

Analysis of the Net Worth of the Poor in Korea

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I. Introduction

1. Purpose of Study

The poverty measure is an important indicator that influences public awareness of well-being, as well as public policies and programs. Income has been the main focus of poverty measurement, and income maintenance has been the primary goal of public policies designed to alleviate poverty. However, using income as the basis to measure and alleviate poverty ignores the importance of wealth.

Wealth is central to a household's economic security in the sense that they provide liquidity in times of economic hardship and can be used to pay for further education, to buy a house, or to maintain a decent standard of living after retirement. Owner-occupied housing is an important part of household wealth, as it provides services and frees up resources that would otherwise be sent on rent. People without assets are forced to live from one paycheck to the next, require assistance when their income flow is interrupted, and are discouraged from actively seeking a better life.

In this study, we discuss the characteristics of household that lack enough savings to sustain them during a period of economic hardship. We define an asset poverty measure whereby a household is considered to be asset poor if it does not have enough wealth to meet its basic needs for a limited period of time. Caner and Wolff (19) reported that, contrary to a sharp decline in the official measure of income-based poverty, the asset poverty rate barely changed over the 1984-99 period and the severity of poverty increased, despite economic growth and a booming stock market.

Income/asset inequalities increased since the emergence of the international financial crisis which was begun from the second half of 2009. A rapid deterioration of income/asset inequalities might further cause serious social problem. After the foreign exchange crisis in 1997, although there was consensus that deeper understanding is necessary for the asset accumulation of the poor, working poor, and near poor, the needs for basic research was not yet satisfied so far. Furthermore, in addition to incomes, assets are also counted in applying income approval criteria, additional analysis for the current status of the asset-poor might be useful for the refinement of the Basic Livelihood Protection system.

In addition to generating income from itself, assets can provide information on the financial stability of the household. It would be suffice to study income if asset is highly correlated with income. But, it is well known that the correlation between income and asset is

relatively low, thus the discussion on the financial condition based solely on the income concept might not provide enough information on the financial condition of the households. (Keister and Moller, 2000).

Since most of the existing literature in Korea considered total assets rather than net assets, it is not possible to evaluate the financial soundness of the households especially in times of economic crisis we just experienced. Therefore, in this study, analysis is based upon the net asset, rather than the total asset. Specifically, the net asset is defined as the difference between total asset and total debt.

Asset holdings of the poor might be an important source of on the effect of the inequality reduction through the Basic Livelihood Protection System. The purpose of this study is to provide alternative policy initiative for the alleviating inequalities by analyzing the asset holdings of the poor.

2. Review on Previous Literature

If we were concerned with the overall distribution of economic well-being or resources, it would be appropriate to examine the distribution of "total wealth", that is, human plus non-human capital. But this is not our objective here. Instead, we exclude the human capital component and focus on material assets in the form of real property and financial claims. The term "wealth" will therefore usually refer to "net worth", that is, the value of non-human assets minus debts. Our aim is to examine the reasons for holding household wealth, to document the observed differences in asset holdings across households, and to examine the cause of these observed differences.

One of the reason why we are interested in the assets is that it can help households to smooth consumption. Most of the real and financial assets are tradable in the market. For example, higher consumption is expected in the near future due to baby birth, or decline in income is expected due to the immediate retirement, or unexpected exogenous shocks can affect consumption/expenditure and thus assets might play an important role in consumption smoothing. The role of consumption smoothing is more important when households encountered either in incomplete capital markets or in borrowing constraints.

The concept of net worth may seem to be quite clear, but do we need to include the intangible assets that cannot be bought and sold in the market place? The category of intangible assets cover pension rights, life insurance, and entitlement to future government transfers (including "social security wealth). It is quite common to discover that most of applied work on wealth holdings and/or distribution confines its coverage to marketable wealth. In this paper the intangible assets are not considered in order to avoid the

complexity of difficulty of valuation problems.

There are several stylized facts on the distribution of wealth that are based on the existing empirical literature. It is worthwhile to briefly review them here (Davies and Shorrocks, 1999).

1. Wealth is distributed less equally than labor income, total money income or consumer expenditure. While Gini coefficients in developed countries typically range between about 0.3 and 0.4 for income, they vary from about 0.5 to 0.9 for wealth. The estimated share of wealth held by the top 1% of families varies from about 15% to 35%, for example, whereas their income share is usually less than 10%.
2. Financial assets are less equally distributed than non-financial assets, at least when owner-occupied housing is the major component of non-financial assets. However, in countries where land value is especially important, the reverse may be true.
3. The distribution of inherited wealth is much more unequal than that of wealth in general.
4. In all age groups there are typically a group of individuals and families with very low net worth, and in a number of countries, including the US, the majority have surprisingly low financial assets at all ages.
5. Wealth inequalities has, on the whole, trended downwards in the twentieth century, although there have been interruptions and reversals, for example in the US where wealth inequality has increased since the mid 1970s.

Caner and Wolff (2004) estimated the size and severity of asset poverty in the United States using data from the Panel Study of Income dynamics (PSID). They find that, contrary to a sharp decline in the official measure of poverty, which is based on income, the asset poverty rate barely changed over the 1984-99 period and the severity of poverty increased, despite economic growth and booming stock market.

Leipziger, *et al.*(1992) analyze income and wealth of 4,291 households surveyed by Korea Development Institute (KDI), and report Gini coefficient of assets is 0.58 in 1988. The concentration ratio of the top 1%, 5%, and 10% households are 19%, 37%, and 48%, respectively. Furthermore, they reported that the land holdings is the most important factor of wealth concentration in Korea, top 25% of land owners have 90% of the total land values. They also suggested that adjustments based on balance sheets would substantially increase estimates of wealth concentration in Korea, due to the fact that land is probably undervalued by a significant margin, and that land holdings are distributed very unequally.

Lee and Lee (2001, 2001a, 2001b) analyzed Korea Household Panel Study (KHPS) data compiled by the Daewoo Economic Research Institute (DWERI). They report that net asset inequality is increased before Foreign Exchange Crisis of 1997, debts of the lowest income

group increased sharply after the Crisis. On the contrary, net assets of the richest group dramatically increased at the same time, most of the increase is due to the increase in the real estates.

Kim (2002) also investigates the dynamic patterns of the composition of household assets with DWERI's KHPS data. He reports several key features of the asset composition in Korean households. First, the asset composition reveals risk-aversing behavior of the households and second, the share of real estate in the asset composition is very high. Third, the degree of asset inequality is greater than that of income, whether only real estates are analyzed or not.

