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Poverty Rate and Poverty Line in Korea

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CONTENTS

Chapter Ⅰ. Introduction

When the economic shock hit Korea in November 1997, researchers of social policy were deeply worried about its adverse effects on the life of poor people. Many researchers since then argued that the poverty rate increased rapidly and that the income distribution got worse. To corroborate their argument, researchers measured poverty rates in by their own criteria and method.

However, Korea faces some limitations in producing poverty rate every year. Korean government produces the national income data covering the whole population every five years. Thus, researchers cannot calculate a national poverty rate each year. If private researchers want to measure the poverty rate every year, they should first conduct nation-wide survey with their own budget, which is hardly possible because it would involve a large amount of cost.

Many researchers, however, tried to measure the poverty rate for each year or for each quarter using incomplete data sets without proper information. Thus, each researcher presented a poverty rate differing from the rest. The primary objective of this paper is to review some of these poverty rates. The present review will make it clear that Korea is in need of a new data set for measuring an accurate poverty rate. The secondary objective of this paper is to understand the impacts of economic crisis on the poor in Korea. Although the economic crisis is over, it left the legacy of poverty problem to Korean people.

Chapter Ⅱ. Data Sets and Their Limits

In Korea, there are two types of survey that produces useful data set for measuring poverty rate. Each data set has its own merits and demerits.

1. The National Survey of Income and Expenditure

The National Survey of Income and Expenditure (NSIE) is conducted every five years by National Statistical Office. The first survey was conducted in 1991, and second one in 1996, just one year before Korea plunged into the morass of the economic crisis. The third one is being conducted this year, 2001.

The NSIE investigates receipts, disbursements, yearly income, savings and liabilities and durable goods of households in detail from national sample households in order to analyze patterns of income and expenditure of households. The sample size is about 30,000 households, which is considered large enough.

Because the data set of NSIE contains solid information on income and expenditure of every type of household, it can be most useful for measuring a national poverty rate. The weakness of NSIE, however, is that it is conducted once every five years, which is too long a time interval when policy makers needs to know the poverty rate every year or even every quarter. Especially when the economy fluctuates, the demand for measuring poverty rate in shorter term gets high.

The economic shock struck Korea November 1997, and it seems Korea has passed through the dark tunnel of the economic crisis by the end of 2000, which means fluctuations of poverty rate affected by economy crisis could not be measured on the

basis of NSIE. Although the demand for a new data set containing national information on income and expenditure of household was urgent and high, Korean government could not meet such a demand largely because of its limited budget. In fact, Korea could not measure exact poverty rate during the period of economic crisis due to the paucity of nation-wide data set.

Another drawback of NSIE is that it contains too many items, which means it demands big amount of money to conduct a new survey. If policy makers want to know the poverty rate every month, a new survey with smaller sample size and less items should be designed.

2. The Family Income and Expenditure Survey

The Family Income and Expenditure Survey (FIES) has been conducted on a monthly basis since 1963 by the National Statistical Office. The purpose of FIES is to collect up-to-date information on urban households' income and expenditures. The FIES only covers urban households in Korea. Worse still, even city-based households of farmers, fishermen, and single person are excluded from the sample. Because FIES produces a monthly data set, it is very useful for regularly measuring short-term poverty rates. This is the main reason why most researchers use the FIES data set when they measure the poverty rate.

However, FIES poses severe drawbacks in measuring poverty rates. First, it does not provide information on income but information on the expenditures of non-workers. Thus, if a researcher wants to measure a poverty rate for the total urban households using the data set of FIES, he should measure the poverty rate based on expenditure. Otherwise, he should first estimate the income of non-worker households by indirect ways. This implies that the poverty rate may differ according to the method of estimating the income of non-worker household.

Chapter Ⅲ. Poverty Incidence of Korea

1. Defining the Poverty

Conventionally, the term 'poverty' has been defined in two different ways; *absolute and relative*. In its absolute sense, poverty is simply defined as "an inadequate command over resources relative to needs" (Oster, et al., 1978. p.4). However, the practical definition of absolute poverty is contingent upon the meaning of "needs". Two alternative techniques are used to calculate an absolute poverty level. The first method is to survey actual expenditures of persons who are considered poor. The second method is to design a hypothetical market basket that is necessary for subsistence or for a decent standard of living.

