WELFARE SUPPORT AND POVERTY IN HUNGARY, 1992–1997*

PÉTER SZIVÓS – ISTVÁN GYÖRGY TÓTH

In this study, which is one stage in research series going back many years, we attempt to describe the nature of the connection between welfare benefits and the trends in poverty indicators.

The study examines the changes in income distribution in the mid-1990s, with special focus on the evolution of relative poverty. We show the movement of the real and nominal values of the poverty thresholds employed, and attempt to colour the description of the evolution of poverty with a calculation of additional measures besides the traditional ones. The next part presents some new calculations showing the effects of welfare benefits on poverty.

PROBLEMS OF MEASUREMENT

In our earlier work we attempted to examine the distribution of welfare benefits and the changes in distribution over time. In examinations of this kind preliminary decisions on a number of methodological issues have to be made at the beginning. Here, without going into details we mention only a few.[1]

The incomes of households may be compared in a number of different ways. As one extreme, no difference is made between households as to their size. It is clear that this approach gives no way for taking family size into account when assessing earning capacity or consumption demands. For example, it treats as one household a one-person household, a household where there are many children, and a household where there are possibly several generations. Behind this is the assumption that the living expenses of a household do not change as the family gets bigger. On the other hand, assuming per capita incomes means that the living expenses increase at the same rate as a family size. In the literature of income inequalities, both of these methods are used. However, we

* The first version of this study was prepared within the framework of research co-operation between TÁRKI and the Hungarian Ministry of Public Welfare in the drawing up of the Medium-term Social Policy Strategy. This study was undertaken with support of the European Commission's Phare ACE Programme grant No. P96-6014-R. The data used in the study come from the data base of the Hungarian Household Panel.

[1] *Tóth, I. Gy.*: A jóléti programok szerepe a szegénység enyhítésében. In: Társadalmi riport, 1994. Ed.: *Andorka, R. – Kolosi, T. – Vukovich, Gy.* TÁRKI. Budapest. 1994. 107–136. p.; *Tóth, I. Gy. – Andorka, R. – Förster, M. F. – Spéder, Zs.*: Poverty inequalities and the incidence of social transfers in Hungary, 1992–1993. TÁRKI. Budapest. 1994. 73 p.

shall probably get nearer to the truth if we use an approach somewhere between these two extremites.

According to the logic of equivalence scales, an increase in the size of a family means an increase in its living costs, but not at the same rate as the increase in the family's size. For some households, then, equivalence scales attach diminishing weight to an increase in family size. As formally expressed, a multi-member family has an income equivalent to a single-member family when $j=h/N$, where j is the income of a single-member household, h is the total income of the household being examined and N is for indicating needs differring with the size of the family. In the literature it is regarded as proven that the co-efficient indicating the needs of a family can be well expressed using the formula $N=S^e$, where S is the size of the family/household.[2]

In what follows, we calculate personal equivalent incomes according to three different equivalence scales, and the poverty rates calculated on the basis of these incomes. In the case of the e=0.73 scale we assume in practice that the first member of the household is 1, the second 0.7 and the third 0.5 as consuming units. Secondly, we use an equivalence scale which is more restrictive than this (e=0.55). This means that compared to those indicated so far, additional family members are given less weight as consumers. Last but not least, we calculate poverty rates on the basis of incomes per capita. This is prompted by very important social policy considerations, even if, from the statistical point of view, it might be more correct to give analyses made on the basis of equivalent incomes. First and foremost is the fact that in social policy, in practice, the criteria for entitlement to certain benefits is determined on the basis of per capita income. Therefore, before formulating any kind of actual social policy proposal, the implications of examinations conducted on the basis of per capita income need to be looked at.

Two additional methodological issues are worth mentioning. The first is the kind of poverty threshold to be used when assessing the extent of poverty and the role of welfare benefits in its alleviation. The second is the kind of poverty indicators to be used.

There is no space here to analyse the various concepts of poverty and the advantages and disadvantages of these. (This subject is dealt with in a whole series of articles.[3])

In the following, we will use three poverty thresholds. On the one hand we shall regard as poor those whose per capita or equivalent income belongs to the bottom quintile (the bottom 20 per cent) of all such incomes. This measurement is not suitable for an examination of the size of poverty, since, by definition, 20 per cent of the population will always be in this bottom quintile. On the other hand, it is suitable for an examination of the composition of poverty, as well as for an examination of how the number of those living below the poverty threshold is represented by the upper limit of this quintile changes according to how individual social policy benefits featured in the incomes of individuals.

[2] *Buchmann, B.* et al.: Equivalence scales, well-being, inequality and poverty: sensitivity estimates across ten countries using the LIS database. *Review of Income and Wealth*. 1988. No. 34. 115–142. p.; *Förster, M. F.*: Measurement of poverty and low incomes in a perspective of international comparisons. OECD Labor Market and Social Policy Occasional paper. No. 14.

[3] Among others, *Fábián, Z.*: Review of the social science research into poverty in Hungary. TÁRKI. Budapest. 1995. 69 p.; *Andorka, R. – Spéder, Zs. – Tóth, I. Gy.*: Developments in poverty and inequalities in Hungary, 1992–1994. TÁRKI. Budapest. 1995. 67 p.; *Szivos, P.*: Jövedelmek és jövedelemegyenlőtlenségek alakulása az utóbbi néhány évben. *INFO-Társadalomtudomány*. No. 28. 21–29. p.; *Galasi, P.*: Szegények és gazdagok. TÁRKI. Budapest. 1995. 19 p. and *Galasi, P.*: A jövedelemegyenlőtlenségek változása Magyarországon 1987, 1992–1994. MTA Világgazdasági Kutató Intézet. Budapest. 1995. etc.

The other two measurements greatly depend on the actual pattern of income distribution. On the basis of these we can regard as poor those who (calculated on the basis of the various equivalence scales) live on an income less than half the average and half the median income. What is in favour of the choice of an average is the fact that certain international comparative studies, with which we would like to have comparable data, use this measurement. Against it, as we shall see later on, is the fact that the average, especially in the case of the smaller samples, is very sensitive to the extreme values. For this reason, the use of a median income seems to be more suitable.