Nam (2007) investigated the holdings and inequalities of household wealth using Korea Labor Institute Panel Survey (KLIPS) data compiled by the Korea Labor Institute (KLI) for the period of 1999-2004. He reports some characteristics of the households wealth holdings in Korea as follows: first, the share of real estates is very high, second, net worth is more concentrated to the higher income group, third, bi-polarization of the asset holdings continued for the period of 1999-2004. The major determinants of the wealth poor are found to be household income, number of workers in the household, and whether they have owner-occupied housing or not.

Yoo (2007) performed survey analysis on the recognition of the income inequality, and reports that Koreans do not agree with the basic assumptions of the relative inequality, as well as that they are more sensitive to the absolute income inequality (e.g., absolute income differences). He also recommends that income distribution policy should focus on the poverty reducing growth strategy, by pointing out the fact that the change in income inequality plays different role in economic growth and the change in poverty according to whether the nature of the change is temporary or not.

Nam (2008) investigated the inequality of household assets with KLIPS data (waves 2-9). As of 2006, Gini coefficients of the net worth and income are 0.731 and 0.438, respectively. The correlation coefficient between net asset and income is 0.313, which is somewhat lower than that of the US (0.49). The concentration ratio of net worth in the top 1% is 16.7%, top 5% and top 10% hold 39.8% and 54.3%, respectively. Therefore, net asset is more concentrated than income, and higher income group experienced more rapid asset accumulation in the 1999-2006 period. Inequality decomposition of the net assets tells us real estate contributed the most in acceleration of asset inequality.

Nam and Kwon (2008) investigated asset distribution, inequality, decomposition and asset poor with KReIS data compiled by the National Pension Service (NPS). They find that asset is more concentrated than income, and the share of asset poor increased as the household age increases. Based upon logit analysis on the determinants of asset poverty, they find that the probability of asset poor is higher if the household head is female, renting

a house, living with child under 5 year old. On the contrary, the probability of asset poor is lower if the household have higher education, higher income level, good health condition, or living in her own house.

Section 2 analyzes the asset holdings of the poor and section 3 provides some empirical evidence on the determinants of the asset holdings of the poor. Finally, section 4 provides summary of major findings and some policy recommendations will be provided.

Section 2. Asset Holdings of the Poor

In this section, the asset holdings of the poor will be discussed. We start by briefly summarizing the main features of the KOWEPS data, and describe the criteria for poverty threshold, and finally present some empirical findings on the demographic and/or sociological characteristics of asset and income for the poor in Korea.

1. Data

The second wave of the Korean Welfare Panel Study (henceforth Koweps) data are used for the analysis. Actual survey and data compilation are carried out jointly by Korea Institute for Health and Social Affairs (henceforth KIHASA) and the Social Welfare Research Institute of Seoul National University.

The second wave of Koweps data have several important features: first, it is the largest survey in the sense that 6,580 households (13,478 person) are covered. Second, it has more reliability than other surveys because it has smaller sampling error in statistical sense. Third, the survey covers the whole country, including Cheju island as well as the rural area. Some other surveys in Korea only covers urban areas, and thus has limited representation of the population.

In this paper, the raw data of household survey are used for the analysis, and the net worth data are calculated from the data. Above all, the net worth are calculated by subtracting total debt from total assets. Current income is composed of labor income, business and/or secondary income, property income, and transfer income. Current income is the main income concept in this analysis.

2. Poverty Criteria

(1) Income Poverty

There are two different concepts in income poverty: one is absolute income poverty, and the other is relative income poverty. absolute income poverty is determined by Minimum Costs of Living (MCL) and the amount of income approval. Income poor, near poor, next to near poor households can be classified as in table 1.

<Table 1> Classification of the absolute income poor

income groups		Classification based on absolute poverty
income poor	absolute income poverty	income approval < MCL
non-income poor	near poor	$MCL \leq \text{income approval} \leq MCL \times 120\%$
	next to near poor	$MCL \times 120\% < \text{income approval} \leq MCL \times 150\%$
	non-poor	$MCL \times 150\% < \text{income approval}$

A household is classified as an absolute income poor if the amount of income approval is less than the minimum cost of living (MCL). Near poor household is a household that has income approval greater than the MCL, but less than 120% of the MCL. Next to near poor household is a household that has income approval greater than 120% and less than 150% of the MCL. Finally, a household which has higher income than 150% of MCL is classified as non-income poor.

Table 2 exhibits the composition of the poor based in absolute and/or relative income poverty. The absolute income poverty rate is 10.2% in second wave, 9.5% in the third wave. The relative income poverty rate is 14.7% if poverty threshold is 40% of the median income, and is higher than the absolute income poor (in wave 2).

<Table 2> Household Composition

wave, no of households, and weights		absolute income poverty			relative income poverty		
		poor	near poor	next to near poor	40% of med. income	50% of med. income	60% of med. income
2nd wave	no. of hh	1,149	248	328	1,647	2,263	2,759
	weights(%)	10.2	2.6	3.8	14.7	21.1	26.7
3rd wave	no. of hh	1,018	215	284	1,555	2,122	2,600
	weight(%)	9.5	2.2	3.3	14.8	20.5	26.5

(2) Asset Poor

In this study, two different concepts of asset poor are considered: one is absolute asset poverty, and the second is relative asset poverty. When we say asset in the remaining part of the paper, it means net asset that is equal to the amount of total assets minus total debts. Net asset is the basis for defining asset poor for the analysis, and the definition of asset poverty we used here is based upon Haveman and Wolff (2001). According to their definition, "a household is considered to be 'asset poor' if it access to 'wealth-type resources' is insufficient to enable the household to meet its 'basic needs' for some limited 'period of time'." We used 6-month for the limited period of time because the unemployment benefit is paid for those who are unemployed for more than 6-months. For wealth-type resources, we use net asset, and applied equivalence scale if necessary. For the 'basic needs', we used minimum cost of living to make it operational.

A household is in absolute asset poverty if it has net asset less than the six-month of minimum cost of living. In the actual data analysis, two criteria of six-month MCL are used: one is derived from the households with net asset less than 6-month of MCL, and the other is derived from the average of 6-month MCL of the overall households. Relative asset poverty can be defined as the 40%, 50%, and 60% of the net assets, but 40% criterion is used in the following analysis.