In Korea, there is no official poverty line. However, most researchers adopt the Minimum Cost of Living (MCL) measured by government as a poverty line. A family is considered poor if its income or expenditure falls below MCL. The Korean government measures MCL every five years. The first MCL was measured in 1989. The second and third ones were measured in 1994 and 1999. The problem here is how to adjust MCL in the interval years. Different ways to adjust MCL for the interval years results in different poverty rates.

The alternative concept of poverty - *relative poverty* - is defined as *an income less than "x" percent of the median income*. Households with an income less than 50 percent of the median family income is commonly classified as poor under this method (Fuchs, 1967). In Korea, however, the notion of relative poverty is not widely used. Most researchers measure the poverty rate by the absolute level.

2. Poverty Rate of Urban Resident

A few of researchers measured the poverty rate to analyze the impacts of the economic crisis on the life of Korean people. Kakwani and Prescott's study is one of those studies. They used the data set of FIES, which means the poverty rate they calculated is exclusively urban-based. They adopted the 1994 MCL as poverty line. To adjust MCL for the interval years, they applied the consumer price index so that the poverty line can maintain the same standard of living over the period.

They measured the quarterly poverty incidence that includes the percentage of poor, poverty gap ratio, and severity of poverty index from the first quarter of 1990 to the fourth quarter of 1998. They produced the consumption-based poverty rate as well as the income-based poverty rate. Since they did not estimate the income of the non-workers, the income-based poverty rate represents workers' households only.

Table 1. Poverty Rates of Korea by Kakwani & Prescott

Time	Poverty Rate	
	Consumption- based (A)	Income-based (B)
1st quarter 1996	8.8	5.9
2nd quarter 1996	11.6	5.0
3rd quarter 1996	10.0	3.5
4th quarter 1996	8.0	4.6
1st Quarter 1997	7.0	2.9
2nd Quarter 1997	9.2	2.7
3rd Quarter 1997	8.9	2.1
4th Quarter 1997	9.5	2.6
1st Quarter 1998	17.0	6.1
2nd Quarter 1998	21.2	6.7
3rd Quarter 1998	23.9	8.5
4th Quarter 1998	14.7	7.4

Source: Kakwani & Prescott, table 19 & table 25, 1999.

Table 1 shows some of the poverty rates measured by Kakwani and Prescott. The consumption-based poverty rate is always higher than the income-based poverty rate in Korea. The consumption-based poverty rate is for the whole population of the urban resident while the income-based poverty rate is just for the workers' households.

Kakwani & Prescott's research ignited a diverse range of poverty studies in Korea. There were several researchers who measured the poverty rate using the same FIES data set. However, the flourishing of poverty studies does not necessarily mean that people are coming have a better understanding of poverty incidence. Because the poverty rates are different to some extent according to researchers using the same data set, estimating poverty rate still remains as a controversial issue in Korea.

Table 2. Expenditure-based Poverty Rate in Korea

Time		Total Expenditure			Consumption Expenditure		
		Whole	Worker	Non-worker	Whole	Worker	Non-worker
1996	1st Quarter	10.9	10.0	12.3	14.3	14.1	14.7
	2nd Quarter	11.8	11.3	12.6	15.9	15.7	16.1
	3rd Quarter	11.7	10.6	13.4	15.0	14.3	16.0
	4th Quarter	8.8	7.6	10.9	11.9	11.1	13.3
1997	1st Quarter	9.4	7.8	11.9	12.4	11.2	14.2
	2nd Quarter	9.8	8.8	11.5	13.8	13.2	14.9
	3rd Quarter	10.6	8.8	13.5	13.8	12.5	15.9
	4th Quarter	9.0	7.6	11.3	12.7	11.6	14.3
1998	1st Quarter	14.5	12.3	17.5	19.3	17.9	21.3
	2nd Quarter	16.5	14.3	19.5	23.5	22.2	25.2
	3rd Quarter	20.3	18.1	23.2	26.1	25.0	27.6
	4th Quarter	11.3	9.5	13.7	15.9	14.5	17.7
1999	1st Quarter	14.8	12.5	17.5	18.9	16.9	21.4
	2nd Quarter	15.2	12.8	18.2	21.2	19.4	23.4
	3rd Quarter	15.2	12.6	18.7	20.1	17.8	23.0

Source: C.Y. Park, et al. The Change of Poverty and Income Inequality Level during Economic Crisis and Counter Policies in Korea, 1999.

