

INCOME DISTRIBUTION IN KOREA: EMPIRICAL EVIDENCE FROM OECD GUIDELINE*

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We empirically show the level of income distribution in Korea, by using National Survey of Family Income and Expenditure Data in 1991 and 1996 from Korea National Statistical Office.

We find that the level of income distribution before redistributive policies in Korea was moderate, and was deteriorated over 5 years. However, its level was improved over the times, after redistributive policies were activated. The structure of income sources for total income inequality is quite different between two time periods. However, we hesitate to insist some change in structure of income sources, as our dataset might have inconsistency in population and sampling technique.

Government policy has an interesting implication on income redistribution. Public transfer policy does not have significant impact on reducing the level of income inequality. However, tax policy has a redistributive impact. The relative impact of tax policy on income redistribution is especially strong. Therefore, tax policy can have an important role in reducing the level of income inequality, when it is well designed.

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1. INTRODUCTION

Income distribution is an important area of economic studies, but in Korea, there has not been enough research done in this field compared to other areas. The most popular method of income distribution research is corroborative

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analysis of the level of distribution. This method of study has developed into a way of comparing income distribution among nations, and active research is currently being conducted especially on OECD countries.

Although the inequality in income distribution is an unavoidable problem that comes with modern economic growth, a theoretical approach can provide a solution to achieve an acceptable level. Therefore, in order to judge how serious the inequality of income distribution is within a country, an international comparison among many nations should be used as an indirect way. It is a very difficult task to compare income distribution between countries. The biggest reason is the fact that each country's data have to be under the same standards and methods. Sawyer (1976) was one of the first studies to conduct international comparison of income distribution, but there was a concern that an attempt to compare income distribution between nations, may not be accurate because the data taken from each country were not in uniform standards. But in the 1980's, the income distribution study developed faster when Luxembourg Income Study (LIS) standardized and developed microeconomic data of each country's income distribution. The sources of the LIS data, in the early days, were limited mostly to Western Europe, and then broadened worldwide to include Asia and Eastern Europe. It became an important source of information on income distribution to be provided and used all over the world.

Research effort on income distribution in Korea is still very poor. The main reason is that the micro-data needed to measure the level of income distribution has not been available to the public for use until the mid 1990's. Further researches have begun, after the release of micro-data by government.

Now as a member of the OECD, Korea is expected to have more involvement with other member nations. The OECD produces data and publications in order to compare and analyze each country's social and economic environment. To share and be a part of such information, it is necessary for Korea to follow the OECD's guidelines on compiling various statistics.

However, in Atkinson et al. (1995), a comprehensive study on international comparison of income distribution, Korea was not included. Hyun and Kang (1999) applied their approach into Korea's micro-data of 1991 for international comparison. As income distribution is an important area in analyzing a country's economic structure, it is vital that the various researches, in terms of international comparison, are carried out over time. By comparing Korea to other countries, the absolute level of income distribution in Korea can be judged, so that it can be used as a critical resource in setting the directions of social and economic policies.

The purpose of this paper is to empirically show the level of income distribution in Korea by using two time periods. We also estimate the impact of various government policies, including taxes and subsidies, on the level of income distribution. We use the dataset of National Survey of Family Income and Expenditure Data in 1991 and 1996. This data covers most of the whole

household population, where the sample size, is more than 20,000 households.

We follow OECD methodology for empirical analysis, as OECD currently studies the comparative analysis in income distribution among more than 10 countries. This study uses various methodologies to figure out all aspects in income distribution of OECD countries.

Our empirical results have two important implications. One is to comprehensively and empirically show the situation of income distribution in Korea. The other is that our results will be used to compare our situation in income distribution with other OECD countries.

The structure of this paper is as follows: First, we present the methodology for analysis that OECD currently pursues. Second, we will show our empirical results. Last, we conclude our paper.