In table 3, the absolute asset poverty rate is higher when the criterion of six-month minimum cost of living for the overall households is applied than the 6-month minimum cost of living of individual households. Relative asset poverty rate, which is the share of households that have less than the 40% of median net asset, is 29.3% (in wave 2), and 29.4% (in wave 3). Asset poverty rate is higher than the income poverty rate because asset holdings are concentrated in the higher income/asset groups, which is consistent with the stylized fact of asset distribution discussed earlier.

<Table 3> Summary of asset poverty rates

(unit: household, %)

		absolute asset poverty		relative asset poverty		
		MCL of HH	average of HH MCL	40% of Median	50% of Median	60% of Median
2nd wave	no of hh	1,163	1,188	2,416	2,676	2,956
	weights(%)	13.3	13.5	29.3	33.0	37.1
3rd wave	no. of hh	1,080	1,121	2,338	2,610	2,869
	weights(%)	12.4	12.7	29.4	33.6	37.7

<Table 4> Asset and income Statistics by asset- and income poor criteria

(unit: 10 thousand won)

	asset poverty			income poverty			
	absolute poverty		relative poverty	absolute poverty		relative poverty	
threshold	6 mo. MCL	average of 6 mo. MCL ¹⁾	40% of med. net asset ²⁾	income approval ³⁾	경상소득 ⁴⁾	40% of med. current income ⁵⁾	
no. of hh	1,163	1,188	2,416	1,149	1,544	1,647	
weights(%)	13.3	13.5	29.3	10.1	13.7	14.7	
income	labor	627.4	623.7	775.2	108.3	73.4	79.3
	business	125.3	121.9	137.3	34.1	43.1	46.2
	property	2.6	2.6	2.4	2.1	21.4	21.9
	public tr.	156.8	158.6	142.9	130.9	174.4	177.0
	private tr.	156.1	156.0	129.8	243.6	141.2	142.3
	current income	1,068.2	1,062.8	1,186.8	518.5	453.0	466.4
asset	real	524.6	518.7	917.5	802.7	4,626.8	4,662.4
	financial	145.8	135.1	228.8	106.8	514.2	505.4
	others	64.3	63.6	103.9	24.9	87.8	89.2
	tot asset	723.1	717.4	1,250.2	934.5	5,228.8	5,257.0
	tot debt	2,174.2	2,136.7	1,288.7	813.7	847.3	839.5
	net asset	-621.0	-604.4	337.6	120.8	4,563.3	4,587.5

- note: 1) household below average of 6 month MCL of 3.182 million won
 2) household below 40% of the net asset is 2.013 million won.
 3) income approval below MCL.
 4) current income of 6.457 million won and average of the income approval is in the neighbor of the MCL.
 5) Less than the median of current income of 6.678 million won.
 6) income and assets are all equalized with the square root of the number of household members.
 7) non-zero business incomes are replaced by 0.
 8) top/bottom-coding for the 1%

Table 4 summarizes income- and asset-poverty status for the household based upon poverty thresholds discussed above. When we compare the absolute asset poverty criteria which is 6 month MCL equivalent and relative asset poverty criteria which is 40% of the median net asset, relative asset poverty rate is 29.3%, which is higher than the absolute poverty rate of 13.3%. This reveals that the concentration of net asset is stronger than that of the income.

3. Asset poverty by demographic/sociological characteristics

In this section, the asset poor is defined as the households whose net assets are less than the amount of six month minimum cost of living, and some descriptive statistics on income and assets by demographic/sociological characteristics of the household heads will be

presented.

(1) Asset poverty by household age

According to the life-cycle/permanent income hypothesis, household in their sixties who is just about to retire have the largest assets. In our data, the hypothesis is also true in the sense that the asset poverty rate is lowest in the sixties (9.9%), and becomes higher as the age of household age increases.

<Table 5> Summary of asset poverty by age

		10s	20s	30s	40s	50s	60s	70s	80s	90s	overall
overall	no. of hh	2	203	1,109	1,319	1,029	1,340	1,212	352	14	6,580
	weight(%)	[0.2]	[3.8]	[23.0]	[25.1]	[16.7]	[16.7]	[11.5]	[2.9]	[0.1]	100.0
poor	no. of hh	0	30	139	268	192	185	236	107	6	1,163
	weight(%)	(0.0)	(14.8)	(10.0)	(14.9)	(13.1)	(9.9)	(17.1)	(27.5)	(37.1)	(13.3)
non-poor	no. of hh	2	173	970	1,051	837	1,155	976	245	8	5,417
	weight(%)	(100.0)	(85.2)	(90.0)	(85.1)	(86.9)	(90.1)	(82.9)	(72.5)	(62.9)	(86.7)

note: figures in [] are row shares, and those in () are column shares.

Current income of the asset poor are: 1.8 million won for the twenties, and then decreases with age. This is because labor income declined as the household age becomes higher. Net asset are -9.0 million won for the forties, -8.8 million won for the fifties, and net asset increase after the forties.

There are significant differences in net asset holdings by age groups between asset poor and the overall household. The overall groups showed inverted U-shaped and arrived its maximum at the 60s, whereas it is U-shaped and the maximum lies between 40s and 50s for the asset poor.

<Table 6> Asset and income poverty by age

구분	20s	30s	40s	50대	60s	70s	80s	90s	
no. of hh	30	139	268	192	185	236	107	6	
weights(%)	0.6	2.3	3.7	2.2	1.6	2.0	0.8	0.0	
income	labor	1,438.7	1,127.9	780.7	687.2	254.3	35.5	22.0	44.3
	property	104.3	96.4	192.4	211.3	68.0	35.1	22.5	0.0
	public tr.	0.0	0.5	1.4	4.9	5.1	3.1	3.9	0.0
	private tr.	54.3	100.2	138.3	174.9	211.5	217.8	153.2	137.1
	current income	192.2	77.1	96.0	138.6	179.7	285.0	315.9	347.6
	real	1,789.6	1,402.1	1,208.9	1,217.2	718.6	576.4	517.5	529.0
asset	real estate	196.5	514.4	676.4	751.3	690.8	157.8	54.5	0.0
	financial	445.9	226.9	122.2	137.0	65.2	44.0	65.0	132.1
	other	180.0	132.5	63.5	56.1	43.2	8.5	0.8	0.0
	tot asset	822.5	873.9	862.1	944.5	799.2	210.3	120.3	132.1
	tot debt	1,006.4	2,102.7	2,198.6	2,583.5	1,557.2	391.8	74.1	0.0
	net asset	-183.9	-754.5	-909.0	-883.8	-469.7	-172.0	46.2	132.1

