

Awad, Yaser; Israeli, Nirit

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Poverty and Income Inequality: An International Comparison, 1980s and 1990s

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Luxembourg Income Study Working Paper Series

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**Poverty and Income Inequality:
An International Comparison, 1980s and 1990s**

Yaser Awad and Nirit Israeli

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Comparison, 1980s and 1990s**

by

Yaser Awad and Nirit Israeli

National Insurance Institute
13, Weizmann Avenue
Jerusalem
ISRAEL
phone: +972-2-6709586
fax: +972-2-6528508
E mail: yaser_a@nioi.gov.il

1 Introduction

During recent years, both policy makers and administrators have become increasingly attentive to the economic distress of the weaker segments of society. In light of this development, many studies, including a number of comparative studies, were conducted both in Israel and throughout the world, for the purpose of measuring poverty incidence and income gaps while examining alternative ways for their reduction. Comparative research on the dimensions of poverty and income inequality is entailed with many difficulties relating to the quality of the data files serving as the basis for measurement (see Table 1 in the Appendix), the equivalence scales employed to characterize consumption patterns in different countries¹, and the methodology of measurement employed.

The databank established in Luxembourg within the framework of the ongoing Luxembourg Income Study (LIS), attempts to confront some of those problems by creating a database according to the uniform definitions of income (which may not be identical to the definitions used in the specific countries) and by standardization of the measurement instruments used to conduct the international comparisons. Within this framework, the most recent comparative study conducted on the issues of poverty and inequality was that of Rainwater and Smeeding (1995). This study did not compare countries over a continuous span of time but, rather, between two periods of time: the 1980s (Ireland 1987, Israel 1986,

¹ Equivalence scales enable the adjustment of the poverty lines to households of different sizes while considering the economics of scale embodied in the household consumption (see 2.2, below).

Luxembourg 1985, Spain 1984, Switzerland 1982, and the UK 1986) and the 1990s (Australia 1990, Belgium 1992, Canada 1991, Denmark 1991, Finland 1991, Germany 1989, Italy 1991, the Netherlands 1991, Norway 1991, and the US 1991). The research was limited to measuring the degree of poverty among children, among specific groups, and within the general population, employing an equivalence scale commonly used by the Organization for Economic Cooperation and Development (OECD). In the present study, we will use the LIS database (which includes data on households headed by salaried, self-employed and unemployed persons) in order to conduct a comparative study of the trends of poverty and income inequality in the general population and in selected segments in the populations of 12 countries (Australia, Belgium, Canada, France, Germany, Israel, Italy, the Netherlands, Norway, Sweden, the UK and the US). The data for the two periods, the 1980s versus the 1990s², will be compared by applying alternative equivalence scales.

Three main approaches are common in the measuring of poverty: the *absolute approach*, which views poverty in terms of absolute deprivation, and which determines a minimal basket of needs for existence; the *relative approach*, which perceives poverty in terms of relative deprivation as compared to a society's general standard of living; and the *subjective*

² The comparison was conducted on the basis of data collected in the different countries and years as follows: During the 1980s — Australia 1985, Belgium 1985, Canada 1987, France 1984, Germany 1984, Israel 1986, Italy 1986, the Netherlands 1987, Norway 1986, Sweden 1987, the UK 1986 and the US 1986; during the 1990s — Australia 1989, Belgium 1992, Canada 1991, France 1989, Germany 1989, Israel 1992, Italy 1991, the Netherlands 1991, Norway 1991, Sweden 1992, the UK 1991 and the US 1991. These countries actively participate in LIS research projects. Israel appears among the seven countries that initiated the project as early as the 1970s.

approach, which regards poverty as a subjective feeling of deprivation, irrespective of the general standard of living or basic needs.

The first part of this section briefly reviews these approaches and the equivalence scales employed for the measurement of poverty by Israel, by LIS and by OECD member states. These scales differ in their estimation of the additional income required to compensate a household for the increase in its size and, thereby, maintain its standard of living. The second part of the section presents the findings of the study.

2 Approaches to The Measurement of Poverty and The Associated Equivalence Scales

2.1 Measuring Poverty

In the following, we summarize the three approaches for measuring poverty, as well as their advantages and disadvantages:

- * The *absolute approach*, according to which a poor household is one whose income is lower than the income required to purchase the basic basket of goods considered necessary for existence.
- * The *relative approach*, according to which a poor household is one whose income is particularly low relative to the income of other households in the population.
- * The *subjective approach*, according to which the poor household is defined as one *convinced* that its income is inadequate.

A. The Absolute Approach

This approach to the measurement of poverty defines poverty as the inability to purchase the basic basket of goods (food, clothing, housing, etc.) required for existence. In other words, those households or individuals who lack the sources of income necessary to finance such a basket are considered as being poor. The term *poverty line* usually indicates the level of income required for such purchases . A number of countries (e.g., Austria, Germany, Sweden, and the US) have adopted this approach, and plan their assistance programs accordingly.

Advantages:

1. The system for updating the basic consumption basket is relatively simple, and is usually based on changes in the cost-of-living index.
2. The cost of a suggested program for improving the economic situation of households or individuals' economic deprivation can be precisely calculated. This cost is a function of the growth in the needy population and the duration of the program.

Disadvantages:

1. The basic basket is determined by experts (such as sociologists or economists) who are not always in agreement either among themselves, or with consumers' surveys. It is difficult to determine which route is preferable.

2. The composition of the basket depends upon economic, social and demographic variables as well as upon the social support system; it is therefore adapted to the consumption patterns of each specific country. The absence of a standard, universal basket makes it difficult to conduct international comparisons.
3. The basket requires periodic updating to the macroeconomic and social changes taking place in the society.
4. The composition of the basic basket is insensitive to shifts in income gaps taking place within an economy.

