Table not shown.) In all cases, the U.S. rate is the highest and Canada's is second. In general, poverty rates are higher for the larger families, but in some countries, like Sweden, family size does not seem to make much difference, and in France poverty rates are lower as one moves from one to three children.

In the case of solo mother families, we observe that in the United States there is an enormous increase in poverty as one moves from one child (36%) to three or more children (63%). There is a similar increase in the United Kingdom, but in the other countries growing family size seem to increase poverty not at all or at least not very much.

In order to understand variations in poverty rates from country to country, we need to examine the income packaging of the non-poor. To the extent that earnings and/or the social wage are high enough, we will find low poverty rates. Insight into how families avoid poverty will come from examining most particularly the income packages of families with equivalent incomes below the median. By definition, half of families have equivalent incomes twice the poverty line and more. It is those individuals with incomes below the median who are in some sense at risk of poverty. The income-packaging institutions of each country determine how many of this half of the population end up with incomes below the poverty line.

We noted that the U.S., Canada, and Australia have the highest working family poverty rates with the other countries all having rates of 5% or less. There is an interesting variation among these low poverty countries in the proportion of families with low, but not poverty level, incomes (between 50 and 70% of the median equivalent income). We find that the Netherlands and Sweden have very low proportion of families in this range (fewer than 7%) compared to France and Germany (with 14% and 15%). The United Kingdom is in the middle with 10%.

As a result, the total low-income population is almost twice as high in France and Germany (around 18%) as in the Netherlands and Sweden (around 10%).

The income sources available in the LIS database do not always fit neatly into our standard categories, nor do the detailed income sources available to us from the original data always fit neatly into the LIS categories. I will deal with some of the details of this approximation in the following section which examines in detail the income packaging of each country.

Tables 4 and 5 which follow present *disposable* income from each source. That is, the amounts of income in the original LIS data have been converted to after-tax income by apportioning taxes paid over taxable income sources. (This is an approximation because regulations concerning tax on different sources can be quite complicated.) Sources have been converted to equivalent income by dividing income amounts by each family's need factor which is a function of size and age of head. We can then examine how weighty particular sources are in relation to a nation's median equivalent income which is used to define the poverty line by calculating the percent each source is of median equivalent income (MEI).

Factor Income. Not surprisingly, working families derive by far the greatest share of their income from earnings (and income from savings). Factor income varies as a proportion of total income from 63% in Sweden to 91% in the United States (Table 5). However, we note that it is only in Sweden that we have a significant amount of measured sickness and absence insurance. It is best to combine these two sources for purposes of comparing across countries. Here we find that Sweden still is low with 73% of disposal income coming from these market sources. France and the United Kingdom are the next lowest with around 78%. All the other countries have at least 83%.

If we consider instead the percentage each source is of median equivalent income we find

that the ranking of the countries shifts slightly (Table 5). We find that the average income from work (including sickness and maternity benefits) is really not that different across countries. Canada, France, Sweden, the United Kingdom and the United States all have average equivalent income from work of between 57-59%. Australia is slightly higher, and Germany and the Netherlands are significantly higher.

It is apparent that the income packaging of couples and solo mothers is quite different, even for this group of families with earnings.

Among solo mothers we find much greater heterogeneity. For all but two countries, the average equivalent income from work is below the poverty line and in the United Kingdom it is well below. In Germany, it is right at the poverty line; in Sweden work income amounts to 53% of MEI.

Table 4
Percentage Distribution of Sources of Income by Family Type
(Persons in Families with Below Median Income)

Source:	Australia	Canada	France	Germany	Nether-lands	Sweden	United Kingdom	Unit Sta
All Families:								
Factor Income	86	83	78	89	86	63	76	
Absence	0	0	1	0	0	10	1	
Child Allowance	4	3	18	5	9	9	10	
Child Support	0	1	0	0	0	6	2	
Income Tested	2	6	0	1	2	8	6	
Unemployment	4	5	0	3	1	3	2	
Pensions	3	1	3	2	1	1	3	
Total	100	100	100	100	100	100	100	
Couples:								
Factor Income	89	85	79	89	87	71	80	
Absence	0	0	1	0	0	9	1	
Child Allowance	4	3	18	5	9	10	9	
Child Support	0	1	0	0	0	1	1	
Income Tested	1	5	0	1	2	6	4	
Unemployment	3	6	0	3	1	2	2	
Pensions	2	1	2	2	1	1	3	
Total	100	100	100	100	100	100	100	
Solo Mothers:								
Factor Income	67	74	70	82	60	55	52	
Absence	0	0	1	0	0	11	1	
Child Allowance	3	3	19	5	11	8	11	
Child Support	3	6	0	2	10	12	11	
Income Tested	14	12	0	4	9	10	19	
Unemployment	3	3	0	0	2	3	0	
Pensions	10	2	10	6	8	1	6	
Total	100	100	100	100	100	100	100	

Child allowances provide around 10% of the income of all families in the Netherlands, Sweden, and the United Kingdom, and they provide 19% in France. The average share of income from child allowances in Germany and Australia is much lower, at 4%-5%, and in Canada lower still, at 3%. The United States, of course, has no child allowance. The countries with higher child allowances have generally a long tradition of emphasizing child allowances. This is particularly true of France, which as we see has larger allowances than any of the other countries.

Child support income, including advanced maintenance payments, is less clear-cut in the income surveys on which LIS relies. We find that in Sweden fully 6% of disposable income comes from this source. There are small amounts in the United Kingdom and the United States, and a small but unknown amount for France (because in the French data advanced maintenance payments are combined in one variable with certain other kinds of social insurance). Although the German program of advanced maintenance payments is included in our database, the amounts seem to be very small.

Child support is an important income source for solo mothers. Swedish solo mothers receive 13% of their income from this source. Child support amounts to 9% and 11% in the Netherlands and the United Kingdom. Child support payments may be equally important to French solo mothers, since we find that 10% of their income comes from a social insurance category that includes this kind of payment.

We find that child support amounts to 10% of median equivalent income in Sweden, 7% and 8% in the Netherlands and the United Kingdom, and is possibly as high in France, compared to 4% in Canada, 3% in the United States, and 2% in Australia.

The combination of child allowances and child support thus amounts to quite a large amount of money for solo mothers in some countries. Thus in France the two may total to 20% of MEI, and 15% or more in the Netherlands, Sweden, and the United Kingdom. Payments on

behalf of children amount to 5-6% of MEI for solo mothers in Germany and Canada, and to less in Australia and the United States.

Table 5
Income Sources as a Percent of Median Equivalent Income
(Persons in Families with Below Median Income)

Source:	Australia	Canada	France	Germany	Nether-lands	Sweden	United Kingdom	Unit State
All Families:								
Factor Income	62	57	57	68	71	51	56	
Absence	0	0	1	0	0	8	1	
Child Allowance	3	2	13	4	8	7	7	
Child Support	0	1	0	0	0	5	1	
Income Tested	2	4	0	1	2	6	5	
Unemployment	3	4	0	2	1	3	1	
Pensions	2	1	2	1	1	1	2	
Total	72	69	72	76	83	80	74	
Factor Income	65	61	58	69	73	57	59	
Absence	0	0	1	0	0	7	1	
Child Allowance	3	2	13	4	8	8	7	
Child Support	0	0	0	0	0	1	0	
Income Tested	1	4	0	1	1	5	3	
Unemployment	3	4	0	2	0	2	1	
Pensions	2	1	1	1	1	1	2	
Total	73	71	73	78	83	79	74	
Factor Income	41	42	48	50	43	44	37	
Absence	0	0	1	0	0	9	1	
Child Allowance	2	2	13	3	8	6	8	
Child Support	2	4	0	1	7	10	8	
Income Tested	9	7	0	2	7	8	13	
Unemployment	2	2	0	0	1	3	0	
Pensions	6	1	7	3	5	1	4	
Total	61	57	68	61	71	80	71	

Income-tested income sources are not very important for couples in any country, although one notes that they are not insignificant in Sweden, the United Kingdom, and Canada. For solo mothers, on the other hand, income-tested sources are about 10% or more of disposable income in five countries, ranging from the United Kingdom with a high of 19% down to Sweden and the Netherlands at around 10%. France and Germany make relatively little use of general income-tested programs. (In France some family benefit programs are income-tested. these are included in child allowances.)

Although in the United States 8% of solo mothers' income comes from income-tested sources, the average amount is quite small -- only 4% of MEI compared to 7% or more in all the other countries, except in France and Germany, which as noted make almost no use of general income-tested sources.

Taking together all income sources (other than pay for work absence), we find, as might be expected, that solo mothers receive on average about twice as much income from these sources as do couples. For couples the range is from France, Sweden, and the United Kingdom with total transfers amounting to between 14% and 16% of median family income, down to the United States with only 4%. Australia, Canada, Germany, and the Netherlands are in between with 8 to 11%.

Among solo mothers the range is much wider, with the United States and Germany at the low end with 11% of median equivalent income as their average, Canada not far ahead with 15% and Australia and France with 20%. At the high end we find Sweden, the Netherlands, and the United Kingdom, with average transfer payments to solo mothers amounting to between 27-33%.

Work and the Social Wage in the Income Package

We can simplify the relationship of poverty rates to income sources by examining the average level of work income and transfers, and the degree of inequality in their distribution.

The pattern across our eight countries differs considerably for couples and solo mothers. Among couples the average level of work income for the group we are considering (families whose disposable incomes are below the median) does not seem at all related to variations in the poverty rate. For the average level of transfers we find a very modest relationship. The factor that seems to drive poverty rates for couples is the degree of inequality in their income from work.