II. METHODOLOGY FOR ANALYSIS

OECD has studied the comparative analysis for income distribution among OECD member countries. OECD (2000, 1998) is some examples for this line of researches, and these studies will be extended into more countries with a more rigorous methodology. One of the most important elements for comparative analysis is to have same kind of micro dataset and same methodology. Thus we will closely follow the OECD approach for analysis. For reference, OECD (2000, 1998) is pragmatic but not specific (see Cowell, 2000). Cowell discussed the various methods of the income inequality measurement. Our study following after the OECD guideline is different from the approach of Cowell (2000) in several points: first, we don't handle the re-ranking problem - the horizontal equity- in calculating the after-tax Gini coefficient or the index of squared coefficient of variation. Second, we don't connect the income inequality to the social welfare function. Third, the decomposition of the income inequality focuses on that of only income components after Shorrocks (1982), not the decomposition by subgroup or between-groups in Cowell (2000). Here we briefly summarize the methodology for analysis.¹

1. Definition

The unit for analysis is the individual. It is quite a different approach, as most studies about income distribution have the household as a unit for analysis. One merit of having the individual as a unit in the analysis, is that we can find some individual characteristics in income distribution. As the unit of observation for the survey is the household, it needs some modification. For instance, if Y_i denotes the total disposable income of household i , the

¹ This section heavily draws from OECD guideline, which is partially explained in OECD (1998, 2000).

“adjusted” income of each member j of household i (W_{ij}) is calculated as following :

$$(W_{ij}) = \frac{Y_i}{S_i^\epsilon}$$

where S_i is the number of members in household i and ϵ is the equivalence elasticity.

All incomes, taxes and benefits are reported on an *annual basis*. The total household income (Y_i) is defined as the total disposable income, so that it includes various types of incomes excluding taxes and public transfer. As our analysis is done with two time periods (1991 and 1996), we need to standardize two incomes with one initial time period. Current income in 1996 is deflated by using the CPI deflator relative to the initial year of 1991. Thus we measure the change of various things between two time periods in real income amount valued in 1991.

The economies of scale exist in the household with respect to the number of households. It implies that any additional household member needs a less than proportionate increase of the household income in order to maintain a given level of welfare. There are many ways to define the degree of economies of scale, depending upon the value of the equivalence scale index (ϵ). We use $\epsilon=0.5$ for our analysis, as other studies did in a popular way.

We have the following income sources to calculate the individual disposable income and individual market income.

- 1) the salary income of the household head (EH).
- 2) the salary income of the household spouse (ES).
- 3) the total salary income from other household members (EO).
- 4) capital incomes, including occupational pensions and all kinds of private transfers (K).
- 5) self-employment incomes (SE).
- 6) public transfer (TR).
- 7) income taxes and social security contributions (TA).

Individual disposable income per equivalent household member can be expressed as follows:

$$(W_{ij}) = EH_{ij} + ES_{ij} + EO_{ij} + K_{ij} + SE_{ij} + TR_{ij} - TA_{ij}$$

In addition, individual market income per equivalent household member is as follows:

$$(M_{ij}) = EH_{ij} + ES_{ij} + EO_{ij} + K_{ij} + SE_{ij}$$

2. Inequality Index

There are many indexes to measure the level of inequality. We find the general figure of income distribution by using the income decile (see Table 2, 3). We also use one aggregate index to summarize the level of income inequality by Gini index as follows:

$$\begin{aligned}
 Gini &= \left(\frac{2}{\mu \cdot n^2} \cdot \sum_{k=1}^n k \cdot W_k \right) - \frac{n+1}{n} = \frac{2cov(W_k, \frac{k}{n})}{\mu} \\
 &= \frac{\frac{2}{n} \sum_{k=1}^n (W_k - \mu) \cdot \left(\frac{k}{n} - \frac{1}{n^2} \sum_{k=1}^n k \right)}{\mu}
 \end{aligned}$$

where household income per equivalent household members ($W_{ij} = W_k$) are ranked in ascending order (such as $k = 1, 2, \dots, n$).