B. The Relative Approach

The majority of Western European countries have adopted the *relative approach*, which perceives poverty as the inability to maintain the standard of living “characteristic” of the society in question. Households and individuals, whose incomes are significantly lower than the typical income of the population, are therefore considered to be poor. Two fundamental questions arise from this position: First, what is the *characteristic* (mean, median, and modal) income; second, just how much below that income is a household’s income required to be before it is considered “poor”? Stated differently, what is the poverty line? A number of countries (such as Norway) regard *mean income* as that typical for their societies. The poverty line is then defined as some percentage (usually 50%) of mean income. Other countries (including Israel) take the *median income* as characteristic. Hence, the poverty line there is defined as some percentage (again, usually 50%) of median income. In some countries, the poverty line is defined by the second decile of income distribution.

According to this approach, the rate of poor people in the population is invariable over time, that is, it remains at a level of 20%.

Advantages:

1. It takes into account changes in the market income inequality, taxation system, transfer payments and population growth.
2. It permits international comparisons given that the researcher can uniformly set the poverty line for each and every country (including countries which adopt the absolute approach).

Disadvantages:

1. Setting the poverty line as a percentage of a some central measure (median or average) of income distribution is arbitrary; theoretically, the number of poor people in the population can be zero.
2. This approach does not consider the contribution made by differences between countries in regard to the general level of inequality or poverty.

C. The Subjective Approach

From the perspective of the subjective approach, poverty is the subjective inability, determined by a household's or individual's self-evaluation, to maintain a reasonable standard of living. Accordingly, the poverty line is set according to responses given by the household or individual to questions such as: "What is the minimal income your family needs in order to maintain a reasonable standard of living?" or "How do you rank your current

economic status on a scale of 6 (1 being the most difficult, 6 being the most comfortable)”; or according to answers to indirect questions.

Advantages:

1. Estimation of the minimal income is conducted by the households themselves, according to perception of their situation relative to the socio-economic environment in which they live.
2. Determination of the poverty line focuses on the individual, contrary to the first two approaches, which also consider additional dimensions, pertaining to the general population.

Disadvantages:

1. Family income and expenditure surveys generally do not include questions regarding the household’s self-evaluation of its situation; when these questions do appear, they may vary across countries and thereby hamper international comparison.
2. An implicit, underlying assumption of this approach presupposes that no significant differences of opinion will be found among household members regarding the minimal income required.

To summarize, therefore, each approach entails unique advantages and disadvantages, both conceptually and empirically (including estimation problems); consequently, no one approach is preferable to the others. Accordingly, the wisest strategy is to apply all the strategies concurrently and to then evaluate the combined results.

2.2 Equivalence Scales

Equivalence scales enable the adjustment of the poverty line to household size, while taking into consideration the economics scale embodied in household consumption. That is, such a scale considers the fact that household consumption does not rise in exact proportion to the increase in the number of its members — the addition is somewhat less. Practically , an equivalence scale “translates” the number of household members into a number of “standard persons,” which is much smaller than the actual number of individuals. A nation’s poverty line is calculated according to standard persons. By multiplying the poverty line per standard person by the number of standard persons in the household, we can attain the poverty line for a household of any specific size.

Table 1: Three Equivalence Scales

Size of Household (Persons)	Israeli Equivalence Scale (Standard Persons)	LIS Equivalence Scale (Standard Persons)	OECD Equivalence Scale (Standard Persons)
1	1.25	1.33	1.42
2	2.00	2.00	2.00
3	2.65	2.67	2.45
4	3.20	3.33	2.84
5	3.75	4.00	3.18
6	4.25	4.67	3.48
7	4.75	5.33	3.76
8	5.20	6.00	4.01
9	5.60	6.67	4.26
10	6.00	7.33	4.48
11	6.40	8.00	4.71
12*	6.80	8.00	4.91

* The weight of each additional individual in the commonly used Israeli scale is equal to 0.4; in the LIS scale, that figure is 0.

The three most prevalent equivalence scales utilized to measure poverty and inequality are:

1. The Engel Scale, is the oldest scale which, considers only household expenditures on food.
2. The Barten Scale, which considers all the products consumed by a household.
3. The Rothbart Scale, which considers only those items consumed by adults (e.g., clothing, alcoholic beverages, and tobacco).

In Israel, the equivalence scale used is of the Engel type. This scale, first calculated by the National Insurance Institute in 1971, on the basis of data collected by means of the Family Expenditure Survey of 1968/69, has been the Institute's official scale until this very day (despite the fact that Achdut, Shaul and Shmueli (1989) re-estimated the scale according to family expenditure survey data of 1986/87). In this paper, we focus on three Engel-type scales, presented in Table 1. Two of these scales are estimated on the basis of empirical data (the Israel and the LIS scales) while the third is extrapolated, by experts, from a scale devised by the OECD in 1976.

3 Developing Trends in The Incidence of Poverty

An international comparison of the incidence of poverty and the extent of income inequality was conducted according to the relative approach. The poverty line was defined, as

generally practiced in Israel, as 50% of net median income³ per standard person (according to the Israeli scale). One of the important elements in this comparison was the choice of the unit of income; in this paper, income per standard person was chosen. Three types of income were analyzed within the context of the research: market income (including income from work, income from capital, and income from pensions), gross income (i.e., market income in addition to transfer payments) and net income (i.e., gross income minus direct taxes). The Israeli equivalence scale was applied to each country (see Table 1) in order to use Israel as the basis for comparison. Such a comparison has not been conducted previously (the comparable data using the LIS and OECD scales are presented in Table 2 of the Appendix).

The first significant finding from the international comparison is the significant difference observed in poverty incidence measured according to net income (that is, the percentage of persons in households with net income below the poverty line) among the various countries and between the two periods surveyed (i.e., the 1980s and the 1990s).

Table 2 presents country poverty incidence, by market income, gross income and net income for the two periods under discussion, as well as the extent by which transfer payments and direct taxes reduce each countries poverty incidence. The table reveals that during the 1980s, the poverty incidence in the US was fivefold higher than that found in Norway or Sweden, that is 19.8% versus 3.7% and 3.8%, respectively. Despite this, the poverty

³ Median income is that income level at which 50% of the population has income below or near this level, and 50% has income above this level.

incidence in Israel, Canada and Australia was similar to that of the US, that is, 16.2%, 13.7%, and 13.4%, respectively; and three-to-four times as high as that of Norway, Sweden, or Belgium. During the 1990s, the differences in poverty incidence narrowed due to the decline in the poverty incidence in the US, Israel, Canada and Australia, and to the rise in poverty incidence in the other countries. More specifically, the poverty incidence in Israel fell by about two percentage points, i.e., to 14.0%⁴, while in the US and Australia, the poverty incidence declined very little. In contrast, in Norway and Sweden, the poverty incidence rose by about 2.5 percentage points, while in Germany, France and the UK, the poverty incidence almost doubled.