(2) Asset poverty by household size

The share of 4-person household is the highest (29.1%), 3-person household is 22.2%, 2-person household is 23.4%, and 1-person household is 16.1%. Asset poverty rate is the highest for the one-person household (26.1%), whereas others show lower asset poverty rate than the overall asset poverty rate.¹⁾

<Table 7> Summary of asset poverty rate by household size

		1 person	2 person	3 person	4 person	5 person	6 person	7 person	8 person	total
overall	no. of hh	1,452	1,936	1,255	1,415	420	86	15	1	6,580
	weight(%)	[16.1]	[23.4]	[22.2]	[29.1]	[7.6]	[1.3]	[0.3]	[0.0]	[100.0]
poor	no. of hh	436	264	198	184	73	6	2	0	1,163
	weight(%)	(26.1)	(11.2)	(11.9)	(9.2)	(12.8)	(8.8)	(6.2)	(0.0)	(13.3)
non-poor	no. of hh	1,016	1,672	1,057	1,231	347	80	13	1	5,417
	weight(%)	(73.9)	(88.8)	(88.1)	(90.8)	(87.2)	(91.2)	(93.8)	(100.0)	(86.7)

note: figures in [] are row shares, whereas figures in () are column shares. 내의 수치는 열 구성비임

Current income of 3-person household is 1.3 million won, 4-person household is 1.3 million won, and 1.2 million won for the 5-person household. The difference is primarily due to the differences in labor income. One-person households show the lowest current income, since their labor income is the lowest.

The magnitude of net asset is smallest for the 5-person household (-10.4 million won), and

1) Seventies (30.8%) occupied the most in one-person household who is asset poor, and more than half of them are not in the labor force (62.2%).

6-person household is the next (-8.7 million won). The reason why one-person households show relatively larger net assets is that they have smaller total debts as well as smaller total assets.

<Table 8> Asset poverty by household size

		1 person	2 person	3 person	4 person	5 person	6 person	7 person
no. of hh		436	264	198	184	73	6	2
weights(%)		4.2	2.6	2.6	2.7	1.0	0.1	0.0
income	labor	354.5	536.6	846.9	899.2	697.6	729.8	566.2
	business	80.4	43.7	157.3	201.2	247.9	98.3	11.1
	property	4.4	0.0	1.3	4.0	1.9	0	0
	public tr.	161.8	191.0	149.1	125.5	137.8	157.3	309.5
	private tr.	223.2	175.8	135.8	56.5	148.8	188.3	46.1
	current income	824.3	947.2	1,290.5	1,286.5	1,234.0	1,173.7	933.0
asset	real	195.5	517.3	592.7	832.9	851.5	1,275.7	133.3
	financial	90.5	99.5	213.6	186.6	68.8	42.2	48.8
	others	17.0	53.1	101.4	114.5	62.4	58.3	1.1
	tot asset	303.0	669.9	907.7	1,134.0	982.8	1,376.3	183.1
	tot debt	1,010.4	2761.2	3,070.8	2,488.3	2,357.3	2,247.0	106.6
	net asset	-450.9	-585.8	-622.2	-763.4	-1,038.7	-870.7	76.5

(3) Asset poverty by participation of economic activity

The participation of economic activity of the household head can be either regular worker, temporary worker, employer, self-employed, or not in the labor force. Regular worker is the person who is either employed for more than one year or working without specifying the employment period due to company rules. Temporary workers are the person employed for more than one month and less than one year, whereas temporary workers are those employed for less than one month. Employer is those who operates business with more than one employee, and self-employed are those working alone or with non-paid family members. Unemployed are those who are over fourteen year old with ability to work and seeked for a job without working for the last four weeks. Non-economically active population is for the person who is over fifteen and is neither employed nor unemployed.

According to the distribution of the households by participation of the economic activity, the share of regular workers are the highest (40.5%), non-economically active population is 22.0%, self-employed is 16.7%. Asset poverty by participation of economic activity of household head are: daily workers are 30.5%, temporary workers are 22.1%, non-economically active population is 21.8%, and unemployed are 21.2%. On the contrary, asset poverty rate of employers and regular workers are 3.6% and 6.9%,

respectively.

<Table 9> Classification of households by participation of economic activity

		regular	temporary	daily	employer	self-employed	unemployed	not in LF	no resp.	total
overall	no. of hh	1,874	364	518	183	1,471	224	1,945	1	6,580
	weight(%)	[40.5]	[5.9]	[7.4]	[4.2]	[16.7]	[3.4]	[22.0]	[0.0]	[100.0]
poor	no. of hh	172	89	175	7	129	60	531	0	1,163
	weight(%)	(6.9)	(22.1)	(30.5)	(3.6)	(7.5)	(21.2)	(21.8)	(0.0)	(13.3)
non-poor	no. of hh	1,702	275	343	176	1,342	164	1,414	1	5,417
	weight(%)	(93.1)	(77.9)	(69.5)	(96.4)	(92.5)	(78.8)	(78.2)	(100.0)	(86.7)

<Table 10> Asset poverty by participation of economic activity

		regular	temporary	daily	employer	self-employed	unemployed	not in the LF
	no. of hh	172	89	175	7	129	60	531
	weights(%)	2.8	1.3	2.3	0.1	1.3	0.7	4.8
income	labor	1,498.7	935.6	826.5	438.0	160.9	422.0	102.9
	business	43.1	66.4	39.6	1,449.7	812.5	28.2	22.7
	property	0.1	1.9	1.2	59.7	1.3	0.1	3.9
	public tr.	73.9	132.4	91.3	87.9	96.5	177.1	255.5
	private tr.	72.2	125.5	106.5	21.1	73.4	162.9	263.3
	current income	1,688.1	1,261.7	1,065.1	2,056.5	1,144.6	790.3	648.4
asset	real	723.8	563.4	472.9	3,295.6	641.4	485.4	312.5
	financial	322.2	146.1	50.3	1,106.7	101.3	61.1	51.0
	others	130.7	38.6	45.5	156.6	183.6	35.4	11.8
	tot asset	1,176.7	748.1	568.7	4,558.9	926.3	581.9	375.2
	tot debt	2,394.8	1,532.6	2,253.6	9,576.0	1,989.5	1,575.0	802.2
	net asset	-818.0	-694.7	-871.1	-1,637.2	-799.8	-676.7	-281.5

The current income of the employer (20.6 million won) is the highest in magnitude, which is due to the fact that business income is the highest (11.5 million won). Current income of regular workers is 16.7 million won, and that of temporary workers is 12.6 million won. For the household head who is not in labor force, public transfer (2.6 million won) is the largest, private transfer (2.6 million won) is the next, and current income is the lowest (6.5 million won).