In studies dealing with poverty in Hungary, the poverty rate and – less often – the poverty gap are the indicators which regularly appear. The first expresses ($H=p/n$) the proportion of poor people within the population, and is therefore the simplest and most readily understood type of poverty measure. Its big disadvantage, however, is its complete insensitivity to the intensity of poverty. This intensity – which in other words is the depth of poverty – is measured by the poverty gap, and by its relative version which shows the distance of the average income of the poor from the poverty threshold. The formula for this may be expressed as

$$I=1/p\cdot \Sigma_{i=1,p}((k-y_i)/k)$$

where

p – is the number of poor people,
y_i – is income of the poor,
k – is the poverty threshold.

The aggregate poverty gap – $\Sigma_{i=1,p}k-y_i$ – gives the minimum aggregate amount needed for the poor to rise above the poverty level. The poverty gap, however, is always insensitive to changes taking place in the number of the poor as long as the average income of the poor is unchanged. In order to combine the complementary characteristics of the two indices, the normalized version of the aggregate poverty gap can be used. This gives the amount of income to be redistributed from the non-poor to the poor if all of the poor are to rise to the level of the threshold.

Besides the above indicators, in the literature on the poverty of the last 15–20 years, many additional proposals have been made which are contained in a number of excellent summaries in Hungarian.[4] In the following, we shall rely on these papers and on the indicators worked out in them.

Neither the above two indicators (the poverty rate and the poverty gap), nor a combination of the two gives any information on the scale and seriousness of poverty among the poor, in other words, they do not take account of inequalities of income among the poor. For example, let us take two income distributions A=(1,2,3,4) and B= (2, 2, 2, 4), with the poverty line being 3. The poverty rate is 75 per cent and the average poverty gap is 0.33 in both cases, and at the same time the poorest person in the A distribution has half the income of the poorest person in the B distribution. Let us suppose that a B distribution comes about with a redistribution from the least poor to the

[4] *Hajdu, O.*: A szegénység mérőszámai. KSH Könyvtár és Dokumentációs Szolgálat. Budapest. 1997. 99 p.; *Seidl, Ch.*: Poverty measurement: a survey. In: Welfare and efficiency in public economics. Ed.: *Bös, D. – Rose, M. – Seidl, Ch.* Berlin–Heidelberg. 1988. and *Ravallion, M.*: Poverty Comparison. World Bank. (Manuscript.) 54 p.

most poor in the *A* distribution. The poverty indicators we have examined so far are insensitive to such a redistribution. The poverty index proposed by *A. Sen* is appropriate from the point of view of the above criteria. The formula which bears his name is

$$P_s=H(I+(1-I)G_p),$$

where

H – is the poverty rate,
I – is the average rate of poverty gap,
G_p – is a measurement of income inequality among the poor on the basis of the Gini coefficient.

This index contains the information relating to the extent and intensity of poverty and to inequalities among the poor as well. The smallest value of the indicater is 0 and its highest is 1; 0 if there are no poor at all and 1 if everyone's income is zero. Insofar as the income of all the poor is the same, this income is the lowest possible, the more its value approaches the poverty rate, the higher the proportion of the poor is, and the more the value approaches the average poverty gap. A modification of the index was suggested by *S. Anand* who said that not only the incomes of the poor should be taken into account when measuring poverty, but the incomes of the non-poor as well. The intensity measurement proposed by him compares the distance between the threshold value and the average income of the poor with the average income of the population as a whole. This index can be interpreted as the proportion of total incomes of the non-poor that needs to be transferred to the poor to lift them to the level of the threshold. The Anand measurement differs from the Sen measurement only in one constant, which is a quotient of the poverty line and the average income of the population as a whole.

Despite all their advantages, these indicators do not satisfy the requirement of additivity. They do not ensure that the poverty index relating to the population as a whole can be compiled as a weighted average of indicies relating to sub-populations, or, the other way round, that it can be decomposable from the 'complete' index.

A relatively simple measure satisfying the above requirement is the Foster – Greer – Thorbecke index, which is built on a conception of a weighted poverty gap. Its formula is the following:

$$P_{FGT}=1/n\Sigma_{i=1,p}((k-y_i)/k)^{\alpha},$$

where

$\alpha \geq 0$,
p – is the number of poor people,
n – is the population size,
y_i – is income,
k – is the poverty threshold, α the value of the calculation parameter.

The greater the value of α, the greater the weight attached to the poorest of the poor. In the case of $\alpha=0$, it is weighted with the poverty rate. If $\alpha=1$, the weight is the product of the poverty rate and the average poverty gap, while when $\alpha=2$, the poverty gap is weighted with itself. Referring back to the earlier mentioned *A* and *B* distributions, the values of *FGT*(2) are 0.14 and 0.08 respectively.

WELFARE BENEFITS AND THE PROFILE OF POVERTY

Welfare benefits came first into the center of attention in the first half of the 1990s, because at the time of the recession they amounted to more than 30 per cent of Gross Domestic Product. Hungarian social expenditures at that time exceeded the OECD average.[5] Then, partly because of the stablization package, in 1996–1997 welfare expenditure fell back dramatically.[6]

Table 1

Some principal characteristics of cash social benefits

Money benefits	In the year of				
	1992	1993	1994	1995	1996
	HUF billion				
Family allowances	91.8	108.9	110.6	101.6	95.7
Unemployment benefits	48.4	59.1	52.4	50.1	47.2
Pensions	314.9	392.9	477.4	553.4	633.9
Social assistance	18.3	22.3	24.9	29.2	33.3
Total (of above four)	473.5	583.1	665.3	734.4	810.1
Total income	2050.8	2350.9	2888.6	3560.3	4366.1
	Nominal change, 1992=100.0 per cent				
Family allowances	100.0	118.6	120.4	110.7	104.2
Unemployment benefits	100.0	122.0	108.3	103.5	97.5
Pensions	100.0	124.7	151.6	175.7	201.3
Social assistance	100.0	121.7	136.0	159.4	181.6
Total (of above four)	100.0	123.1	140.5	155.1	171.1
Total income	100.0	114.6	140.9	173.6	212.9
Price index (CPI)	100.0	122.5	145.5	186.6	230.6
	Change in real value, 1992=100.0 per cent				
Family allowances	100.0	96.8	82.7	59.3	45.2
Unemployment benefits	100.0	99.6	74.4	55.5	42.3
Pensions	100.0	101.8	104.2	94.2	87.3
Social assistance	100.0	99.3	93.4	85.4	78.7
Total (of above four)	100.0	100.5	96.5	83.1	74.2
Total income	100.0	93.6	96.8	93.0	92.3
	Shares of cash social benefits in total incomes				
Family allowances	4.5	4.6	3.8	2.9	2.2
Unemployment benefits	2.4	2.5	1.8	1.4	1.1
Pensions	15.4	16.7	16.5	15.5	14.5
Social assistance	0.9	0.9	0.9	0.8	0.8
Total (of above four)	23.2	24.7	23.0	20.6	18.6

Source: TÁRKI Social Policy Data Base.