During the 1980s, transfer payments and direct taxes extricate about 21% and 40% of poor persons by market incomes in the US and Israel, respectively, from the circle of poverty. However, the most dramatic decline in poverty incidence resulting from transfer payments and direct taxes can be found in Sweden, Norway, and Belgium — about 85% — although in the Netherlands, Germany, France, and the UK, about 70% were extricated from the circle of poverty, as a result of the same policy tools.

During the 1990s, the poverty reducing of transfer payments and direct taxes rose in the US, Israel, Canada and Australia, to levels of 26.2%, 48.0%, 53.6%, and 49.2%, respectively.

⁴ This figure is different from the poverty incidence according to net income among persons calculated by the National Insurance Institute on the basis on the Family Expenditure Survey of 1992/93, i.e., 15.0%. The reasons for the difference in the two findings, both of which are based on the same data, is that the data of LIS include *income in kind* (i.e., non-monetary income) the definition of net income.

On the one hand, this trend apparently resulted from the growth of the share of transfer payments in gross income and the decline in the average tax burden in these countries between the two periods under discussion. On the other hand, among the remaining countries surveyed, stability or a small decline was observed. The most striking decline in the effect of transfer payments and direct taxes in the 1990s was observed in Germany, France

Table 2: Poverty Incidence Among Persons, by Type of Income, and The Effect of Transfer Payments and Direct Taxes, 1980s and 1990s (Percentages)*

Country	1980s				1990s			
	MI	GI	NI	Percent of Reduction due to TPDT	MI	GI	NI	Percent of Reduction due to TPDT
US	25.2	17.5	19.8	21.4	26.7	17.5	19.7	26.2
IS	27.3	13.4	16.2	40.7	27.0	12.2	14.0	48.0
CN	23.5	12.2	13.7	41.6	27.5	11.6	12.8	53.6
AS	23.5	11.9	13.4	42.9	25.5	12.0	13.0	49.2
SW	26.1	2.4	3.8	85.3	34.8	4.0	5.4	84.6
IT	29.3	--	11.4	61.1	19.3	6.1	8.0	58.4
NL	28.8	2.8	7.0	75.8	23.4	4.5	6.8	70.8
NW	19.2	3.0	3.7	80.7	20.6	3.7	4.1	80.1
BE	32.7	4.7	4.7	85.7	28.9	3.8	4.6	84.0
GE	25.1	5.3	6.7	73.3	27.5	11.5	14.7	46.5
FR	33.6	8.6	8.7	74.1	38.8	15.0	15.5	60.1
UK	31.5	7.7	9.4	70.1	28.5	9.6	13.2	53.8

*TPDT = Transfer Payments and Direct Taxes, MI = Market income, GI=Gross Income, NI=Net Income.

and the UK — to a level of 46.5%, 60.1%, and 53.8%, respectively, when compared to 73.3%, 74.1%, and 70.1%, respectively, during the previous decade. The increase in poverty incidence in Germany apparently resulted from a decline in the share of transfer payments in the gross income of the general population (from 19.0% in the 1980s to 16.4% in the 1990s), but especially among the poor population (from 57.0% in the 1980s to 31.0% in the 1990s).

In France, despite the increase in transfer payments as a percentage of gross income and the decline in the average tax burden, a sharp rise in the poverty incidence was witnessed; that is, the poverty line rose as a percentage of average market income by 7% between the two decades. Apparently, the weaker segments of the population (the elderly, large families), the bulk of whose income is comprised of transfer payments, was unable to sustain the rate of increase in the poverty line: The proportion of poor persons living in elderly families within the total poor in the population rose by 3.9% in the 1980s and by 13.8% in the 1990s. Moreover, the proportion of poor persons living in large families (four children or more) remained at about 2.5 higher than their proportion in the general population.

Like Germany, the UK also experienced a reduction in the level of transfer payments as a fraction of gross income (from 20.1% during the 1980s to 14.5% during the 1990s). At the same time, the average tax burden declined — by about 4.5%. Moreover, the main group to be hurt was that of persons living in households headed by an elderly person. The proportion

of persons living in elderly households within the total poor in the population grew by 3.9% in the 1980s, and by 15.8% in the 1990s.

Table 3: Poverty Incidence Based on Israel's Demographic Distribution, 1980s and 1990s (Percentages)

Country	Original Poverty Incidence	Original Ranking	Poverty Incidence Based on Israel's Demographic Distribution	Rank Based on Israel's Demographic Distribution
1980s				
US	19.8	1	26.9	1
CN	13.7	3	19.4	2
IT	11.4	5	17.2	3
AS	13.4	4	17.2	4
IS	16.2	2	16.2	5
UK	9.4	6	14.7	6
GE	6.7	9	13.8	7
NL	7.0	8	12.0	8
FR	8.7	7	11.5	9
BE	4.7	10	6.3	10
NW	3.7	12	4.8	11
SW	3.8	11	2.6	12
1990s				
US	19.7	1	25.3	1
UK	13.2	5	19.2	2
FR	15.5	2	19.2	3
CN	12.8	7	17.7	4
AS	13.0	6	16.6	5
IT	8.0	8	15.8	6
GE	14.7	3	15.2	7
IS	14.0	4	14.0	8
NL	6.8	9	8.7	9

BE	4.6	11	5.9	10
SW	5.4	10	5.4	11
NW	4.1	12	5.2	12

Table 2 rank orders the countries by level of poverty incidence as measured in terms of net income (the first country on the list is that exhibiting the highest poverty incidence). Israel appears second from the top in this ranking, following the US. We should note that poverty incidence in itself reflects not only the demographic structure of the population, but also the prevalence of weak segments (elderly and large families) within the general and poor populations. Among the countries reviewed, significant differences can be found in the demographic structures of each, especially between Israel and the other countries.