Shorrocks (1982) suggests the inequality decomposition by factor components, which is neutral to the types of inequality index. As we have seven different income sources, it might be useful to find the contribution of each income into total level of income inequality. We use the index of squared coefficient of variation (hereafter, SCV) to decompose the factor components. It can be expressed as follows:

$$SCV = \sum_k \frac{covar(Y_k, Y)}{\mu^2} = \sum_k \frac{1}{2} \left[\frac{var(Y_k)}{\mu^2} + \frac{var(Y_k) + 2covar(Y_k, Y - Y_k)}{\mu^2} \right]$$

where Y_k is the k th component of total income Y and μ is the mean total income.

The total SCV is adaptively decomposable into the contribution of each component $k(Y_k)$ measured as the covariance between component $k(Y_k)$ and the total income (Y) divided by the squared mean of the total income. Each contribution can in turn be decomposed into:

- its own "pure" inequality measured by the variance of component k divided by the squared mean (first term inside the bracket). This corresponds to the inequality specific to component k , that is the inequality which would be observed if all others income sources were equally distributed.

- the contribution of component k assuming that all interaction effects which involve component k are allocated to component k . This is measured by the second term inside the bracket which is the sum of the variance of component k and of twice the covariance between component k and the sum of all other components, except k .

For each of the 7 income components in the individual disposable income,

one needs to calculate the following indicators:

1) the total contribution of the component (TOTC), calculated as the covariance between the income component and the total household disposable income (both expressed per equivalent household members) divided by the square of the average disposable income. For instance, the total contribution of the earnings of the household head TOTC(HE) is calculated as follows:

$$TOTC(HE) = \frac{covar(EH_{ij}, W_{ij})}{\mu^2} = \frac{\frac{1}{n} \sum_i \sum_j (EH_{ij} - \overline{EH})(W_{ij} - \mu)}{\mu^2}$$

where \overline{EH} is the average earning of the household head (per equivalent household member) and, the overall mean disposable income (per equivalent household member).

2) the "pure" inequality of each component (VAR), calculated as the variance of each component divided by the squared overall mean. Therefore, the inequality specific to the distribution of heads earnings (VAR(HE)) is calculated as follows :

$$VAR(HE) = \frac{var(EH_{ij})}{\mu^2} = \frac{\frac{1}{n} \sum_i \sum_j (EH_{ij} - \overline{EH})^2}{\mu^2}$$

3) the interaction effect (INT), based on twice the covariance between each component and the hypothetical value of the total disposable income where the component has been replaced by its mean. For instance, the interaction effect of heads earnings is obtained from recalculating all disposable incomes by setting heads earnings equal to the mean heads earning ($W_{ij} - HE_{ij} + \overline{HE}$), then by calculating twice the value of the covariance between heads earnings and this hypothetical disposable income divided by the squared mean disposable income:

$$\begin{aligned} INT(HE) &= \frac{2covar(HE_{ij}, W_{ij} - HE_{ij} + \overline{HE})}{\mu^2} \\ &= \frac{2}{n} \frac{\sum_i \sum_j (HE_{ij} - \overline{HE})((W_{ij} - HE_{ij} + \overline{HE}) - \overline{W - HE})}{\mu^2} \end{aligned}$$

where \overline{HE} is the mean heads earnings and $\overline{W - HE}$ is the mean of the hypothetical disposable income where heads earning are replaced by their mean, thus

$$\overline{W-HE} = \left(\frac{\sum_i \sum_j W_{ij} - HE_{ij} + \overline{HE}}{n} \right).$$

3. Poverty Index

We will identify the proportion of individuals living in poor households. There are several ways to define the poverty. Broadly, it can be grouped into two approaches; relative poverty and absolute poverty. We use relative poverty to define the household under the poverty line. It is quite controversial to define the level of poverty line. We use several poverty lines, which is from the comparison of the median income of all population. Thus there are four poverty lines, which are 30, 40, 50, 60 percent of the median income. Under this definition, we measure the level of poverty in all population by using three indexes. First is the headcount number of poor (H), which is the number of individuals with disposable income per household equivalent member lower or equal to the poverty threshold expressed as a percentage of the total number of individuals in the population under consideration. Second is the income gap (I), which is expressed as a % of the poverty threshold. It is the average gap between the poverty threshold and the disposable income of poor expressed as a percentage of the poverty threshold. Third is the Gini coefficient calculated over the poor in each household category.

