Poverty in Hungary with special reference to child poverty

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Database of income surveys carried out by the HCSO on 25 percent subsamples of the 2 percent microcensuses in 1996 and 2005 with reference years 1995 and 2004 are outstandingly suitable to investigate the presence and the size of poverty in Hungarian society as well as its causing factors. In this study the authors present important results of their analyses concerning poverty issues in the years referred and the changes through the examined period. Child poverty and its underlying causes are discussed in some more details. In conclusion some basic characteristics of child poverty in Hungary are enlighted.

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A great advantage of combining of microcensuses and income surveys is based on the fact that to answer to the former was obligatory by law. Consequently, for all households and persons not responding to the income surveys we disposed plenty of data relevant in respect of the income situation (age, sex, marital status, family status, educational attainment, economic activity, occupation, economic branch, etc.) from the microcensus. This made it possible to *impute* their incomes either by hot deck or cold deck imputation techniques. In cases where detailed and reliable data were available either from macro statistics or from large scale sample surveys (e.g. the annual earning survey covering several hundred thousands employed earners) or from tax authorities, generally cold deck imputation techniques were applied using *microsimulation methods*. For other income sources hot deck imputation was applied by selecting randomly one of the responding households (or persons) having similar characteristics as the household (person) in question and imputing his/her/its corresponding income item to the non-respondent. Thus for all selected households of the income surveys we had income data irrespective of whether the household in question cooperated in the income survey or not. Correspondingly, information on the income distribution and poverty indicators are based on data of the whole subsamples of the microcensuses, i.e. on 18120 and 18880 households, respectively.

In addition to imputations *corrections* on certain income items were also made, because in many cases people tend to underreport or forget their incomes. In respect of such income items correction procedures were carried out, for which reliable macrostatistical or large scale sample survey data were available. Obviously, quite a lot of income items could be found, which were not corrected at all, the reported data were processed. More detailed descriptions of the imputation techniques and correction procedures can be found in *Kesztehelyiné* [2006a] and *Keszthelyiné* [2006b]. The following chapter introduces the basic principles of the concept and measuring of poverty.

1. Income poverty and poverty measures used

Poverty can be characterized by various aspects: income, consumption, housing conditions, earning possibilities, educational facilities, deprivation, etc. When primarily the income situation of households is considered, we focus on the *income*

*poverty. I*n the following most of our analysis concentrates on income poverty, however, other aspects of poverty are also investigated.

In the study poverty rates and characteristics of the poor are investigated using two different poverty thresholds (k):

1. relative poverty (k_1), and
2. subjective poverty (k_2).

Relative poverty is the usual way of defining who can be considered as poor. In this study we define it as 60 percent of the median equalized income using the original OECD1 equivalence scale. In most of the analyses this threshold is used in the paper. In both income surveys households were asked not only to report their incomes, but also to estimate how much money a household similar to their own in size and composition would need to reach various levels of living standards. The lowest of these indicates conditions when a household hardly can make both ends meet. The weighted means of these amounts was considered as the threshold of *subjective poverty*.

Poverty rate (PR) is the proportion of households or persons living below a given poverty threshold. If n denotes the number of all households or persons and p the number of the poor, then PR in percent is

$$PR\% = \frac{p}{n} * 100.$$

Poverty gap(R) is the average distance of the equalized incomes of poor households or persons from the poverty threshold. If $I(i)$ denotes the equalized income of the ith poor household or person, then

$$R = \frac{\sum_{i=1}^{p}\left(k - I(i)\right)}{p} = k - \bar{x}_p$$

where $\bar{x}_p$ is the average income of the poor.

Income gap ratio (Rr) is the ratio of the poverty gap to the poverty threshold, i.e.

$$Rr = \frac{R}{k} = \frac{k - \bar{x}_p}{k} = 1 - \frac{\bar{x}_p}{k}.$$

Rr is generally given in percentage form. It measures the intensity of poverty. Its limits are between 0 and 1. The closer *Rr* is to 1, the deeper the poverty of those living below the poverty threshold k.

Poverty risk is defined as the ratio of proportion of a population subgroup within the poor to the proportion of this subgroup in the total population.