During the 1980s, the percentage of families in Israel having five or more members reached about 29.5% of the total number of families within the population, while in the comparison countries, this percentage ranged between 4.0% and 11.0%. The percentage of large families (containing at least four children) in Israel, during the same period, was 10.3%, versus 2.3%-4.0% in the other countries. The picture has changed little during the 1990s. In order to demonstrate the importance of these structural differences, the poverty incidence of the different countries was re-estimated using the demographic distribution of Israel as a base - (In other words, the estimation was conducted upon the assumption that the distribution of families, by number of children, was identical to that in Israel.)

Table 3 presents the rank ordering of these countries by poverty incidence in terms of net income, as calculated on the basis of the Israeli distribution during the two periods surveyed. The findings, as displayed in this table, indicate that Israel's position in this rank order, compared to other countries, changes in response to the standardization. During the 1980s, Israel fell from second to fifth place (below the US, Canada, Italy and Australia). Furthermore, during the 1990s, Israel's position fell once again, from fourth to eighth place (following the US, the UK, France, Canada, Australia, Italy and Germany). Stated differently, the position of Israel among these countries — in terms of poverty incidence — improved.

Table 4 presents poverty incidence among selected segments of the population, by market income and net income (poverty incidence among selected segments of the population, according to alternative equivalence scales, is presented in detail in Table 3 of the Appendix). During the 1980s, poverty incidence of net income among households headed by an elderly person was especially high in the US, Israel, and Australia — about 21%, about 17%, and about 13%, respectively. However, in Sweden, the Netherlands, Norway, France and the UK, poverty incidence among this segment was markedly low, ranging from about 0.6% (Sweden) to 2.5% (France). An improvement was witnessed during the 1990s, when poverty incidence fell in the US, Israel and Australia to 17.2%, 14.8% and 11.5%, respectively. In contrast, poverty incidence rose in Sweden, the Netherlands, and particularly in Germany, France and the UK (increasing two- to fivefold). In the UK and France, the proportion of poor persons found in households headed by an elderly person within the total

poor in the population was equal to the proportion of persons found in households headed by an elderly person within the general population. This occurred during the period — the 1980s — when the proportion of the first group was about a third of their proportion in the latter.

The sharpest decline in poverty incidence of net income (i.e., after transfer payments and direct taxes) among persons living in households headed by elderly persons — by about 99% — was observed, during the 1980s, in the Netherlands and Sweden. In Norway, Canada and Germany, the decline was about 90%. However, in the US and Israel, transfer payments and direct taxes were able to extricate only about 66% of the individuals living in households headed by elderly persons from the poverty cycle. During the 1990s, the effect of transfer payments and direct taxes on the poverty incidence in this group was similar, excluding the cases of Germany, France and the UK, where an increase was observed (from two- to more than fivefold).

Turning now to the poverty incidence in families with children, we can observe that the trends in poverty incidence among families with one to three children is similar, over time, to the trends found in the general population during the periods under discussion. In the majority of countries, the percentage of large families (more than four children) is generally low. Accordingly, in the following, we will relate only to those countries in which persons living in large families comprise at least 6% of the general population. The highest level of poverty incidence among large families during the 1980s was found in the US — about 57%

(their proportion in the total number of poor persons is three times as large as their proportion in the general population). However, in Israel, the poverty incidence among this segment of the population was about 37.3% (their proportion in the total number of poor persons is twice as large as their proportion in the general population), while in Australia and the UK, the figures were 31.06% and 33.0%, respectively (their proportion in the total number of poor persons was twice and three times as large, respectively, as their proportion in the general population). The lowest level of poverty incidence was found in France — about 24.0%.

During the 1990s, an improvement was observed among large families in the US and Israel. Nonetheless, in Australia, France and the UK, the opposite occurred. During the 1980s, the most significant decline in poverty incidence resulting from transfer payments and direct taxes among persons living in large families, was observed in France (about 70.0%), the UK (about 60.0%), Israel (about 30.0%) and Australia (about 11.0%). In the US, however, poverty incidence among this segment of the population did not decline. During the 1990s, the influence of transfer payments and direct taxes was similar to that of the 1980s in the majority of countries, excluding the US, where poverty incidence among large families declined only slightly. This trend was the result of the decline, between the two periods, in poverty incidence measured in terms of market income.

We now turn to another variable indicating poverty and inequality — the poverty gap⁵, Table 5 presents the index of the poverty gap found in the general population during the 1980s and 1990s, by income and by percentage change resulting from transfer payments and direct taxes. The data reveal that during the 1980s, the countries surveyed could be divided according to three levels: the first group, displaying a significantly large poverty gap (38.4%-46.8%), included France, the UK, the Netherlands, the US and Sweden; the second group, with a poverty gap of 31.9%-35.2%, included Belgium, Norway, Canada and Australia; while the third group, in which the poverty gap was significantly low, included Italy, Israel and Germany (21.2%-26.8%). During the 1990s, we can observe a reduction in the poverty gap in all the countries, excluding Australia, Belgium, France and Germany. Among the first three countries, the poverty gap rose by about 1.5-4 percentage points, while in Germany, the poverty gap rose by about 17 percentage points (from 21.2% to 38.3%). We should note that in the UK, the poverty gap declined drastically (by about 20 percentage points) between the two periods reviewed.

In the 1980s, by rank ordering countries according to the levels of the poverty gap observed, we find that Israel appears in the 11th place, while Germany, in which the poverty gap is significantly low, is in the last place. Furthermore, during the 1990s, Israel can be found in the 12th place, with a particularly low poverty gap of about 21.9%. This finding is a

⁵ The poverty gap is defined as the average distance of the net income of the poor population from the poverty line - relative to the poverty line.

consequence of the increase in the share of transfer payments in gross income (from 45% in the 1980s to 55.1% in the 1990s) and the decline in the role of direct taxes due to a policy aimed at reducing the average tax burden. Thus, despite the seemingly high poverty incidence in Israel (without standardization by demographic structure), the rank ordering of countries by poverty gap levels reveals that, compared to the US and Western European countries, transfer payments (especially social security) and direct taxes were highly efficient tools for improving the situation of Israel's poor population.