[5] *Tóth, I. Gy.*: A jóléti rendszer az átmenet időszakában. *Közgazdasági Szemle*. 1994. No. 4. 313–341. p.; Social and labour market policies in Hungary. OECD. Paris. 1995. 189 p.

[6] *Lelkes, O.*: Az állam szociális kiadásai Magyarországon 1988 és 1996 között. TÁRKI. Budapest. 1997. 15 p.

Before we examine the influence of this on the income distribution of poverty and welfare benefits, we should like to present a few characteristics of the four-benefit system covered by our analysis: family allowances, unemployment benefits, pensions and social assistance.

In the period between 1992–1996, the total nominal amount spent on these four benefits rose by 70 per cent. The total sum spent on pensions increased somewhat more, doubling in nominal terms. Unemployment benefit expenditure showed no increase even in nominal terms (see Table 1). Of course, the developments in incomes as a whole were influenced by changes in the number of benefit recipients, as well as by changes in the average values of the benefits. The proportion of households receiving pensions rose by a few percentage points and indexing was also in operation. As a result, this benefit was the one which lost the least of its real value. In the case of unemployment benefits, the proportion of those benefiting decreased. Also, due to changes in legislation, the average amount of the payment fell to two-thirds during this period. The real value of family allowances also suffered a significant fall, to less than half. Here primarily the fall in average values was decisive.

Since disposable income increased more rapidly in nominal terms, benefits and decreased less than the cash benefits in real terms, the role of these benefits in income composition decreased. While in 1992 the four benefits under discussion made up 23 per cent of total household income, by 1996 this figure had fallen to 19 per cent. Family allowances and unemployment benefit lost the most value, but to some degree so did pensions, which were of much greater importance. The significance of social assistance remained about the same. These structural changes are supported by the findings of the Hungarian Household Panel,[7] so we shall rely on these series of data in our analysis.

Income distribution and poverty

The study, as we have indicated, shows data on those living on incomes below the poverty threshold calculated on the basis of the bottom quintile, half of the average, and half of median income. The empirical differences between these three poverty lines are shown on the basis of data relating to the Hungarian income distribution in the years 1992–1997, using a number of poverty measurements. The data and the calculations are everywhere prepared by using the data base of the Hungarian Household Panel.

Income distribution in Hungary, as generally, is skewed towards the left. In other words, the lower regions of the income distribution contain population cohorts of significant size. In the upper tail, on the other hand, those groups whose incomes are significantly higher than that of the average 'pull apart' the field. This can clearly be seen in Figure 1, where the income distribution data for 1992 can be examined. This feature of income distribution is also shown by the fact that the average income in 1992 exceeded the median income by 15 per cent. The difference remained largely the same throughout the period (although in 1995 the difference reached 20 per cent).

Comparing income distribution data through subsegment years in a period of considerable inflation, price adjustment of household incomes should be made. In the

[7] *Szivós, P. – Tóth, I. Gy.*: A háztartások jövedelmi szerkezete, egyenlőtlenségek, szegénység és jóléti támogatások. In.: Zárótanulmány. Jelentés a MHP 6. hullámának eredményeiről. Ed.: *Sik, E. – Tóth, I. Gy*. TÁRKI. Budapest. 1998. 252 p.

period between 1992 and 1997, inflation led to a fall in the real value of the different poverty thresholds. Out of the three thresholds, the greatest fall in real value (33%) in the period examined was the poverty threshold defined as the upper limit of the bottom quintile.

Figure 1. Number of persons belonging to the different per capita income categories, 1992

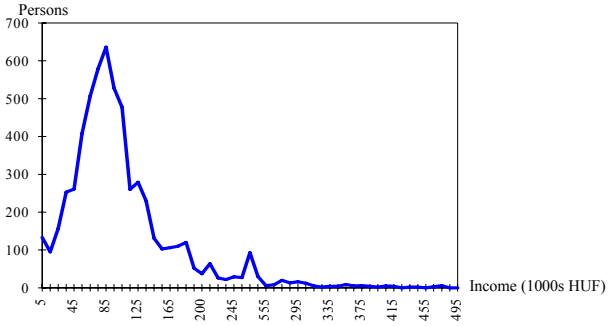


Figure 2. Real values of poverty thresholds, at 1991/1992 prices

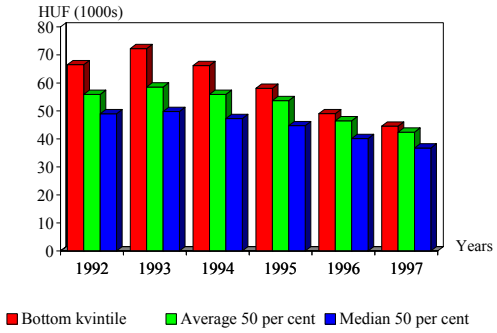
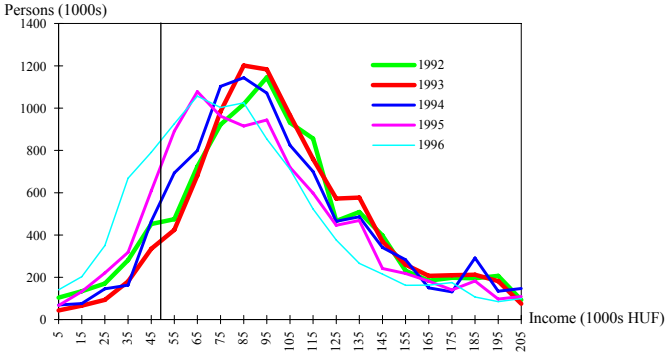


Figure 3. Income distribution at 1991/1992 prices, 1991/1992–1995/1996
(Base period: April 1991–March 1992)



Source: Hungarian Household Panel, Waves I–VI. Inflation indices always compare the later March–March average with the earlier March–March average. Thanks are due to *István Bedekovics* for the calculations.

The fact that income distribution shifted leftwards is also shown by the diagram which depicts the distribution of the real incomes in individual years compared to this poverty threshold (half of the 1992 median) (see Figure 3). It is obvious from this that in thes successive years the fall in real incomes afflicted larger and larger population groups below the 1992 poverty threshold.