2. Poverty in Hungary in years 1995 and 2004

According to data of the respective income survey in 1995 10.4 percent of the households and 13.0 percent of the population could be considered as poor in Hungary, lived below the relative poverty threshold based on the OECD1 equivalence scale. The corresponding percentages were 12.7 percent and 13.9 percent, respectively, in 2004. It means a slight increase in poverty from 1995 to 2004. The rate of the poor is generally greater than that of poor households, because most poor households are of a larger size than the average household size. The respective household size figures were 3.27 and 2.61 in 1995 and 2.85 and 2.61 in 1995.

As households tend to overestimate the amount of money a household similar to their own would need to reach a low level of living standard, the poverty rates based on subjective thresholds are higher than those based on relative thresholds. The corresponding poverty rates were 27.0 percent for households and 31.4 percent for persons in 1995, while 23.0 percent and 24.5 percent in 2004.

The values of the income gap ratio – 27.5 percent in 1995 and 21.8 percent in 2004 – indicate that poverty, although significant, is not really deep in Hungary. Moreover, there was a remarkable decrease in this poverty indicator from 1995 to 2004. The lower decile of the income distribution was only by 9 percent smaller than the relative poverty line in 2004 and even the lower 5 percent quantile of the distribution almost reached its three-quarter in this year.

The size of the household is a good characteristic of poverty risk. For households of size greater than three the risk to become poor exceeds the average and in case of households with six or more members the risk is 2.2fold of the average. Among poor households the young ones represent a much greater proportion than the average as well as households where the head has low educational attainment. Further factors having relatively high poverty risk are on the one hand when there is no active earner in the household, and, on the other, when unemployed person(s) can be found among the members. Table 1. shows some more detailed figures.

There were considerable regional differences in the poverty rates in 2004. While only 7.3 percent of the households belonged to the poor in the Central Hungary region (including the capital), in the Northern Plain region the poverty rate exceeded 18 percent. The regions Southern Transdanubia, Northern Hungary and the Southern Plain can be considered as the poorer parts of the country with poverty rates of households 17.1, 16.2 and 15.3 percent. In Central and Western Transdanubia, on the other hand, only about one tenth of the households could be considered as poor in 2004. The size of the settlement also considerably influences poverty. In the smallest villages (with inhabitants less than 1000 persons) the poverty rate was nearly 22 percent, in 2004, and even in settlements with inhabitants between 1000 and 4999 persons it exceeded 15 percent. In the largest cities (with inhabitants more than 50 thousands) somewhat more than 9 percent of the households could be considered as

poor in 2004, and even less, 6.5 percent in the capital. The respective risk indicators show similar features. If a household lived in the capital in 2004, its chance to be poor was only half of the country average and three-quarter of it in the large cities, but it amounted to 1.7 fold of the country average if they lived in one of the smallest villages.

Table 1

Poverty risk of poor households with various characteristics, 2004

Household characteristics	Relative	Subjective
	poor households	
1 member	1.15	1.15
5 members	1.55	1.48
6 or more members	2.27	2.20
With no child	0.82	0.85
1 child	1.11	1.08
2 children	1.45	1.34
3 or more children	2.66	2.39
No active earner	1.54	1.44
Three or more active earners	0.16	0.24
Unemployment is present	2.94	2.28
Educational attainment of the head is		
elementary school or lower	1.50	1.48
third degree	0.21	0.22
Age of the head is		
below 30 years	1.51	1.29
30-49 years	1.21	1.11
60-69 years	0.73	1.91
70 years or older	0.73	0.94

An outstanding number of the poor lives in dwellings of inferior quality than the average. While only 9 percent of all households shelter in dwellings with no amenities or in temporary accommodation, 23 percent of the poor households live in such dwellings. In 24 percent of the poor households the situation is made harder by the lack of indoor flushing toilet, while the rate of such dwellings among all dwellings is only 9 percent. In country total only 3 percent of the dwellings do not dispose running water within. Among poor households this rate is almost 10 percent.