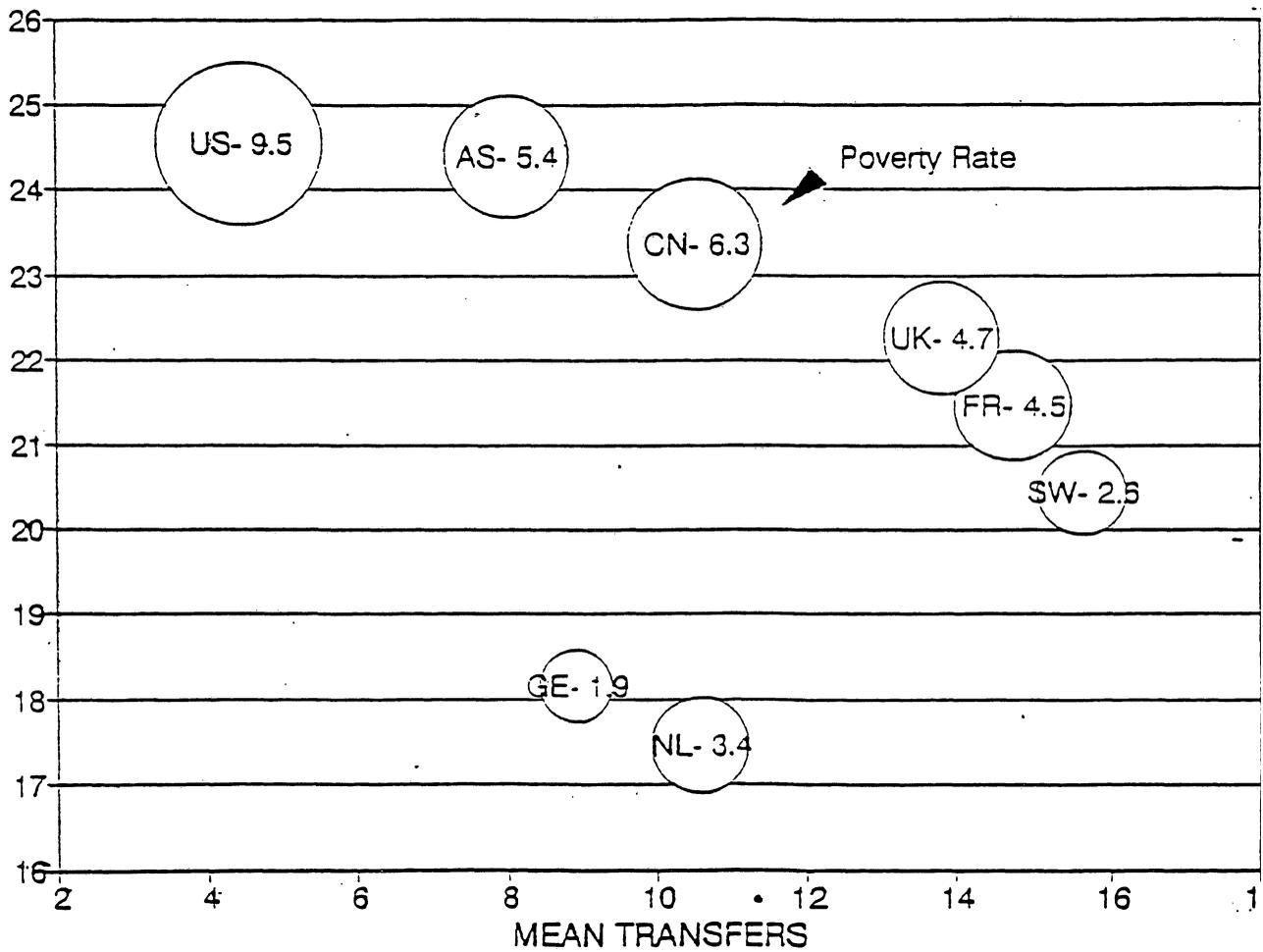
We find a range in the standard deviation of work income (as a ratio to median equivalent income) from a little over 17 to not quite 25 (see Figure 3). The three countries with the highest variance of work income-- U.S., Canada, and Australia--are also the countries with the highest poverty rates. The three countries with the lowest variance of work income -- Netherlands, Germany, and Sweden--are the three countries with the lowest poverty rates. France and the United Kingdom have work income variances in between. Only Canada spoils a perfect rank order correlation. We can conclude that the lion's share in the variation in couple poverty is attributable to work income inequality.

But, transfers also have a strong effect on couple poverty given a particular level of work income inequality. For the six countries with higher work income inequality, the higher transfers are as a percent of MEI the lower the poverty rate. Germany and the Netherlands are outliers here; much less of couples' income comes from transfers than in some other countries, but because they have much more equally distributed work income their poverty rates are quite low.

Among solo mothers, the inequality of work income is unimportant, as is the inequality

FIGURE 3

Effect of Earnings Variance and Mean Transfers on
The Poverty Rate of Two Parent Families



Notes: For families with equivalent incomes below the median.
Each source is aftertax and expressed as a percentage of median
equivalent income.

of transfers. It is, rather, mean work income and transfer income that track the differences (see Figure 4). The more solo mothers work, and the more society transfers income to them while they are working, the less likely they are to be poor. The three countries with the low mean transfers to solo mothers and low mean earnings -- the United States, Canada, and Germany -- have the highest poverty rates for this group. Sweden, with both high mean earnings and high transfers, has the lowest poverty rate.

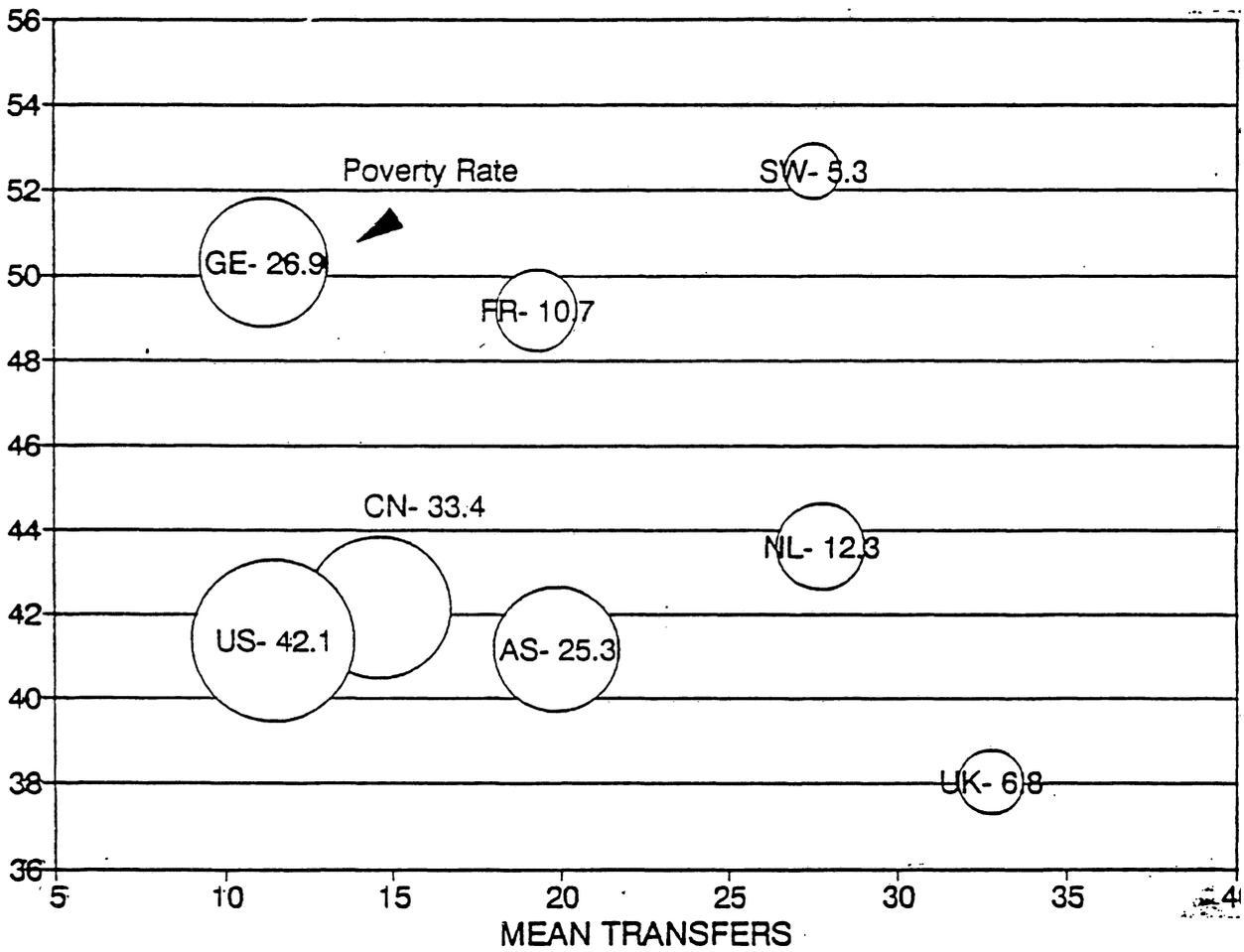
The four countries where mean work income and mean transfers do not go together tell a more complex story. If we control visually for mean transfers we see that the countries with higher mean earnings have lower poverty rates -- Germany compared to the United States and Canada, France compared to Australia, Sweden compared to the Netherlands. Controlling visually for mean earnings highlights the role of transfers. We see that Sweden has a lower rate than France, which in turn has a lower rate than Germany. The band of five countries with relative low mean earnings falls nicely in line -- increasing mean transfers produces lower poverty rates.

The United Kingdom is the real outlier here. Working solo mothers have very low mean earnings. Yet high transfers (over three times higher than in Germany and the United States) compensate for low earnings to produce a poverty rate of only 6.8%. A very significant portion (44%) of these transfers are income-tested.

This tour of work and welfare in other countries has shown that there are a number of different ways socio-economic institutional practices can result in low poverty rates among families with workers. To the extent work income is more equally distributed in the lower half of the distribution poverty rates will be lower. The more solo mothers work, the lower their poverty rates. Thus poverty rates are deeply affected by the labor market dynamics of a country, an observation that is at once obvious and often ignored both by policy makers and researchers.

FIGURE 4

Effect of Mean Earnings and Mean Transfers on
The Poverty Rates of Solo Mothers



Notes: For families with equivalent incomes below the median.
Each source is aftertax and expressed as a percentage of median
equivalent income.

The first goal of poverty policy should be to raise the relative wages of the poorest paid workers, and to increase the amount of work by reducing unemployment and underemployment (particularly on the part of solo mothers).

The social wage plays an equally important role. Child allowance and state-backed child support are central policy instruments for maintaining low poverty rates as we have seen in the cases of France, the Netherlands, Sweden and the United Kingdom. Income-tested programs that extend benefits to a broad group in the bottom half of the distribution build on the poverty reducing effects of universal child allowance and support programs as we have seen is the case in these same four countries. These may be programs aimed at particular family situations as in the case of French programs to aid solo parents. Or, they may be targeted on particular needs as in the case of the housing allowance programs of these four countries.

**No Pain, No Gain?
Inequality and Economic Mobility in the
United States, Canada and Europe**

by
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with
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October 24, 1992

ABSTRACT

By European standards, poverty and inequality in the United States are strikingly high. But longitudinal data from the U.S. also show considerable upward mobility among the poor. This paper investigates possible tradeoffs between the generosity of redistributive programs and upward economic mobility using data from nine countries on families with children. We find that favorable income changes among low-income families with children were widespread and strikingly similar across the nine countries in our study despite very different degrees of income inequality.

ACKNOWLEDGMENT

Prepared for the Central Bureau of Statistics research conference on poverty, Oslo, November 16-17, 1992. Duncan and Rodgers are at the University of Michigan. Gustafsson is at Gothenburg University; Hauser is at Frankfurt University; Jansson is at Statistics Sweden; Keso is at Statistics Finland; Messinger is at the Economic Council of Canada; Muffels is at Tilburg University; Nolan is at the Economic and Social Research Institute in Dublin; and Ray is at the University of Nancy, and Schumass is at CEPS/INSTEAD in Luxembourg;

This paper is the result of a collaborative research project sponsored by the Rockefeller Foundation, the Russell Sage Foundation and the European Science Foundation as part of its Network on Household Panel Studies. CEPS/INSTEAD provided substantial in-kind support. Deborah Laren provided excellent research assistance. Jos Berghman, Tim Callan, Bengt-Olof Gert, Peter Gottschalk, Pierre Hausman, Bruno Jeandidier, Stephen Jenkins, Leslie Kish, Anders Klevmarken, Katherine McFate, Udo Neumann, Gaston Schaber, Tim Smeeding, Daniel Stripinis, Hedwig Vermeulen, Wolfgang Voges and Brendan Whelan provided substantial assistance and advice during the course of the project.

