

JOURNAL OF ECONOMIC DEVELOPMENT

Volume 26, Number 2, December 2001

Income Distribution and Public Transfers as Social Safety Nets in Korea

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Using 5-year balanced household panel data, this paper shows that the inequality of per capita income in Korea aggravated during the financial crisis in 1998. The decomposition analysis of income inequality by factor component shows that the dominant positive effect on the income inequality is by the asset income. Next is the wage income, followed by the other income. Furthermore, this paper shows that social safety net programs were not yet in place during the initial period of the crisis. Public transfers were not effective social safety net devices and did not contribute in decreasing income inequality. Private transfers, on the other hand, were effective devices and narrowed the disparity in household income.

I. Introduction

Triggered by the Asian financial crisis, Korea suffered from economic imbalances. With the onset of the crisis, real GDP contracted by 6.7 percent in 1998 and unemployment rate jumped from 2.6 percent in 1997 to 6.8 percent and inflation rose to 7.5 percent. As a social impact, poverty incidence rose. The 8.6 percent of poor urban households jumped to 19 percent, back to the level of 1993 (Kakwani (2000), World Bank (2000)).

It is often asked whether the burden of the economic crisis is being equally distributed among the rich and the poor. One would expect income inequality to aggravate during recessive times since it is plausible that people belonging to high-income group have more ways to protect their income than people belonging to low-income group, and since the effect on wage income that is basically the only resource of the poor, will be more serious. On the other hand, one would expect social safety net devices of the government like public transfers and private transfers to protect the income of people belonging to low-income group would contribute to improve income inequality. In Korea, for instance, employment insurance and national pension, which constitute the public transfers, were introduced in order to reduce income inequality.

This paper examines the impact of the crisis on income distribution by exploring the change in income sources and the role of private and public transfers as social safety net devices. This paper uses per capita household income rather than household income in order

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to control the effects of different household sizes. Thus, we are considering the household as a unit characterized by a flow of income transfers.

Using 5-year balanced panel data of the Korea Household Panel Survey (KHPS), this paper shows that per capita income inequality increased during the crisis. The finding is consistent with that of Cheong (2001) using the Household Income and Expenditure Survey (HIES) data. Through inequality decomposition by factor component, it is shown that the dominant positive effect on the income inequality is by the asset income. Next is the wage income, followed by the other income. In addition, this paper shows that public transfers as the main social safety nets did not play a significant role in reducing per capita income inequality. This is because public transfers were consisted predominantly of pension and not of public assistance and because social safety net programs were not yet in place during the initial period of the crisis. Private transfers, on the other hand, played a positive role in reducing income inequality.

The results of the paper suggest important policy implications. First, in order to improve income inequality, government transfer policies should be well targeted to the poor. Second, even if public transfers are well targeted to the poor, public transfer programs need to be carefully designed to prevent crowding-out effect of the more prevalent private transfers because there is a strong crowding-out relation between private and public transfers in Korea (Jimenez, Kang and Sawada (2001)).

This paper is organized as follows. The next section discusses the data and evolution of income inequality. Section III explores the impact of income components on income distribution. Section IV discusses the role of public and private transfers as social safety net devices, and Section V concludes.

II. Evolution of Income Distribution

1. Data and Descriptive Statistics

The Korea Household Panel Survey (KHPS) data has a rectangular form, following the Panel Survey of Income Dynamics (PSID) in the US. There are no replacements of households, but household split-offs due to marriage or other reasons are included. The survey was conducted in all Korean prefectures except Jeju-do through stratified random sampling by street blocks: eight and seven households from each street block are randomly selected in large and small cities, respectively. The data consists of multi-purpose surveys in household and individual modules. This study excludes data of the first and second waves because definition of some variables and the period covered are not comparable with those in the later waves. Thus, this study examines periods from 1995 to 1998, inclusive of the initial period of the Asian financial crisis. Table 1 summarizes the number of households and the period covered by the KHPS data.¹

1. The data are compared with the survey data of the HIES conducted by the Korea National Statistical Office which has been extensively used in the estimation of income and expenditure inequality indices (Kakwani (2000), Cheong (2001)). The HIES data is a repeated cross-section data and covers households residing only in 72 cities,

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Some basic economic variables for Korea are presented in Table 2 for years 1994-1998. Between 1994 and 1997, annual average growth rate of GDP was 7.3 percent; unemployment and inflation rates were hovering around 2 and 4.5 percent, respectively. The onset of the financial crisis, however, caused GDP growth rate to fall from 5.0 percent in 1997 to - 6.7 percent in 1998, and unemployment and inflation rate to collapse to 6.8 percent and 7.5 percent, respectively, in 1998.