Next, asset holdings of the asset poor can be summarized as follows: the net asset of the employer is the lowest (-16.3 million won), but the total asset of them is the largest (45.6 million won). The reason why net asset of the employer is the lowest is that although the

total asset is largest, the total debt of them is much larger than the total asset.

4. Asset poverty and Basic Livelihood Protection Benefits

It is possible to have a 2 by 2 classification table with the definition of asset poor and whether households receive benefits from the Basic Livelihood Protection System.

<Table 11> 2 by 2 classification of asset and income

		overall	recipient	non-recipient	
asset poor	no. of household	1,163	417	746	
	weights(%)	13.3	3.9	9.4	
	income	labor income	627.4	171.9	819.2
		business income	125.2	35.3	163.1
		property income	2.6	0.8	3.4
		private transfer	156.8	115.1	174.3
		public transfer	156.1	385.9	59.4
		current income	1,068.1	709.1	1,219.3
	net asset	real estate	524.6	244.8	642.4
		financial asset	134.1	35.3	175.8
		other asset	64.3	11.5	86.5
		total asset	723.1	291.7	904.7
		total debt	2,174.2	908.3	2,707.2
		net asset	-621.0	-430.7	-701.1
non-asset poor	no. of household	5,417	306	5,111	
	weights(%)	86.7	2.9	83.8	
	income	labor income	1,391.0	196.2	1,432.7
		business income	432.7	60.9	445.6
		property income	98.1	8.8	101.2
		private transfer	137.7	92.2	139.2
		public transfer	126.7	384.3	117.7
		current income	2,184.5	742.5	2,234.7
	net asset	real estate	11,823.8	2,075.9	12,163.3
		financial asset	2,116.0	241.7	2,181.2
		other asset	413.5	90.3	424.8
		total asset	14,353.3	2,407.9	14,769.4
		total debt	1,628.1	340.2	1,673.0
		net asset	10,484.0	2,067.6	12,527.9
overall	no. of household	6,580	723	5,857	
	weights(%)	100.0	6.8	93.2	
	income	labor income	1,289.7	182.3	1,371.1
		business income	391.9	46.3	417.3
		property income	85.5	4.2	91.4
		private transfer	140.2	105.4	142.8
		public transfer	130.6	385.2	111.8
		current income	2,033.8	723.3	2,132.9
	net asset	real estate	10,325.1	1,025.2	11,008.9
		financial asset	1,853.1	123.3	1,980.3
		other asset	367.2	45.1	390.9
		total asset	12,545.5	1,193.6	13,380.1
		total debt	1,700.6	666.2	1,776.6
		net asset	10,478.5	634.1	11,202.3

note: 1) The threshold of asset poverty is 6 month MCL.

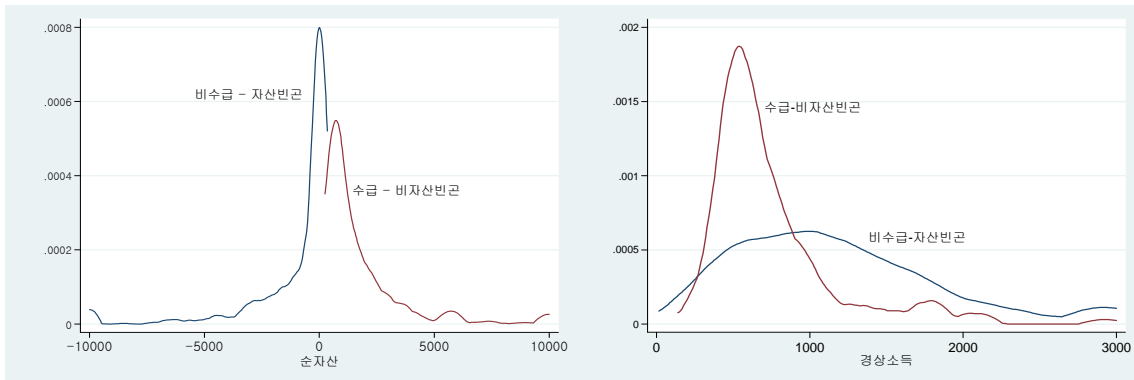
2) We equalized with OECD modified scale (square root formula).

3) A household is in recipient group if the amount of income approval is less than the MCL.

From this table, we can evaluate major characteristics of the non-benefit recipient households and the appropriateness of the derivation of the amount income approval since both income and asset information are necessary in deriving the amount of income approval. The income and net asset for the non-recipient-non-asset poor households are 22 million won, and 125 million won, respectively. The recipient-asset poor households have current income of 7.1 million won and net asset of -4.3 million won.

The current income and the net asset of the non-recipient-asset poor households are 12.2 million won and -7 million won, whereas those of the recipient-non-asset poor are 7.4 million won and 20.7 million won, respectively. <Figure 1> shows these differences in a compact way.

<Figure 1> kernel density of net asset and income



Note: blue line represents non-recipient-asset poor, whereas red line is for recipient-non-asset poor.

Left panel of <Table 1> depicts the distribution of net assets of the two groups, whereas right panel shows the distribution of the current income. The distribution of net assets of non-recipient-asset poor households tells us that net assets are mostly clustered around zero, and skewed to the negative values. On the contrary, the net assets of the recipient-non-asset poor households are more spreaded in the positive axis and thus the peak is lower.

Based upon the distribution of the current income, the recipient-non asset poor household is more clustered in the left had side of the distribution than the non-recipient-asset poor household. This implies that current income is the major determinants when determining the recipients of the Basic Livelihood Protection benefits.

<Table 11> summarizes income and asset data according to the the recipient/nonrecipient group and asset poor/non-poor classification. Focus is put on the comparison of the non-recipient-asset poor group vs. recipient-non asset poor group.

In order to evaluate the validity of the calculation of income approval, we need to compare individual components of the income approval.

First, when we compare current incomes of the two groups, non-receipt-asset poor group is 12.2 million won, which is smaller than that of receipt-non-asset poor group (7.4 million won). The amount of income approval of the non-receipt-asset poor group is 11.8 million, which is larger than that of receipt-non-asset poor group (3.9 million won).