Table 3. Income-based Poverty Rate in Korea

Time		Receipts			Income			Current Income		
		Whole	Worker	Non-worker	Whole	Worker	Non-Worker	Whole	Worker	Non-Worker
'96	1st Quarter	2.6	0.8	5.5	8.2	4.1	14.9	10.3	5.2	19.1
	2nd Quarter	2.3	0.6	5.2	7.7	3.4	15.0	9.4	4.1	18.6
	3rd Quarter	2.3	0.6	5.2	7.2	2.8	14.4	8.6	3.8	16.9
	4th Quarter	2.1	0.4	4.9	6.6	2.8	12.8	9.6	3.7	19.8
'97	1st Quarter	2.9	0.5	7.0	8.1	3.4	15.9	10.4	4.5	20.1
	2nd Quarter	2.6	0.5	6.1	7.0	2.8	13.7	8.9	3.5	18.1
	3rd Quarter	2.5	0.4	6.0	7.2	2.3	14.9	8.7	3.0	18.2
	4th Quarter	2.6	0.5	6.0	8.5	3.0	17.2	10.2	3.5	21.2
'98	1st Quarter	3.8	0.9	8.2	13.8	5.7	25.9	14.7	6.5	27.5
	2nd Quarter	4.7	1.3	9.5	15.2	6.2	28.0	15.5	6.8	28.4
	3rd Quarter	4.5	1.5	8.8	15.4	6.7	27.5	15.9	7.3	28.1
	4th Quarter	4.0	1.2	7.8	12.7	5.7	22.3	15.2	6.5	27.5
'99	1st Quarter	4.8	1.6	8.8	17.1	7.8	28.9	19.5	9.0	33.6
	2nd Quarter	4.9	1.8	9.1	14.9	7.3	24.7	18.0	8.3	31.3
	3rd Quarter	4.4	1.4	8.4	14.2	6.2	24.7	16.3	7.0	29.5

Source: C.Y. Park, et al. The Change of Poverty and Income Inequality Level during Economic Crisis and Counter Policies in Korea, 1999.

Here is a good example. C.Y. Park et al. calculated a poverty rate using the FIES data set. The results are given in table 2 and table 3. By comparing table 1 with table 2, we can easily find that they do not match each other. For example, the consumption-based poverty rate for 1st quarter of 1997 is 7.0% from table1, while it is 12.4% from table 2. Although the discrepancy between two results becomes much slimmer for 1998, it is notably wide in 1997.

Two factors can be thought of as responsible for the discrepancy. First, we should take into account the fact that C.Y. Park et al. adopted a poverty line derived from Minimum Cost of Living for the interval years that is different from the one Kakwani and Prescott used. So the discrepancy seems inevitable to some extent. Second, there could have been a technical mistake in calculating the poverty rate. The reason why we cannot foreclose the possibility of technical mistake is that the discrepancy does not show consistency. If Kakwani and Prescott

took a poverty line lower than the one used by C.Y. Park et al., then their poverty rate should be consistently lower than that of C.Y. Park et al. The reality, however, is that the poverty rate of Kakwani and Prescott was lower than that of C.Y. Park et al. for 1997 and then became higher for 1998. This implies that possibly one of them made mistake while they were calculating the poverty rate. My own calculation shows that Kakwani and Prescott might have made a mistake when they calculated the poverty rate of 1997.

Another research conducted by Bark et al. adds yet more complexity to the statistics of poverty rate in Korea. Bark et al. calculated the poverty rate of urban worker households by using the FIES data set. They adopted five different poverty lines to calculate poverty rate; the 1994 minimum cost of living adjusted by consumer price index, the 1999 minimum cost of living adjusted by consumer price index, 50% of median income of urban worker households, 50% of average income of urban workers, and consumption expenditure. The poverty rate by Bark et al. is shown in table 4. Because Bark et al. adopted the five different poverty lines, there were five different poverty rates for a certain period of time. Here, again we see discrepancies in poverty rate. For example, the poverty rate for the 1st quarter of 1998 for whole households based on consumption expenditure is 19.3% in table 2 and 16.6% in table 4. Although both studies used one and same data set, they produced different poverty rates for the same population because they adopted different poverty lines.

Table 4. Poverty Rates by Bark et al.