Table 1 The KHPS Data

	Period Covered	1993	1994	1995	1996	1997	1998
1993	Jan. 92 - Dec. 92	4547	3609	3045	2712	2571	2266
1994	Apr. 93 - Mar. 94		16	13	11	9	7
1995	Aug. 94 - Jul. 95			50	41	39	30
1996	Aug. 95 - Jul. 96				69	55	39
1997	Aug. 96 - Jul. 97					50	46
1998	Aug. 97 - Jul. 98						80
Drop-outs			938	564	333	141	305
New Entry (Split-offs)			16	63	121	153	202
Drop-out rate (%)			20.6	15.6	10.9	5.2	11.9
Total		4547	3625	3108	2833	2724	2468

Table 2 Basic Indices of Korean Economy

Year	1994	1995	1996	1997	1998
GDP Growth Rate	8.3	8.9	6.8	5.0	- 6.7
Unemployment Rate	2.4	2.0	2.0	2.6	6.8
CPI (1995=100)	95.7	100	104.9	109.6	117.8
Inflation (CPI)	6.2	4.5	4.9	4.5	7.5

Source: *Economic Statistics Yearbook*, The Bank of Korea (2001).

Table 3 gives the definition of income by factor component while Table 4 reports the descriptive statistics of per capita income by its component of the balanced panel households.² All variables are expressed in 10 thousand Korean won throughout the paper. The number of balanced households in every year is 1,978. All income categories - wage, asset, transfers and other income - are in terms of per capita household at constant 1995 prices. The subcategories of transfers - public and private - are shown as well.

excluding 1) farmers, 2) fishermen, 3) single and 4) foreign households. And this survey does not provide information on incomes of unemployed and selfemployed household heads.

2. See Goh, Kang and Sawada (2001) for descriptive statistics of household characteristics, expenditure, asset and debt variables.

Table 3 Definition of Income Variables

Wage Income	Asset Income	Transfers	Other Income	salaried workers, entrepreneurs, temporary/part-time workers, and side business workers interest or dividend income from saving/bond/shares, income from leasing land, house, or building and through selling land, house, or building national, private schools/civil servant/military, and veterans' pension, support from government or social organization, and employment insurance support from family or relatives Time deposit, insurance payments received, time deposit insurance received, selling securities, selling real estates, loan repayments, lottery payment received, and others
		Public	Private	

Table 4 Descriptive Statistics of Per Capita Income Components

Per Capita Income	1995	1996	1997	1998	% change 95/97	% change 97/98
Total Income	664.75 (100)	761.82 (100)	776.30 (100)	591.55 (100)	8.4	- 23.8
Wage Income	483.69 (72.8)	534.65 (70.2)	541.05 (69.7)	408.93 (69.1)	5.9	- 24.4
Asset Income	118.54 (17.8)	151.02 (19.8)	146.69 (18.9)	84.75 (14.3)	11.9	- 42.2
Transfer Income	20.70 (3.1)	25.79 (3.4)	29.50 (3.8)	29.45 (5.0)	21.3	- 0.2
Public	6.46 (1.0)	6.44 (0.9)	6.50 (0.8)	8.37 (1.4)	0.3	28.8
Private	14.22 (2.1)	19.32 (2.5)	22.99 (3.0)	21.17 (3.6)	30.8	- 7.9
Other Income	46.35 (7.0)	53.88 (7.1)	62.62 (8.1)	70.37 (11.9)	17.6	12.4
Households	1978	1978	1978	1978		

Note: The percentage share is in the parenthesis.

Between 1995 and 1997, per capita total income increased by 8.4 percent every year on average, with 5.9 and 11.9 percent increased in wage and asset income, respectively. Further, wage and asset income constituted 70 and 19 percent, respectively, of the total income in 1997. During this period, public and private transfers also increased by 0.3 and 30.8 percent, respectively but occupied only a small percentage of total income, i.e., 3.8 percent in 1997.

