



STATISTICAL
RESEARCH
CENTER

Poverty Index Measurement in Iran 1984-2000

(Farhad Khodadad Kashi, Farideh Bagheri, Khalil Heidari,
Omid Khodadad Kashi)

Economics Statistics Research Group
Autumn 2002

Poverty Index Measurement in Iran, 1984-2000

Introduction

The problem of poverty and how to measure it has solicited the attention of the related executive organizations and universities in the country during the recent years. Particularly, in the late 1960s and with the beginning of the First Economic Development Plan it was expected that a part of Iranian households would encounter difficulties to satisfy their basic needs as a result of applying the economic policies in the country. Therefore, in order to examine the poverty in Iran in different dimensions, many efforts in various procedures have been made so far such as doing researches, presenting papers, publishing books, holding seminars, continuing the poverty alleviation programs, etc.

Since it is necessary to alleviate poverty in a country or a population in review, the poverty and its components should be defined and identified in theory and its size measured in practice in that country or population.

1- poverty Line: Definition and Measurement

The poverty line, Ravallion (1998) states, is the expenses an individual incurs to get the minimum level of welfare in a specific place and time. The individuals having no access to this level are regarded as poor but those having access to it as not poor.

Whether the poverty is considered absolute or relative, a threshold is defined to delineate the boundary between the poor and the other individuals in a community. This threshold is called "poverty line". In this way, the poverty line enjoys two concepts, "absolute" and "relative". The selection of either of the two is of vital importance in poverty alleviation policies, since the poverty indexes dependent on each concept are differently susceptible to the socio-economic developments in the short-term and long-term and to the income inequality.

By definition, the absolute poverty line is the amount of income essential to satisfy the minimum needs of the individuals (i.e. food, clothing, and housing) considering the cultural and socio-economic conditions of the community under study, or it consists of the lowest properties such as minimum level of income, education, housing, etc., which, if unsatisfied, cause the related individual to be regarded as poor.

The relative poverty line is defined to be a specific percentage (mean) of a community's income or an income boundary under which a certain percentage of the individuals in that community may stand. However, selection of relative poverty line would always result in regarding a number of individuals in a community as poor.

Poverty occurrence indexes

While poverty has a sense broader than simply having no money, its general occurrence as measured traditionally refers to a percentage of individuals whose income or consumption is under the poverty line calculated by the standard of living indexes. This poverty line may be defined as the following ways:

- 1- Basic-Needs Approach
- 2- Food-Ratio Approach
- 3- A Mean Income Percentage Approach

4- Percentile Approach

2- How to measure the poverty line in urban and rural communities

There are various ways to calculate the poverty line. The calculation approach varies depending on which concept of poverty may be of interest. For instance, the concepts absolute or relative poverty, and objective or subjective poverty will each determine the poverty line calculation approach. This study presents the approaches employed to measure the poverty line and the results obtained from poverty line calculation in the country's urban and rural populations during 1984 – 2000. It is necessary to mention that all calculations have been made based on the data from the Household Income and Expenditure Survey and households included in income deciles, by their per capita expenditures.

2-1-Poverty line measurement based on calorie need (Pajoyan Approach)

The measurement of the poverty line on the basis of calorie need is made according to the concept of absolute poverty and the basic needs, that is to say, it is first assumed (according to nutritionists) that every person may need a specific amount of calorie. In this study, it is assumed that individuals are at least in need of either 2179 or 2300 calories to survive. Then, the households under study are classified into ten expenditure groups according to their levels of income. After estimating the food values received by each income decile, the first decile, whose received energy exceeds the standard energies, 2179 or 2300 calories, is taken into account. The difference between the energy received by the related decile and the standard figure is thus calculated.

The cost of each unit of calorie received is also obtained dividing the total decile's expenditure by the amount of energy received by the decile. The product of the multiplication of the cost of each unit of calorie by the difference between the energy received and the standard figure equals the expenditure of the energy received surplus to the amount needed. Subtraction of these expenditures from the total decile's expenditure equals the poverty line.

Table 1- Poverty line estimation of urban and rural populations based on a need of 2179 calories during 1984-2000.

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	10867	11608	12657	14255	25007	20455	21030	17663	31502	37470	63355	56376	77234	40264	110752	113280	153408
Rural	3503	4320	9208	9079	12754	8851	11678	10119	19046	25639	39162	40120	45852	50177	61316	64471	84684

Table 2- Poverty line estimation of urban and rural populations based on a need of 2300 calories during 1984-2000.