	'97. I	'97. II	'97. III	'97. IV	'98. I	'98. II	'98. III	'98. IV	'99. I	'99. II	'99. III	'99. IV
Urban Worker's Households												
(A)	3.4	2.8	2.3	2.9	6.1	6.4	6.7	5.6	7.4	7.4	5.8	5.4
(B)									8.2	7.8	6.5	6.0
(C)	8.2	6.2	7.6	6.6	10.5	8.7	9.9	9.2	10.7	8.7	10.1	9.2
(D)									13.5	13.1	11.2	10.3
Whole Households: Consumption-based	10.5	12.2	11.8	10.9	18.5	22.4	25.5	14.3	16.6	19.3	17.5	

Note: A is the real value of the 1994's minimum cost of living; B is the estimated minimum cost of living of 1999; C is 50% of median income of urban worker's households; D is 50% of average income of urban workers.
Source: Bark, et al., A Study on Poverty Profiling in Korea, 2000. Table IV-5.

Because researchers often adopt different poverty lines derived from Minimum Cost of Living in their own way, there are various poverty rates for a certain period of time. To solve these problems, an official poverty line, not the Minimum Cost of Living, should be established by the government every year.

Moreover, since poverty researchers produce different poverty rates based on various criteria, it becomes confusing for people to understand the poverty incidence in Korea. Government officials are inclined to take a poverty rate based on income of worker households because it is lower than the rest, while non-government organizations tend to choose a poverty rate based on consumption expenditure, which is much higher. If the Korean government could establish an official poverty rate every year, it would be helpful for people to understand poverty incidence more clearly and more simply.

3. National Poverty Rate

Although national poverty rate could not be measured on a yearly basis due to the lack of proper data set, a couple of researchers tried to measure it in a complementary way.

Bark et al. measured a national poverty rate for 1996 using the NSIE data set. Assuming that the relationship of the national poverty rates to the poverty rate for the urban worker households keeps constant for the year 1996, Bark et al. estimated national poverty rate for the post-1996 period.

Table 5. National Poverty Rate by Bark et al.

Poverty line	96	**97**	'97. I	'97. II	'97. III	'97. IV	**98**	'98. I	'98. II	'98. III	'98. IV	**99**	'99. I	'99. II	'99. III	'99. IV
(A)	4.3	**7.4**	8.8	7.2	6.0	7.5	**16.5**	16.3	17.0	17.8	14.9	**17.6**	20.2	20.0	15.6	14.5
(B)												**16.3**	17.0	18.6	15.5	14.2
(C)	8.6	**12.8**	14.6	11.1	13.6	11.8	**17.4**	19.1	15.8	18.0	16.7	**17.8**	19.7	16.0	18.5	16.8
(D)												**18.8**	21.2	20.1	17.6	16.1

Note: A is the real value of the 1994's minimum cost of living; B is the estimated minimum cost of living of 1999; C is 50% of median income of urban worker's households; D is 50% of average income of urban workers.

Source: Bark, et al., A Study on Poverty Profiling in Korea, 2000. Table IV-5.

The study by Bark et al. can be helpful in understanding the national poverty incidence. However, it is just an "estimated value". If the relationship between the poverty rate for rural households and that for urban households changes, which is a common phenomenon, the estimated value will prove to be wrong.

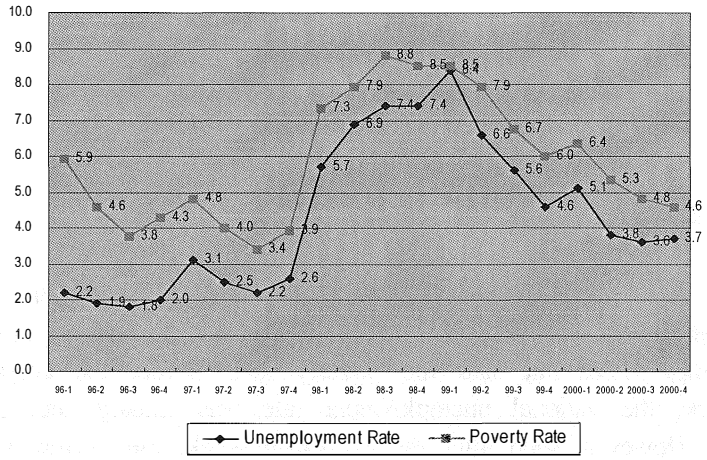
Chapter Ⅳ. Impact of the Economic Crisis

1. Macro Impact on People's Life

The 1997 economic crisis deeply hit people's life on every aspect. First of all, the depressed economy pushed up the unemployment rate and the poverty rate. Before the economic shock, the national unemployment rate was usually kept under 3%. However, soon after the economic shock, the unemployment increased rapidly and peaked at 8.4% by the 1st quarter of 1999, and then began to decline and plummeted to 3.7% in the 4th quarter of 2000. The poverty rate for urban worker households followed a similar route. It peaked at 8.8% in the 3rd quarter of 1998 and then began to fall down.