Table 4: Poverty Incidence Among Persons in Selected Segments of the Population, by Type of Income, 1980s and 1990s
(Percentages)

Country	The Elderly				Without Children				With 1-3 Children				With 4+ Children			
	1980s		1990s		1980s		1990s		1980s		1990s		1980s		1990s	
	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI
US	53.8	20.8	53.4	17.2	24.9	13.2	25.9	12.7	21.6	21.0	24.4	22.4	57.4	57.3	53.5	51.2
IS	50.6	16.9	49.1	14.8	29.0	8.7	28.6	9.1	6.1	11.2	18.7	9.7	53.2	37.3	48.1	33.2
CN	59.9	7.9	69.0	3.9	26.2	9.4	31.9	8.8	19.6	15.6	21.9	14.5	43.8	40.5	45.7	39.1
AS	61.1	13.0	71.3	11.5	28.2	8.3	30.9	8.7	18.4	15.8	19.2	14.7	35.0	30.9	40.6	33.1
SW	83.6	0.6	88.5	2.0	39.9	5.3	47.0	6.9	7.7	2.0	17.7	3.0	24.1	1.0	48.6	10.0
IT	76.2	12.5	47.7	3.3	42.1	8.7	23.5	4.6	18.1	12.8	12.6	12.5	50.8	38.0	44.2	41.0
NL	61.0	0.9	62.1	3.6	34.7	5.1	32.3	5.0	13.8	7.3	14.5	8.2	26.7	31.6	20.7	15.6
NW	65.5	2.4	59.7	1.5	31.5	3.4	30.0	3.8	8.3	3.7	11.0	4.1	17.9	9.2	21.2	10.2
BE	85.9	7.6	86.0	7.2	40.2	4.6	42.9	4.6	23.1	4.3	12.7	3.6	52.1	13.2	47.3	14.4
GE	83.2	8.0	71.1	14.6	37.7	5.9	36.0	15.0	9.7	6.8	14.9	14.1	42.8	40.6	24.8	18.6
FR	80.3	2.5	82.2	13.7	41.0	6.4	47.0	13.6	23.0	9.0	27.8	15.0	77.2	23.8	73.5	38.8
UK	67.1	2.3	61.3	12.0	34.4	3.9	30.9	8.4	26.8	12.2	23.5	16.0	55.0	33.3	57.1	43.6

**Table 5: Poverty Gap in the General Population, by Type of Income, 1980s and 1990s
(Percentages)**

Country	1980s				1990s			
	MI	GI	NI	Percent of reduction due to TPDT	MI	GI	NI	Percent of reduction due to TPDT
US	63.7	39.4	39.0	38.7	62.0	38.0	37.0	40.3
IS	56.7	23.4	22.4	60.5	56.7	22.7	21.9	61.3
CN	59.5	32.4	31.9	46.3	61.4	32.2	30.9	49.7
AS	71.3	33.1	30.7	57.0	70.9	34.6	33.0	53.4
SW	70.3	44.2	38.4	45.4	70.5	39.7	37.0	47.6
IT	68.3	--	26.8	60.8	59.6	45.6	25.3	57.5
NL	85.0	65.2	44.6	47.5	77.1	50.7	39.9	48.2
NW	69.4	34.8	33.7	52.2	64.8	33.2	32.8	49.3
BE	76.0	35.2	35.7	53.7	86.6	41.0	36.1	58.3
GE	80.4	22.5	21.2	73.7	78.9	45.9	38.3	51.5
FR	63.4	38.0	40.3	36.4	67.5	41.9	44.8	33.6
UK	77.4	39.5	46.8	39.5	75.9	24.6	26.3	65.3

The sharpest decline in the poverty gap due to transfer payments and direct taxes during the 1980s was observed in Germany, Israel and Italy, i.e., about 73.7%, about 60.5%, and about 60.8%, respectively. The smallest decline was observed in France — about 36.4%. During the 1990s, however, the contribution of transfer payments and direct taxes to the reduction of the poverty gap grew in most countries, especially the UK (from 39.5% in the 1980s to 65.3% in the 1990s). This trend resulted from an increase in the share of transfer payments

and a decrease in the share of direct taxes in the gross income of the poor population. Accordingly, the share of net income in total gross income rose from 78.4% in the 1980s to 86.7% in the 1990s. Despite this trend, in Germany, the contribution of transfer payments and direct taxes was in the opposite direction to that in the UK, i.e., in Germany, the share fell from 73.7% in the 1980s to 51.5% in the 1990s. This reduction can be credited to the decline in the share of transfer payments and the rise in the share of direct taxes in the gross income of the poor.

The distribution of the poverty gap among elderly and large families differs from the distribution found in the general population. Table 6 presents the poverty gaps found among selected segments of the population (elderly families, families without children, families with 1-3 children and large families), by market income and net income for the two periods reviewed. The table reveals that during the 1980s, the largest poverty gap among the elderly persons, measured in terms of net income, was observed in the UK — about 47.7%; while the smallest gap was observed in Israel — about 19.6%. During the 1990s, the picture changes: The smallest poverty gap was found in Norway — about 11.4%; while the largest was found in France — about 48.0%. In comparison, the poverty gap in Israel grew only marginally during the 1990s — to 21.0%. Israel can thus be rank ordered seventh among the countries surveyed, while France can be found in first place. In the UK, a significant reduction in the poverty gap among the elderly population was observed, similar to the reduction in the poverty gap observed among the general population.

Regarding large families, we will concentrate on the following countries: the US, Israel, Australia, France and the UK, countries in which the percentage of persons living in large families equals at least 6% of the total population. During the 1980s, the smallest poverty gap among this segment of the population was found in Israel — about 23.5%, while the largest was found in the US — about 42.4%. During the 1990s, the poverty gap either narrowed or stabilized in the countries surveyed, excluding Australia, where the poverty gap among large families increased slightly (from 30.1% during the 1980s to 32.8% in the 1990s). The smallest poverty gap was found in the UK — about 20.9%, although the poverty gap in Israel has remained at the same level since the 1980s.