The magnitude of net assets of the non receipt-asset poor group and the receipt-non-asset poor group are -7.0 million won and 20.7 million won, respectively. However the amount of income transformation are quite similar between the two groups, which implies that differences in net assets are not fully counted in evaluating the amount of income approval.

Considering net assets, the non-receipt-asset poor households have debts of 27 million won, which is larger than that of receipt-non asset poor group (3.4 million won). In addition, the total assets of the non receipt-asset poor group is 9.0 million won, which is lower than that of receipt-non asset poor group (24.1 million won). Therefore, we know that even a household with larger total asset can get the official benefit from the Basic Livelihood Protection system just because not enough attention is paid to the asset holdings in the selection process.

In summary, the amount of income approval is calculated mostly based upon income so differences in assets are not fully counted. It makes sense that the Basic Livelihood Protection System is designed to support current income in the short run. But there are households that have slightly above the threshold income but with almost no assets (or even with large amount of debts). More discussion might be necessary in the sense that the households with marginally higher income than threshold but without enough assets also deserve to get the benefits of the Basic Livelihood Protection System.

<Table 12> Anatomy of income approval by asset/income group

구분		전체overall	수급recipient	비수급non-recei- pient
asset poor	income approval	1,253.4	334.6	1,640.3
	evaluated income	928.9	334.6	1,179.2
	translated income of assets	324.4	0	461.0
	trans. income of general property	0.6	0	0.95
	trans. income of financial asset	0	0	0
	trans. income of car	323.7	0	460.1
non-ass et poor	income approval	9,987.6	879.7	10,304.9
	evaluated income	2,143.0	389.9	2,204.1
	translated income of assets	7,844.5	489.8	8,100.7
	trans. income of general property	4,341.7	369.7	4,480.0
	trans. income of financial asset	1,279.3	66.8	1,321.5
	trans. income of car	2,223.5	53.2	2,299.1
overall	income approval	8,829.1	566.9	9,436.7
	evaluated income	1,982.0	358.2	2,101.4
	translated income of assets	6,847.1	208.7	7,335.2
	trans. income of general property	3,765.9	157.5	4,031.2
	trans. income of financial asset	1,109.7	28.5	1,189.1
	trans. income of car	1,971.5	22.7	2,114.8

Section 3. Determinants of the Asset Holdings of the Poor

1. Estimated Model

While the great majority of regression models are concerned with analyzing the conditional mean of a dependent variable, there is an alternative methods of modeling other aspects of the conditional distribution. One approach, called quantile regression, models the quantiles of the dependent variable given a set of conditioning variables.

The median regression technique is employed in this study, because it can control extreme values. Median regression is one way of quantile regression²⁾, which permits a more

2) As originally proposed by Koenker and Basset (1978), quantile regression provides estimates of the linear relationship between regressors and specific quantile of the dependent variable.

complete description of the economic distribution than conditional mean analysis alone, allowing us to describe how the median of the response variable is affected by regressors. Moreover, since the quantile regression approach does not require strong distributional assumptions, it offers a distributionally robust method of modelling these relationships.

Handling outliers is a big hassle in analyzing stock variables such as net assets of the poor in this paper. Advantage of using quantile regression is that since we are using conditional percentile, rather than conditional mean, the expected value of the residuals need not be zero, and thus estimated parameters are not sensitive to the outliers of the dependent variable.

The dependent variable is net asset holdings, and the independent variables are age of household head, financial asset holdings (dummy), current income, household size, special job (dummy), self-employed (dummy), house owner (dummy), urban resident (dummy), etc.

2. Determinants of asset holdings for the poor

First of all, results from whole households indicate that net assets increases decreasingly as the age of household head increases. Households with financial assets have more net assets by about 11.9 million won than non-financial asset holders. Households with more current incomes have more net assets, self-employed households have more assets by about 11.1 million won, home owners have more by 47.8 million won, and urban residents have more net assets by 8.9 million won.

The results are quite similar for the non-asset poor households only. But there are several distinct points to mention when only the asset poor group is considered. First, age of household head (and its squared term also) is no longer significant. This implies that asset poverty prevails for the entire age groups. Therefore, poverty alleviation policy for the specific target group might not be able to bring visible results in the short run.

Household with financial assets has more net asset by 8.1 million won than those without financial assets. Also, current income does not play an important role in asset formation of the poor. This is because the poor do not have enough income to save for the future if their income is not enough to cover expenditure for the family members.

<Table 13> Determinants of Net Asset by Household Type

	overall	asset poor	non-asset poor
age of hh (continuous)	185.28 (0.000)	-27.87 (0.307)	55.21 (0.288)
squared age of hh ³⁾ (continuous)	-0.94 (0.006)	0.21 (0.332)	0.58 (0.226)
financial assets (dummy)	1,119.17 (0.000)	807.65 (0.000)	1,451.44 (0.000)
current income (continuous)	3.66 (0.000)	-7.98 (0.000)	4.04 (0.000)
square of current inc ²⁾ (continuous)	-3.9e-5 (0.000)	9.367e-3 (0.000)	-6.8e-5 (0.000)
household size (discrete)	-223.34 (0.001)	-36.81 (0.491)	-147.97 (0.079)
special/manager ¹⁾ (dummy)	875.59 (0.002)	240.47 (0.213)	1,389.12 (0.000)
self-employed (dummy)	1,143.96 (0.000)	104.16 (0.567)	1,545.74 (0.000)
own houses (dummy)	4,780.46 (0.000)	4,682.00 (0.000)	4,658.26 (0.000)
metropolitan ²⁾ (dummy)	887.81 (0.000)	707.95 (0.000)	858.92 (0.000)
intercept	-10,573.41 (0.000)	1,973.88 (0.024)	-9,222.91 (0.000)
no. of obs.	6,580	1,647	4,933
Pseudo R ²	0.2087	0.1625	0.2051

note: 1) Special jobs group covers House Representatives, and Special scientists.

2) Living in Metropolitan covers those living in Seoul or Metropolitan area.

3) Figures in parenthesis are p-values.

According to the empirical analysis for determinants of asset holdings of the poor, asset poverty prevails for almost all age groups. This implies that we might not be able to get desired results from the policy that aims to reduce poverty by targeting specific socio-economic groups. Also, current income does not play an important role in asset formation of the poor. This is because the poor do not have enough income to save for the future if their income is not enough to cover expenditure for the family members.