III. EMPIRICAL RESULTS

1. Some Features of Income Inequality²

Our use of data is the household survey data from National Survey of Family Income and Expenditure conducted by Korea National Statistical Office, which covers two time periods of 1991 and 1996. This dataset is superior to other household survey data like Daewoo panel data and Urban Household Survey Data, as population coverage is very high and the number of surveyed household is more than 20,000. It also includes the information about self-employment income. One weak point is that this dataset is created every 5 years, first surveyed in 1991.

² Our studies are based on the OECD guideline and then it is not significant to calculate measures in Table 1-5 with several hypothetical values of equivalence scales (EQS). But we show the Gini coefficients to vary with EQS (ϵ) as follows.

		ϵ	1/3	1/2	4/5	1
1991	Before-tax		0.3583	0.3523	0.3562	0.3829
	After-tax		0.3331	0.3274	0.3332	0.3588
1996	Before-tax		0.3739	0.3715	0.3918	0.3920
	After-tax		0.3125	0.3088	0.3191	0.3351

Thus we do not have comparable dataset to figure out the situation during 1970's and 1980's. As we want to find any changes between 1991 and 1996, we need to standardize the income in the two time periods. The consumer price index has been used, so that incomes in 1996 are expressed in national currencies of 1991.

[Table 1] Evolution of income inequality through time

(Unit : Thousand Won)

	1991		1996	
Total number of individuals	74264		79321	
Total number of households	20224		24290	
	Upper Bound Value	real mean income	upper bound value	real mean income
Decile 1	3281	2213.46	4276	2879.07
Decile 2	4191	3775.37	5697	5039.50
Decile 3	4867	4544.43	6725	6239.36
Decile 4	5489	5193.94	7681	7206.58
Decile 5	6148	5807.99	8626	8145.05
Decile 6	6856	6478.84	9674	9115.52
Decile 7	7757	7300.84	11015	10304.05
Decile 8	8992	8322.29	12691	11804.04
Decile 9	11034	9868.62	15474	13918.49
Decile 10	41620	14337.80	251690	20923.60
TOTAL		6784.85		9557.86
Real median income:	6148		8626	
Gini	0.3274 (before-tax:0.3523)		0.3088 (before-tax : 0.3715)	

Table 1 shows the general trend in income distribution by income deciles. The sample size has more than 74,000 individuals for both years. The average income has the increase rate of 41% between two years. The Gini coefficient has been reduced from 0.3274 in 1991, to 0.3088 in 1996. It implies that the level of income inequality has been decreased moderately over 5 years. In the meanwhile, the income inequality index measured with the market income, i.e., before-tax index, increased from 0.3523 in 1991 to 0.3715 in 1996. It says that the trend of our before-tax Gini coefficient during two periods is very similar to that announced by the Korea National Statistical Office (KNSO). KNSO measured it by using the Survey of Income and Expenditure by Urban Household, while we calculate it with the National Survey of Household Income and Expenditures. Ours are higher than those of the NSO, since our data includes the self-employed and the sample coverage is nation-wide. Table 2 shows the pattern of income distribution for seven different income sources. It has wide variation in the degrees of income inequality by different income source.