No Pain, No Gain?
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I. Introduction

Comparative income distribution data from the Luxembourg Income Study show large differences across countries in the number of low-income families with children. Defining the poverty line as half of the annual income received by the median family, LIS data show a poverty rate among families with children in the United States in the mid-1980s (23%) that was two to three times as high as rates in continental European countries and seven times as high as in Sweden. Poverty rates in Canada and the United Kingdom were closer to but still substantially less than that estimated for the United States.¹ Since poverty lines such as these are drawn relative to each country's own annual median income, the differing poverty estimates reflect striking differences in the degree of inequality in the distribution of annual family income.

To the extent it exists, persistent economic deprivation is a crucial social problem, especially among families with children, since it can leave measurable scars on children's development (Huston, 1991; Danziger and Stern, 1990). But it is far from clear that evidence such as that of Smeeding and Rainwater, based as it is on annual snapshots of the income distribution, tells us anything about the extent of persistent poverty in the countries in their study.

The correspondence between the distribution of annual and longer-term income depends on the extent of family economic mobility. If a family's economic position is entrenched, with little possibility for upward mobility, then the distribution of short- and long-term economic status will be very similar. But if family incomes are highly volatile and opportunities for upward mobility ample, then a single-year snapshot of the income distribution cannot be trusted to provide an accurate picture of longer-run economic conditions and opportunities.

Indeed, there may actually be a tradeoff between inequality and upward economic mobility. Suppose that the more generous redistributive income-transfer programs that reduce

poverty in Europe also reduce incentives to work, save, marry and engage in other behaviors that lead to economic betterment. In that case, low poverty rates would be accompanied by little economic mobility. Although the European redistributive programs may be generous enough to prevent large numbers of families from experiencing deep poverty, these same programs may restrict mobility to the point that low-income families have little hope of ever gaining a middle-class standard of living for themselves or for their children.

There is considerable consensus among U.S. researchers that the modest U.S. social-assistance system has produced measurable but rather small reductions of work effort and other mobility-related behavior (Danziger et al., 1981; Moffitt, 1992). And longitudinal household data in the United States show that its inequality is, in fact, accompanied by surprising amounts of upward economic mobility among low-income families. This mobility produces frequent, although far from universal, transitions out of poverty (Bane and Ellwood, 1986). For example, the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) found that one-quarter of all individuals living in households with incomes below the U.S. poverty threshold in 1984 were not poor in 1985 (U.S. Bureau of the Census, 1989).

The combination of spartan transfers and a high degree of inequality but also of high upward mobility among low-income families in the United States is consistent with the theory of a necessary tradeoff between economic equality and mobility. There is little doubt that European social assistance schemes are more generous than in the United States;² whether they also reduce upward economic mobility is an open question. A simple but key piece of missing evidence is whether the lower rates of poverty and inequality in Europe are accompanied by lower rates of economic mobility among low-income families. A primary goal of this paper is to assess whether upward economic mobility among low-income families is as extensive in Canada and European countries as in the United States.

The structure of our paper is as follows: In Section II we describe our sources of data and definition of poverty. The third section presents our findings on poverty rates and transitions. Section IV summarizes our results and their policy implications.

II. Data sources and definitions of poverty thresholds

Much of our analysis uses simple transition tables, which compare family income position at two points in time, usually one year apart. The nine countries that have gathered the requisite longitudinal economic information from representative samples of their populations during the 1980s are: Canada, (the Lorraine province of) France, the Federal Republic of Germany, Finland, Ireland, Luxembourg, the Netherlands, Sweden and the United States.³ Details on the data sets and procedures are presented in the Appendix.

In brief, and with exceptions noted in the Appendix, the heart of our measure of family economic status is total family income, including social assistance and other government and private transfers, but excluding income and payroll taxes. Samples drawn from all countries consisted of families with minor children.

We used an equivalence scale that gave respective weights of 1.0, 0.7 and 0.5 to the first adult, subsequent adults and children in the family. We then estimated the distribution of size-adjusted family income for the entire population of each country each year.⁴ Our definition of poverty is based on the median income within each country.

We defined each family's economic status with reference to whether its size-adjusted annual income was below 40, 50 or 60 percent of the median in that year. An "escape from median-income-based poverty" is defined as a transition from income below 50 percent of the median in a given year to income above 60 percent of the median one year later. (We required income to jump at least 20 percent in order to avoid the ambiguity associated with transitions involving very small income changes from just below to just above a poverty line.)

We also present results using a second definition of poverty, based on the same equivalence scale but defining the poverty threshold as the point at which the size-adjusted income distribution divides the bottom 10 percent of a country's families from the top 90 percent. By definition, a constant percentage of each country's population of families is "bottom decile" poor each year. An "escape from bottom-decile poverty" is defined as a transition from the bottom decile to a point at least 20 percent higher than the bottom-decile break point.

III. Poverty rates and transitions

Single-year poverty rates. We begin with conventional cross-sectional income-distribution data based on an annual accounting period. The first four columns of Table 1 show the estimated fractions of families with children with size-adjusted incomes less than 40%, 40-50%, 50-60%, and more than 60% of the median. The last three columns show the cumulative fractions of families with incomes below those various thresholds.

Drawing the poverty line at 40% of the country medians produces enormous differences in estimated poverty rates, with the United States and Canada having double-digit rates, and all other countries with rates of less than 5%. More than one-third of all black families in the United States were poor by this definition, reflecting the much worse economic position of U.S. blacks than whites relative to the median for blacks and whites taken together. Considerably more foreign than native residents of Germany were poor by this definition, although the total fraction of German foreign residents with incomes below the 40%-of-median threshold (6%) is still much lower than the fraction of poor Americans or Canadians.

Raising the line to 50% (column 2) and then 60% (column 3) of the median adds substantial numbers of families to the poverty counts in most countries. Poverty rates based on a 50% line (column 6) are still very low in Finland, France, Luxembourg, the Netherlands and Sweden. Finland, the Netherlands and Sweden have fewer than one in ten families poor even when the line is drawn at 60% of the median income (column 7). At all points in the distribution, however, poverty rates in the United States (especially among blacks) and Canada and among foreign residents of Germany are much higher than in the other countries included in the study.

Longer-run poverty. Most of the data sets provide at least a three-year window over which poverty patterns can be observed. The first column of Table 2 presents estimates of the fractions of the populations of the five countries with appropriate data that failed to enjoy incomes at least 50% of the median in all three of the years.⁵ In the continental European countries -- Germany, Luxembourg, France and the Netherlands -- virtually no families had

persistently low relative incomes.⁶ Rates of persistent poverty were much higher in Canada and the United States. Specifically, about one in eight Canadians, one in seven Americans and two in five black American families were persistently poor over the three years by this definition.

If anything, the three-year window afforded by the longitudinal data sets reveals greater inequality in the longer-run distribution of income in the United States relative to the other countries in our study than does the single-year window used in cross-sectional snapshots. Why this is so depends on the extent of inequality in the distribution of income and the extent of economic mobility. We now turn to a direct examination of economic mobility among low-income families.

Poverty transitions. Our findings on transitions out of poverty are based on a poverty line drawn at 50% of the median and displayed in the second column of Table 2. There are large differences in the estimated fractions of poor escaping poverty from one year to the next, ranging from a low of 8% among U.S. blacks to a high of 44% among the Dutch poor. A comparison of the estimated fractions poor and the estimated fractions of poor escaping poverty (Figure 1) shows a striking inverse relationship. Thus, contrary to our initial expectations, countries with more generous social security schemes and lower poverty and income inequality had greater mobility out of poverty. The seemingly substantial amount of economic mobility in the United States suddenly appears small when compared with European countries.⁷

Before reaching any general conclusions about the possible tradeoff between inequality and mobility in the countries in our study, it is important to go beyond the rather arbitrary classifications of whether families were poor, and whether poor families escaped their poverty, to consider the nature of the underlying income distribution.

Suppose that the extent of year-to-year fluctuation in income was uniform across countries, but the extent of inequality in the income distribution was quite different. In that case, the 50%-of-median poverty line would cut the income distributions of the different countries at different points. Countries with greater inequality would have more poor and, if the income distribution were approximately normal, the typical poor family would be further

away from the 60%-of-median threshold used to define an escape. Greater inequality would be associated with fewer exits from poverty despite the fact that the distribution of income changes would be identical.

There are several ways in which the nature of economic mobility among poor families in the nine countries can be assessed more directly. First, we can test the idea that poor families in countries with more poverty are typically further away from the poverty thresholds by calculating the income position of the typical (i.e., median) poor family, expressed as a fraction of the 50%-of-median poverty line (column 5 of Table 2). The evidence is mixed. Poor families (and, in particular, poor black families) in the United States are typically much farther from the poverty line than are poor families in other countries, while poor families in some of the countries with high mobility rates -- in particular Luxembourg -- are typically quite close to the line. But a number of countries do not fit the expected pattern. The poor in Sweden are highly mobile and yet start from a distance that is almost as great as in the United States, while the poor in Canada, with low mobility rates, typically start much closer.

A second approach is to repeat the mobility calculation with a crude standardization on distance to the poverty line. This was done by calculating transitions rates on the subset of poor families who were close to the poverty line (column 3 of Table 2). Only families with year t incomes between 40 and 50% of the median are selected for the analysis. As before, a transition is defined as occurring if year $t+1$ income exceeds 60% of the median. Transition rates among families close to the poverty line are strikingly uniform across the countries, with rates for the United States (22%) and Canada (23%) quite similar to those found in Germany (24%), Luxembourg (29%), Ireland (22%) and the Netherlands (23%). Blacks in the United States have lower transitions rates (15%), while Finns and Swedes generally have higher-than-average rates (47% and 45%, respectively).

A third way of standardizing the income distributions across the nine countries is to base the poverty-exit calculation on the bottom ten percent of families. This holds constant the share of each country's population defined to be "low income". As with the median-income-based definition of poverty exits, we require year $t+1$ income to be at least 20% higher than the year t poverty line. As with transitions among the near-poor and in contrast

to the very different escape rates across countries based on the median-income definitions of poverty, escape rates based on the bottom-decile definition of poverty are fairly uniform across the countries (Table 2, column 4). Escape rates for the United States (23%) are quite high and very similar to those in Canada (26%), Finland (27%), France (21%), Germany (23%), Ireland (27%) and the Netherlands (21%) and somewhat higher than in Sweden (at 16%) and Luxembourg (15%).⁸

A fourth calculation, shown in the sixth column of Table 2, is of the typical (i.e., median) percentage change in size-adjusted income between t and $t+1$ among families defined to be "bottom-decile poor" in year t . This also produces fairly similar -- and quite positive -- results across countries, with the typical bottom-decile poor family experiencing income increases ranging from 8 to 28 percent. Typical changes for the U.S. poor are more positive than in Sweden, the Netherlands, Luxembourg and France, but smaller than in Canada, Finland, Germany and Ireland.