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	11470	13939	13360	22539	26396	21572	23427	21875	33251	51691	75984	59507	81523	85604	116902	138008	161928.5
Rural	3698	5018	6222	8813	16579	9347	12305	18082	20104	27062	42390	42348	48398	58538	64721	68052	89383

2-2-Determination of poverty line based on 50 or 66 percent of the households' median expenditure

This approach is based on the concept of relative poverty. To determine the poverty line in this approach, first the households' expenditures are arranged in income (or expenditure) deciles, then a mean is taken from the expenditures of the fifth and sixth deciles and this mean is considered to be the households' median expenditure. Finally, once 50 percent and once 66 percent of the median expenditure are calculated to obtain two poverty lines according to the above-mentioned criteria.

Table 3- Poverty line estimation of urban and rural populations based on 50 percent of median expenditure during 1984-2000.

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	7829	6689	7556	8286.5	10165	12094	11556	14995	19396	24721	35469	61381	83133	96882	121823	145055	170467
Rural	3834	3387	3562	4426.5	5120	3085	6078	8553	11119	13566	18804	35350	43155	52459	63758	83900	98344

Table 4- Poverty line estimation of urban and rural populations based on 66 percent of median expenditure during 1984-2000

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	10334	8829	9973	10938	13418	15964	15254	19794	25602	32632	46819	81023	109735	127884	160806	191473	225016
Rural	5060	4470	4702	5843	6759	4073	8023	11290	14678	17907	24821	46662	56965	69246	94160	110748	129814

2-3-To measure poverty line based on 50 or 66 percent of the mean expenditure

In order to measure poverty line based on the relative concept, it is possible to calculate the households' mean expenditure and to determine a percentage of it as the poverty line. In this approach, first the mean expenditure is calculated and then 50 percent or 66 percent of this mean is regarded as poverty line.

Table 5- Poverty line estimation of urban and rural populations based on 50 percent of the mean expenditure during 1984-2000

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	10723	9097	10640	11766	13755	16160	15499	20777	26208	32152	47970	85879	116991	136272	168792	199752	234199
Rural	5052.5	4331	4773	5518.5	6391	7669	9785.5	11794	14450	17454	24772	47721	56160	69696	88222	113365	130447

Table 6- Poverty line estimation of urban and rural populations based on the 66 percent of the mean expenditure during 1984-2000

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	14154	12008	14045	15531	18156	21331	20459	27425	34594	42441	63320	113360	154428	179879	222805	263683	309143
Rural	6669	5717	6300	7284	8436	10124	12917	15568	19075	23039	32699	62992	74131	91999	116453	149642	172190

2-4- To determine poverty line based on the Engel's Reverse Coefficient

In order to assess the relation of the households' food expenditure to their income, Engel () employed the index of households' food expenditure relation to their income. This procedure is based on the objective concept of poverty. In applying this approach, first the Engel's Coefficient is estimated according to the econometric models, then the household's food expenditure is multiplied by the Engel's Reverse Coefficient and the product of this calculation would equal the estimated poverty line.

Table 7-Poverty line estimation of urban and rural populations based on Engel's Reverse Coefficient during 1984-2000

(percapita, monthly, rials)

Year	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Urban	22459	17988	19041	22901	27291	31603	43135	65532	80595	99665	158260	243782	387542	423715	433032	511707	614995
Rural	13300	10648	9736	11212	15387	20708	23509	29443	35514	41682	63463	112104	142441	169379	189611	269149	305573

3- Poverty indexes in urban and rural populations

The poverty indexes in urban and populations during 1984-2000 will be presented in this part of the study.

Table 8 displays the results from calculation of relative poverty gap indexes, the Gini Coefficient of the poor, the percentage of the poor households, and the Sen index.

Table 9- Poverty indexes in the urban and rural populations during 1984-2000

Year	Urban				Rural			
	<i>Poverty gap</i>	<i>Gini Coefficient of the poor</i>	<i>Percentage of the poor households</i>	<i>Sen index</i>	<i>Poverty gap</i>	<i>Gini Coefficient of the poor</i>	<i>Percentage of the poor households</i>	<i>Sen index</i>
1985	0.366	0.211	31	0.156	0.285	0.164	15	0.062
1986	0.391	0.225	40	0.211	0.329	0.192	25	0.115
1987	0.362	0.208	35	0.172	0.314	0.178	21	0.091
1988	0.379	0.225	47	0.248	0.305	0.169	26	0.112
1989	0.406	0.238	46	0.253	0.313	0.179	25	0.110
1990	0.356	0.198	41	0.198	0.332	0.196	18	0.083