With the onset of the crisis, per capita total income fell by 23.8 percent between 1997

and 1998. The two major income categories which are wage and asset income dropped by 24.4 and 42.2 percent respectively. Private transfers decreased by 7.9 percent while public transfers rose by 28.8 percent. They, however, occupied only a small share of the total income, 5 percent in 1998, for instance.³ Furthermore, the share of wage income also decreased from 72.8 percent in 1995 to 69.1 percent in 1998.

2. Evolution of Per Capita Income Inequality

Korea is generally cited as a country with rapid economic growth and low income inequality. There is also a general acceptance of the view that income distribution has further improved recently. In view of this, Table 5 shows per capita income inequality measures between 1995 and 1998.

The first two measures - Gini coefficient and Theil index - are widely used in empirical work. The Gini coefficient, which is more sensitive to changes in the middle of the distribution, remained the same in both 1995 and 1996 but decreased to 0.42 in 1997. Then it increased again to 0.43 during the crisis. And the Theil index, which is extremely sensitive to changes in the upper and lower tails, increased from 0.34 in 1995 and 0.36 in 1998. The last two measures that are coefficients of variation (CV) of per capita household income and standard deviation (SD) of log of per capita household income increased during the crisis as well.

The larger the values of these inequality measures are the more unequal the income distribution. In Table 5, it is shown that the income distribution became unequal by all inequality indices except the Gini coefficient between 1995 and 1996 but had been improved until 1997. The onset of the crisis in 1997, however, aggravated income inequality.

The estimated Gini coefficient of per capita consumption shows different trend over the same period. Using the same data used in this paper, Kang (2001) shows that the Gini coefficient of per adult-equivalent expenditure decreased during the crisis. Cheong (2001) finds that the Gini coefficient for urban households of per capita consumption did not increase, while it increased in terms of per capita income during the crisis. Kakwani (2000) finds that the Gini coefficient of per capita welfare did not show significant trend of an increase or decrease during the crisis. Both Cheong (2001) and Kakwani (2000) used the HIES data.⁴

Table 6 shows the per capita household income by decile. Between 1996 and 1997, the per capita income in bottom 20, 30, and top 10 percent deciles dropped but that of other groups increased. During the financial crisis, the per capita income of low-income group except the lowest 10 percent group dropped more than that of high-income group. For instance, the income of the poorest 20 percent decile dropped by 60 percent.

3. 23 and 31 percent of households received transfers in 1997 and 1998, respectively. 18 and 22 percent of households received private transfers and 9 and 16 percent received public transfers in 1997 and 1998, respectively (Jimenez, Kang and Sawada (2001)).

4. See Ahn (1997) for a review of historical trends of income distribution and data used in the estimation of income inequality in Korea.

Tables 5 and 6 suggest that the crisis in Korea led to a more unequal income distribution, indicating two key points. First, per capita income distribution remained constant between 1995 and 1996. Second, while the income distribution had been improving, it became more unequal than that of 1995 after the financial crisis hit the country.

Table 5 Per Capita Income Inequality

	1995	1996	1997	1998
Gini Coefficients	0.4234	0.4234	0.4177	0.4313
Theil Index	0.3362	0.3452	0.3184	0.3573
CV	1.0440	1.0735	0.9895	1.1573
SD (log)	0.8422	0.8424	0.8241	0.8749

Table 6 Average Per Capita Income by Decile

Percentile of Income	1996	1997	1998	% change 96-97	% change 97-98
10	122.07	131.24	89.82	7.5	31.6
20	261.11	250.27	187.82	- 4.2	- 60.0
30	358.62	362.46	262.72	- 3.8	- 27.5
40	446.42	451.45	335.83	1.1	- 25.6
50	530.68	545.13	404.66	2.7	- 25.8
60	610.75	641.53	484.34	5.0	- 24.5
70	720.61	761.05	570.78	5.6	- 25.0
80	871.18	934.3	707.45	7.3	- 24.3
90	1178.26	1235.32	945.46	4.8	- 23.5
100	2519.91	2453.66	1930.91	- 2.6	- 21.3

In addition to the results shown by Tables 5 and 6, transition matrices of Table 7 show how the per capita income of households changed over the period 1996-1998. Such ordinal ranking may be important for tracking the location and characteristics of a household group. Due to missing data, only 1,879 households in 1996-1997 and 1,897 households in 1997-1998 out of balanced 1,978 households are considered.

