# POVERTY LINE ESTIMATION
# IN IRAN
# 1991-2001

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***Poverty Line Estimation in Iran***
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***Abstract***

**The poverty phenomenon has already been defined in different ways by different scholars with different notions on the subject, but one concept underlies all the definitions; "some kind of deprivation of common living basics." Moreover, the set of definitions reflect two general viewpoints in recognizing the poor population; the absolute viewpoint and the relative viewpoint. These two conceptions affect policy making on the challenge of poverty alleviation differently. In the research study of *Poverty Line Estimation in Iran 1991 -2001*, the poverty line for Iranian urban and rural populations has been measured for the 1991-2001 period based on the four approaches of *minimum calorie requirement* (2179 and 2300 calories), *a percentage of average household expenditure* (50 percent), *a percentage of median of households expenditures* (50 percent), and *Angel's Reverse Coefficient.* The outcomes of the study show that the poverty line might accept a range of values with regard to the poverty definition and the measurement approach adopted. The results of the above four methods application in measurement of poverty line evidence that the urban poverty line stands above the rural poverty line and the absolute poverty line falls under the relative poverty line all over the study period.**

***Key words:*** **households expenditures, Angel's Reverse Coefficient.**

### *Introduction*

**In recent years various studies on poverty and the size of it as well as the effects of economic policies on poverty phenomenon have been conducted across the nation. The results of these studies are very different and constitute a diverse range. Some researchers, for example, believe that only 18% of the total population could be reckoned as poor; on the other hand, some claim that it is as high as 70%. In search of the causes of such a wide gap, one might refer to a number of reasons: First, researchers hold different notions on the concept of poverty. Second, there is not a certain scientific procedure for poverty measurement and researchers draw on different approaches. Third, there are various variables used for poverty estimation, which contribute differently to the size of computed poverty line.**

**The present study, in addition to estimation of poverty line in Iran during the years 1991-2001 based on the four methods of; minimum calorie requirement (2179 and 2300 calories), a percentage of average household expenditure (50 percent), a percentage of median of households expenditures (50 percent), and Angel's Reverse Coefficient, seeks to show that the poverty line is not a fixed external reality, but rather it proves to be a changing value seriously affected by the type of measurement approach.**

### *Data used for the study*

**The study draws on the raw data from the *Urban and Rural Households Income and Expenditure Survey* implemented by the Statistical Center of Iran during the years 1991-2001. To conduct the study, first the per capita expenditure at the household level was measured, then the related variables were estimated.**

### *Definitions of poverty and poverty line*

**Poverty has been defined differently across time and place and has always been a matter of discussion between scholars, but there is a consensus between the majority that there should be a definition of the poverty line concept.**

**During the study, the two concepts of absolute and relative poverty have been dealt with. The absolute poverty is defined as incapability to access the minimum standards of living against the relative poverty, which is defined as failure to afford a set of living standards recognized as necessary or ideal for the society members. Actually, in relative poverty disparity in income and wealth distribution is more cared about than the individuals' absolute amount of income.**

**The minimum level of welfare/living requirements is a concept for which there are various definitions and even the slightest change in definition causes a substantial change in the size of poverty. In spite of a lack of consensus on the minimum level of living requirements, any scholar should provide a practical definition of the concept so that they could estimate the size of poverty. When the definition has been provided and the subsistence level estimated, the monetary equivalent might be computed. The cost of the minimum requirements is what we call the (local) poverty line.**

**For each of the two concepts of absolute and relative poverty a certain border line, separating the poor from the rest of society, is resulted which is referred to as the poverty line. As a result, therefore, the poverty line also might be absolute or relative. Making a choice between these two concepts affects the poverty-alleviation policies differently. That is because the indexes affiliated to each of them demonstrate different movements against short- and long-term socio-economic fluctuations or income disparities.**

**Sometimes, to estimate the absolute poverty line, in addition to the minimum income required for securing the basic needs, some minimum quantitative and qualitative criteria, such as minimum calorie and protein requirements per day per person, minimum per capita residential built-up area, minimum educational attainment of the head of the household, minimum number of literate people in the household, etc., are also taken into account. When an individual fails any of these criteria, they are considered as poor. In this study the minimum calorie requirement has been taken as a criterion for determining the minimum basic needs.**

**The relative poverty line is defined as a certain percentage (or average) of income or as an income borderline under which lies a certain percentage of the society's population. Approaching the relative poverty line means that a certain proportion of the population is always marked as poor.**

**In a general definition of the poverty line one might claim that: poverty line consists of all expenses made by a person at a certain time in a certain place to enjoy the minimum level of welfare. The people who cannot afford it are considered poor, otherwise they are non-poor.**

### *Poverty line estimation in urban and rural areas of Iran*

**As mentioned before, in this study the poverty line for Iranian urban and rural populations for the period of 1991-2001 has been estimated based on four**

**different methods using the data from the *Urban and Rural Households' Expenditure and Income Survey* conducted by the Statistical Center of Iran.**