The development of relative poverty rates can clearly be shown by the presentation of cumulative distribution of social groups below the given income levels in the function of the increase in incomes. For the sake of simplicity, with the help of density functions only for 1992 and 1996, we can examine how the change in, or changing of, the poverty thresholds employed affected the proportion of poor people in a given population (see Figure 4). The vertical line placed on the diagram represents half of the median income in 1992. We can also see that in the 1992 density function, this value implied a poverty rate of 18 per cent, while in the 1996 distribution of income it implied a poverty rate of some 25–30 per cent. We can also see that near the above mentioned value cumulative frequencies rise somewhat steeply. This indicates that even a relatively small change in the poverty threshold affects comparatively significant population groups. On the other hand, with the help of a horizontal line placed on the Figure 4 at the 20 per cent value of cumulative distribution, the fall in the real value of the upper limit of the bottom quintile can be seen.

Figure 4. Cumulative distribution of persons on the various levels of per capita income in 1991/1992 and 1995/1996

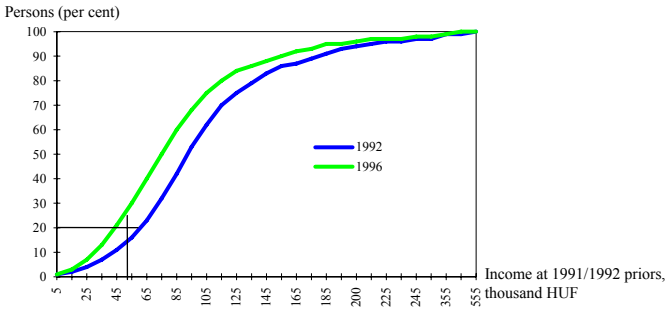
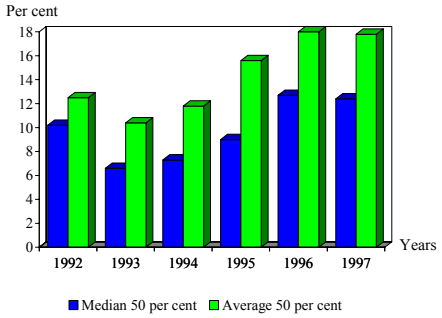


Figure 5. Poverty rates of persons for different poverty thresholds defined on the basis of per capita incomes



Source: Hungarian Household Panel, Waves I and V. Inflation indices: As in Diagram 3.

The former mentioned movements in the characteristics of income distribution are also present in the increase of poverty rates. The proportion of poor people increased according to all three definitions over the period (see Figure 5 and Table 2). The increase in relative poverty was especially significant in 1995 and 1996; on the other hand, we can speak of some decrease and almost no movement in 1997.

As we have already mentioned, poverty headcount, however, is just one measurement of poverty. In addition to this, new information is provided by data which show the nature of income distribution within the group of the poor.

For all three thresholds we can find that the average poverty gap was approximately 30 per cent in the last years (see Table 2). This value is higher than the one given in the World Bank poverty assessment report[8] which used the Household Budget Survey carried out by the Hungarian Central Statistical Office, where poverty in Hungary was described as 'shallow'. Nevertheless, this is not surprising, since the Panel, despite all its limitations, spans a relatively wider range of income distribution than the Household Budget Survey.[9]

However, the 'depth' of poverty is not simply a statistical or sociological question. In aggregate the difference between the incomes of poor persons and the poverty threshold, equals the amount of money needed for all poor persons to enjoy an income on the level of the poverty threshold. Figure 6. shows the Hungarian population ranked by household incomes per person. It can clearly be seen that incomes per person are somewhat unequal in the lower regions of the distribution, than in the upper part of income distribution.

The horizontal line in Figure 6 represents the poverty threshold. (This is half of the median income, which in 1992 was HUF 49 000.) The size of the area between the horizontal line and the actual income distribution curve represents the area which would need to be filled for the poor to reach the poverty threshold (this is called the poverty deficit). Comparing the thus-defined poverty deficit with the incomes of the non-poor, we arrive at a measure which further colours the description of poverty.

The third column of Table 2 shows that the rate of such a redistribution would be rather slight. The raising of the lowest incomes to the upper limit of the bottom quintile would necessitate a redistribution of approximately 3–4 per cent of the total income of the non-poor. According to our estimates, this would have been 85–90 billion HUF in 1996, which would have been the equivalent of twice the social assistance paid out that year. This is in line with those statistics which (using other data and other methodology) have so far been aimed at determining the poverty deficit.[10]

However, the situation is not so simple. The amounts indicated in the above denote only direct costs of a minimum income guarantee, but the total costs are appreciably more than this. Apart from the administrative costs, three factors would make its actual use extremely expensive. To begin with, a minimum income guarantee would mean a 100 per cent implicit marginal tax for those living below the poverty threshold, namely it would be a matter of indifference to them whether they acquired their income through work or through asssistance.

[8] Hungary: Poverty and Social Transfers. A World Bank Country Study. World Bank. Washington DC. 85 p.

[9] *Andorka, R. – Ferge, Zs. – Tóth, I. Gy.*: Valóban Magyarországon a legkisebbek a jövedelmi egyenlőtlenségek? *Közgazdasági Szemle*. 1997. No. 2. 89–112. p.

[10] *Szivós, P.*: The evolution of poverty in Hungary, 1987–1992. (Manuscript.) 1994. 36 p.

Table 2

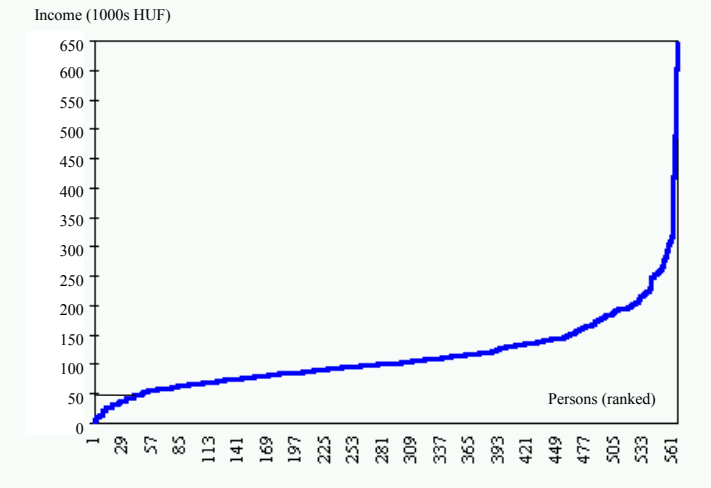
Trends in individual indicators of poverty