All in all, the bulk of the evidence suggests that patterns of economic mobility among low-income families are similar across the nine countries in our study. No country was consistently at the top or bottom of the rankings across all of our mobility measures. Although relatively few poor families in the United States cross the 60%-of-median threshold, the other measures of mobility used in our study place the U.S. poor near the middle of the pack. So while inequality is greater in the United States than elsewhere, the extent of upward mobility among U.S. poor is similar to the mobility of poor families in Europe.

A digression on measurement error. Assumptions about measurement error are crucial for analyses of poverty transitions, since a spuriously low income report in one period may create two spurious poverty transitions -- one from nonpoverty to poverty, and one from poverty to nonpoverty. Although it is very difficult to identify spurious transitions, there are a number of reasons why we believe that our transition patterns are not dominated by errors of measurement.

First, our requirement that transitions involve income changes of at least 20% provides some insurance against overstating real transitions. Small positive reporting errors

in income in year $t+1$ will not be sufficient to cause a transition.

Second, three of our data sources (for Finland, Sweden and Canada) come mostly or entirely from administrative records rather than household surveys. Although administrative records are certainly not error-free, they are free from a number of the errors that occur in the reporting and recording of survey information. Although Swedish data did show less income change than in many of the other countries (Table 2, column 6), they also showed, if anything, more transitions out of poverty. Typical income changes of Finns were higher than in any other country. Income changes in the Canadian data were also quite large, while rates of poverty transitions fit well with the patterns from survey-based data sources. Thus it does not appear that administrative-based data tell a fundamentally different story about inequality and mobility than survey-based data.

Third, conclusions about the reliability of transition data from naive measurement-error models neglect the crucial fact that measurement errors are likely to be positively correlated across time. That is, respondents who under- or overreport income at time t are likely to persist in their under- or overreporting in the interview at $t+1$. Once correlated measurement error is allowed in these models, it is possible to either overstate or understate the number of true transitions.

More generally, the "signal-to-noise ratio" is lower for a change measure than a corresponding level measure as the: i) correlation across time in the "true" measure increases and ii) correlation across time in the error decreases. It is generally assumed that correlations in "true" conditions are fairly high while cross-time correlations in measurement errors are typically assumed to be zero. However, validation studies that compare interview reports of employment information such as earnings and work hours to the "truth" as revealed by highly accurate company or Social Security records generally find only slightly lower signal-to-noise ratios for change than level measures (Bound et al., 1990).⁹

A fourth reason why the transitions presented in Table 2 are likely to be mostly real

is that we can link many of the transitions to demographic and economic events. With varying degrees of comparability, most surveys were able to gauge whether or not the following events occurred at approximately the same time as the poverty transition: a marriage/remarriage; substantially more employment for household members; and the beginning of social insurance benefits (Duncan et al., 1992).

Employment was by far the most frequent cause of exits, accounting for between one- and two-third of them. Marriage accounted for as many as one-tenth of poverty exits in three countries, while exits related to social insurance played a significant role in four countries. All in all, the three sets of events account for between 42 and 84% of the observed poverty exits.

IV. Discussion

Our basic findings about poverty are easily summarized. The relative economic position of families varies widely across countries, with substantial numbers of families in the United States and Canada quite badly off. Although favorable income changes among low-income families with children were widespread and rather similar across the nine countries in our study, the very low starting position of the typical poor family in the United States and Canada could not elevate -- even occasionally -- the living standards of substantial numbers of families to a level that was half that enjoyed by a typical Canadian or American family. More than two-fifths of black families in America lived persistently below the 50%-of-median poverty line.

Are inequality and poverty the price the United States pays for its dynamic economic system? Surely the data presented here call such an assumption into question. The extent of upward mobility appears to be just as great among the poor in Europe as among U.S. poor. The European countries in our study provide ample evidence that it is possible to combine economic mobility among the poor with only modest inequality, and to leave very few families in a state of persistent deprivation. Thus, it appears that the threat of poverty is not a necessary precondition for upward economic mobility.

Although a number of countries in our study appear able to reduce income inequality while preserving upward mobility among low-income families, our evidence should not be

taken to suggest that individual transfer programs have no adverse effects on incentives to work and engage in other behavior that promotes upward mobility. Research in the United States has consistently found significant effects of transfer programs on work effort (Moffitt, 1992). The overall effects of U.S. transfer programs on labor supply have not been very large because the programs themselves have not been very generous. It is likely that the more generous European transfer programs would have larger effects. Indeed, a detailed study of the Dutch disability system (Wolfe, De Jong and Haveman, 1984) found much larger effects for the more generous Dutch system.

The package of social-assistance programs available to lone parents is much more generous in Europe than in the United States. Duncan et al. (1992) calculated the ratio of cash and near-cash social assistance available to lone parents with two children as a percentage of median family income and obtained the following figures: Canada-41%; France-18% to 54%, depending on the age of the children and recency of divorce; West Germany-47% to 67%, depending on the age of the children; Ireland-55%; Luxembourg-51%; the Netherlands-61%; Sweden-64%; the United Kingdom-60%; United States-27%.

Whether the duration of social-assistance spells in the U.S., Canada, Germany and the United Kingdom varied with their levels of generosity was investigated by Duncan et al. (1992). Typical recipients in the United Kingdom had the longest spells, recipients in the United States and Germany the shortest. High benefit levels might account for the longer UK spells, although poor employment conditions and norms that discourage working mothers may have also contributed. Household panel data have only just begun to be collected in the United Kingdom, so it will be several years before we know whether these conditions lead to less income mobility in the UK as well. Why recipients in Germany, with its high benefits levels, should have spells as short as recipients in the United States emerges as a key question in understanding how countries might successfully combine generous benefit levels and upward economic mobility.

The frequent but by no means universal transitions out of poverty suggest considerable diversity across families in poverty experiences. The static dichotomy of "poor" versus "not poor" is very misleading and needs to be replaced by at least four dynamic categories of economic position -- persistent poverty, transitory poverty, the

economically vulnerable and the financially secure.

The distinction between persistent and transitory poverty is crucial. Low-income families observed at any given time are really a heterogeneous mixture of families who have fallen into relatively brief periods of poverty and families unable to meet their basic needs for prolonged periods. In U.S. data (e.g., Duncan et al., 1984) and, we suspect, in data from other countries as well, the characteristics of the temporarily poor are not very different from the characteristics of the rest of the population. Relatively few families are immune to the possibility and economic consequences of a bout of unemployment or the departure or death of a spouse. For these families, social assistance can be viewed as a kind of insurance program, available if necessary to cushion them against the severity of their temporary misfortunes. With time, their departure from poverty will again place them in the ranks of the taxpayers, supporting the very social assistance programs that once aided them.

Although surprisingly widespread, movements out of poverty are by no means universal and long-term poverty probably exists in all of the countries in our study. How should social assistance programs deal with the distinction between short- and long-run poverty? For some purposes the temporal dimension is unimportant. Social assistance programs aimed at fulfilling short-term needs -- food or heating for example -- need not distinguish between the short- and longer-term poor. However, it is vital that programs aimed at curing long-term poverty make such a distinction, based on knowledge of who among the poor is most likely to remain poor as well as who among the long-term poor would profit the most from these programs.

APPENDIX

Data used in the paper are drawn from a variety of sources and, despite our persistent efforts, retain a number of inconsistencies. In this appendix, we summarize the data sets, procedures and remaining inconsistencies.

Data sources. **Canada:** the Longitudinal Administrative Database; **Finland:** the Income Distribution Survey; **Federal Republic of Germany:** the Socioeconomic Panel (SOEP); **Ireland:** a two-wave household panel study conducted by the Economic and Social Research Institute; **Luxembourg:** the Liewen zu Letzebuerg household panel; **France:** the Lorraine Household Panel; **The Netherlands:** the Dutch Socioeconomic Panel Project (SEP); **Sweden:** the Household Income Survey (HINK); **United States:** the Panel Study of Income Dynamics.

In brief, and with some exceptions noted below, our poverty analyses took all families with children and classified them in year " t " according to whether their post-tax, post-transfer income was sufficiently low for us to consider them "in poverty." Repeating this procedure in year " $t+1$ " produces a two-way table showing whether or not family income had increased sufficiently for them to be "out of poverty."

All data used in the poverty transition analyses come from longitudinal household surveys, which provide data on changes in the economic status of the same families between years " t " and " $t+1$ ". Calendar years corresponding to " t " and " $t+1$ " vary from survey to survey. For **Canada**, years " t " and " $t+1$ " consist of four pairs of consecutive years from 1982-83 to 1985-86. For **Finland**, years " t " and " $t+1$ " consist of three pairs of years from 1987-88 to 1989-90. For **France**, years " t " and " $t+1$ " consist of two pairs of years -- 1984-85 and 1985-86. For the **Federal Republic of Germany**, years " t " and " $t+1$ " consist of three pairs of consecutive years from 1983-84 to 1985-86. For **Ireland**, years " t " and " $t+1$ " are not consecutive and correspond to 1986 and 1988. For **Luxembourg**, years " t " and

" $t+1$ " consist of two pairs of years -- 1984-85 and 1985-86. For the Netherlands, years " t " and " $t+1$ " consist of three pairs of consecutive years from 1984-85 to 1986-87. For Sweden, years " t " and " $t+1$ " consist of 8 pairs of consecutive years from 1980-81 to 1987-88. For the United States, years " t " and " $t+1$ " consist of six pairs of consecutive years from 1980-81 to 1985-86.

In all cases the unit of analysis is families with children age 17 or younger at the time of both the year t and year $t+1$ income reports. The family at year $t+1$ must include at least one of the children and one of the adults present in year t to be kept in the sample. Where the family at year t splits into two or more families at year $t+1$, the family unit in which the youngest child (and one of the adults) remain is kept in our analyses and other derivative families are eliminated.

Income in most cases is annual, post-tax, post-transfer family cash income. Exceptions are the French income data, which are gross of income taxes, and are obtained by multiplying how many of the 12 months prior to the November-December interview a given type of income was received by the amount of such income received in the month prior to the interview; the Dutch data, in which the family income total refers to the household's "normal" income at the time of the October interview; and the United States data, in which the value of Food Stamps, a near-cash transfer program, is counted as part of family income.