[Table 2] Cumulative shares of income components by decile

	EH	ES	EO	K	SE	TR	TA	TOTAL
1991								
Decile 1	2.49	0.45	0.32	9.97	3.32	9.80	1.22	3.26
Decile 2	7.99	1.37	1.27	16.90	8.99	16.44	3.66	8.83
Decile 3	14.71	3.27	2.75	23.51	16.18	21.09	7.33	15.53
Decile 4	22.56	6.27	5.16	29.05	24.46	25.86	12.05	23.18
Decile 5	31.64	10.25	8.89	36.02	32.74	33.79	17.81	31.74
Decile 6	41.68	15.55	13.70	42.19	42.84	40.08	25.61	41.29
Decile 7	52.76	23.22	22.50	50.70	53.93	48.40	35.42	52.05
Decile 8	65.58	35.99	35.92	60.86	65.28	56.39	47.42	64.31
Decile 9	80.44	54.25	60.60	73.14	78.36	72.23	64.00	78.85
Decile 10	100	100	100	100	100	100	100	100
1996								
Decile 1	2.28	0.90	0.96	11.65	1.13	10.19	0.35	3.01
Decile 2	8.16	3.38	3.69	19.31	4.80	17.29	2.06	8.29
Decile 3	15.82	6.96	7.37	25.09	10.23	22.79	5.31	14.81
Decile 4	24.64	12.09	13.04	30.14	16.87	28.24	9.89	22.35
Decile 5	33.95	18.41	20.04	35.30	25.71	35.29	16.48	30.87
Decile 6	44.89	26.48	28.59	40.99	34.53	41.82	24.30	40.41
Decile 7	56.72	36.41	41.08	47.22	44.76	51.90	33.84	51.19
Decile 8	68.93	49.54	56.28	55.52	57.90	68.97	46.30	63.54
Decile 9	83.26	68.71	76.84	67.32	71.81	81.05	61.99	78.11
Decile 10	100	100	100	100	100	100	100	100

Table 3 shows the proportion of each income source with respect to total income for each income decile. In 1991, the salary income of the household head occupies 63.7% of total income, and self-employment income does 29.3%. Thus these two income sources represent more than 90% of total income. However, this occupancy rate was reduced to around 80% in 1996. The salary income of the household head has reduced sharply from 63.7% to 51.0%, but that of spouse and other family members has increased for the five years. It is very significant to find that the proportion of lower deciles reduced but that of higher deciles grows much more, indicating that the income inequality of the self-employment gets worse. Also, the proportion of the capital incomes including occupational pensions and all kinds of private transfers has increased for five years, especially both in lower three deciles and in higher three deciles. It implies that lower deciles become poorer than five years ago but higher deciles get richer with respect to that type of the income. The proportion of public transfer in total income amount is only 0.6 in 1991 and 0.92 in 1996. Even though it shows the increasing pattern over time, public transfer with small proportion might not have important role in distributive policy. The proportion of tax liability in total income indicates -9.07% in 1991, and -7.81% in 1996. Total tax liability seems to be decreased slightly. We explain it with two reasons;

First, current income in 1996 is deflated by the CPI deflator relative to the initial year of 1991. The CPI in 1996 is 129.6 relative to 100 of 1991 by this. Namely, our tax liability is measured in the real term. Second, it is because the income tax policy has the tendency to decrease tax liability through the increase of exemption threshold over time. As far as the levels of the exemption based on the four-person family goes in the real terms, it is 5,130 thousand won in 1991 and 8,160 thousand won in 1996 for the salary income. As for the self-employment income, it is 1,980 thousand won in 1991 and 3,550 thousand won in 1996. Totally, we can guess that it is 7,110 thousand won in 1991 and 11,710 thousand won in 1996. The exemption value of 1996 is about 1.5 times as much as that of 1991. We estimate that the exemption threshold in 1996 may be risen up relative to 1991 as is seen in Table 1 and 2. It is because the income tax policy has the tendency to decrease tax liability through the increase of exemption threshold over time.