Years	Poverty threshold		
	50 per cent of average income	50 per cent of median income	Upper limit of the bottom quintile
	Poverty rate: Proportion of persons with per capita income less than the given poverty threshold		
1992	12.8	10.2	20.0
1993	10.4	6.6	20.0
1994	12.1	7.4	20.0
1995	15.8	9.0	20.0
1996	18.3	12.8	20.0
1997	17.8	12.4	20.0
	Poverty gap-ratio: Average income shortfall in terms of the poverty threshold (per cent)		
1992	33.2	31.3	30.9
1993	26.5	27.0	25.0
1994	26.3	26.7	26.2
1995	29.0	33.4	27.9
1996	29.8	29.9	31.2
1997	31.1	32.6	30.8
	Rate of poverty deficit to the total income of the non-poor		
1992	2.2	1.4	3.8
1993	1.4	0.8	3.2
1994	1.6	0.8	3.2
1995	2.3	1.3	3.1
1996	2.8	1.7	3.4
1997	3.0	1.8	3.5
	Sen index × 1000		
1992	59.7	46.5	88.4
1995	66.3	42.2	81.8
1996	77.8	55.7	87.5
1997	78.0	55.8	87.5
	FGT(2) × 100		
1992	2.16	1.66	3.05
1993	1.02	0.80	2.10
1994	1.40	0.92	2.21
1995	2.20	1.51	2.62
1996	2.60	1.90	2.97
1997	2.64	1.93	2.94

The notions used in Table 2 are:

Poverty rate: $H=p/n$,
Poverty gap-ratio: $I=1/p\cdot \Sigma_{i=1,p}((k-y_i)/k)$,
Poverty deficit/income rate: $\Sigma_{i=1,p}k-y_i / \Sigma_{i=p->n}y_i$,
Sen index: $P_s=H(I+(1-I)G_p)$ (G_p – the inequality among the poor measured by Gini coefficient),
FGT index: $P_{FGT}=1/n\Sigma_{i=1,p}((k-y_i)/k)^{\alpha}$, ($\alpha$ – the value of the calculation parameter, $\alpha>=0$).

Figure 6. The income of persons ranked according to per capita annual incomes, 1992



Source: Hungarian Household Panel, Wave I. Sample taken from the Panel's data base

For the reason mentioned before, the non-benefit derived incomes of the poor must also be added to the redistribution costs. Secondly, a supplementation would prompt to reduce the efforts of those who are just above the poverty threshold to acquire income through work. Namely, for them the marginal costs of undertaking work could significantly exceed the marginal incomes which the undertaking of work would bring. For this very reason, it could be expected that some of those who would otherwise have been above the poverty threshold could slip down.

Finally, supplementation is accompanied by tax costs. These taxes burden the incomes of those who are well above the poverty threshold. The disincentive effects stemming from an increase in taxation and the extremely high implicit marginal tax rate could undermine the moral foundations of the market economy even among those affected by these measures indirectly or only to a negligible extent. Consequently, a guaranteed minimum income could lead then to a situation accompanied by disincentive effects, in other words its social costs could significantly exceed the optimal level.[11]

We however, introduced the poverty deficit conception as a statistical measure rather than a social policy proposal. In this sense, the methodological status of the poverty deficit as a measurement is similar to that of the Robin Hood index.

Among other indicators, we also use the Sen index, which, in addition to those so far, namely the poverty rate, the poverty gap and their derivatives, also incorporates income inequality among the poor. The values for this indicator are to be found in the fourth column of Table 2. According to this indicator poverty did not increase, or did not increase as significantly as it could have been expected on the basis of the increase in the poverty rate. Since the average poverty gap changed differently from 1992 to 1997 according to the different thresholds, and since income inequality among the poor

[11] *Gál, R. I.*: A társadalombiztosítási programok ösztönző hatásai. *Közgazdasági Szemle.* 1996. No. 2. 128–140. p.; *Semjén, A.*: A pénzbeni jóléti támogatások ösztönzési hatásai. *Közgazdasági Szemle.* 1996. No. 10. 841–862. p.

decreased with all three thresholds, this indicator, arising as the product of all these effects, shows a smaller increase. To investigate the reason for the decrease in differences among the poor while an increase in the inequality characterizes the population as a whole, will require further research.

Another index calculated is the Foster – Greer – Thornbecke (FGT) index (used in the literature with the parameter α=2), of which an important characteristic is the fact that it places a greater weight on the poorest than the earlier indicators did, with the result that it reacts more sensitively to the changes taking place in their ranks. This is the explanation for the fact that the year 1993 – which from a number of aspects did not conform with the trends – behaved 'strangely' here too, falling the index to half. Comparing the beginning and the end of the period examined, its value increased by some 20 per cent in the case of the poverty thresholds represented by half of the average income and half of the median income, while falling a certain amount using the upper limit of the bottom quintile.

Between the last two periods, there was almost no difference with regard to the level of the FGT index.

Poverty indicators before and after transfers

What kind of role do welfare benefits play in the reduction of poverty? We attempted to provide an answer to this question in an earlier study (see Note 1). Now, reformulating the question a little but essentially following our earlier thinking, we shall, as in Szivós's article,[12] investigate the extent to which individual welfare benefits are capable of reducing poverty indicators.

Table 3

Poverty rates of persons in 1995–1996, on the basis of personal equivalent incomes, according to different equivalence scales and poverty thresholds

Equivalence scale (*e*)	Total income	Without family allowances	Without unemployment benefits	Without pensions	Without social assistance
	Poverty threshold: 50 per cent of average income				
0.73	15.3	20.5	16.5	32.8	15.7
1	18.0	22.7	19.8	36.4	18.4
0.5	15.0	20.6	16.3	31.2	15.3
	Poverty threshold: 50 per cent of median income				
0.73	9.6	15.3	11.1	26.5	9.7
1	12.7	18.0	14.3	29.9	13.3
0.5	8.8	14.7	10.6	25.8	9.4
	Poverty threshold: Upper limit of bottom quintile				
0.73	20.0	24.9	21.6	41.6	20.6
1	20.0	25.6	22.1	43.1	20.4
0.5	20.0	25.6	21.1	40.0	20.7

[12] *Szivós, P.*: A munkanélküliek jövedelempótló támogatása. *Statisztikai Szemle.* 1996. No. 11. 894–907. p.