To form the median-income-based poverty line, we obtained a median size-adjusted income figure in a given year from our survey data as follows. We: i) took all individuals present in that year as the units of observation (including individuals who were not part of families with children); ii) divided the household income by a family-size adjustment factor, which is the sum of: 1 for the first adult, .7 for each additional adult, and .5 for each child (under age 18); and iii) assigned that size-adjusted income to each individual in the household. (E.g., each individual in a four-person household containing two adults and two children and a \$20,000 household income has a size-adjusted household income of $\$20,000/(1+.7+.5+.5) = \$20,000/2.7 = \$7,407$.) We then: iv) found the (weighted) median of size-adjusted household income of all individuals in the sample; and v) repeated this for each of the years t and $t+1$ used in the poverty analysis. Once these medians were

calculated, it was a simple matter to categorize our samples of households with children according to whether household income was less than 40%, 40-50%, 50-60%, or 60% or more of the median.

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Percent of families with family income:

Percent of families with family income:

COUNTRY

Less than 40% of median 40% to 50% of median 50% to 60% of median 60% of median or more

Less than 40% of median Less than 50% of median Less than 60% of median

Canada	12%	5%	5%	78%
Finland	1	2	4	93
France-Lorraine	2	2	7	89
Germany (West)	3	5	9	83
Ireland	4	8	10	79
Luxembourg	1	3	6	90
Netherlands	1	1	5	93
Sweden	1	1	3	94
United States	14	7	8	72

12%	17%	22%
1	3	7
2	4	11
3	8	17
4	11	21
1	4	10
1	3	7
1	3	6
14	20	28

German foreign residents	6	12	16	66
U.S. Blacks	37	12	9	42

6	18	34
37	49	58

Table 2: Poverty Transitions and Income Changes of Low-income Families with Children (mid-1980s)

COUNTRY	Three-year poverty rate*	Poverty transitions among:			Income of typical poor family as % of poverty line	Typical income change for families in the bottom decile
		All the poor**	The near-poor***	The bottom-decile poor****		
Canada	12%	12%	23%	26%	85%	21%
Finland	na	43	47	27	85	28
France-Lorraine	2	28	32	21	72	10
Germany (West)	2	26	24	23	83	18
Ireland	na	25	22	27	90	22
Luxembourg	1	26	29	15	91	10
Netherlands	1	44	23	21	74	8
Sweden	na	37	45	16	69	9
United States	14	14	22	23	70	15
German foreign residents	4	20	23	17	85	12
U.S. Blacks	42	8	15	14	63	8

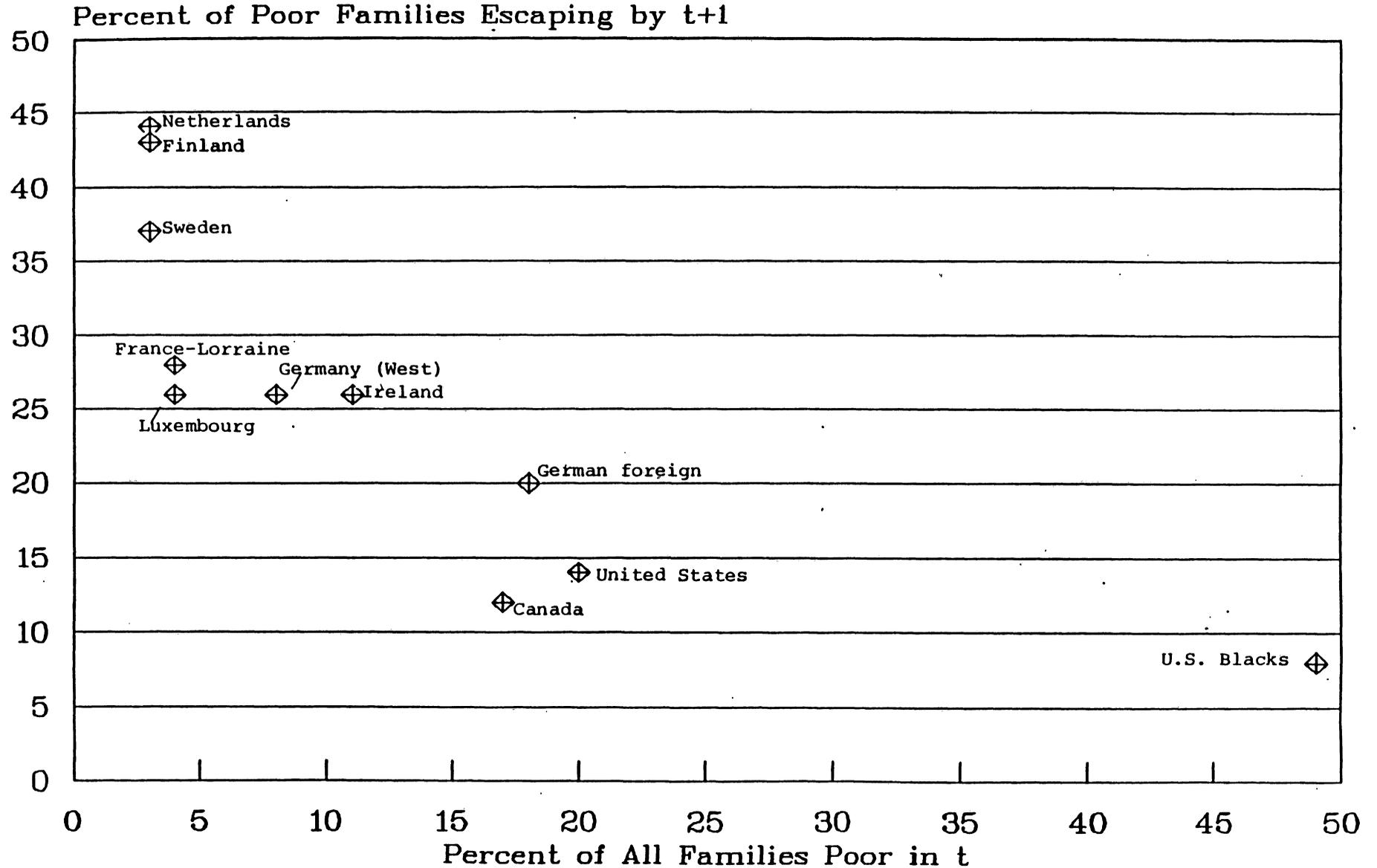
* Percent with income <50% of given country's median income all three years of a 3-year period

** Of families with income <50% of median in t, percent with income >60% of median in t+1

*** Of families with income 40%-50% of median in t, percent with income >60% of median in t+1

**** Of families with income in the bottom decile in t, percent with income at least 20% above bottom decile in t+1

Figure 1
Transitions Out of Poverty* for Families with Children



*Of those with income <50% of median in t, percent with >60% of median in t+1

1. Tim Smeeding kindly provided these calculations. They are based on a definition of poverty that sets the line at 50% of the country's median size-adjusted income and the equivalence scale implicit in the U.S. poverty thresholds: United States (23%), (West) Germany (6%), the Netherlands (6%), France (8%), Sweden (3%), Canada (14%) and the United Kingdom (11%).
2. O'Higgins (1988) estimated the following shares of Gross Domestic Product spent on family benefits and a more comprehensive set of social services (including education, health care, social security and welfare, and housing and community activities): Canada (0.6%, 39.9%); France (2.7%, 46.0%); West Germany (1.1%, 46.6%); Netherlands (1.6%, 56.9%); Sweden (1.6%, 61.0%); United Kingdom (1.6%, 44.4%); United States (0.5%, 35.4%).
3. Where possible, data for the Federal Republic of Germany are presented separately for native Germans and foreign residents (the majority of whom are Turks), while data for the United States are presented separately for blacks and whites. (Both sets of minorities were oversampled in their respective surveys, although weights have been used to calculate unbiased combined national estimates.) We suspect that the nature of poverty experiences of ethnic minorities in most of the other countries of our study deserves separate study, but only in the Federal Republic of Germany and the United States were there sufficient numbers of observations for separate estimates.
A problem in comparing foreign residents of Germany with blacks in the U.S. is that blacks retain their social citizenship when they become poor. Foreign residents in Germany who become poor may voluntarily return to their countries of origin or, in some cases when they apply for social assistance in Germany and are not citizens of EC countries, they may be encouraged to leave the country. Such departures may lead to an exclusion of the poorest foreigners from the German sample.
4. Since our medians are based on estimates of the size-adjusted family income of all individuals in the population (not just individuals living in families), median-income-based poverty thresholds also reflect the comparative status of family and nonfamily households in the population.
5. Note that these three-year estimates are not of long-run poverty, since a family poor in, say, the first of the three years could have just ended a very long spell of poverty. Rather, the estimates should be taken for what they are -- poverty estimates for each country over a three-year period in the mid-1980s.
6. Three-year poverty rates could not be calculated from the panel data from Sweden, Finland and Ireland since those data covered only two-year periods. Since only 3% of families with children were below the 50%-of-median poverty line in Finland and Sweden in a single year, both of those countries should be added to the list of countries with very few persistently poor families.
7. The 14% escape rate for U.S. poor based on PSID data may appear inconsistent with the 25% escape rate quoted for SIPP data. In fact, the two data sources are in close agreement. The SIPP-based estimate uses the official U.S. poverty line, which cuts the U.S. income

distribution at closer to the 40%-of-median line than 50%-of-median line and, more importantly, does not require income to increase more than one dollar above the line to be counted as a transition. The data in Table 2 require a transition from less than 50% of the median to more than 60% of the median. A PSID-based calculation of the fraction of families with incomes less than 40% of the line in year t who have incomes above 40% of the line in year t+1 is 29%, if anything a little higher than that found in the SIPP-based transition rate.

8. When the bottom decile is defined on the basis of the incomes of blacks and whites taken together, escape rates for blacks in the United States are relatively low. This is due mainly to the large distance between the typical low-income black family and a poverty line drawn from blacks and whites taken together. When the bottom decile is defined by the black population alone, the escape rate (42%) is much higher.
9. In both of the validated data sets used in the Bound et al. study, the correlation in true earnings was surprisingly modest -- .45 for four-year change in the payroll records of PSID validation study and .64 for one-year change in Social Security earnings records. On the other hand, measurement-error correlations were relatively high in the Current Population Survey responses -- .37 over the one-year period. This correlation indicates that respondents who overreported in the first year tend to overreport the next -- hardly surprising but almost never assumed to be the case in measurement-error models involving change. All in all, the error-to-total variance of the measures of change in ln earnings -- .29 in the PSID validation study and .32 in the CPS-Social Security match data -- was not much higher than the .15 to .30 range for the error-to-total variance of the measures of earnings level.

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THE POWER OF REFORM REVISITED

Lecture delivered to The Research Conference on Poverty and Distribution, convened by The Norwegian Central Bureau of Statistics, Oslo 16-17 November 1992.

Students of the welfare state have long been intrigued by the question, 'Does politics matter?', and continue to disagree about its answer, much to the bemusement, I suppose, of more common sense minded people who may observe that governments invest uncountable millions in public policy and ask why they would do that if it were of no consequence? This is a good question, but the matter is not obvious. There may be irrationalities even in democratic systems so that policy outcomes are arbitrary or work to strengthen vested interests and powers.