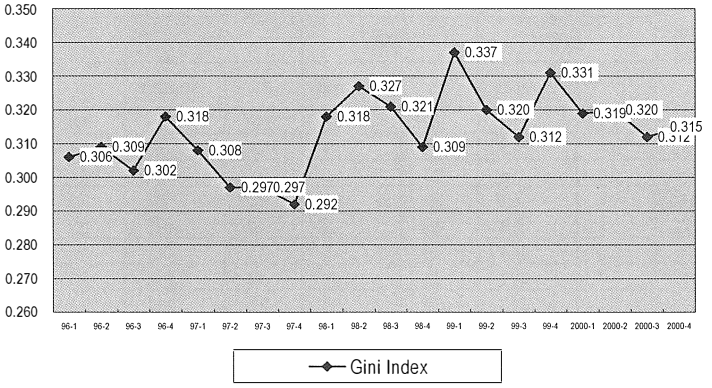
Figure 1 shows that the poverty rate and the unemployment rate are closely related, which means that the urban worker households have been directly affected by the economic crisis. As of the 4th quarter of 2000, it seems that Korea economy has almost recovered from the economic recession in terms of poverty unemployment rates. However, the problem of inequality still persists.

Figure 1. Poverty Rate and Unemployment Rate: 1st qter 1996 4th qter 2000



Although the poverty rate and the unemployment rate are falling down to the level of 1997, the state of income distribution has not come back to the previous level. Traditionally, Korea had been known for its relatively good income distribution. As shown in Figure 2, the Gini index was 0.292 for the 4th quarter of 1997. However the economic shock worsened the income distribution, pushing up the Gini index to 0.337 in the 1st quarter of 1999. Since then, the Gini index has been fluctuating but still remains above 0.31, while the poverty and the unemployment rate are continuously falling down. This means that the problem of absolute poverty is being solved but the problem of relative poverty will continue to persist for a while.

Figure 2. Gini index for urban worker households



Source: Korea National Statistical Office, The Family Income and Expenditure Survey. Each Quarter

2. Vertical Impact on Income and Consumption

Table 6 shows that the higher income workers have benefited from the economic crisis. The income share of the uppermost level (95%<) increased from 13.2% in 1997 to 16.0% in 1999, while the income share of next upper level (90~95%) increased just 0.1% point during the same period. As expected, the income share of lowest level (≥5% & 5~10%) has decreased from 3.3% in 1997 to 2.7% in 1999. The income of other levels remains comparatively stable. This explains the increase in the Gini index for the worker households. In other words, people in the uppermost group earned more money during this period than they did before the crisis, while the lowermost group lost their earnings during the economic crisis. The middle group during the same period could keep their earnings close to their pre-crisis level.

Table 6. Distribution of Urban Worker Households Income

Income Interval	Distribution of Urban Worker Households Income							
	1996		1997		1998		1999	
	%	Accumltd	%	Accumltd	%	Accumltd	%	Accumltd
>5%	1.2	1.2	1.2	1.2	0.9	0.9	1.0	1.0
5~10%	1.9	3.2	2.1	3.3	1.8	2.7	1.7	2.7
10~15%	2.4	5.6	2.3	5.6	2.2	4.8	2.1	4.8
15~20%	2.7	8.3	2.7	8.3	2.5	7.4	2.5	7.3
20~25%	2.8	11.1	3.0	11.3	2.8	10.1	2.8	10.1
25~30%	3.2	14.3	3.3	14.5	3.1	13.2	3.0	13.1
30~35%	3.4	17.7	3.5	18.1	3.4	16.6	3.3	16.4
35~40%	3.7	21.4	3.8	21.8	3.6	20.2	3.5	20.0
40~45%	3.9	25.4	4.2	26.0	3.9	24.0	3.9	23.8
45~50%	4.2	29.6	4.1	30.1	4.1	28.1	4.0	27.8
50~55%	4.5	34.1	4.6	34.7	4.5	32.6	4.4	32.2
55~60%	4.8	38.9	4.9	39.6	4.7	37.3	4.7	36.9
60~65%	5.1	44.1	5.2	44.8	5.1	42.4	5.1	41.9
65~70%	5.5	49.6	5.6	50.3	5.5	47.8	5.4	47.4
70~75%	6.0	55.5	6.0	56.3	5.9	53.7	5.9	53.3
75~80%	6.5	62.0	6.5	62.8	6.4	60.1	6.4	59.7
80~85%	7.1	69.1	7.1	69.8	7.1	67.2	7.1	66.8
85~90%	8.0	77.1	7.9	77.7	7.9	75.1	8.0	74.7
90~95%	9.3	86.4	9.1	86.8	9.2	84.3	9.2	84.0
95%<	13.6	100.0	13.2	100.0	15.7	100.0	16.0	100.0
Total	100.0		100.0		100.0		100.0	