<i>Year</i>	<i>Urban</i>				<i>Rural</i>			
	<i>Poverty gap</i>	<i>Gini Coefficient of the poor</i>	<i>Percentage of the poor households</i>	<i>Sen index</i>	<i>Poverty gap</i>	<i>Gini Coefficient of the poor</i>	<i>Percentage of the poor households</i>	<i>Sen index</i>
1991	0.364	0.203	37	0.181	0.342	0.202	19	0.090
1992	0.338	0.195	28	0.132	0.372	0.214	32.5	0.165
1993	0.299	0.167	24	0.099	0.360	0.204	37	0.181
1994	0.334	0.185	34	0.155	0.356	0.196	42	0.201
1995	0.303	0.184	15	0.065	0.333	0.192	22.5	0.103
1996	0.301	0.185	16.5	0.071	0.309	0.178	19	0.083
1997	-	-	-	-	0.295	0.167	14	0.059
1998	0.293	0.176	14	0.057	0.298	0.175	16	0.066
1999	0.288	0.177	9.7	0.040	0.288	0.171	9.6	0.039
2000	0.296	0.174	12,3	0.052	0.283	0.161	12	0.048

Source: Findings of the study

Percentage of urban and rural poor households

Table 9 introduces percentage of urban and rural poor households during 1992-2000, by the 2179 – caloric poverty line and Engel’s Reverse Coefficient poverty line.

Table 9 - Percentage of urban and rural poor households during 1992-2000

<i>Year</i>		<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>
<i>Urban</i>	<i>2179-calorie poverty line</i>	28	24	34	15	16.5	17	14	9.7	12
	<i>Engel’s Reverse Coefficient Poverty line</i>	75.5	76	79	83	87	85	79	79	78
<i>Rural</i>	<i>2179-calorie poverty line</i>	32.5	36.8	42	22.5	19	14.5	16	9.6	12
	<i>Engel’s Reverse Coefficient Poverty line</i>	65	63	68.5	74	78	76	70.5	75	73

Source: Findings of the study

Poverty Severity in urban and rural areas

Table 10 illustrates the poverty severity in urban and rural areas during 1992-2000 based on absolute and relative concepts of poverty. The absolute poverty is considered to be corresponding with a daily need of 2179 calories and relative poverty corresponding with the Engel’s Reverse Coefficient poverty line.

Table 10- Income deficiency severity of urban and rural poor households based on the absolute and relative poverties during 1992-2000

<i>Year</i>		<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>
Urban	<i>2179-calorie poverty line</i>	0.338	0.299	0.334	0.303	0.301	0.481	0.293	0.288	0.296
	<i>Engel's Reverse Coefficient Poverty line</i>	0.503	0.484	0.520	0.548	0.596	0.565	0.512	0.509	0.510
Rural	<i>2179-calorie poverty line</i>	0.372	0.361	0.356	0.333	0.309	0.295	0.299	0.288	0.283
	<i>Engel's Reverse Coefficient Poverty line</i>	0.456	0.439	0.449	0.491	0.495	0.482	0.474	0.488	0.477

Source: Findings of the study

In studies concerned with poverty the distinction between poor households and non-poor households is always regarded as a measure to identify poverty in a community. However, this measure which is determined to be a percentage of poor households gives no information about the dispersion and distribution of poor households. Therefore, in order to identify the distribution of poverty among the households it is necessary to determine the ratio of each group of households to the community's total poverty.

The ratio of urban and rural poor households to the community's total poverty

Table 11 shows the ratio of urban and rural households to the community's total poverty based on the absolute poverty (2179-calorie limit) during 1992-2000 with the ratio of poverty to that of population of urban and rural households.

Table 11-Distribution of poverty in urban and rural populations during 1992-2000 based on the absolute poverty

<i>Description</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>
<i>Urban</i>	44	42	45	46	44	47	46
<i>Rural</i>	56	58	55	54	56	53	54
<i>Ratio of urban households to the total poverty</i>	48	53	55	50	47	46	46
<i>Ratio of urban population</i>							
<i>Ratio of rural households to the total poverty</i>	52	47	45	50	53	54	54
<i>Ratio of rural population</i>							

Source: Findings of the study

Conclusion

This study attempts to give a vivid picture of the poverty in Iran by estimating various indexes including the percentage of poor households, relative poverty gap, age index of the country's sample households. Accordingly, the results reveal that firstly, the poverty indexes in Iran based on the relative poverty is by far greater than the poverty indexes based on the absolute poverty, secondly, the absolute poverty in the country's urban and rural areas has tended to decline while the relative poverty has increased. In other words, the poverty alleviation programs have mostly focused on the absolute poverty without much care for the relative poverty.

The results of the distribution of poverty among households prove that ratio of rural populations is higher than that of urban populations.