To sum up the results of comparing the poverty measures obtained from the two income surveys we can conclude that not too considerable changes have occurred in the period investigated. Meanwhile other sources, e.g. data of the continuous HBSs indicate, that after 1995 the poverty rate – in parallel with a decrease in the real income of the households and an increase in the income inequality – increased to some extent, and then it has decreased again.

3. Child poverty

In poverty issues child poverty represents one of the most important and most challenging one, not only because children represent a particular population group, which is weak to influence their own economic condition or to find escape from poverty. Moreover, without the efforts and well-considered measures of governments and the society there is a high risk of poor children growing to poor adults. Attaining higher educational degrees than that of their parents is one of the most hopeful way for poor children to get out of the circle of poverty and deprivation.

Child poverty can be investigated simpliest by analysing the living conditions of households upbringing children. In this study we consider a household having a child (or children), when at least one dependent child under the age of 20 lives in the household as pupil, student or other dependant. As shown in Table 2, the poverty rate in households with children was considerably higher than the average both in 1995 and 2004.

Table 2

Poverty rates using relative and subjective poverty thresholds in households with children, 1995, 2004
(percent)

Poverty rate	Relative		Subjective	
	threshold			
	1995	2004	1995	2004
For households	17.0	18.3	37.8	30.9
For persons	18.1	19.6	39.5	32.7

As data indicate, there was a slight increase in the *relative poverty* of households with child (children) from 1995 to 2004. In 2004 the rate of relative poverty for persons living in households with children was 1.5 percentage points higher than in 1995. However, using the subjective poverty thresholds, we experienced a decrease instead indicating that the households in 2004 might have been more realistic in judging their monetary needs than in 1995. It is worth to mention that the poverty is somewhat less "deep" in poor households with children than in all poor households. The income gap ratio was 22.8 percent among the former group of the poor in 1995 as compared to 23.1 percent among all poor households, while 20.3 percent against 21.8 percent in 2004. The figures show at the same time a decrease in the income gap ratio from 1995 to 2004.

The more children a household has, the larger the probability is that the household will be poor. The relative poverty rates in the respective two years for persons living in households with different number of children are shown in Table 3.

Table 3

Number and rate of children living in poverty and relative poverty rates

Number of children in the household	Number and rate of poor children				Relative poverty rate (percent)	
	1995		2004		1995	2004
	persons	percent	persons	percent		
1 child	96 062	13.5	81 408	12.8	12.7	13.2
2 children	184 594	16.0	146 262	14.9	15.9	18.6
3 children	109 470	28.1	103 554	23.3	28.3	29.0
4 or more children	107 259	59.3	90 311	43.3	59.5	51.1
Together	497 385	20.4	421 535	18.6	18.1	19.6

Note that while in contrast with the general tendency the total number of children in households with 3, 4 or more children did not decrease but increased (by 14 and 15 percent) from 1995 to 2004. This was not characteristic to the poor children. The rate of poor children in these two groups of households with children considerably, decreased (by 11 and 15 percent) from 1995 to 2004. However, in spite of this decrease the rate of the poor remained very high, more than 23 and 43 percent, respectively, in these two groups of households with children even in 2004. The last two columns of Table 3 require some explanation. While the poverty rates in the first three groups of households with children increased to a less or more extent from 1995 to 2004, it markedly decreased in the fourth group, in households with four or more children (though it was still very high, more than 51 percent in 2004). We think that this positive change can mainly be attributed to the so called regular child-welfare assistance introduced in the period considered. Those households are entitled to apply for this assistance, where the per capita available income is less than the amount of the current minimal pension. As primarily households with four or more children meet this condition, the amount per children (22 percent of the current minimal pension) obtained in the form of this new assistance significantly improved the income situation of many of the households with four or more children in 2004.