***Poverty line estimation based on the calorie requirement***

**Poverty line measurement based on the calorie requirement relies on the absolute concept of poverty and basic needs of individuals. To estimate the poverty line, first the minimum calorie consumption per person was decided on - after consultations with a number of nutrition specialists, two amounts of 2179 and 2300 calories were accepted as standards. Then the total households under study were divided into ten expenditure (or income) groups according to their income. When the nutritional values received by any expenditure (or income) decile was estimated, the first decile with the received energy more than the standard amount of 2179/2300 was adopted. Subsequently the difference with the standard amount was figured out. Then the decile's total expenditure was divided to the energy received by the decile to obtain the price of a unit of calorie. The unit price multiplied by the amount of calorie more than the standard amount resulted the cost of surplus calories received, and, eventually, the decile's total expenditure minus the cost of surplus calories resulted the size of poverty line.**

**Table 1, covering the years 1991-2000, has been developed with the assumption that every person needs only 2179 calories a day. It reveals that the poverty line has experienced an increasing trend in urban areas during the period. The monthly figure for an urban individual, for example, increased from 17663 rials in 1991 to 153408 rials in 2000, which means an annual growth of 27% - It is of course not unexpected considering the always two-digit inflation rate during the period. In rural areas the poverty line per person per month was estimated as much as 10119 rials in 1991 that reached 84684 rials in 2000. The urban areas absolute poverty line exceeds that of rural areas all over the study period.**

**Table 1. Poverty line estimation for urban and rural populations based on calorie requirement (2179) during 1991-2000**

**(per person, per month, rials)**

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Urban | 17663 | 31502 | 37470 | 63355 | 56376 | 77234 | 40264 | 110752 | 113280 | 153408 |
| Rural | 10119 | 19046 | 25639 | 39162 | 40120 | 45852 | 50177 | 61316 | 64471 | 84684 |

**If an individual's daily calorie consumption is assumed 2300 calories, then the absolute poverty line would increase as compared with the previous 2179 calories assumption. Table 2 contains the poverty lines for urban and rural areas during**

**the years of study with the 2300 calories as the base. According to the results an urban individual needed a subsistence of 21875 rials a month in the year 1991 while he needed 157173 rials in 2000, which implicates a 22% annual growth of poverty line. For people in rural areas the subsistence level for the years 1991 and 2000 has been recorded 18082 and 96601 rials a month, which indicate to an 18% annual growth.**

**Table 2. Poverty line estimation for urban and rural populations based on calorie requirement (2300) during 1991-2001**

**(per person, per month, rials)**

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Urban | 21875 | 33251 | 51691 | 75984 | 59507 | 81523 | 85604 | 116902 | 138008 | 161928 | 157173 |
| Rural | 18082 | 20104 | 27062 | 42390 | 42348 | 48398 | 58538 | 64721 | 68052 | 89383 | 96601 |

**Poverty line estimation based on a percentage of average household expenditure**

**In order to measure poverty line based on the relative concept, one may use the average household expenditure and take a certain percentage of it as the poverty line. In this approach there is not a certain scientific procedure to determine the percentage. Actually, the percentage taken is something optional and experimental and every researcher may select it as he thinks suitable. Following the previous studies the present study draws on 50 percent of the average household expenditure as the basis for estimation of poverty line. In this approach the expenditure average is first calculated, then 50 percent of the result is taken as the poverty line. Table 3 contains the poverty lines estimated for urban and rural households based on 50 percent of the average expenditure. The results show that the poverty line for the year 1991 stands at 20777 rials a month in urban areas, which, with an annual increase of 31%, rises to 234199 rials in 2000. As regards the rural population, the estimated figures are 11794 and 130447 rials for the years 1991 and 2000 with the same annual growth rate.**

**Table 3. Poverty line estimation for urban and rural populations based on 50% of average household expenditure during 1991-2000**

**(per person, per month, rials)**

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Urban | 20777 | 26208 | 32152 | 47970 | 85879 | 116991 | 136272 | 168792 | 199759 | 234199 |
| Rural | 11794 | 14450 | 17454 | 24772 | 47721 | 56160 | 69696 | 88222 | 113365 | 130447 |

### *Poverty line estimation based on a percentage of median of households expenditures*

**The other poverty line estimation method relying on relative poverty concept is adopting 50 percent of the median of households expenditures as the poverty line. Similar to the former approach, the method holds no certain scientific procedure to determine the percentage, and the researcher is free to choose the percentage he thinks appropriate according to his personal experiences and understanding of the society under study.**

**To estimate the poverty line based on the above method, first the households expenditures were grouped and sorted out in ten income (expenditure) deciles, followed by figuring out the average of fifth and sixth deciles, taken as the median of the households expenditures. Finally, the poverty line was measured as 50 percent of the median.**

**The results of poverty line estimation for urban and rural populations during the years 1991-2000 based on 50 percent of the median of expenditures are reflected in table 4. According to the table, an urban individual needed a minimum 14995 rials a month in the year 1991 while he required 170467 rials a month in 2000, which implicates an annual growth of 31% - some 9% more as compared with the 2300 calories basis.**