This thinking is built on a very simple assumption. First, we examine the size of the poverty indices calculated on the basis of the various poverty thresholds when the various benefits are included in total incomes, and then we calculate their size when these benefits are taken out, leaving the thresholds unchanged. This is shown by Table 3 with regard to 1995–1996, applying various equivalence scales and poverty thresholds.

In the second column of Table 3, we can find the proportion of those whose monthly income is less than the given level of income. The different equivalence scales give different poverty rates, since the poverty rate is senstive to the equivalence scale employed in a measure dependent on the household structure.[13]

The third column of Table 3 shows the size of poverty rates with unchanged poverty thresholds but for total incomes minus family allowances. Using all three equivalence scales, the poverty rates shown in the third column of Table 3 are substantially higher than those shown in the preceding column. All this is broken down in Table 4 on the basis of income per capita for the year 1996–1997, according to the number of children. Table 5 presents the changes in the FGT index.

Table 4

The poverty-reducing effects of family allowances:
Poverty rates with family allowances and without them, 1996–1997

Income – family allowance	Total	Noumber of children under 18 years				
		0	1	2	3	4 and more
	Poverty threshold: 50 per cent of average income					
Total income (1)	17.8	4.9	13.5	23.4	47.9	62.8
Total income – family allowances (2)	21.8	4.9	18.8	30.2	52.2	81.3
2/1	1.22	1.00	1.39	1.29	1.09	1.29
	Poverty threshold: 50 per cent of median income					
Total income (1)	12.4	2.6	8.9	15.7	33.3	56.3
Total income – family allowances (2)	16.5	2.6	10.8	22.9	47.8	68.8
2/1	1.33	1.00	1.21	1.46	1.44	1.22
	Poverty threshold: upper limit of bottom quintile					
Total income (1)	20.0	5.7	15.7	26.9	51.4	70.8
Total income – family allowances (2)	23.5	5.7	19.6	32.1	57.7	87.4
2/1	1.18	1.00	1.25	1.19	1.12	1.23

In the absence of family allowances in 1996/97, the poverty rate of those under 16 would have risen from 31.7 per cent to 39.2 per cent using half of the average income as the poverty threshold, and from 23 per cent to 32 per cent using half of the median income as the poverty threshold. This latter poverty rate would have shown a 37 per cent increase. The investigation according to the number of children showed a jump in the

[13] See Note 1. and *Atkinson, A. – Rainwater, L. – Smeeding, T. M.*: Income distribution in the OECD countries. OECD Social Policy Studies. No. 18. Paris. 1995. 164 p.

poverty rate of those with two children, while the FGT index shed light on the serious situation of those with 3–4 children.

Table 5

The poverty-reducing effects of family allowances:
FGT index with family allowances and without them, 1996–1997

Income – family allowance	Total	Noumber of children under 18 years				
		0	1	2	3	4 and more
		Poverty threshold: 50 per cent of average income				
Total income (1)	2.638	0.645	1.631	2.939	6.482	15.288
Total income – family allowances (2)	4.518	0.705	2.202	4.604	13.027	30.323
2/1	1.71	1.09	1.35	1.57	2.01	1.98
		Poverty threshold: 50 per cent of median income				
Total income (1)	1.925	0.510	1.173	2.067	4.601	11.469
Total income – family allowances (2)	3.587	0.561	1.627	3.305	10.245	26.396
2/1	1.86	1.10	1.39	1.60	2.23	2.30
		Poverty threshold: upper limit of bottom quintile				
Total income (1)	2.942	0.711	1.844	3.333	7.283	16.589
Total income – family allowances (2)	4.903	0.775	2.477	5.165	14.088	31.932
2/1	*1.67*	*1.09*	*1.34*	*1.55*	*1.93*	*1.92*

Table 6

The poverty-reducing effects of unemployment benefits:
Poverty rates before and after unemployment benefits, 1996–1997

Income benefits	Total	Unemployed	Not unemployed
	Poverty threshold: 50 per cent of average income		
Total income (1)	17.8	27.4	17.0
Total income – unemployment benefits (2)	18.7	30.3	17.8
2/1	1.05	1.11	1.05
	Poverty threshold: 50 per cent of median income		
Total income (1)	12.4	20.8	11.7
Total income – unemployment benefits (2)	13.4	22.8	12.6
2/1	1.08	1.10	1.08
	Poverty threshold: upper limit of bottom quintile		
Total income (1)	20.0	30.0	19.3
Total income – unemployment benefits (2)	21.3	33.1	20.2
2/1	1.07	1.10	1.05

Leaving the logic of the analysis unchanged, we performed calculations of exactly the same type on unemployment benefits, pensions and social assistance, in addition to family allowances (see Tables 6–9).

Table 7

The poverty-reducing effects of unemployment benefits:
FGT index before and after unemployment benefits, 1996–1997

Income benefits	Total	Unemployed	Not unemployed
	Poverty threshold: 50 per cent of average income		
Total income (1)	2.599	5.186	2.418
Total income – unemployment benefits (2)	3.142	6.511	2.854
2/1	1.21	1.26	1.18
	Poverty threshold: 50 per cent of median income		
Total income (1)	1.900	3.899	1.755
Total income – unemployment benefits (2)	2.380	5.107	2.146
2/1	1.25	1.31	1.22
	Poverty threshold: upper limit of bottom quintile		
Total income (1)	2.969	5.697	2.708
Total income – unemployment benefits (2)	3.467	7.049	3.160
2/1	1.17	1.24	1.17

Table 8

The poverty-reducing effects of pensions: Poverty rates before and after pensions, 1996–1997

Income pensions	Total	Pensioners	Non-pensioners
	Poverty threshold: 50 per cent of average income		
Total income (1)	17.8	5.5	21.9
Total income – pension (2)	44.0	77.3	32.8
2/1	2.47	14.05	1.50
	Poverty threshold: 50 per cent of median income		
Total income (1)	12.4	3.2	15.5
Total income – pension (2)	37.2	72.6	25.3
2/1	3.00	22.69	1.63
	Poverty threshold: upper limit of bottom quintile		
Total income (1)	20.0	7.1	24.5
Total income – pension (2)	46.4	78.8	35.5
2/1	2.32	11.10	1.45

Without family allowances, the income poverty risk of persons living in households with children would have increased significantly, but to a varying extent.