Regional differences in the risk that a household with children becomes poor increased from 1995 to 2004, but the change was radical in two of the regions only. In county Pest the risk decreased from 1.1 to as low as 0.4. Meanwhile in the South Transdanubia region, it increased from 0.8 to 1.5. There were radical decreases in the poverty risk and poverty rate of households with children living in Budapest. The risk to become poor decreased in their case from 0.9 in 1995 to 0.5 in 2004. While in 1995 15 percent of the poor living in households with child (children) could be found in the capital, in 2004 only 7.6 percent. Similar to the general tendency, for households with children, the risk to become poor increased when the population size of a settlement is smaller. For instance in small villages (with population less

than 1000 persons) the risk becoming poor was 1.6 in 2004 for persons living in households with children. As data of Table 4 suggest, the distribution of persons living in poor households according to the type of settlement is significantly different from that of the total population both in the case of all households and households with children.

Table 4

Distribution of persons living in all households and in households with children, 2004

Type and size of the settlement	All households		Households with children	
	the average	the poor	the average	the poor
Budapest	17.4	8.4	14.2	7.6
Large cities with more than 50 000 inhabitants	19.1	13.3	17.7	11.9
Settlements with 1 000-50 000 inhabitants	56.1	65.9	59.9	67.6
Small villages	7.3	12.5	8.2	13.0
Total	*100.0*	*100.0*	*100.0*	*100.0*

Since the middle of the 1990s there was a considerable improvement in the general housing conditions in Hungary. This refers also to the poor households, but many of the poor still have rather bad living conditions mostly with no amenities. One-quarter of the numbers of poor families with children lives in a dwelling where there is no in-door flushing toilet, 23 percent of them in dwellings with no amenities.

Table 5

Distribution of persons living in all and poor households
with children according to their housing conditions

Characteristics of the dwelling	All	Poor	All	Poor
	households with children			
	1995		2004	
Without comfort	12.3	30.1	8.1	23.0
Block of flats	14.5	10.9	11.3	6.1
Houses without foundation	4.1	9.0	5.0	8.6
Absence of an in-door flushing toilet	12.4	31.3	8.1	24.1
Absence of running water	2.5	7.3	2.6	8.9
Other	54.2	11.4	64.9	29.3
Total	*100.0*	*100.0*	*100.0*	*100.0*

In addition to bad housing conditions poverty manifests itself also in such everyday situations when the household does not know how to make both ends meet. 50 percent of the relative poor and 44 percent of the subjective poor mentioned such problems in 2004. Another serious trouble for the poor is to pay the bills for electricity, gas, running water, sewage, district heating, etc. As can be seen from Table 6, households with children are in worse position in this respect, too.

Table 6

Proportion of all poor households and poor households
with children mentioning financial worries and difficulties in paying bills

Type of the worry	Relative	Subjective	All households
	poor households		
Everyday financial worries	50.1	44.4	23.9
Difficulties in paying bills	44.4	37.5	18.9
	with children		
Everyday financial worries	56.4	50.1	29.6
Difficulties in paying bills	52.1	46.2	26.3

4. Characteristics of poor households with children

Whether we investigate the age structure of all the members of a household or the age of the head we can conclude that young households had the highest risk to become poor both in 1995 and 2004. In both years the poverty risk of persons living in households with children where the age of the head was less then 30 years exceeded double of the share of the population living in such households. The poverty risk decreases with the increase of the age of the household head.

Table 7

Poverty risk of persons living in households with children by the age of the head

Age of the head of the household	All	Poor	All	Poor
	households with children			
	1995		2004	
Below 30 years	1.3	2.3	1.3	2.2
30-49 years	1.6	1.5	2.1	1.9
50-59 years	0.5	0.3	0.5	0.3
60 and more years	0.1	0.1	0.1	0.1

The number of active earners in a household is an important factor influencing poverty. However, it seems that comparing to 1995 an even one more important factor which induces poverty is *unemploymen*t. If there is an unemployed in the household, then the poverty risk of the members is extremely high.

Table 8

Poverty risks according to the number of active earners
and the presence of unemployment, 2004

Number of active earners and the presence of unemployment	All poor households	All	Poor
		households with children	
No active earner	1.9	0.4	1.5
1 active earner	1.2	1.3	1.5
2 active earners	0.3	1.3	0.3
3 and more active earners	0.2	0.7	0.2
No unemployed earner	0.7	0.9	0.7
Unemployment is present	3.7	1.7	4.2

The role of educational attainment in inducing poverty has also increased, especially when we consider the lowest and highest level of education. While in 1995 the difference in the poverty risks between the highest and lowest level of education was 2.8fold, in 2004 it exceeded to 8fold.