Table 6: The Poverty Gap Among Persons in Selected Segments of the Population, by Type of Income, 1980s and 1990s
 (Percentages)

Country	The Elderly				Without Children				With 1-3 Children				With 4+ Children			
	1980s		1990s		1980s		1990s		1980s		1990s		1980s		1990s	
	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI	MI	NI
US	70.8	28.4	68.0	27.7	69.3	38.4	67.0	38.9	58.2	38.3	56.8	35.2	63.4	42.4	63.7	40.1
IS	71.9	19.6	64.9	21.0	69.6	18.6	67.6	23.6	51.4	22.2	47.5	19.1	52.6	23.5	57.6	23.6
CN	68.1	20.0	68.7	15.4	64.0	32.6	65.5	33.6	54.7	32.1	57.0	29.8	56.1	29.2	58.8	28.5
AS	79.4	20.1	80.8	23.6	76.7	30.0	77.1	33.6	67.3	31.2	65.8	32.8	59.9	30.1	56.0	32.8
SW	75.2	22.5	78.3	17.0	72.8	42.2	74.9	40.4	55.0	24.0	57.7	30.0	51.9	34.8	58.0	21.9
IT	87.3	23.9	67.2	18.4	81.0	23.6	54.8	23.1	46.8	28.5	52.4	27.0	36.1	27.4	74.0	40.0
NL	78.0	18.4	72.4	56.8	84.7	71.7	75.6	44.6	85.1	32.5	80.4	36.3	89.1	23.7	76.3	46.3
NW	76.8	28.0	63.5	11.4	73.9	38.3	65.7	41.7	57.1	30.8	64.7	25.3	35.7	16.1	41.2	24.4
BE	93.6	21.2	96.5	39.8	87.6	34.0	95.7	50.8	53.1	37.1	67.2	26.0	65.2	31.5	56.7	14.8
GE	90.0	20.2	84.2	32.8	85.5	22.2	81.8	33.2	59.2	19.9	69.8	42.8	61.5	22.9	63.2	37.6
FR	86.1	30.0	83.4	48.6	80.9	53.3	81.2	54.9	41.3	36.1	49.2	41.7	54.1	28.6	54.2	22.7
UK	74.5	47.7	72.0	13.4	77.9	79.6	73.9	25.8	76.4	42.4	77.9	27.8	80.2	26.0	79.9	20.9

4 Trends in the Inequality of the Income Distribution

An analysis of trends in the distribution of income inequality during the 1980s and 1990s was conducted by estimating the Gini coefficient for net income among the general population and the poor population⁶. Table 7 presents the Gini coefficient values obtained. The findings indicate that during the 1980s, the countries surveyed can be divided into three groups: those evidencing the highest degree of inequality (the US, Israel, Italy and Australia); those displaying relatively equal income distribution (the UK, France, Canada, the Netherlands and Germany); and those displaying the greatest equality in income distribution (Belgium, Norway and Sweden).

The division of countries into three groups is, to a certain degree, the outcome of the linkage between transfer payments and direct taxes on the one hand, and patterns of inequality on the other. During the 1980s, the transfer payment and direct tax systems in Australia and the US were less progressive than those operating in Belgium and Sweden. Therefore, the share of transfer payments in total gross income equaled only about 12% in the first two countries, versus about 30% in the others. At the same time, the share of direct taxes in total gross income equaled only about 20% in the US and Australia, versus about 40% in the remaining countries.

⁶ The Gini coefficient is the most widespread measure used for estimation of income inequality. Its values range from 0 (representing absolute equality) to 1 (representing absolute inequality).

Table 7: Gini Coefficient Values, by Type of Income and effect of Transfer Payments and Direct Taxes, 1980s and 1990s

Country	1980s				1990s			
	MI	GI	NI	Percent of reduction due to TPDT	MI	GI	NI	Percent of reduction due to TPDT
US	0.4481	0.3894	0.3467	22.6	0.4571	0.3916	0.3501	23.4
IS	0.4701	0.3875	0.3241	31.2	0.4621	0.3721	0.3180	31.2
CN	0.4037	0.3284	0.2929	27.4	0.4197	0.3290	0.2881	31.4
AS	0.4344	0.3551	0.3012	30.7	0.4447	0.3629	0.3131	29.6
SW	0.4383	0.2577	0.2144	51.1	0.4694	0.2586	0.2252	52.0
IT	0.4342	--	0.3107	28.4	0.3313	0.2747	0.2600	21.5
NL	0.4550	0.3147	0.2621	42.4	0.4265	0.2985	0.2755	35.4
NW	0.3610	0.2625	0.2289	36.6	0.3816	0.2704	0.2293	39.9
BE	0.4266	0.2291	0.2291	46.3	0.4655	0.2921	0.2295	50.7
GE	0.4387	0.2977	0.2533	42.3	0.4474	0.3250	0.2714	39.3
FR	0.4763	0.3368	0.2980	37.4	0.5149	0.3705	0.3528	31.5
UK	0.4887	0.3421	0.2983	39.0	0.4580	0.3734	0.3412	25.5

During the 1990s, the division of the countries changed somewhat: France and the UK entered the first group; Italy entered the second, and the third apparently remained constant. The increase in the Gini coefficient resulted from the declined effect of transfer payments and direct taxes: While these factors reduced the Gini coefficient by 39% during the 1980s, by the 1990s, they did so by only 25%.

The role played by demographic characteristics in income inequality can also be examined. The measure that reflects the situation of the weak segments of the population, primarily large families and elderly, is the dependency ratio⁷. During the two periods reviewed, the highest dependency ratio was found in Israel. The explanation for this finding lies in the fact that families with children comprised about 50% of the total population, and that the percentage of elderly reached about 20%. In Italy, a decline in the dependency ratio by about 29% was observed, a phenomenon that contributed to the almost 16% reduction in the Gini coefficient. Similarly, an increase of about 6% in the dependency ratio in Germany may explain the 7% rise in the Gini coefficient during the same period.

