

## Measurement of Poverty and Data Sources



Within the framework of research activities being carried out in Israel on the issue of poverty and income distribution, a relative approach to measuring poverty was formulated in the early 1970s, which is accepted by most researchers and social policy makers in the Western world.

Under this relative approach, “poverty” is a phenomenon of relative hardship that should be evaluated in correlation with the society’s standard of living: A family is considered poor not when it is unable to purchase a basic basket of products it needs for its subsistence, but rather, when its living conditions are significantly inferior to those of society as a whole.

The relative approach also recognizes that hardship is not expressed merely by low income, but may also be expressed by the level of property ownership, by housing conditions, by education and by the public services available to those in need. However, since there is no generally accepted index that reflects all aspects of hardship, and since the NII possesses data only on the current nominal income of households in Israel (based on income surveys of the Central Bureau of Statistics), the measurement of poverty is limited to the aspect of the nominal income.

The relative approach offers some practical methods for measuring poverty based on the level of nominal income, the common denominator being a comparison between the income level of families at the bottom of the income scale and that of all other families. The determination of the “poverty line” as some percentage of the “representative income” of the society’s standard of living is the foundation of any method for measuring poverty. A family whose income is below the poverty line is considered a poor family, without this necessarily implying that the family is going hungry, is suffering from malnutrition, is wearing threadbare clothing or living in dilapidated housing. A poor family, therefore, is simply a family whose income is significantly lower than the representative income.

In Israel, the method for measuring poverty is based on three principles:

- a. **The first principle** is viewing the family’s disposable income as the income that is relevant for examining the phenomenon of poverty. “Disposable income” is defined as the family’s economic income (from work and from ownership of physical means of production and from financial assets) plus transfer payments (payments other than in consideration for economic activity, such as national insurance benefits, support from institutions and from individuals in Israel and abroad), and net direct taxes (income tax, national and health insurance contributions).
- b. **The second principle** is viewing the median disposable income of the population as the society’s representative income.<sup>1</sup> The “median income” is defined as the threshold, when 50% of the families have income that is equal to or below it, while the income

1 In order to represent the typical standard of living, use of the median income is preferable to the average income, since the average income is affected by extreme values in income distribution (that is, by very high or very low incomes).

of the other 50% is above it. The poverty line is defined as the income level that is equal to 50% of the median disposable income. Therefore, a family whose disposable income is less than half of the median disposable income is considered to be a poor family. Economic growth, which stimulates an increase in the level of the median disposable income, also raises the poverty line. A family that is not poor, but whose disposable income is growing at a slower pace than the rise in the poverty line, is liable to become a poor family.

- c. **The third principle** is based on adjusting the poverty line to the size of the family. The assumption is that the size of a family affords advantages in terms of consumption: when a family grows by one additional member, its consumption needs do not increase proportionately, but rather, at a lower rate, so that the additional income needed by a family in order to maintain the same standard of living decreases as the size of the family increases. In order to facilitate a comparison between the standards of living of families of different sizes, an equivalence scale was developed that made it possible to measure the needs of these families compared with the needs of a family of a given basic size. Specifically, the equivalence scale translates the number of persons in a family to the number of “standard” persons (or “standard” adults) in the family. According to the equivalence scale, the basic family is comprised of two persons, which is assigned a value of two standard persons. According to this scale, a one-person family is assigned a value of 1.25 standard persons. In other words, the needs of a one-person family are not assessed as being equal to half of the needs of a two-person family, but rather, slightly more than half. Similarly, the needs of a family of four (which is assigned a value of 3.2 standard persons) are not double those of a family of two (which is assigned a value of two standard persons), but rather, are less than double (only 1.6 times greater).

Based on these principles, the “poverty line per standard person in Israel” was defined as a level equivalent to 50% of the median disposable income per standard person. A family in Israel is considered part of the poor population when its disposable income, divided by the number of standard persons in the family, is under the poverty line per standard person. The poverty line for a family may be calculated in a similar manner – by multiplying the poverty line per standard person by the number of standard persons in the family.

As in many Western countries, the analysis of the dimensions of poverty in Israel is based primarily on the two aggregate poverty indices that are the most generally accepted in empirical studies – “incidence of poverty” and “depth and intensity of poverty” (reflected in the income gap ratio of the poor and the FGT index). The incidence of poverty index indicates the extent of poverty in terms of the percentage of poor families in the entire population. The poverty gap index reflects the depth of poverty: the poverty gap of any poor family is defined as the difference between the poverty line (adjusted to family size) and its actual income, while the poverty gap of the entire population is defined as

the sum of the poverty gaps of all of the poor families. The poverty gap index may be standardized and defined as the ratio between the average income gap for a poor family and the poverty line (hereinafter: “the income gap ratio of the poor”). The FGT Index (also called the Foster Index) was developed by Foster, Greer and Thorbecke in 1989 and became the most accepted index for expressing the depth and intensity of poverty. Contrary to the income gap ratio of the poor, it gives greater weight to those whose income is the farthest from the poverty line.<sup>2</sup> Another aggregate index is the SEN Index, which combines these two indices with the component of inequality in the distribution of income among the poor.