Table 9

Poverty risks according to educational attainment 1995, 2004

Level of educational attainment of the head of household	All poor households		All		Poor	
			households with children			
	1995	2004	1995	2004	1995	2004
Elementary school	1.3	1.7	0.7	0.7	1.1	1.7
Vocational school	1.2	1.0	1.3	1.3	1.2	1.2
Secondary school	0.7	0.5	1.2	1.0	0.9	0.5
Third level education	0.2	0.2	1.1	1.0	0.4	0.2

5. The role of social assistances

The most important social assistance for households with children is the family allowance. Almost all (98.4 percent in 2004) of households with children receive this

benefit. However, while the per capita income of the population increased in nominal value almost to fourfold from 1995 to 2004, the value of the family allowance for a receiving household was only somewhat more than doubled (increased to 2.2fold) in this period. Available data indicate that family allowance is not an exception in this respect. None of the comparable social assistances preserved their real value in the period considered. In connection with the family allowance it must be noted, however, that a decrease in the number of children entitled to receive family allowance also contributed to the smaller increase of the nominal value of the family allowance.

Table 10

Dynamics of the rate of utilizing households and the value
in case of certain social assistances 1995, 2004

Social assistance	Rate of utilization	The sum for a utilizing household
Family allowance	0.9	2.2
Orphan's allowance	1.1	3.2
Support on housing	2.4	2.6

As far as the sum of the various social assistances for a utilizing household is concerned the orphan's allowance with its relatively high sum provides an essential contribution to the living of the households concerned. Though the monthly sum between HUF5500 and HUF9100 of the family allowance per child – the amount depended on the number of children and on whether the family is a one-parent or two-parents family – which households with children received in 2004 meant also a considerable promotion to bring up their children. The sums of various social assistances and the rates of utilization are shown in Table 11.

Table 11

Rate of utilization of various social assistances
and their amounts among households with children, 2004

Social assistance	Rate of utilization (percent)	Average monthly amount, HUF	
		for households with children	for utilizing households
Family allowance	98.4	11 909	12 106
Orphan's allowance	1.2	1 350	34 446
Regular allowances	7.3	2 687	11 033
Occasional allowances	1.8	236	3 914
Support on housing	2.3	238	3 044

If we consider the same data for *poor households* with children, the rate of utilization is reasonably higher in the case of regular and non-regular allowances as well as of support on housing. The monthly amounts are also remarkably larger in several cases, e.g. for family and regular allowances, but in other cases they are smaller.

Table 12

Rate of utilization of various social assistances
and their amounts in poor households with children, 2004

Social assistance	Rate of utilization (percent)	Average monthly amount, HUF	
		for poor households with children	for receiving poor households
Family allowance	98.0	14 856	15 160
Orphan's allowance	3.1	794	25 975
Regular allowances	77.4	8 792	11 359
Occasional allowances	21.2	936	4 414
Support on housing	29.5	782	2 655

With the increase of the number of children the role of the family allowance in the living conditions of the household also increases. However, its amount does not reach one fifth of the income of the household even in case of five children. It means that family allowance does not cover even a significant portion of the costs of supporting the children, not even supposing a very modest provision.

6. The role of various factors in inducing poverty

Beside investigating the size of poverty in contemporary Hungary, the changes of its nature in the last decade and the characteristics of all poor households and poor households with children we made some researches to find out what are the really significant factors and household characteristics bringing about poverty. Moreover, our researches extended to quantify the importance of the various factors both in 1995 and in 2004. Naturally, the income position and living conditions of an individual household and its members are determined by lot of factors. Though we are convinced that by thorough research and with the knowledge of long experience it is possible to set up relevant models expressing the existing relationship between poverty and a number of explaining factors.

We applied the well known logistic regression model with the incidence of poverty as dependent variable.

At first step the following explanatory variables were considered:

– the number of dependant children under 20 years in the household,
– the number of active earners in the household,
– at least one member is unemployed within the household,
– the absence or presence of in-door flushing toilet.