Table 8 presents the Gini coefficients for the poor population. The findings indicate that during the 1980s, the countries surveyed can, once again, be divided into three groups in regard to income inequality: The first — the group displaying the greatest inequality, headed by Sweden and followed by the US, Australia, the UK, the Netherlands and Norway; the second, intermediate group, containing France, Belgium, Canada and Italy; and the third, displaying the least inequality, comprised of Israel and Germany.

The high values estimated for Sweden and the Netherlands resulted from a regressive transfer payment system, in contrast to their highly progressive direct tax system. The low values obtained for the measure resulted primarily from a highly progression transfer payment system coupled with a regressive direct tax system. The low value obtained for

⁷ The dependency ratio is the percentage of elderly and children in a population relative to its labor force.

Israel resulted essentially from a progressive transfer payment system that induced a more homogeneous distribution of income throughout the poor population.

Table 8: Gini Coefficient Values Estimated for the Poor Population, According to Net Income, 1980s and 1990s

Country	1980s	1990s
US	0.2213	0.2342
IS	0.1183	0.1108
CN	0.1768	0.1623
AS	0.2174	0.2245
SW	0.2499	0.2358
IT	0.1573	0.1328
NL	0.2157	0.2567
NW	0.2127	0.2054
BE	0.1920	0.1469
GE	0.1251	0.2707
FR	0.1980	0.2337
UK	0.2169	0.1406

During the 1990s, the level of income inequality in Germany among the poor population rose in response to the transformation of the transfer payment and direct systems into regressive systems. In the Netherlands and France, the increase in inequality among the poor population, by about 19% and about 35%, respectively, was a response primarily to the regressive direct tax system.

5 Summary

In the first part of this paper, we described three alternative approaches to the measurement of poverty (the absolute, relative and subjective approaches), as well as the equivalence scales utilized to estimate poverty in Israel, LIS, and the OECD member states. In the second part of the paper, we presented the results of an international comparison of poverty measures conducted according to the relative approach as well as the results of an international comparison of measures of income inequality.

Concerning developments in the level of poverty, income distribution and the effect of transfer payments and direct taxes on the dimensions of poverty and inequality, significant differences were revealed, both between the countries studied and between the respective periods reviewed. Differences were also found in respect to the effect of transfer payments and direct taxes on these phenomena. During the 1980s, the poverty incidence, as measured in terms of net income, was more than five times higher in the US than in Sweden or Norway. Nonetheless, the poverty incidence in Israel, Canada and Australia was less than or similar to the poverty incidence in the US. That is, the poverty incidence in the US was the highest among all the countries surveyed, followed by Israel. The most significant decline in the poverty incidence, after the introduction of transfer payments and direct taxes, was found in Sweden, Norway and Belgium. In the following period, the 1990s, the differences in poverty incidence between countries narrowed, given the decline in the poverty incidence in the US, Israel, Canada and Australia, as well as the rise in the poverty incidence in the

remaining countries. Israel's rank order position consequently improved, and fell from second (during the 1980s) to fourth place (after the US, France and Germany). The contribution of transfer payments and direct taxes to the reduction in the poverty incidence grew in the US, Israel, Canada, and Australia, while it declined in Germany, France and the UK.

In order to illustrate the importance of differences in demographic structure in the determination of the poverty incidence, the poverty incidence in the selected countries was re-estimated, based on the distribution of families, by the number of children, as found in Israel. In response to this type of standardization, the position of Israel, during the 1980s, improved: Israel's rank-order position fell to fifth place (after the US, Canada, Italy and Australia). During the 1990s, Israel's position further improved, and fell to eighth place.

Developments in the poverty gap, as measured by net income among persons, varied in the respective countries between the two periods reviewed. During the 1980s, the countries could be divided into three groups according to the level of the poverty gap found: The first, in which the poverty gap was particularly high, included the UK, the Netherlands, France, the US and Sweden; the second, intermediate group included Belgium, Norway, Canada and Australia; the third group, in which the poverty gap was the lowest, included Italy, Israel and Germany. A rank ordering of these countries, according to the level of their poverty gaps, indicated that Israel ranked eleventh (almost last). The most drastic reductions

in the poverty level, after transfer payments and direct taxes, were found in Germany, Israel and Italy. During the 1990s, the poverty gap fell in all the countries reviewed, excluding Australia, Belgium, France and Germany. In the associated rank ordering, Israel was in twelfth place, meaning that the poverty gap was lowest among all the countries on the list. In the majority of countries, the contribution of transfer payments and direct taxes to the narrowing of the poverty gap significantly increased, especially in the UK.

An analysis of the trends in income inequality during the 1980s and 1990s was measured using the Gini coefficient, estimated on the basis of net income distribution among the general population and the poor population. During the 1980s, the countries surveyed could be divided into three groups: the first — countries displaying particularly high income inequality (the US, Israel, Italy and Australia); the second — countries displaying less income inequality (the UK, France, Canada, the Netherlands and Germany); and third — countries displaying the least income inequality (Belgium, Norway and Sweden). The most significant decline in the Gini coefficient, in response to the influence of transfer payments and direct taxes, was found in Sweden, while the smallest decline was found in the US. During the 1990s, the distribution of countries among the three groups was slightly modified: France and the UK entered the first, Italy joined the second, while the third saw no changes. The largest contribution of transfer payments and direct taxes was found in Italy; while the smallest was evidenced in Sweden. However, no change influence of these factors was found between the two periods studied.

An analysis of developing trends in income distribution among the poor population, as observed during the 1980s, permits allocating the countries surveyed into three groups, according to the level of inequality: The first — the group displaying the highest income inequality (the US, Australia, the UK, the Netherlands and Norway); the second, intermediate level (France, Belgium, Canada and Italy); and the third — displaying the least income inequality (Israel and Germany). In Israel, the particularly low Gini coefficient values were a consequence of a progressive transfer payment policy, one that induced a degree of homogeneity in income distribution throughout the poor segments of society. During the 1990s, the level of income inequality among the poor grew in Germany, the Netherlands and France in response to the increasing regressivity of the transfer payment and direct tax systems.