An increase in household size has positive effect on asset formation for the poor only. In turn, this implies the importance of providing job opportunities for the poor, because this will create additional income and eventually helps asset formation for the poor. It might be worthwhile for the government to provide special attention to the creation of job opportunities for the poor.

The reason why we do not observe significance in explanatory variables of special job or self-employed is that there is not enough cases in the sample. On average, households with their own houses have more assets by 46.8 million won, that urban households have more assets by 7.1 million won. The policy implication from these results is that one of the

biggest obstacles to asset formation of the poor is the preparation of the residential housing for the family. Especially in the case of the poor with rental housing, high housing costs deteriorate life standards and as interfere asset formation. Especially special attention of providing housing plan should be given to those low-income households living in metropolitan area.

In order to have sound financial structure, every household member voluntarily needs to recognize her financial status exactly, and manages income creation, household consumption expenditure, saving, loaning etc. Therefore, in addition to disbursement of simple grants in aid, government need to be interested continuously in strengthening of financial affairs education for low-income households.

Section 4. Summary and Conclusion

Several important findings can be summarized as follows. When we identified asset poor household among income poor, there are considerable differences in income and asset between the asset poor and the non-asset poor. Therefore, the study of asset poverty can be served as an important basis in establishing policy for the asset formation of the low income household.

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On average, households with their own houses have more assets by 46.8 million won, that urban households have more assets by 7.1 million won. This implies that one of the biggest obstacles to asset formation of the poor is the preparation of the residential housing for the family. Especially in the case of the poor with rental housing, high housing costs deteriorate life standards and as interfere asset formation. In the longer run, the housing support policy should focus on the low income households living in urban area.

We should admit that the income support plan for the aged is not enough even though It is well-known that Korea is experiencing rapid aging due to the decline of birth rate and lengthening of life expectancy. The introduction of the reverse mortgage for the aged might be an alternative to assure stable housing life. But, according to the existing literature, only about 70% of households aged 65 and over own hoses and there are considerable differences in the gender of household heads. Specifically, the share of aged female householders are about half of male households. This implies that female households might not be able to be protected from income support program of housing property.

Also, since 67% of the aged have housing property of values less than 100 million won, it is hard to expect elevation of real income in practical sense. According to Kim(2007), in reality, poverty of the aged over 75 years old actually declines when they have housing property of 100 million won. Thus it is not possible for the aged who have less than 100 million won to get income support from the reverse mortgage. The aged who are excluded

from the benefit group of the Basic Livelihood Guarantee due to the failure of asset criterion (even though they satisfied income criterion) need to get the minimum level of life protection.

In order for the National Basic Livelihood Protection System to be the last social safety net for the poor, benefit of basic life protection should be provided to the currently non-receiving poverty group and the potential poverty group. The blind spot of the National Basic Livelihood Protection System exists due to the excessive support responsibility criterion and high translation ratio of asset to income criterion. Therefore, it is necessary for the effort of the government to entail non-receiving income poor into the National Basic Livelihood Protection System.

As a way of extending social safety net for the small-sized self-employed households, It might be useful to introduce a unemployment insurance savings accounts as proposed by Feldstein and Altman (1998). The system compulsorily make self-employed to deposit a certain part of the labor income while they are working, and allow to withdraw when they are unemployed. It can play a role of social safety net if government provide matching funds for the working poor among small-scaled self-employed, who increased rapidly after the financial crisis of 1997.

Among other things, it is necessary to have creation of decent jobs and vocational training that income may be connected to asset formation.

Policy consideration should be given to provide job opportunity and vocational training for the asset poor who are below 40s, and to extend jobs that has employment stability for the aged who are over 50s.

References

- Alessi, R., A. Lusardi, and T. Aldershof, "Income and Wealth over the Life Cycle: Evidence from Panel Data," *Review of Income and Wealth*, Series 43, No. 1, March 1997, pp. 1-32.
- Ando, A., and F. Modigliani, "The Life-Cycle Hypothesis of Saving: Aggregate Implications and Tests," *American Economic Review*, 1963.
- Atkinson, A., "The Distribution of Wealth and the Individual Life Cycle," *Oxford Economic Papers*, vol. 23, 1971, pp. 239-254.
- Barro, Robert J., "Are Government Bonds are Net Wealth?," *Journal of Political Economy*, vol. 82, no. 6, 1974, pp. 1095-1117.
- Beach, C.M., and R. Davidson, "Distribution-free Statistical Inference with Lorenz Curves and Income Shares," *Review of Economic Studies*, vol. 50, no. 4, 1983, pp. 723-735.
- Burbidge, J.B., and A.L. Robb, "Evidence on Wealth-Age Profiles in Canadian Cross-Section Data," *Canadian Journal of Economics*, vol. 18, no. 4, 1985, pp. 854-875.
- Caner, Asena, and Edward N. Wolff, "Asset Poverty in the United States, 1984-99: Evidence from the Panel Study of Income Dynamics," *Review of Income and Wealth*, vol. 50, Issue 4, Dec. 2004, pp. 493-518.
- Chawla, R.K., "The Distribution of Wealth in Canada and the US 1984," *mimeo*, 1989.
- Choi, Hyun-soo, et al., A Study of Improving efficiency of the asset test for the Basic Livelihood Protection System, KIHASA Report, 2007. (in Korean)
- Cowell, Frank A., *Measuring Inequality*, Third edition, Prentice-Hall/ Harvester-Wheatsheaf, Hemel Hempstead, 2000.
- Davies, J.B., "On the Size Distribution of Wealth in Canada," *Review of Income and Wealth*, vol. 25, Issue 3, Sep. 1979, pp. 237-259.
- Davies, J.B., "The Distribution of Wealth in Canada," in E. Wolff (ed.), *Research on Economic Inequality: Studies in the Distribution of Household Wealth*, vol. 4, Greenwich, CT, JAI Press, 1993, pp. 159-180.
- Davies, J.B., and Anthony B. Shorrocks, "The Distribution of Wealth," *Handbook of Income Distribution*, vol. 1, 1999, pp. 605-675.
- Deaton, A., and C. Paxton, "Inter-temporal Choice and Inequality," National Bureau of Economic Research, Working paper no. 4328, 1993.