I believe the question is relevant, but only if it is formulated more specifically as a question of reform. That revolutionary shifts from one system to another matter is not in doubt; remember East and West Berlin! But do marginal policy changes within systems matter? Do they have a real impact on society and in the lives of individuals and families or are they mere surface phenomena of window dressing? Is reform a plausible strategy for social change?

Let me first try to present to you an illustration which I hope will demonstrate the importance of the question. I have recently visited South Africa and have there had opportunity to observe a society in dramatic transition and to discuss the nature of this transition with fellow academics - sociologists, economists, political scientists, jurists, theologians; all fine people actively engaged in the process of change.

South Africa has a relatively strong economy (although presently in stagnation), but has had a social and political organisation which has excluded the majority of the population from full participation in the economy. These conditions are now in change towards what will hopefully be a democratic South Africa. As a part of this change, some redistribution of wealth is seen as necessary since democracy will require those previously excluded not only to be enfranchised but to get a greater share and stake in society in more general terms. Although there has been a considerable shift in the distribution of income during the 1970s and 1980s to the advantage of the black population (van der Berg 1991) - a process which may now have come to a halt because of rising unemployment - progressives recognise that further redistribution will be needed. As might be expected, there is intense debate about

how to promote further redistribution. Some believe that real change is possible only through radical rearrangements of economic structures, including the ownership of capital. Others warn that such policies will lead South Africa down the road of economic decline, much as has been seen in other African nations, and that redistribution must therefore come through moderate tax and transfer reforms. It is not for me to say who is right, but I think you will see that much may be at stake in the choice of redistributive strategy.

There is no model on hand for South Africa to copy; no other society has attempted a transition from apartheid to democracy. The experience of policy reform in other societies under other circumstances may not be directly transferable to the South African scene. My intention here, however, is not to tell the South Africans what they should do but only to use the South African case to show how important it is to try to set the record straight as to the experience of reformist policies for the purpose of social change.

I have commented extensively elsewhere on the power of reform, in particular in my book *The Possibility of Politics*, which is an analysis of income redistribution through transfer and tax policies. I there argued that the experience of transfer and tax policies in advanced industrial nations is generally that these do redistribute income in the sense that post-tax/transfer income tends to be less inegalitarian than pre-tax/transfer income. I further dismissed the suggestion that poverty has persisted more or less unabated in spite of economic growth as resting on an unsustainable relativisation of the concept of poverty. I also finally found that side-effects in the form of economic inefficiency and welfare dependency need not be prohibitive with regard to desirable redistributive efforts.

I still hold this analysis to be basically sound and I feel in need to back-track on the relatively cheerful conclusions I then drew with regard to policy reform. Instead, I want to take this opportunity to bring the analysis a step further than I was then able to do, something which is possible in part because of later advances in research.

The results I have just summarised very briefly have a shortcoming in the very analysis of redistribution. The effectiveness of transfer and tax policies for redistributing income was established with what I called "the standard method" whereby pre- and post-tax/transfer

income distributions at one point in time are compared and the difference taken as a measure of the redistributive effect of the relevant transfers and taxes. This method has many merits, but it must be granted that it does simplify matters a bit more than is comfortable in that one elementary and important fact is ignored, namely that redistribution in the meaning of modifying social inequality is something that must necessarily occur through a process over time.

Once the dynamic element is taken into consideration, it is easy to see that standard method results are not necessarily conclusive. For one thing, a certain redistributive result at one point in time may be "corrected" by an opposite result later so that a trend analysis would show only arbitrary fluctuations around a stable long term distribution. Furthermore, a dynamic analysis allows for second order effects, namely that people may adapt to the experience of redistribution in such a way as to confound the intended effect, for example that the rich may respond to new progressive taxes by withholding more income from taxation, in which case there may be no redistribution over time even if there appears to be redistribution at any given point in time.

Two problems, then, must be confronted. First, we need information on the dynamics of redistribution. Fortunately, such information is now available and will be introduced later in this lecture. Second, we need to address the suggestion that there are countervailing forces under the surface in society which neutralise what appears to be redistribution on the surface, for example, an inherent ability of those already in privilege to manoeuvre so as to benefit from new opportunities and avoid new burdens. I turn to this problem first and do that through a discussion of equality of opportunity as treated in class analysis.

EQUALITY OF OPPORTUNITY

In *Social Mobility and Class Structure in Modern Britain*, which was published in 1980, Goldthorpe and collaborators concluded that the findings of that impressive study "count as rather grave ones for ... the strategy of seeking to attack social inequalities via legislative and administrative measures of a piecemeal kind ..." (p 252). This conclusion was drawn from the finding that relative class mobility had not changed significantly during the post-war

period up to 1972. In spite of welfare state expansion and educational reform, the study found no change in the influence of the class position of fathers on that of sons. In *Origins and Destinations*, also from 1980, Halsey, Heath and Ridge offered similar findings and interpretations with regard to the impact of class on education. Educational destinies had not become more independent of class origins.

The study by Goldthorpe and collaborators covered a period of rapid change in the class structure with an upward bias and demonstrated higher rates of upward class mobility than had been observed in previous studies for earlier periods. However, in the further analysis a distinction is introduced between *absolute* and *relative* mobility. Absolute mobility refers to the proportion of individuals in some category of origin who move into some other category of destination during their own careers. Relative mobility refers to the chances of individuals in some category of origin to move into some specified category of destination, relative to the chances of individuals in some other category of origin to move into that same category of destination. Changes in relative mobility rates reflect changes in mobility after controlling for the effects of changes in the class structure itself. What was observed, then, was change in absolute mobility but stability in relative mobility, or, in other words, that the higher rates of upward mobility were explained entirely by changes in the class structure itself without any change in the terms of competition between the classes for positions in the given class structure at any point in time.

Observations of class mobility in themselves can say nothing directly about the effects of policies. This is why studies of education and mobility are important since educational reform is a case of pure policy change and a change of policy which has usually been intended to modify inequalities of opportunity.

Heath and Clifford have continued the analysis of the impact of class background on educational achievement, covering the entire 20th century. Again a distinction is made between absolute rates and relative chances, and the conclusions are much the same as those we have seen above. In absolute terms, educational achievement has changed dramatically. "From being a small minority, it is now the majority of the population, and of all classes, who obtain examination certificates such as O-levels." In relative terms, however, the

conclusion is stability. "But the classes have shown little sign of change. Neither the meritocratic reforms of the 1944 Act nor comprehensive reorganisation can, in this respect at least, be said to have succeeded." And overall, "It may be that education policy can have more effects on the overall levels of education than it can on the class inequalities." (Heath and Clifford 1990: 14-15.)

The social competition

The society which is described in these studies is one in which people compete for positions which are attractive and in short supply, such as high class jobs or higher levels of education. (In theory, class positions are not necessarily strictly ranked by attractiveness, but I set that aside in the interest of simplicity.) The competition is defined by a *framework* and by what is called *terms*. The framework has two elements, a distribution of competitors by class background and a distribution of positions in categories of attractiveness. The terms of competition are equivalent to a set of dice which determine, within the given framework, who obtains the attractive positions.

The findings of the studies I have referred to above can now be formulated more precisely in three points. First, there have been many and radical changes in the framework of competition for jobs and education. Second, the dice are loaded against some of the competitors and to the advantage of others depending on social background. Third, the terms of competition (the loading of the dice) have remained unchanged irrespective of changes in the framework.

From these findings, the studies draw the conclusions referred above on social inequality and class inequality, and on the inability of piecemeal measures and educational reform to modify such inequalities. The implications are far-reaching. Social inequality sits deep in the fabric of society, beneath, so to speak, the framework of the social competition. Reformist policies appear to reach only the framework and not to penetrate to the terms of competition. If one wants to change inequality one would therefore need more powerful interventions than those available in the reformist portfolio.

I agree two thirds of the way with these findings and interpretations, but I disagree on a third and decisive issue. I have no quarrel with the analyses and accept without further comment here the conclusion of change in absolute rates and stability in relative chances both in class mobility and educational opportunity.

I also think it is correct that the reformist strategy for the most part reaches only the framework of the social competition and does not penetrate to the terms of competition. This I see not as a problem in the reformist strategy but rather as its inherent logic; the very meaning of the idea of reform is to make do with cautious policy interventions. This I explain more carefully below.

Where I disagree, however, is on the conceptualisation of inequality. I take issue with the concept of class inequality which is applied and with the generalisations which are suggested from observations on relative chances to conclusions on social inequality and policy reform. Social inequality does not sit as deep in the fabric of society as is suggested, it is not independent of the framework of competition, it should not be linked to the terms of competition only, and it is not outside the reach of reformist interventions. This, also, I explain more carefully below.

The logic of reform

The competition for attractive positions in society can change in three ways:

- a) The framework of the positions into which people move can change, for example through educational expansion or shifts in the occupational structure. This can be encouraged by a variety of policies, directly by policy decisions in the case of education and somewhat more indirectly by economic and related policies in the case of the occupational structure. Such changes will affect the competition in two ways, in the short term by changing what is competed for (more attractive positions) and in the long term, ie in the next generation, by modifying the framework of class background.
- b) The framework of class background can change. This will affect the relative size of the groups against or for whom the dice are loaded. Such change can occur only

indirectly as explained in a) and is not subject to direct policy manipulation.

- c) The terms of competition can change, ie the mechanisms whereby competitors are sorted into available positions. These mechanisms are extremely complex but they are subject to policy regulation, for example through rules of recruitment to education or jobs.

If we want to modify the competition for attractive positions we have two possible strategies, either to change the framework of positions or to change the terms of competition.

The dice analogy goes only so far; there is in democratic society no dictator who decides who goes where. Social selection is the outcome of the choices the competitors themselves make; we choose education, we choose jobs. Choice, obviously, is not free but is constrained by a range of factors such as available positions to choose between, the resources of the competitors, the qualifications which are necessary to enter certain positions, routines of recruitment, the attitudes of those recruiting, information, motivation, encouragement and the like. These constraints are distributed more or less systematically by class, gender, race, age or geography, which is why the choices the competitors make add up to a pattern of social selection.

The terms of competition can change in several ways. In the long run, the distribution of resources could be equalised and this could put the competitors on more equal footing. For example, educational reform in this generation could result in less inequality in educational achievement when the next generation enters the social competition, and this could equalise the terms of competition to the degree that these are determined by the resources of the competitors. This has no doubt been the hope of educational reformers. As far as this theory goes, the results of the studies summarised above most count as bad news, indeed.

In the short run, the terms of competition can be changed either by removing old constraints which have limited the choices available to those previously in disadvantage, or by introducing new constraints which limit the choices available to those previously in advantage. The removal of discriminatory rules is an example of the former, the introduction of affirmative action an example of the latter.

The removal of old constraints is without question a good thing from any egalitarian point of view, but is not necessarily an effective policy with regard to inequality, at least not in the short run. My friends in South Africa, for example, are finding that the elimination of apartheid laws does not end social selection by race. Many universities, including my own, are concerned about social bias in student intake but experience only limited success, in spite of efforts, to overcome this problem while maintaining open competition.