Rows represent quintiles of the year t and columns represent quintiles of the year $(t+1)$. Each cell of each row and column represents the number of households. For example, row **I** in year t represents the lowest quintile (the poorest 20 percent) while row **V** in year t represents the highest quintile (the richest 20 percent). Households along the diagonal were those that remained in the same quintile over the period.

In 1996-1997, 830 households (44.2 percent) remained in the same original quintiles, 515 households (27.4 percent) moved to higher quintiles and the remaining 534 households (28.4 percent) moved to lower quintiles. While in 1997-1998, 778 households (41.0 percent) remained in their original quintiles, 594 households (31.3 percent) moved to higher quintiles and the remaining 525 households (27.7 percent) moved to lower quintiles. Based on these results, the number of households that moved to higher quintiles is larger in 1997-1998 than

in 1996-1997.

Table 7 Transition Matrices of Per Capita Income: 1996-1998

		1997					Total
		I	II	III	IV	V	
1996	I	224	93	30	20	15	382
	II	77	140	77	47	34	375
	III	39	86	122	77	54	378
	IV	19	46	99	142	68	374
	V	14	15	48	91	202	370
Total		373	380	376	377	373	1879

		1998					Total
		I	II	III	IV	V	
1997	I	224	99	26	18	15	382
	II	72	138	94	55	21	380
	III	31	66	120	100	62	379
	IV	28	44	80	121	104	377
	V	25	36	64	79	175	379
Total		380	383	384	373	377	1897

III. Inequality Analysis by Factor Component

In this section, a formal decomposition of inequality and a descriptive evidence of per capita income by factor component are provided.

1. Inequality Decomposition by Factor Component

Following Shorrocks (1982, 1983), the decomposition index of income distribution by factor component (SF) is calculated as follows:⁵

$$SF_i = r_i \frac{\mathbf{s}_i}{\mathbf{s}} = r_i \frac{m_i \text{ cv}_i}{m \text{ cv}},$$

where r_i is the correlation between total income and factor income i , and \mathbf{s}_i and \mathbf{s} reflect standard deviation of factor income i and total income, respectively. m_i and m

5. Since this rule does not depend on the specific inequality index, the contributions assigned to different income components will be invariant to the choice of inequality measure. See Lerman and Yitzhaki (1989), Silber (1989) and Sastry and Kelkar (1994) for decomposition analysis of Gini index.

represent the mean of factor income i and total income, respectively and cv_i and cv indicate the coefficient of variation of factor income i and total income, respectively. Note that the sum of contribution by all factor income components is 1.

Table 8 shows the Gini coefficient of each income component and its estimated contribution to income inequality. Factor components with a positive SF value make a disqualifying contribution to inequality in total income and those with negative SF make an equalizing contribution.

The Gini coefficients of all income components decreased from 1996 to 1997. The Gini coefficients for wage and asset income, however, increased during the crisis. For example, the Gini coefficient for wage income in 1996 was 0.38 but it increased to 0.41 in 1997. Furthermore, the Gini coefficient of asset income was large relative to that of wage income, which is intuitively reasonable. The higher inequality of transfers looks reasonable because they might serve as social safety nets. The remaining issue is how transfers were well targeted, which will be investigated in detail in section IV.

The SF values show the pattern of factor contributions across years. The dominant positive effect on income inequality is by the asset income, which account for approximately 55 and 51 percent in 1996 and 1998, respectively. Next is by the wage income (roughly 30 percent in 1996 and 28 percent in 1998), followed by the other income. Our major interest here is the effect of transfers on income inequality. To indicate that transfers acted as social safety nets they should be observed to have negative effect. The estimated SF value for private transfers show that private transfers helped in narrowing income inequality in 1996 and 1998 but contributed in increasing income inequality in 1997. Although the impact was not large, private transfers thus acted as social safety nets. On the other hand, showing a positive SF value, public transfers did not contribute in decreasing income inequality.