Appendix/ Table 1: Definitions of Survey Values and the Populations Included in the LIS Database, Selected Countries, 1980s*

	Israel 1986	Australia 1985	Canada 1987	Italy 1987	United Kingdom 1986	Germany 1984
Survey population	Private households, including military households (excluding civilian institutions)	Households and civilian institutions (excluding military installations)	Households including military installations (excluding civilian institutions)	Households (excluding institutions)	Private households (excluding institutions)	Private households, including military personnel living in private households (excluding institutions and military personnel living on military installations)
Percentage of population covered	90.0	80.0	90.1	92.3	Unknown	98.9
Sampling unit	Household address	Household address	Household address	Household address	Household address	Household address as listed in voting registry
Population surveyed	Individuals in household aged 14+	Individuals in household aged 14+	Individuals in household aged 14+	Individuals who received any kind of income during the survey year	Individuals in household aged 15+	Individuals in household aged 15+
Final sample size	5,000	8,407	11,518	8,022	7,045	5,174
Percentage of those sampled who did not reply to questions on income	None	None	20.5	None	Some, exact number unknown	2.8
Standardized to total population	Yes	Yes	Yes	Yes	No	Yes
LIS survey appellation	Family Expenditure Survey	Income Distribution Survey	Survey of Consumer Finances	The Bank of Italy Income Survey	Family Expenditure Survey	German Socio-Economic Panel Study

(Continued)

	Sweden 1987	Norway 1986	The Netherlands 1987	Belgium 1985	France 1984	US 1986
Survey population	Private households, including military personnel (excluding military personnel and civilian institutions)	Private households include military personnel (excluding institutions)	Private households including military personnel (excluding institutions)	Private households (excluding institutions)	Heads of private households, including military personnel (excluding institutions and tax-owing heads of households)	Private households (excluding military installations)
Percentage of population covered	80.4	98.0	90.0	98.0		
Sampling unit	Household address and details from the tax registry	Household address and individuals	Household address	Household address	Household address as listed in the tax registry	Household address
Population surveyed	Taxpaying heads of households aged 17-74	Individuals in household aged 14+	Individuals in household aged 17+	Heads of households	Heads of households and their spouses	Individuals in household aged 14+
Final sample size	9,412	4,975	6,771	6,471	33,134	11,614
Percentage of those sampled who did not reply to questions on income	None	None	None	7.4	0.9	15.0
Standardized to total population	Yes	Yes	Yes	Yes	Yes	Yes
LIS survey appellation	Income Distribution Survey (HINK)	Norwegian Income Survey	AVO	Belgian Household Panel Study — CSP Panel	The French Survey of Income from Income Tax	The March Current Population Survey (CPS)

*The data included in the table represents data valid for the 1980s only; only incomplete data is available for the 1990s.

Table 2: Poverty Incidence Among Persons in the General Population and the Gini Coefficient, by Net Income and Various Equivalence Scales, 1990s

Country	Poverty Incidence			Gini Coefficient		
	NI (LIS)	NI (IS)	NI (OECD)	NI (LIS)	NI (IS)	NI (OECD)
US	20.1	19.7	17.9	0.3548	0.3501	0.3418
IS	15.3	14.0	10.7	0.3260	0.3180	0.3055
CN	13.0	12.8	11.6	0.2919	0.2881	0.2851
AS	12.5	13.0	8.6	0.3171	0.3131	0.3087
SW	5.6	5.4	5.7	0.2131	0.2252	0.2279
IT	8.5	8.0	6.2	0.2634	0.2600	0.2549
NL	6.9	6.8	6.4	0.2804	0.2755	0.2669
NW	4.5	4.1	5.1	0.2324	0.2293	0.2330
BE	4.8	4.6	3.6	0.2327	0.2295	0.2300
GE	14.8	14.7	13.5	0.2739	0.2714	0.2684
FR	16.7	15.5	13.9	0.3575	0.3528	0.3458
UK	13.6	13.2	12.6	0.3450	0.3412	0.3381

Table 3: Poverty Incidence Among Persons in Selected Segments of the Population, by Net Income and Various Equivalence Scales, 1990s

Country	Elderly			Without Children			With 1-3 Children			With 4+ Children		
	NI (LIS)	NI (IS)	NI (OECD)	NI (LIS)	NI (IS)	NI (OECD)	NI (LIS)	NI (IS)	NI (OECD)	NI (LIS)	NI (IS)	NI (OECD)
US	16.8	17.2	19.5	12.5	12.7	14.1	22.6	22.4	18.6	56.7	51.2	41.0
IS	15.1	14.8	17.7	9.0	9.1	11.5	10.0	9.7	7.3	39.0	33.2	19.3
CN	3.8	3.9	5.8	8.7	8.8	10.1	14.8	14.5	11.9	43.8	39.1	26.7
AS	10.6	11.5	9.4	8.0	8.7	7.2	14.1	14.7	9.0	35.6	33.1	16.0
SW	2.7	2.0	4.2	7.2	6.9	8.3	3.0	3.0	2.2	11.2	10.0	5.3
IT	3.4	3.3	4.2	4.6	4.6	4.2	13.6	12.5	8.7	54.0	41.0	35.6
NL	3.6	3.6	3.8	4.9	5.0	5.9	8.2	8.2	6.8	18.8	15.6	9.4
NW	2.3	1.5	7.8	4.3	3.8	6.9	3.9	4.1	3.2	20.2	10.2	6.4
BE	7.2	7.2	8.3	4.7	4.6	5.0	3.7	3.6	2.0	15.9	14.4	5.2
GE	14.4	14.6	15.6	14.8	15.0	15.3	13.9	14.1	11.1	31.3	18.6	9.4
FR	13.8	13.7	16.9	13.6	13.6	14.8	16.3	15.0	12.4	51.7	38.8	20.5
UK	12.0	12.0	17.5	8.5	8.4	11.1	16.0	16.0	13.4	53.9	43.6	23.2

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