Source: Baik, Sun-Il, et al. A Study on Causes of the Increasing Income Gap and Policy Measures for the Low Income Classes, 2000.

However, the economic crisis had less impact on people's consumption levels. The share of consumption of the uppermost group increased from 17.9% in 1997 to 18.4% in 1999, while the share of consumption of the lowest level decreased just 0.1% point for the same period. This means that the uppermost group earned more money but their consumption did not increase at a similar rate. And it also shows that the lowest group kept their share of consumption during the economic crisis.

Table 7. Distribution of Urban Households Consumption

Interval of Consumption Expenditure	Distribution of Urban Households Consumption							
	1996		1997		1998		1999	
	%	Accumulated	%	Accumulated	%	Accumulated	%	Accumulated
#5%	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2
5~10%	1.8	3.1	1.9	3.1	1.8	3.0	1.8	3.0
10~15%	2.2	5.3	2.2	5.4	2.2	5.1	2.1	5.1
15~20%	2.5	7.7	2.5	7.9	2.4	7.6	2.4	7.5
20~25%	2.7	10.4	2.8	10.7	2.7	10.3	2.7	10.2
25~30%	3.0	13.4	3.0	13.7	3.0	13.3	2.9	13.2
30~35%	3.2	16.6	3.3	16.9	3.2	16.5	3.2	16.3
35~40%	3.4	20.0	3.5	20.4	3.5	20.0	3.4	19.8
40~45%	3.7	23.7	3.7	24.2	3.7	23.7	3.7	23.5
45~50%	3.9	27.6	4.0	28.1	4.0	27.7	3.9	27.4
50~55%	4.2	31.8	4.2	32.4	4.3	32.0	4.2	31.6
55~60%	4.5	36.3	4.5	36.9	4.6	36.6	4.5	36.1
60~65%	4.8	41.1	4.8	41.7	4.9	41.5	4.8	40.9
65~70%	5.1	46.2	5.1	46.8	5.3	46.7	5.2	46.1
70~75%	5.6	51.7	5.6	52.4	5.7	52.4	5.6	51.7
75~80%	6.1	57.8	6.0	58.4	6.2	58.6	6.1	57.8
80~85%	6.7	64.5	6.7	65.1	6.8	65.4	6.7	64.6
85~90%	7.7	72.2	7.6	72.7	7.7	73.2	7.7	72.2
90~95%	9.4	81.6	9.3	82.1	9.5	82.6	9.4	81.6
95%<	18.4	100.0	17.9	100.0	17.4	100.0	18.4	100.0
Total	100.0		100.0		100.0		100.0	

Source: Bark, Sun-Il, et al. A Study on Causes of the Increasing Income Gap and Policy Measures for the Low Income Classes, 2000.

Chapter V. Conclusion

The 1997 economic shock affected people's life in every aspect. The vulnerable groups, in particular, could not help but fall below the poverty line. The Korean government has implemented a wide range of anti-poverty policies to minimize the negative effects of the economic crisis. Calculating the poverty rate is essential for monitoring the number of people below the poverty line as well as for evaluating the effects of anti-poverty policies.

Practical demands urged researchers to measure the poverty rate, even without a proper data set. A couple of studies have produced useful poverty rates. However, many kinds of poverty rate calculated by researchers on their own criteria sometimes make it confusing for people to understand the poverty incidence in Korea. There is an increasing need for an official poverty rate. To make it possible, an official poverty line should be established on a yearly basis and the government should provide a proper data set.

Korea seems to have passed the dark tunnel of the economic depression. The poverty rate is falling down and the unemployment rate is coming close to the pre-crisis level. However, the Gini index is still fluctuating at a high level. This implies that the problem of absolute poverty is being weakened, but the problem of relative poverty still remains as a major concern for policy makers.

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