Table 8 Inequality Decomposition by Factor Income

	Gini			SF*100		
	1996	1997	1998	1996	1997	1998
Wage Income	0.3785	0.3776	0.4084	32.13	30.32	28.00
Asset Income	0.9161	0.9052	0.9222	54.48	51.46	51.60
Private Transfers	0.9277	0.9264	0.9157	- 0.22	1.43	- 0.21
Public Transfers	0.9772	0.9746	0.9713	0.31	0.05	0.25
Other Income	0.9272	0.9218	0.9084	14.30	16.75	20.36
Total	0.4234	0.4157	0.4313	100	100	100

2. Descriptive Evidence

Based on the findings above, the role of each income component needs to be further examined. Using per capita income decile, Tables 9 and 10 show the trends of wage and asset income changes, respectively. The wage income of poor group dropped more than that of high-income group. In 1996-1997, while the income of the poorest 30 percent and the richest 10 percent decreased, that of other group increased. During the financial crisis, on the other hand, the wage income of all income groups dropped. The wage income of the poorest

10 to 40 percent decreased, on average, by 30 percent while that of the richest 10 to 40 percent decreased, on average, only by 21 percent. The crisis, therefore, increased wage income inequality as Table 8 shows.

On the other hand, high-income group, compared with low-income group, experienced more loss in their asset income in 1998. For instance, the richest 30 percent, which gained asset income except the richest 10 percent part of it in 1997, lost almost half of their asset income in 1998. The percentage of asset income loss by low-income group was less than that of high-income group.

Table 9 Average Per Capita Wage Income by Decile

Percentile of Income	1996	1997	1998	% change 96-97	% change 97-98
10	84.85	77.61	52.85	- 8.5	- 31.9
20	198.54	189.59	139.36	- 4.5	- 26.5
30	318.07	309.4	213.36	- 2.7	- 31
40	390.05	413.14	274.35	5.9	- 33.6
50	477.52	499.71	354.31	4.7	- 29.1
60	540.99	559.93	432.64	3.5	- 22.7
70	646.74	659.86	484.58	2	- 26.6
80	732.8	744.46	578.32	1.6	- 22.3
90	829.91	889.42	667.27	7.2	- 25
100	1047.09	948.8	869.36	- 9.4	- 8.4

Table 10 Average Per Capita Asset Income by Decile

Percentile of Income	1996	1997	1998	% change 96-97	% change 97-98
10	5.11	7.6	6.62	48.7	- 12.9
20	12.06	10.6	8.4	- 12.1	- 20.8
30	10.84	17.02	12.88	57.0	- 24.3
40	16.48	11.21	16.74	- 32.0	49.0
50	20.43	12.68	14.76	- 37.9	16.4
60	32.23	29.85	17.91	- 7.4	- 40.0
70	36.45	48.27	37.42	32.4	- 22.5
80	68.15	92.7	45.55	36.0	- 50.9
90	202.88	222.34	105.56	9.6	- 52.5
100	1015.33	966.85	554.91	- 4.8	- 42.6

Table 11 also shows per capita other income increased for low-income and high-income groups and decreased for middle-income group during the crisis. Furthermore, the richest 10 percent occupied the largest percentage of the total other income. As defined in Table 3, other income was mostly constituted of financial securities.

Table 11 Average Per Capita Other Income

Percentile of Income	1996	1997	1998	% change 96-97	% change 97-98
10	0.92	1.72	1.99	87	15.7
20	1.82	3.34	4.32	83.5	29.3
30	1.94	4.51	5.68	132.5	25.9
40	8.26	6.11	8.57	- 26	40.3
50	10.48	14.18	13.49	36.3	- 4.9
60	15.54	30.99	17.66	99.4	- 43
70	27.54	34.53	23.54	25.4	- 31.8
80	53.4	75.15	63	40.7	- 16.2
90	120.62	95.63	133.27	- 20.7	39.4
100	265.11	292.61	399.73	10.4	36.6

IV. Public Transfers as Social Safety Nets

Two main theoretical points must be first made clear before further examining the role of transfers: first, why would one household give money or goods to another and second, what is the relation between private and public transfers. In regard to the former, two principal motives exist: altruism and exchange (Cox (1987)). Households transfer resources out of feelings of altruism that implicitly determines the recipient's consumption (Becker (1974)). An alternative motivation is that households give resources in exchange for something such as future assistance in time of need. Donors give resources in order to receive something in exchange for their transfers in times of need (Bernheim, Shleifer, and Summers (1985)).

Further understanding about private transfers is important for policy making because, among other things, these remittances provide social and economic benefits similar to those of public programs such as unemployment insurance, pension support, educational credit, and health insurance. As such, private transfers may supplement or overlap with public transfers, and, if private donors give less as public transfers increase, the effect of public programs on beneficiaries would be less than originally intended or the transfers may alter the distributional effect of public programs. Thus, the interlinkage between private and public transfers is important since nearly all public policies, including those that focus on the economy's general performance, redistribute income from one group to another.