**The poverty line estimated for rural areas in the year 1991 based on 50 percent of the median of expenditures is equal to 8553 rials against 98344 rials in 2000 with an increase rate of 31% a year. A comparison between the urban and rural poverty lines reveals that the former is usually about two times the latter.**

**Table 4. Poverty line estimation for urban and rural populations based on 50% of median of households expenditures during 1991-2000**

**(per person, per month, rials)**

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Urban | 14995 | 19396 | 24721 | 35469 | 61381 | 83133 | 96882 | 121823 | 145055 | 170467 |
| Rural | 8553 | 11119 | 13566 | 18804 | 35350 | 43155 | 52459 | 63758 | 83900 | 98344 |

### *Poverty line estimation based on Ange l's Reverse Coefficient*

**To figure out the relation between the household's food expenditure and income, Ernest Angel used the index of proportion of food expenditure to income of the household. Later the method was accepted as a way to estimate the poverty line. In this approach also the poverty line relies on the relative poverty concept. To measure the poverty line, the household's food expenditure is multiplied by**

**the Angel's Reverse Coefficient following estimating the coefficient using econometric models.**

**The results of poverty estimation based on Angel's method for the period of 1991-2000 are reflected in table 5. According to the results, the urban poverty line per person per month has experienced a 28% growth rate, moving from 65532 rials in 1991 to 614995 rials in 2000. As to rural areas, the increase rate touched 30%, growing from 29443 rials in 1991 to 305573 rials in 2000, which is very close to that of urban areas. The figures reveal that the urban poverty line has stood higher than the rural poverty line all over the study period.**

Table 5. Poverty line estimation for urban and rural populations based on Angel's Reverse Coefficient during 1991-2000

**(per person, per month, rials)**

| Year | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Urban | 65532 | 80595 | 99665 | 158260 | 243782 | 387542 | 423715 | 433032 | 511707 | 614995 |
| Rural | 29443 | 35514 | 41682 | 63463 | 112104 | 142441 | 169379 | 189611 | 269149 | 305573 |

### *Conclusion*

**As mentioned before, poverty line is not a fixed external reality, but rather it might assume a range of values depending on the researcher's notion as well as the estimation approach employed. Table 6 provides an evidence to this claim. A comparison between figures reveals that the poverty line based on the absolute poverty always lies below the poverty line based on the relative poverty. For the year 2000 the poverty line for an urban individual per month based on the calorie requirement (2300 calories) was equal to 161929 rials while the poverty line based on Angel's Reverse Coefficient was as high as 614995 rials, which was about four times more. In the year 2000, the rural areas poverty line based on Angel's Reverse Coefficient was equal to 305573 rials, while the poverty line based on the calorie requirement (2300 calories) was measured as much as 89383 rials. Actually, the poverty line based on Angel's method was 3.4 times the amount of the poverty line based on the calorie requirement. That is because the poverty line based on the 2300 calories is estimated just according to the minimum requirements of a human being, relying on the concept of absolute poverty, while in the Angel's Reverse Coefficient, with the concept of relative poverty underlying, the poverty line is estimated according to the expenditure pattern of all the population of the society.**

**Table 6. Poverty line estimation for urban and rural populations based on the four approaches used in the study for the period of 1991-2000**

**(per person, per month, rials)**

| Year | 2179 calories | | 2300 calories | | 50% median | | 50% average | | Angel's Reverse Coefficient | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural |
| 1991 | 17663 | 10119 | 21875 | 18082 | 14995 | 8553 | 20777 | 11794 | 65532 | 29443 |
| 1992 | 31502 | 19046 | 33251 | 20104 | 19396 | 11119 | 26208 | 14450 | 80595 | 35514 |
| 1993 | 37470 | 25639 | 51691 | 27062 | 24721 | 13566 | 32152 | 17454 | 99665 | 41682 |
| 1994 | 63355 | 39162 | 75984 | 42390 | 35469 | 18804 | 47970 | 24772 | 158260 | 63463 |
| 1995 | 56376 | 40120 | 59057 | 42348 | 61381 | 35350 | 85879 | 47721 | 243782 | 112104 |
| 1996 | 77234 | 45852 | 81523 | 48398 | 83133 | 43155 | 116991 | 56160 | 387542 | 142441 |
| 1997 | 40264 | 50177 | 85604 | 58538 | 96882 | 52459 | 136272 | 69696 | 423715 | 169379 |
| 1998 | 110752 | 61316 | 116902 | 64721 | 121823 | 63758 | 168792 | 88222 | 433032 | 189611 |
| 1999 | 113280 | 64471 | 138008 | 68052 | 145055 | 83900 | 199759 | 113365 | 511707 | 269149 |
| 2000 | 153408 | 84684 | 161929 | 89383 | 170467 | 98344 | 234199 | 130447 | 614995 | 305573 |
| 2001 | - | - | 157173 | 96601 | - | - | - | - | - | - |

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