Table 9

The poverty-reducing effects of pensions:
FGT index values before and after pensions, 1996–1997

Income pensions	Total	Pensioners	Non-pensioners
	Poverty threshold: 50 per cent of average income		
Total income (1)	2.599	0.374	3.398
Total income – pension (2)	18.582	50.719	7.763
2/1	7.15	135.61	2.28
	Poverty threshold: 50 per cent of median income		
Total income (1)	1.900	0.210	2.502
Total income – pension (2)	17.048	48.625	6.418
2/1	8.97	231.55	2.57
	Poverty threshold: upper limit of bottom quintile		
Total income (1)	2.969	0.457	3.780
Total income – pension (2)	19.189	51.485	8.316
2/1	6.46	112.66	2.20

The risk of those living in single-child households falling beneath the poverty threshold as determined by the upper limit of the bottom quintile would have risen from 15.7 per cent to 19.6 per cent in 1996–1997, and the risk of those living in a two-child household, from 27 per cent to 32 per cent. The poverty risk of those living in three-child households would have risen from 51 per cent to 58 per cent. The poverty rate of those with four or more children, which is high even with familiy allowances, would have risen still more, from 71 per cent to 87 per cent. From these figures we can conclude that, although the incidence of receipt of family allowances favoured middle income groups before it was reformed into a means tested scheme, the erosion of family allowances, nevertheless, has had a greater effect on those with lower incomes. This is supported by the trends in the FGT index, which shows a very significant rise, differentiated according to the number of children and primarily among those with three or more children. Among those with one or two children, a 30–60 per cent rise is discernible for all three thresholds. This indicates that the effectiveness of family allowances as a program of income support could have increased by making it income dependent (more precisely by making the net family allowance income dependent, namely by taxing family allowances) and by combining this with the differentiation by the number of children.

Of the four types of benefit investigated, the ‘withdrawing’ of the unemployment benefit and social assistance would, according to earlier examinations, have had the least dramatic effect, which stems from the relatively minor importance of these two benefits. We found for 1992–1993 that the poverty risk of those households where the head of the household was unemployed would have risen by some 25 per cent (from 41 per cent to 51 per cent). One half of households where the head of the household was unemployed were households where total elimination of unemployment benefit would not have been accompanied by a fall to below the absolute poverty threshold. The ‘withdrawing’ of social assistance, on the other hand, would in practice not increase the poverty risk of the

population as a whole. Of course, this does not mean that the abolition of social assistance would not cause serious problems for the very poor. On the contrary: it would clearly do significant harm to the situation of those who are already poor, as well as harming the income position of households who now could not be described as poor, but not so much that these would fall below the fixed poverty threshold.[14]

Now with these more recent calculations, we can arrive at similar conclusions, although now it is not the poverty rate of households that is being examined, but that of persons. Despite this we can see that even a small 'withdrawal' of unemployment benefit and social assistance would increase the poverty rates and the FGT index, but the Sen index would not rise more than 20–30 per cent and 9–13 per cent respectively at the time the two benefits are 'witthdrawn'. Especially surprising is the very small increase that would have characterized the withdrawal of social assistance. Further investigations will be necessary to explain the reason for all this.

Table 10

Summary data: Poverty rates with and without welfare benefits

Years	Poverty threshold	Total income	Without family allowances	Without unemployment benefits	Without pensions	Without social assistance
	HUF	per cent				
	Poverty threshold: 50 per cent of average income					
1992	55910	12.5	18.1	14.7	28.1	13.2
1993	71805	10.4	14.1	12.9	33.5	11.3
1994	82600	11.8	16.5	15.3	36.8	12.6
1995	95758	15.6	22.6	17.0	34.4	16.2
1996	106919	18.0	22.7	19.8	36.4	18.4
1997	118532	17.8	21.8	18.7	44.0	18.8
	Poverty threshold: 50 per cent of median income					
1992	49000	10.2	13.7	11.9	25.1	10.8
1993	61050	6.6	10.2	9.1	28.0	7.3
1994	69823	7.3	11.6	9.7	30.8	8.0
1995	79803	9.0	14.8	10.8	26.7	9.5
1996	92350	12.7	18.0	14.3	29.9	13.3
1997	102750	12.4	16.5	13.4	37.2	13.6
	Poverty threshold: Upper limit of bottom quintile					
1992	66502	20.0	27.1	22.3	40.6	20.9
1993	88586	20.0	25.9	22.7	49.4	20.8
1994	97840	20.0	24.6	22.4	49.6	20.8
1995	103600	20.0	27.0	21.9	43.4	20.9
1996	112800	20.0	25.6	22.1	43.1	20.4
1997	124600	20.0	23.5	21.2	46.4	20.9

Had there been no pension, the poverty risk of pensioners would have risen to 79 per cent as compared to a 7 per cent probability of belonging to the bottom quintile.

[14] See *Tóth, I. Gy.* Note 1.

Moreover, 77 per cent of them would have fallen not only below the quintile barrier, but also below 50 per cent of the average income. At the same time a withdrawing of pensions would also have significantly increased the poverty risk of those households in which the head of the household is below pension age, as well as the risk of those who, although not pensioners themselves, live in households where one or more pensioners are living. There is a multifaceted explanation for all this. On the one hand, as we have seen on the basis of earlier investigations, in the income composition of households where the head of the household is of pension age, the proportion of income derived from pensions exceeds 70 per cent. This proportion is even higher in the case of pensioners living alone and in the case of pensioner couples. Because of this, a fall in the value of pensions (or the abolition of pensions altogether) would be equivalent to total poverty for them, and, in the majority of cases, to total lack of income. On the other hand, this is not true for all pensioners.

It is obvious that the poverty risk is smaller for those pensioners who have their own incomes from the market, or for those who live in households where there is at least one active earner. For these pensioners, part of the 'drop' stemming from the decrease in the value of pensions can be warded off by income from the market. In any case the lesson is that the vulnerability of pensioner households can really be reduced by making their income composition more diversified.

Table 11

The poverty-reducing effects of the different benefits: the ratio of the poverty rate in the absence of benefits to the poverty rate with benefits

Years	Family allowances	Unemployment benefits	Pensions	Social assistance
	Poverty threshold: 50 per cent of average income			
1992	145	118	225	106
1993	136	124	322	109
1994	140	130	312	107
1995	145	109	221	104
1996	126	110	202	102
1996	122	105	247	105
	Poverty threshold: 50 per cent of median income			
1992	134	117	246	106
1993	155	138	424	111
1994	159	133	422	110
1995	164	120	297	106
1996	142	113	235	105
1997	133	108	299	110
	Poverty threshold: upper limit of bottom quintile			
1992	136	112	203	105
1993	130	114	247	104
1994	123	112	248	104
1995	135	110	217	105
1996	128	111	216	102
1997	117	106	231	104

Tables 10 and 11 show that poverty rates have increased significantly in the 1990s. We need to add that data calculated on the basis of average incomes show certain hectic movement, which is probably due to the fact that the Hungarian Household Panel's sample size is rather small. In estimates of this kind, a small sample size greatly accentuates the sensitivity of the average towards extreme values.