The relation between private and public transfers is affected by the relative importance of the two motives of transfers discussed above. The altruism model predicts that public transfers tend to displace private transfers while the exchange model indicates that government transfers will have little effect on private ones (Becker (1974), Bernheim, Shleifer, and Summers (1985), Cox (1987)).⁶ Thus the mere existence of private transfers

6. Cox and Jimenez (1995) estimate that if unemployment insurance system was introduced in the Philippines,

does not imply that crowding-out necessarily occurs.⁷

If crowding-out occurs, it could pose difficult targeting problems for policy makers. For example, what happens when poor households who are already receiving private transfers are targeted for a public subsidy? The subsidy eases the burden of private donors, who will then contribute less to their relatives and friends.⁸ Thus, in essence, the government subsidy indirectly benefits donors. As donors are often from upper-income brackets, some of the government subsidy intended only for the poor is diverted to better-off households. Thus government needs a careful targeting scheme to prevent such crowding-out effects.

Based on theoretical considerations, one of the main concerns of this paper is the role of private and public transfers as social safety net devices during the financial crisis that is examined by investigating how much each decile group of per capita income received private or public transfers throughout the period. As Table 12 shows, the observed trend of public transfers is in contrast to our expectation. High-income group received more public transfers, compared with low-income group. For instance, the public transfers of the richest 10 to 30 percent increased, on average, by 152 percent while that of the poorest 10 to 30 percent decreased, on average, by 34 percent in 1998. This suggests that the public transfers did not contribute in reducing the income inequality during the crisis. This is because of the fact that the public transfers are consisted predominantly of pension, and not of public assistance. This implies that the safety net programs were not yet in place during the initial period of the crisis.

On the other hand, the private transfers in Table 13 shows an opposite trend. It is clearly shown that low-income group received relatively large amount of private transfers. For instance, in 1998, the poorest 40 percent received about 268 thousand Korean won on average whereas the richest 40 percent group received 187 thousand Korean won on average. The amount high-income group received is lower than that of low-income group except for the richest 10 percent group. This confirms that the inter-household private transfers play a positive role in reducing income gap, which is also shown in Table 8.⁹

private transfers would fall so much that the intended beneficiaries of the program would scarcely be any better off. In contrast, they find that the degree of crowding-out associated with pensions is much less dramatic. If transfers are motivated by exchange, so that they compensate the recipient for providing the donor with some kind of service, government transfers will have little effect on private ones (Cox (1987)).

7. Using the same data used in this paper, Jimenez, Kang and Sawada (2001) show a strong crowding-out relation between private and public transfers throughout the period.
8. Existing evidence on the extent and magnitude of crowding-out is mixed (Cox and Jimenez (1990, 1995), Rosenzweig and Wolpin (1994), Cox and Jakubson (1995), Cox, Eser and Jimenez (1998)).
9. Using binary response panel model, Jimenez, Kang and Sawada (2001) show that pre-transfer income has a negative relation with the probability of receiving private transfers. This result suggests that private transfers in Korea were largely motivated by altruistic behavior implying that private transfers were well targeted to poor households.

Table 12 Average Per Capita Public Transfers by Decile

Percentile of Income	1996	1997	1998	% change 96-97	% change 97-98
10	8.45	10.15	7.88	20.1	- 22.4
20	8.98	5.87	5.29	- 34.6	- 9.9
30	6.10	7.48	2.39	22.6	- 68.1
40	5.66	5.01	8.17	- 11.5	63.1
50	4.89	4.00	4.41	- 18.2	10.3
60	3.62	9.55	4.81	163.8	- 49.6
70	1.79	5.14	6.55	187.2	27.4
80	9.18	5.67	11.43	- 38.2	101.6
90	9.00	2.85	22.97	- 68.3	70.6
100	6.76	8.98	9.63	32.8	7.2