In both years and in the cases of both all poor households and poor households with children the last two variables proved to have the largest explaining power. Table 13 shows the values of the exponential β and the pseudo R^2 of the models for both groups of the poor in 1995 and 2004.

Table 13

Parameters of the logistic models with four explanatory variables

Explaining variables of the model	Values of the parameters			
	all poor households		poor households with children	
	exponential β	pseudo R^2 (percent)	exponential β	pseudo R^2 (percent)
1995				
Number of children under 20 years	1.89		1.59	
Number of active earners	0.56	19.4	0.43	20.5
At least one member is unemployed	2.55		1.97	
Absence of in-door flushing toilet	2.19		2.71	
2004				
Number of children under 20 years	1.71		1.34	
Number of active earners	0.37		0.25	
Number of unemployed members	3.50	22.4	2.35	27.0
Absence of in-door flushing toilet	3.43		4.06	

Including the level of educational attainment of the household head into the explanatory variables (with the reference category: third level of education or more) the explanatory power of the model significantly increased. For the 1995 model three educational levels above the first level were differentiated, for the 2004 model five levels. It is quite interesting that the explanatory power of the educational attainment of the household head is remarkably strong if the head is a skilled worker or has secondary school attainment. The models have significantly higher explanatory power for 2004 than for 1995. The value of the pseudo R^2 is 30.8 percent for poor households with children in 2004 which can be considered as rather high. Table 14 shows more detailed data for 1995 and 2004.

Table 14

Parameters of the logistic regression models, five explanatory variables

Explanatory variables of the model	Values of the parameters			
	all poor households		poor households with children	
	exponential β	pseudo R^2 (percent)	exponential β	pseudo R^2 (percent)
1995				
Number of children under 20 years	1.90		1.55	
Educational attainment of the head				
– elementary school	4,13		6.21	
– vocational school	3.74		3.64	
– secondary school	2,80	20.6	2.89	22.8
Number of active earners	0.60		0.47	
At least one member is unemployed	2.45		1.82	
Absence of in-door flushing toilet	1.82		1.94	
2004				
Number of children under 20 years	1.71		1.27	
Educational attainment of the head				
– elementary school	1.57		4.70	
– vocational school	1.86		1.99	
– specialized secondary school	1.71		1.15	
– secondary school	0.97		0.62	
– college	0.38	24.7	0.29	30.8
– university	0.23		0.21	
Number of active earners	0.40		0.28	
At least one member is unemployed	3.13		1.94	
Absence of in-door flushing toilet	2.76		2.46	

Note. For the educational attainment of the head in 1995 reference category is the third level of education, while in 2004 the reference category is the Phd degree.

Note that the inclusion of the size category of the settlement into the explanatory variables does not improve noticeably the explaining power of the models, probably because this last variable is in very close correlation with the remaining ones.

7. Conclusions

The paper presents some important findings on poverty and especially on child poverty in 2004 and in the middle of the 1990s in Hungary. The data originate from two income surveys covering 0.5 percent of the private households. The analysis is

based mainly on the notion of *relative poverty*, where the threshold is defined as 60 percent of the equalized median income.

There was a slight increase in the poverty rate from 1995 to 2004. The poverty for people living in *households with children* was considerably higher in both years in question. Having children in the household represents one of the primary sources of poverty in contemporary Hungary. The risk to become poor is rather high also for households where *unemployed person(s)* can be found among the members. A *low educational attainment* can also considerably contribute to poverty. Those who live in *small villages* have larger probability to become poor than those living in towns or in the capital. The various factors are correlated and influence poverty simultaneously.

The individual and common impacts of various explanatory factors on poverty are investigated applying logistic regression models. In 2004 the five factors considered explained almost 31 percent of the variations in poverty among household with children. A majority of poor households with children live not only in rather bad conditions, but they also feel and realize the difficulties in their living conditions. Social care, first of all family allowance can significantly mitigate poverty, but its amount in real value decreased in the period investigated and covers only a modest part of the cost of bringing up children.

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