The introduction of new constraints, however, although potentially effective, is highly problematic from a reformist point of view because of the high costs associated with such policies. There are potential costs, first in the form of infringements on liberty. It would be the simplest thing in the world to create equality of educational opportunity if we were willing to allocate school places by lottery, but even radicals in the politics of redistribution would no doubt revolt against this idea on behalf of their own children, in particular academic radicals. (In fact, the University of the Western Cape in South Africa does use a lottery system in the recruitment of students in order to increase chances for black candidates, something which has been argued as acceptable in response to the legacy of apartheid, but not adopted by other South African universities.) The problem of liberty, I think, explains why there is much reluctance in democratic societies to use affirmative action except against the background of extreme injustice, such as discrimination by race or gender. Affirmative action in response to inequalities by class is clearly not on the agenda in open societies (although it was an accepted policy in Communist Eastern Europe).

Affirmative action policies have over the last years to some degree come to be accepted in response to inequalities by gender, which may explain an observed equalisation of relative chances by gender, as opposed to class, in the competition for education (Halsey 1992). It must here be a valid comment that the generalisation from certain observations on class inequality to social inequality has a pretty weak basis when the same logic applied to what is known about gender inequality would give the opposite generalisation with regard to social inequality. This, however, is perhaps more a matter of terminology than of substance.

There are, further, potential costs in the form of social conflict. Changes in the terms of competition give to some by taking from others. This is a recipe for conflict and therefore

alien to the basic philosophy of reform. The preferred reformist strategy is always to give to some without taking from others, which is why redistribution is easy when there is economic growth and difficult otherwise.

A general conclusion is now possible with regard to policy reform and terms of competition. The long term strategy of modifying the distribution of resources seems from empirical evidence to have had surprisingly little effect. As to short term strategies, these have the problem that easily acceptable policies may not be effective and that effective policies may not be acceptable. If the terms of competition between the classes have been left to themselves, this is not for want of possibility, but because of unacceptability. Although there are clearly circumstances in which terms of competition can be regulated directly in perfectly acceptable ways, this does not seem to be a viable recipe for policy reform.

Given the limited scope for regulating inequalities in the terms of competition between the classes, the reformist is left with the alternative strategy of changing the framework of positions for which people compete. The attractiveness of this strategy are clear to see. Easy policies are available, for example simply to allocate money for more places in higher education, there is no problem in relation to liberty since no new constraints on choice are involved, and there is no problem in relation to social conflict since no one is deprived of opportunities they have previously had. The question of course, is of effectiveness. Can inequalities of opportunity be modified by regulating the framework of competition? If the answer were to be no, we would face the dilemma of either ignoring inequality or having to resort to potentially authoritarian strategies.

The concept of inequality

The development we are considering is one of stable terms of competition between the classes within changes in the framework of the competition at both ends, ie both relatively fewer competitors against whom the dice are loaded and relatively more attractive positions to move into. These changes are of considerable proportions; there are *many* more attractive positions on offer and *much* fewer persons disadvantaged by unfavourable odds. Is it justified in these circumstances to conclude that there is no change in class inequality of opportunity? I think

not.

The terms of competition, as defined in the studies I have referred to, are estimated by controlling for changes in the framework. As a mathematical exercise, this is simple enough, but the interpretation of the resulting parameter is all but simple. It seems to me that there is interaction, and not independence, between terms and framework in the social competition. The sociological meaning of a mechanism which sorts people into more or less attractive positions depends on the framework within which it operates. Even if the mechanism is in some meaning the same - the same dice - the job it does is different when the framework changes, and certainly when the framework changes considerably. The competition is no longer the same. The higher the proportion of attractive positions, the less the terms of competition matter. It is no good arguing that the competition is really the same if St Peter sends 100 people to Heaven and one to Hell rather than 100 to Hell and one to Heaven, only because he is using the same dice to determine who goes Up and who goes Down. The lower the proportion against whom the dice are loaded, the less the dice matter. A definition of inequality which allows one to say that inequality may be unaffected, in however large a population, as long as there is one person left facing unfavourable odds, is too rigid.

In a sense it might be argued that class inequality of opportunity is unchanged as long as the terms of competition are the same for classes as aggregates, even if the relative sizes of the classes change, but I do not see how such an argument could carry. Inequality is between persons. Class inequality is between persons with different class characteristics. Persons do not face opportunities in isolation from what goods or bads the chances a person has for achieving an attractive position depends not only on how the dice are loaded for or against him or her, but also on how many attractive positions are available. The opportunities of persons are determined not by the terms of the competition alone but by the terms and the framework of the competition together. The problem with defining inequality of opportunity as a matter of terms of competition alone, is one of mis-specification. The terms of competition are an important factor for understanding the nature of inequality, but they do not alone determine inequality. They are a mechanism which contribute to the distribution of opportunities, but other factors matter as well, notably the structure of available positions. There is a confusion between inequality of opportunity as such and one of the factors which

generate inequality of opportunity. Neither the terms of competition nor the framework of competition alone determine inequality; they are both parameters which together produce a result - opportunity - by which inequality should be defined.

A second general conclusion is now possible. Since opportunities and thereby inequality, are determined, in part, by the framework of competition, and since the framework of the social competition is subject to being regulated by policy means which represent no problem from a reformist point of view, there is in theory nothing in the logic of inequality which excludes the possibility of an effective, reformist strategy for social equality. The dilemma which was suggested above does not apply. We can take on the problem of inequality without having to accept potentially authoritarian policies. Since the empirical observations we are relating to do not show stability in both the terms and framework of competition, but instead show very considerable changes in the framework, the available evidence is not in support of the hypothesis that social inequality has been unaffected by policy reform.

It may now be useful to introduce some figures in order to make this less abstract. Table 1 reproduces some selective data from the paper by Health and Clifford on changes in educational achievement in Britain over a period of 30 years. These data show that the probability of achieving the equivalent of an O Level pass has increased irrespective of social class, that it has increased more for those with a lower class background, and, in consequence, that the difference between the classes in this respect has been reduced. In the 1930 cohort, those of class 1 background were about 4 times as likely to achieve an O Level pass as were those of class 7 background; in the 1960 cohort the difference is less than 2 to 1. However, the authors demonstrate that there has nevertheless been little or no change in the relative chances of the classes, which is the basis for their conclusions as quoted above.

(Table 1 about here)

In my reading, on display in Table 1 is class inequality in educational opportunity in Britain. There is no other class society under the surface which is hidden behind these data. There are terms of competition which operate under the surface, but these do not define social inequality. They contribute to the result we can read in the table but it is this result which

defines social inequality. We here see what opportunities persons in the two cohorts have faced, and we see what changes there have been in educational opportunities within and between classes. Opportunities have increased and the class difference is reduced. The fact that these changes have occurred without change in the terms of competition, as defined, does not mean that the change which is displayed has not occurred, or that what has "really" happened is something else. The situation for the 1960 cohort is better than for the 1930 cohort, both in the level and distribution of opportunity. Far from demonstrating stability in class inequality of educational opportunity, because it is all explained by changes in the educational framework, these estimates confirm that change in class inequality of opportunity can occur by force of changes in the framework of the competition.

Conclusion

In this section I have considered, and rejected, the proposition that class inequality of opportunity is beyond the reach of reformist policies. I have found the proposition to rest on too narrow and rigid a conceptualisation of the problem of inequality. Class inequality is not independent of the framework of the social competition. Given the considerable changes which are observed in this framework with regard to jobs and education, there is no basis for the general proposition that class inequality of opportunity is beyond the reach of reformist policies, or for the conclusion of policy failure, a conclusion which has been suggested by asking the single parameter of relative chances, defined narrowly, to carry much more weight than it can.

There is an interesting similarity between the theory of relative class inequality, which suggests that class inequality of opportunity is independent of class structure, and the theory of relative poverty, which suggests that poverty is independent of absolute standards of living. Both these theories have been used to argue the futility of reform. I have rejected that interpretation previously with regard to the theory of relative poverty and now come to the same conclusion with regard to the theory of relative class inequality. The industrial democracies have experienced a process of unprecedented change over the last two or three generations. Some social scientists are inclined to believe that what looks like change is mainly a mirage and that "real" society cannot easily be observed directly but must be enticed

into our vision with the help of rather mysterious theories which will reveal that, in spite of appearances, underneath the misery is really all the same.

THE EXPERIENCE OF INCOME REDISTRIBUTION

Recent comparative research on income distribution and poverty has produced at least two findings which can be characterised as firmly established and which have resulted in a new understanding of income inequality in advanced industrial nations. The first is that there are considerable differences in income distribution and poverty rates between nations. This has been demonstrated above all in the Luxembourg Income Study (Smeeding et al 1990). Before the co-ordinated LIS estimates there was uncertainty about this and the tendency was to emphasise similarity more than difference. It has also been shown in more limited comparisons, such as my own of Norway and Sweden (Ringen 1986), those of Gustafsson and Uusitalo (1990a, 1990b) of Finland and Sweden and those of Saunders and colleagues of Australia and New Zealand (Saunders, Stott and Hobbs 1991). The second finding is that there have been considerable and systematic shifts within countries in income inequality over relatively short periods of time. Here I refer to work by Jenkins (1991) for Britain, in addition to the works referred to above for Finland, Sweden, Australia and New Zealand and to "official" poverty estimates in Britain and the United States. Previously, the tendency was to regard income inequality as relatively stable over time and such changes as were observed as mainly fluctuations around a stable underlying trend.

Through these findings, income inequality has become established as a sensitive indicator of social life. The question before us today is whether this indicator is also sensitive to reformist policy interventions. Transfer and tax policies represent the logic of reform perfectly, their intention being to redistribute income "after the fact" rather than to regulate the underlying processes which generate an inegalitarian distribution of primary income in the first place. Standard method results suggest that the strategy is effective, but the objection is that these results do not necessarily demonstrate lasting effects.

I shall introduce the results of two studies which are of particular relevance. One is a study of changes in income inequality in Finland over the period from the mid 1960s to the late 1980s. This study does two important things in relation to the issues under consideration here; it establishes with the help of strictly comparable estimates the trend over a period of about 25 years in the distribution of disposable income, and it explains the observed trend

through an analysis which distinguishes between on the one hand, disposable income, and, on the other hand, the effect of factors which influence the effects of transfers and taxes the distribution of primary income.

The second study takes the Australian case and analyses income redistribution in a life-time perspective. The issue here is that cross-section results may be spurious in the sense that what appears to be redistribution between persons at one point in time may in effect be the result of redistributions over the life-cycle for the same persons, in which case there may still be no redistribution of life-time income.

Trends in income inequality

From the mid-1960s to the mid-1980s, Finland experienced what is perhaps the most dramatic case of reduced income inequality in any industrial nation and was transformed in this respect into the most egalitarian of the Nordic countries. During the period, the gini index for the distribution of equivalent disposable income fell from about .32 to about .20. Most of this change occurred during no more than ten years, from 1966 to 1976. After 1985, the distribution has been stable. (Uusitalo 1989, and personal communication on trends after 1985.)