From the tables it can also be concluded that, in a certain sense, the poverty-reducing effects of family allowances and pensions work against each other. The fact that these two benefits are the two biggest items in the social benefits system certainly played a major role in this. In their cases, a decision on one of these benefits always has an effect on the other, since they are in competition for the funds relating to the 'maintenance' of benefits.

Table 12

The poverty-reducing effects of the different benefits: Ratios of poverty indices in the absence of benefits to poverty indices with benefits

Years	Family allowances	Unemployment benefits	Pensions	Social assistance
Sen index	Poverty threshold: 50 per cent of average income			
1992	157	125	436	107
1996	149	114	400	107
1997	140	112	423	110
	Poverty threshold: 50 per cent of median income			
1992	156	127	517	108
1996	160	115	494	109
1997	158	116	520	113
	Poverty threshold: Upper limit of bottom quintile			
1992	147	119	347	106
1996	146	113	371	106
1997	141	112	393	109
FGT(2) index	Poverty threshold: 50 per cent of average income			
1992	167	133	736	109
1996	168	115	683	111
1997	171	121	715	114
	Poverty threshold: 50 per cent of median income			
1992	175	138	894	110
1996	176	116	860	114
1997	186	125	897	117
	Poverty threshold: Upper limit of bottom quintile			
1992	159	128	572	108
1996	164	116	620	110
1997	165	116	646	114

We have calculated the Sen and FGT indices for the first and last two years of the period investigated. The poverty-influencing effect of the given benefits is presented in

Table 12. It is worthy of note that although these two indices take into account different aspects of poverty, the changes in the benefits, over a period of time, display similar characteristics.

Table 13

Accumulated distribition of individual social incomes and total household income, in income deciles defined on the basis of the equivalent incomes of households
(per cent)

Years	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
	deciles									
	Pensions									
1991–1992	5.9	16.2	28.3	40.0	52.7	63.9	74.1	82.1	92.3	100.0
1992–1993	6.8	15.6	26.5	37.6	50.5	62.2	71.7	82.7	91.3	100.0
1993–1994	4.7	12.9	23.3	34.7	47.2	58.7	70.9	80.3	90.5	100.0
1994–1995	4.6	12.8	23.1	35.0	47.4	61.8	73.1	82.9	92.5	100.0
1995–1996	4.2	10.9	19.4	32.2	43.9	57.8	69.5	80.6	91.9	100.0
1996–1997	2.9	9.7	18.2	28.7	41.0	54.4	66.9	80.5	92.0	100.0
	Unemployment benefits									
1991–1992	13.6	24.1	35.7	46.8	55.3	63.1	78.6	89.2	94.4	100.0
1992–1993	15.7	30.9	40.4	51.7	58.4	69.6	82.1	91.6	96.5	100.0
1993–1994	13.1	30.4	39.9	50.6	59.7	71.4	83.6	89.1	97.2	100.0
1994–1995	18.6	31.6	41.9	50.8	58.8	70.9	83.6	91.7	96.9	100.0
1995–1996	15.3	32.2	52.3	57.7	69.8	77.2	87.5	92.6	95.6	100.0
1996–1997	25.3	39.8	50.9	58.2	65.8	71.9	81.7	94.4	97.1	100.0
	Social assistance									
1991–1992	9.2	21.3	29.2	37.0	51.9	63.0	76.9	81.1	85.4	100.0
1992–1993	17.4	30.8	39.0	47.1	54.1	65.8	81.2	88.6	96.5	100.0
1993–1994	21.5	30.8	38.5	55.9	65.4	80.6	88.0	92.6	99.8	100.0
1994–1995	17.1	27.7	39.1	48.6	60.6	66.5	75.5	86.6	98.9	100.0
1995–1996	17.9	29.9	40.8	44.4	51.6	69.4	81.1	86.4	93.0	100.0
1996–1997	18.9	36.2	47.4	60.4	65.7	74.9	80.9	89.6	97.3	100.0
	Family allowances									
1991–1992	8.1	14.1	22.5	31.8	43.2	54.7	68.1	81.4	91.4	100.0
1992–1993	9.0	17.3	26.2	35.9	45.9	58.7	69.6	81.8	91.7	100.0
1993–1994	11.0	21.7	29.9	39.4	48.6	59.1	70.2	81.7	92.0	100.0
1994–1995	13.2	24.6	34.1	42.4	53.4	63.9	73.2	82.5	92.1	100.0
1995–1996	13.0	28.9	39.5	47.2	58.0	65.8	74.5	85.0	93.3	100.0
1996–1997	20.9	35.0	43.6	51.9	62.2	71.0	80.5	88.7	96.3	100.0

The first conspicuous characteristic is that, as the poverty-reducing power of the benefits – in the majority of cases – diminished, their internal order remained the same. The role of pensions changed the most, at the earlier date their role was more significant, which supports the fact that the relative position of pensioners has improved. Again it is worth noting that the 'power' of social assistance has not increased, and that of family allowances has not shown a significant change, either.

*

On the basis of the findings of this study, our first conclusion is that before going further it would be important to examine, once again and in greater detail, the distribution of social incomes and the role of welfare benefits in the reduction of poverty. This would mean, on the one hand, the conducting of incidence studies, and, on the other hand, the examination of income composition according to income size and social grouping, and to changes over time. In this regard, it should be mentioned the increase in the concentration of social incomes (in other words, the 'improving' tendency in the 'targeting' of incomes of this sort) has halted the increase in the inequality of pre-distribution incomes. The concentration (for this reason probably their 'targeting' too) decreased somewhat in the last period. This is shown in detail in Table 13, which relates to the distribution of social incomes. In the distribution pattern of social incomes considered together, in all cases except pensions, a shift towards the lower income groups has been noticeable for years. Within these changes, the 'targeting' of familiy allowances and maternity benefits are especially worthy of attention, but in the case of social assistance and unemployment benefits, the shift of benefits towards those on the lower rungs of the income ladder should not be overlooked either.