[Table 3] Average income structure by decile

	% shares of income sources in each decile							TOTAL
	EH	ES	EO	K	SE	TR	TA	
1991								
Decile 1	48.65	0.57	0.39	22.12	29.82	1.80	-3.40	100
Decile 2	63.02	0.69	0.69	9.03	29.84	0.71	-3.98	100
Decile 3	63.89	1.18	0.89	7.14	31.44	0.41	-4.96	100
Decile 4	65.37	1.64	1.27	5.24	31.70	0.37	-5.59	100
Decile 5	67.64	1.94	1.76	5.90	28.32	0.55	-6.11	100
Decile 6	67.01	2.32	2.03	4.68	30.98	0.39	-7.41	100
Decile 7	65.63	2.98	3.30	5.73	30.18	0.46	-8.27	100
Decile 8	66.60	4.34	4.41	6.00	27.13	0.39	-8.88	100
Decile 9	65.16	5.24	6.84	6.11	26.33	0.65	-10.34	100
Decile 10	58.94	9.03	7.51	9.20	29.98	0.78	-15.44	100
Total	63.74	4.17	4.03	7.24	29.29	0.60	-9.07	100
1996								
Decile 1	38.64	2.18	2.17	43.22	11.57	3.11	-0.90	100
Decile 2	56.81	3.42	3.51	16.23	21.34	1.24	-2.54	100
Decile 3	59.81	4.00	3.81	9.90	25.59	0.77	-3.89	100
Decile 4	59.54	4.95	5.09	7.49	27.01	0.66	-4.74	100
Decile 5	55.69	5.39	5.57	6.77	31.87	0.76	-6.05	100
Decile 6	58.44	6.16	6.08	6.67	28.43	0.63	-6.41	100
Decile 7	55.91	6.70	7.85	6.45	29.14	0.86	-6.91	100
Decile 8	50.34	7.74	8.34	7.51	32.68	1.27	-7.88	100
Decile 9	50.12	9.57	9.57	9.06	29.33	0.76	-8.42	100
Decile 10	38.96	10.40	7.17	16.68	39.56	0.80	-13.57	100
Total	50.95	7.28	6.78	11.18	30.72	0.92	-7.81	100

2. Inequality Decomposition by Income Source

Table 4 shows the decomposition of income inequality by income sources. We can examine the degree of contribution of each income source for total inequality. Its contribution can be separated into three parts; the pure inequality of each income component (VAR), the interaction effect between each income component and the total disposable income (INT), and the total contribution of each income component (TOTC). Total contribution of each income is standardized to easily compare its contribution among each other with respect to the summation of all income components contribution. Thus it can be expressed as the percentage value (TOTCE (%)). As each income component has a different occupancy in the total income, relative contribution of one unit in each income component might be a useful index to compare among different income sources. So we get the ratio of TOTCE (%) with respect to the occupancy rate of each income source in total income, which is expressed as TOTCE (a).

[Table 4] Decomposition of income inequality by income sources

	EH	ES	EO	K	SE	TR	TA	TOTAL
1991								
VAR	0.034007	0.0020623	0.0020228	0.0053497	0.033106	0.00045241	-0.0023774	0.074623
INT	-0.035324	0.00080975	0.0015301	0.0094653	0.050529	0.0007854	-0.0057915	0.022004
TOTCE	0.016345	0.0030648	0.0022881	0.0024281	0.0084789	0.0001963	-0.0054532	0.027348
TOTCE(%)	59.8	11.2	8.4	8.9	31.0	0.7	-19.9	100.0
TOTCE(a)	0.94	2.69	2.08	1.23	1.06	1.20	2.20	1.00
1996								
VAR	0.0000105	0.0000015	0.0000016	0.0000055	0.0000201	0.0000003	-0.0000016	0.0000378
INT	-0.0000128	0.0000016	0.0000025	0.0000101	0.0000285	0.0000004	-0.0000067	0.0000237
TOTCE	0.0000041	0.0000014	0.0000010	0.0000042	0.0000085	0.0000001	-0.0000033	0.0000159
TOTCE(%)	25.6	8.5	6.1	26.5	53.7	0.6	-20.8	100.0
TOTCE(a)	0.50	1.17	0.91	2.37	1.75	0.61	2.66	1.00

We examine the percentage contribution of each income source for total income inequality. The salary income of the household head shows the highest contribution (60%) in total income equality, and self-employment income has the second highest contribution (31%) in 1991. Thus two income sources explain almost 90% of total income inequality. In 1996, this pattern was changed dramatically. The salary income of the household head showed 26%, and self-employment income showed 54%. Thus the self-employment income has contributed more to total inequality than the salary income of the household head. The dramatic change is explained as follows: in case of the salary income, there are quite a few differences between two periods in terms of the percentage of composition by deciles. However, the self-employment income in