Hannu Uusitalo, after having established this remarkable trend, has sought to explain the change in inequality in Finland through an analysis which considers three sets of explanatory factors: transfer and tax policies, incomes policies, and structural changes in society. This study is exceptionally illuminating since it takes in a broad range of factors and covers a long period of time. Studies which consider only transfers and taxes are open to criticism for being incomplete. They do not consider socio-economic factors which shape the distribution of primary income "before" it is redistributed through the transfer/tax system, nor second order effects which work back on primary income, for example through behavioural responses to new transfers or taxes. This study overcomes these criticisms. It considers, over a long period of dramatic modification of income inequality, the effects of structural change in society on income inequality, along with the effects of transfers and taxes, and thereby responds to the argument that redistribution through transfers and taxes is superficial

and that "real" change needs to be made by regulating underlying socio-economic processes. It also considers the trend in the distribution of primary income, along with disposable income, and thereby responds to the argument that such equalising effects as there may be of transfers and taxes on disposable income are offset by secondary effects which pull the distribution of primary income in the opposite direction.

There were important changes in socio-economic structure in Finland during the period, such as in the occupational composition of the work force, the regional pattern of residence, and household size and composition. These structural changes turn out to be of relatively little importance for explaining the change in income inequality. They changed the relative income situation of some socio-economic groups, but these changes tended to pull in different directions and to balance each other out. Hence Finland did not become more egalitarian in income terms as a result of Finnish society itself becoming more egalitarian in some structural sense. Rather, income equality was generated without structural pressures which pushed systematically in that direction, something which is an important finding in its own right.

The change in final inequality was a result of changes both in the distribution of primary income and of redistributions of primary income into disposable income. The change in the distribution of primary income is attributed in large measure to incomes policies. In a period of "solidaristic wage policy", primary income inequality was reduced; when this policy was relaxed, primary income inequality stabilised. Here, there are two additional important findings. First, at no time was a trend of increasing inequality of primary income observed. In a period of strong redistributive pressures, there were in other words not countervailing forces of sufficient strength to undermine redistribution by pulling primary income in the direction of more inequality. Second, in the period of reduced inequality of primary income, the explanation is not underlying socio-economic change, but instead market interventions from above or outside, in this case in the form of incomes policy agreements between government and labour market partners. Not only changes in final inequality, therefore, but also in primary income inequality turn out to be politically rather than structurally induced.

Although changes in the distribution of primary income did push final income in the direction of equality, the most important of the explanatory factors considered is transfer and tax

policy. Changes in these policies had a strong equalising impact. This effect was at work while primary income inequality was reduced and continued to work after primary income inequality had stabilised. Redistribution occurred through taxes as well as transfers and services, between the working and non-working populations, and within the working population. Transfers and taxes can affect the distribution of disposable income in two ways, through the volume effect (the level of transfers and taxes relative to gross income) and through the progression effect (the distributive profile of transfers and taxes). Uusitalo found that changes in volume had been more important than changes in profile for explaining the change in final income inequality in Finland.

This analysis is in terms of general inequality. In a separate study Uusitalo has replicated the main analysis in terms of poverty rates, and found these to have been reduced in much the same way as general inequality and this reduction to be influenced in much the same way by redistributive policies. Bjorn Gustafsson has analysed changes in income inequality and poverty in Sweden over the same period and reached conclusions for Sweden much like those of Uusitalo for Finland (Gustafsson and Uusitalo 1990a, 1990b). The importance of the volume effect is the same as I myself found in my comparison of Norway and Sweden in explaining the stronger redistributive impact of transfers and taxes in Sweden than in Norway (Ringen 1986).

The case of Finland is unique and is not representative of other industrial nations. It shows not what is typical, but what is possible. Inequality is not necessarily stable and is not beyond the reach of policy reform. The Finnish experience, I believe, totally shatters the theories that redistribution is futile and that "real" change requires "real" surgery into the depths of the social machinery. It is as if Finnish society decided that its income distribution was unacceptable, set about changing it with the help of cautious policy interventions, succeeded in doing that in about ten years, and then settled down to a new and acceptable distribution. What will happen in the future no one knows, but I do not think an observation period of 25 years is too short to draw robust conclusions.

Once it is accepted that redistributive policies can have a real impact on inequality, it needs to be recognised that this can cut both ways. The redistributive dose can be increased to

produce equality, as we have seen above, but it can also be relaxed and generate inequality, Britain being a case in point. From 1949 to 1975, there was a steady, if not dramatic, development towards more income equality. From 1975, however, this trend was reversed and within ten years the distribution was back to about what it had been around 1950. Atkinson (1991) has analysed this shift towards inequality and found it to be the result of a combination of policy factors and structural factors. The relative size of the non-working population increased and within the working population there was a rise in earnings inequality. On the policy side, there were changes in social security provisions which, together with increasing rates of unemployment, pulled the distribution towards more inequality. State earnings related pensions did not keep track with wages and occupational pensions, and benefits, for example for the unemployed, had a downward trend in relative value, mainly because the basis for up-rating benefits was changed from earnings to prices. There was more inequality, in part because of a relaxation of policies which could have prevented it.

Life-time re-distribution

Ann Harding has developed a "dynamic micro-simulation model" with the help of which life-time redistributive effects of today's transfer and tax policies can be estimated (Harding 1992). The model is applied to the case of Australia. It simulates the life of a cohort "born" in 1986 through a life span of 95 years with regard to events such as birth, marriage, divorce, death, children leaving home, labour force entry and exit and so on. The simulations are made year by year over the life-span of the cohort, on the basis of known probabilities from existing statistics and today's rules for transfers and taxes. A simulation of this kind obviously cannot predict what will happen in the future, but it can show what would happen under a steady-state assumption. The question the study seeks to answer is the following: if the demographic, labour force, income and other characteristics of the population and all government policies existing in 1986 remained unchanged for 95 years, what would the distribution of income be like at different points in time and what income redistribution would be achieved by government programmes over the life-course of the cohort? No prediction is involved; the model estimates show the character of *present* policies with respect to long-term effects rather than only present effects.

The characteristics and limitations of the study are essentially those of standard redistribution analysis, except for the introduction of the time dimension. The analysis is limited to cash income, and to first order redistribution. Income is recorded as equivalent income for persons. Only cash transfers are considered. On the tax side, the simulations incorporate the level of income taxes which is needed to finance actual cash transfers. The study does not break new ground on the concept of redistribution, but it overcomes the cross-section limitation of standard redistribution research and thereby shows the degree to which cross-section results can be generalised to a life-time perspective. Cross-section studies typically show transfers and taxes to have an equalising impact. Does this conclusion hold when one expands the perspective into the long term?

The main findings of the simulations are as follows: First, the tax-transfer system in Australia has had a profound effect on life-cycle income. This works in two ways. Income is redistributed both over the life-course of persons (from the years of work to the years of retirement) and between persons during their life-courses. On average for males, about 45 per cent of the income tax paid was returned to the same persons at another point in the life-cycle. The remaining 55 per cent was absorbed by inter-person redistribution.

Second, the winners in this redistribution are first of all women compared to men. While men on average get less back in transfers than they pay in taxes, women on average break even up to about the age of 60 and then become net winners.

Third, when groups defined in terms of life-time standard of living are compared and transfers and taxes are accumulated over the life-course, it is for both men and women those with a lower standard of living who are the winners and those with a higher standard of living who are the losers.

We know that transfers and taxes generally redistribute income within a population over short periods, such as a year. It is still possible that for the members of a cohort, year by year redistributions pull in different directions in different periods of the life, so that in the long run it all washes out and there is no effect on life-time income. This study introduces hard evidence on long-term effects of present tax and transfer policies in the case of Australia.

It is demonstrated that transfer and tax redistributions are not absorbed by intra-person effects over the life-course but are to a considerable degree the result of inter-person effects over the long term.

Conclusion

In this section I have referred the results of recent research which address weaknesses in standard method redistribution studies. The standard method records the redistribution of primary income into disposable income, but ignores the distribution of primary income as such. The study for Finland considers both primary and disposable income. It is demonstrated that the very considerable shift towards equality in disposable income which occurred over a period of 10 to 20 years was brought about mainly by redistributive measures "after the fact" and that this did not give rise to second order effects on the primary income distribution which neutralised the first order redistribution. The standard method, further, typically records redistribution over only short time periods, such as a year, but ignores the problem of how short-term effects aggregate into a long-term effect. The simulation study for the case of Australia suggests that short-term effects do not balance each other out but add up to a pattern of redistribution of life-time income between persons. Both studies add valuable information on issues which are left unresolved in the standard method and both reinforce established results from standard method research.

CONCLUDING REMARKS

In his much quoted article, *The Welfare State in Historical Perspective*, from 1961, ASA BRIGGS wrote of the welfare state as the deliberate use of politics and administration "... in an effort to modify the play of market forces ...". Is the experience since then that the effort has been a success?

The mixed-economy democracies have certainly adopted welfare state policies, and even if there may presently not be much expansion, welfare states they are. I think it is a sound hypothesis that democracy is a reasonably rational system and that democracies would not have chosen the welfare state route unless politics and administration had proved reasonably

capable of performing as intended. At least I think it would be profoundly sad if this hypothesis had to be rejected.

There are counter-hypotheses on the welfare state, two which I have considered in this essay. One is that such forces as one might want to modify with the help of welfare state policies, be it market forces, class inequality or income distribution, sit too deep in the fabric of society to be reachable by policies which are not more penetrating than those of the welfare state. It is true that reformist policies do not reach down to basic social structures - that is their logic - but I do not think the evidence suggests this makes them ineffective in relation to their objectives. I have suggested that class inequalities can be modified through regulations of the framework of the social competition, which is within the reach of reformist means, if necessary without intervening in the terms of the competition, which would be a more problematic strategy within the limitations of reformist constraints. I have also suggested that income inequality is subject to modification "after the fact", if necessary without intervening in the distribution of market income.

A second counter-hypothesis is that reformist policies are superficial in the sense that their effects are not sustainable over the long run. Again, I do not think the evidence is in support of this hypothesis. As we get better comparative income data we are finding that income inequality is not stable over time or between nations but displays systematic changes and differences. Such changes and differences prove to be related to transfer and tax policies. Recent research on the dynamics of income redistribution demonstrate that tax/transfer effects can well be durable, be it over time for societies or over the life-course of cohorts.

This essay is about what reform *can* achieve, not about what actual attempts at reform necessarily *do* achieve. The types of policies discussed are not necessarily representative of all types of policy reform, and the evidence quoted not necessarily representative of all experience of reform. Reform will never be perfect and may obviously fail. But reform does not necessarily fail and can be a powerful strategy for social change.

TABLE 1

EDUCATIONAL ACHIEVEMENT IN BRITAIN

Percent in each birth cohort obtaining O Level pass

Father's class		1930-39	1960 and later
Males	1	56	87
	7	15	48
Females	1	65	86
	7	14	57

Source: Heath and Clifford 1990 (extract of Table 7).

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