## The Data Sources

The income data are used as a basis for calculating the dimensions of poverty and the distribution of income in Israel are the annual income surveys conducted by the Central Bureau of Statistics (hereinafter: “the CBS”). Up to and including 1997, the population surveyed included solely households headed by an employee or a non-working person in urban communities of at least 2,000 residents, and excluded East Jerusalem.<sup>3</sup>

In 1998, the CBS decided to produce a combined income survey, elicited from the data from the current income survey and the data from the household expenditure survey. The combined income survey has been published since 1997, when the CBS began preparing a current household expenditure survey in addition to the current income survey. The combined survey is based on a larger sampling (1.8 times larger than the previous sampling) and encompasses 95% of all households in most types of communities in Israel. In addition to the employees and non-working persons residing in urban communities, the combined survey also encompasses the self-employed, residents of moshavs, rural communities and community settlements and, in principle, also the residents of East Jerusalem. The populations that are not yet included in the survey are mainly the kibbutzim, as well as Bedouin not residing in permanent communities. The residents of East Jerusalem were included in the combined survey for the years 1997-1999,<sup>4</sup> but not in 2000, due to the security situation, which made it difficult to conduct

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2 The FGT index accepts values of between 0 (if the income of the poor is at the poverty line) and the incidence of poverty (if the income of the poor is zero). The index is calculated according to the following formula:

$$\frac{1}{n} \sum_{i=1, y_i < z_i}^n \left( \frac{z_i - y_i}{z_i} \right)^2$$

where  $z_i$  is poverty-line income and  $y_i$  is the family's income.

3 Up to and including 1994, the income surveys included non-Jewish communities with at least 10,000 residents (excluding East Jerusalem). Since 1995, the income survey was expanded to also include non-Jewish communities of between 2,000 and 10,000 residents.

4 The sampling of the combined income surveys included residents of East Jerusalem fully in 1998 and 1999, and only partially (approximately 65%) in 1997.

a survey. In order to present comparisons for 1997-2000, the poverty and inequality data for 1997-1999 were re-generated, excluding the residents of East Jerusalem.<sup>5</sup>

A household (defined as a group of individuals who reside together most of the week and who have a common household budget) serves as the unit under examination in income and expenditure surveys.<sup>6</sup> For the sake of convenience, it is customary to use the term “family” instead of “household,” even if the terms do not have identical connotations.

When using the historical data presented in the Poverty and Inequality Tables appendix, it is important to take into consideration the following major milestones in the CBS’s income surveys and the NII’s calculations of the poverty line and dimensions of poverty and inequality over the years:

1. In the poverty calculations published by the NII up until 1985 on the basis of income surveys, the poverty line had been defined as the income level that was equal to 40% of the gross median income (after transfer payments, but before deducting direct taxes). Since 1988, the definition of the poverty line has been revised to 50% of the median disposable income.
2. The income surveys conducted since 1985 differ from previous income surveys in their research and measurement methodologies, in terms of the duration of the research period.
3. Up to and including 1997, the population surveyed in the CBS’s income surveys included households headed by an employee or non-working individual (i.e., the surveys did not include households headed by a self-employed individual, which constitute about 10% of all households) in urban communities with at least 2,000 residents, excluding East Jerusalem.
4. Up to and including 1994, non-Jewish communities with at least 10,000 residents (excluding East Jerusalem) had been included in the income surveys. Since 1995, the income survey has been broadened to also include non-Jewish communities with 2,000-10,000 residents.
5. Since 1998, the CBS has been producing the income survey based on the data from the current income survey and the data from the household expenditure survey. The combined survey is based on a larger sampling (1.8 times larger than the previous sampling) and encompasses 95% of all households in most types of communities in Israel.
6. Regarding the new series of surveys since 1997: In 2000 and 2001, no survey was conducted among residents of East Jerusalem. The income survey sampling included the residents of East Jerusalem fully in 1998 and 1999, and since 2002, but only partially (approximately 65%) in 1997.

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5 The Annual Survey for 1999 presents data on the dimensions of poverty in 1997 – 1999 in relation to the population that also includes East Jerusalem.

6 Since 1995, a “head of household” is defined as that member of the household with the greatest “degree” of participation in the labor force, regardless of age or gender.

Following an initiative proposed by the NII, the CBS carried out a feasibility study that showed that it is possible to produce findings on poverty and income distribution on a bi-annual basis. Consequently, since 2004, in addition to data on the calendar year, the CBS publishes findings relative to the second half of the previous year and the first half of the current year. For example, in addition to the 2007 Survey, a survey covering 2007/8 is published, which relates to the second half of the 2007 Survey and the first half of the 2008 Survey. No individual survey with its own sampling framework is conducted to analyze poverty and income distribution for these interim periods; instead, a database was built that is comprised of both parts of the annual surveys. Accordingly, the report on poverty for these periods is more succinct in nature and is used primarily to show the forecasted trends relative to poverty and social gaps in the coming calendar year.