1996 decreased sharply in lower deciles but the higher deciles the larger the percentage of the composition relative to 1991. On the other hand, the other income components show a little bit variation between two periods. Next, according to Table 3, the trend of average of the salary income by the household head, which is mostly composed of the salary income, has reduced to a great extent for higher 3 deciles in comparison with 1991. It makes the contribution in total income inequality of salary income shrink sharply. In other words, it has a crucial influence on the decrease of the contribution of the salary income in total inequality. Meanwhile, as for the self-employment income, the average income in lower three deciles has declined but that in higher three deciles has increased. So it has increased not only in proportion but also in inequality index. These are why two components income have been reversed the contribution in total inequality like Table 2 and Table 3. Government policy does not have much fluctuation in the contribution for the total inequality over time. Public transfer does not have a distributive role, as it has positive value with 0.7 and 0.6 for both years. However, tax policy shows moderate impact on income redistribution, with around 20% decrease of total income inequality. We can show it by using Table 3. The proportion of transfer income is remarkably less than that of tax liabilities. It means that taxes and social securities contributions paid are smaller than the benefits received by the government. It makes the degree of contribution of tax liabilities for total inequality lower than that of the transfers.

We compare the relative contribution of one unit of each income source for all inequality, except government policies. In 1991, the salary income of the household spouse shows the highest relative contribution (2.69), and the total salary income from other household members shows the second highest level (2.08). Even though the salary income of the household head shows the highest contribution, its relative contribution indicates the lowest level (0.94). In 1996, the pattern of the relative contribution of each income source was changed dramatically. Capital income shows the highest contribution (2.37) in relative term, and self-employment income shows the second highest level (1.75).

Government policy for income redistribution gave an interesting implication. Public transfer has the relative contribution of 1.2 in 1991, and 0.61 in 1996. Although the absolute amount of public transfer is too low, its relative impact is moderate. The role of relative contribution in public transfer was decreased. Tax policy shows a different pattern. The relative contribution to reduce the level of income inequality through tax policy is 2.2 in 1991, and 2.66 in 1996. We find that tax policy has a very strong impact on reducing the income inequality.

3. Some Features about Poverty

Table 5 shows our empirical finding about poverty in relative approach.

Poverty threshold was defined as comparing the current median income, like 60%, 50%, 40%, 30%. When 60% of the current median income was defined as poverty line, around 13% of total individuals are categorized under poor ones. Also its poverty level has almost a 32% gap from poverty threshold. The Gini coefficient shows 0.19 for both years. Thus we find the stable pattern in poverty measures over time. However, when poverty line is defined differently, poverty measures was improved a little in 1996. For example, when the poverty line is 40 percent of the current median income, around 4% of total individuals are within poor ones. The income gap shows 37% in 1991, and 33% in 1996. Also the Gini coefficient changed from 0.219 to 0.195.

[Table 5] Evolution of relative poverty

	1991	1996
Relative poverty :		
Poverty threshold=60 per cent of the current median income		
H	0.13161	0.13056
I	0.31995	0.31195
GP	0.19021	0.19869
Poverty threshold=50 per cent of the current median income		
H	0.08349	0.07784
I	0.33535	0.32880
GP	0.19861	0.19648
Poverty threshold=40 per cent of the current median income		
H	0.04716	0.04416
I	0.36818	0.32789
GP	0.21900	0.19506
Poverty threshold=30 per cent of the current median income		
H	0.02417	0.02097
I	0.42820	0.33529
GP	0.25523	0.19801

IV. CONCLUSION

We empirically show the level of income distribution in Korea, by using National Survey of Family Income and Expenditure Data in 1991 and 1996 from Korea National Statistical Office. These dataset is most comprehensive in population coverage and sample size, which can lead to reliable estimates on Korea's income distribution.

We find that the level of income distribution before redistributive policies in Korea is moderate, and deteriorated over 5 years. However, its level was improved over the times, after redistributive policies were activated. The structure of income sources for total income inequality is quite different between two time periods. However, we hesitate to insist some change in structure of income sources, as our dataset might have inconsistency in population and sampling technique.

Government policy has an interesting implication on income redistribution. Public transfer policy does not have significant impact on reducing the level of income inequality. However, tax policy has a redistributive impact. The relative impact of tax policy on income redistribution is especially strong. Therefore, tax policy can have an important role in reducing the level of income inequality, when it is well designed.

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