Table 13 Average Per Capita Private Transfers by Decile

Percentile of Income	1996	1997	1998	% change 96-97	% change 97-98
10	22.72	34.17	20.48	50.4	- 40.1
20	39.71	40.88	30.44	3.0	- 100.0
30	21.67	24.05	28.40	11.0	18.1
40	25.97	15.99	28.00	- 38.4	75.1
50	17.35	14.57	17.69	- 16.0	21.4
60	18.37	11.21	11.33	- 39.0	1.1
70	8.09	13.25	18.69	63.8	41.1
80	7.65	16.32	9.15	113.3	- 43.9
90	15.86	25.08	16.39	58.1	- 34.7
100	16.36	32.55	30.37	99.0	- 6.7

An examination of Table 14 indicates the role of each component of public transfers. The first three columns represent public transfers in terms of pensions: National is national pension, Civil servant is private schools, civil servants, or military pension, and Veterans is veterans' pension. The fourth column, Insurance, is the transfer from employment insurances and the fifth column, Support, is the support from the government or social organizations. The last column shows the value of per capita public transfers, which is the same with the values shown in Table 12.

High-income group received larger income from pensions. In addition, the support from the government or social organizations, as expected, played a positive role in reducing income inequality, except among the richest 10 percent, and was therefore an effective social safety net device. Public transfers from insurances, on the other hand, can be ignored since its amount is negligible. Based on the values presented, it can be said that most of the public transfers served as sources of extra income rather than as safety net devices.

As discussed in the introduction, Korean government was not well prepared in the beginning of the crisis. This is supported by the empirical results of this paper. After the crisis hit the country, the government, however, started to allocate larger budget into social safety nets. It responded to sharp increase in unemployment by putting forth a comprehensive unemployment benefit package in March 1998, which was agreed upon in the Tripartite Commission composed of businessmen, union leaders and public officials. The package includes an expanded unemployment insurance system, subsidized loan programs for the unemployed and venture businesses, active wage market policies, public work programs and others.¹⁰ The effect of these government social safety net programs is however not explored in this paper since the data used only covers from Aug. 1997 to Jun. 1998. It is therefore not fair to conclude that government programs had no contribution in recovering economic crisis.

Table 14 Average Per Capita Public Transfers by Category and by Decile (1998)

Percentile of Income	National	Civil Servant	Veterans	Insurance	Support	Total
10	0.10	0.00	0.65	0.16	6.98	7.88
20	0.00	0.00	0.00	0.00	5.29	5.29
30	0.08	0.00	0.77	0.00	1.54	2.39
40	0.88	1.08	4.41	0.00	1.80	8.17
50	0.61	0.23	2.82	0.00	0.75	4.41
60	2.61	0.00	1.71	0.36	0.13	4.81
70	1.62	3.17	1.19	0.00	0.57	6.55
80	1.02	7.00	3.04	0.26	0.10	11.43
90	0.08	9.66	8.92	0.00	4.32	22.97
100	3.10	5.07	0.79	0.53	0.10	9.63
Mean	1.03	2.64	2.42	0.13	2.14	8.37

V. Conclusion

Using 5-year balanced household panel data, this paper shows that the burden of the economic crisis was not shared equally by the poor and the rich in Korea. All of the income inequality measures increased during the economic crisis, suggesting that the income inequality in the country had worsened. In order to explore the impact of different income sources on income inequality, this paper divided the total income into four categories: wage,

10. For instance, in 1998, Korean government allocated a budget of 3,625 billion won, i.e., 1.3 percent of the GDP, for social safety nets and unemployment-related expenditures. As the recession deepened, the government further increased 1999 budget allocations for social programs by 34.3 percent compared to the previous year. Thus the consideration of data after the crisis might find a significant role of social safety net programs newly introduced by government (Moon, Lee and Yoo (1999)).

asset, transfers, and other income. The wage income of low-income group dropped more than that of high-income group. The asset income of high-income group, however, dropped more. The other income of low-income group increased but that of high-income group decreased.

What is more interesting is the distributional effect of transfers. Although private transfers were effective social safety net devices, public transfers were not and did not contribute in improving income inequality. This is because public transfers are consisted predominantly of pension and not of public assistance, and because social safety net programs were not yet in place in the initial period of the crisis.

After the onset of the crisis, however, the government expanded its social safety net programs as discussed in section IV. With these ongoing policies, the World Bank (2000) indicates that the negative impact of the crisis on households' welfare was smaller than was originally expected because the sensible responses of households and the government played an important role in combating the crisis. The KHPS data used in this paper, however, does not cover the effect of government policies implemented just after the crisis. Hence, the impact of these policies on income distribution might not have been reflected in the analysis.

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