- Feldstein, Martin, and Daniel Altman, "Unemployment Insurance Savings Accounts," in James M. Poterba (ed.), *Tax Policy and the Economy*, Volume 21, NBER, 2007.
- Geongjoon, Yoo, On the Concept and current Status of the Income Inequality, *Labpor Economic Review*, 30(3), December 2007, pp. 103-138. (in Korean)
- Greenwood, D., "An Estimation of U.S. Family Wealth and Its Distribution from Microdata, 1973," *Review of Income and Wealth*, vol. 29, Issue 1, Mar. 1983, pp. 23-44.
- Haveman, Robert and Edward N. Wolff, "Who Are the Asset Poor? Levels, Trends, and Composition, 1983-1998," Institute for Research on Poverty Discussion Paper no.1227-01, 2001.
- Jeong, Jin-Ho, and Kang-sik Choi, "On the Inequality decomposition of the Workers Household Income," *Korean Economic Review*, 49(3), 2001, pp. 39~64. (in Korean)
- Juster, F. Thomas, and Kathleen A. Kuester, "Differences in the Measurement of Wealth, Wealth Inequality and Wealth Composition Obtained from Alternative U.S. Wealth Surveys," *Review of Income and Wealth*, vol. 37, Issue 1, Mar. 1991, pp. 33-62.
- Keister, Lisa A., and Stephanie Moller, "Wealth inequality in the United States," *Annual Review of Sociology*, Vol. 26, 2000, pp. 63-81.
- Kim, Anna, On the characteristics and the determinants of the working poor in Korea, *Social Welfare Policy* 20, 2007, pp. 145-168. (in Korean)
- Kim, Dae-Il, "Comparison of Income and Consumption as a measure of inequality," *Labor Economic Review*, 30(3), 2007, pp. 77-102. (in Korean)
- Kim, Jin Young, On the Trend of the Household Wealth Composition in 1990s: Evidence from DWERI Panel Data, *Public Finance Review*, 17(1), 2002, pp. 47~74. (in Korean)
- Kim, Mee-Gon, Eugene Yeo, *et al.*, *Basic Report of the Koweps*, KIHASA and Seoul National University, January 2007. (in Korean)
- King, M.A., and D.L. Dicks-Mireaux, "Asset Holdings and the Life Cycle," *Economic Journal*, vol. 92, no. 366, June 1982, pp. 247-267.
<http://www.jstor.org/stable/pdfplus/2232439.pdf>
- Koenker, Roger, and Gilbert Bassett, Jr., "Regression Quantiles," *Econometrica*, 46(1), 1978, 33-50.
- Lee, Jeong-woo, and Sung-Lim Lee, "Estimates of Asset Inequality in Korea," *Economic Development Review*, 7(1), 2001a, pp. 1~28. (in Korean)

- Lee, Jeong-woo, and Sung-Lim Lee, "Recent trend on the inequality of household asset in Korea," *Labor Policy Review*, 1(1), 2001b, pp. 39~51. (in Korean)
- Lee, Jeong-woo, and Sung-Lim Lee, "Recent trend on the inequality of household asset in Korea," Paper presented to the annual meeting of Korean Economic Association, February 2001.
- Leipziger, D. M., D. Dollar, A. F. Shorrocks and S. Y. Song, *The Distribution of Income and Wealth in Korea*, The World Bank, Washington DC, 1992.
- Lerman, Robert I., and Shlomo Yitzhaki, "Income Inequality Effects by Income Source: A New Approach and Applications to the United States," *Review of Economics and Statistics*, vol. 67, no. 1, Feb. 1985, pp. 151-156.
- Menchik, P.L., and N.A. Jianakoplos, "Wealth Inequality as Cohort Age," in E.N. Wolff (ed.), *Research on Economic Inequality: Studies in the Distribution of Household Wealth*, vol. 4, Greenwich, CT, JAI Press, 1993, pp. 81-98.
- Mincer, J., *Schooling, Experience, and Earnings*, Columbia University Press for National Bureau of Economic Research, New York, NY, 1974.
- Modigliani, F., and R.E. Brumberg, "Utility Analysis and the Consumption Function: An Interpretation of Cross Section Data," in K.K. Kurihara (ed.), *Post-Keynesian Economics*, New Brunswick, NJ, Rutgers University Press, 1954, pp. 388-436.
- Nam, S., B. Shin, and B. Ahn, "Income Distribution and Inequality Decomposition since the Financial Crisis of 1997," *Venture Information Review*, 8(2), 2005, pp. 159~183. (in Korean)
- Nam, Sang-Ho, "Household Asset Distribution in Korea: 1999-2004," Paper presented in the Annual Meeting of the Korean Economic Association, February 2007. (in Korean).
- Nam, Sang-Ho, "On the Distribution and Factor Decomposition of the Household Net Worth in Korea: Evidence with KLIPS Data," paper presented to the 9th KLIPS Seminar, January 2008. (in Korean)
- Nam, Sang-Ho, and Soonhyun Kwon, "Comparative Analysis of the Household Asset Distribution in Korea," Paper presented to the Autumn Seminar of the Korean Public Finance Association. (in Korean)
- Nam, Sang-Ho, and Soonhyun Kwon, Analysis of the Asset Distribution and Poverty for the Aged: Evidence from KReIS Data, *Health and Social Research*, 28(2), (in Korean)

- National statistics Office, Report of the Household Wealth, 2006, March, 2007. (in Korean)
- Oja, Gail, "The Distribution of Wealth in Canada," *Review of Income and Wealth*, vol. 29, Issue 2, Jun. 1983, pp. 161-173.
- Podoluk, J. R., "Measurement of the Distribution of Wealth in Canada," *Review of Income and Wealth*, vol. 20, Issue 2, Jun. 1974, pp. 203-216.
- Projector, D.S., and G.S. Weiss, "Survey of Financial Characteristics of Consumers," Federal Reserve Board, Washington, D.C., 1966.
- Pudney, S., "Income and Wealth Inequality and the Life Cycle: A Non-parametric Analysis for China," *Journal of Applied Econometrics*, vol. 8, 1993, pp. 249-276.
- Shin, Hyun-Koo, G. Boo, and J. Bahn, "Introduction to the KLOSA," *Labor Review*, KLI, 2007. (in Korean)
- Shorrocks, Anthony F., "Inequality decomposition by factor components," *Econometrica*, vol. 50, no. 1, 1982, pp. 193-212.
- Siddiq, F., and C.M. Beach, "Characterizing Life-Cycle Wealth Distributions Using Statistical Inference and Dominance Criteria," *Empirical Economics*, vol. 20, 1995, pp. 551-575.
- Tuttle, M.H., and J. Gauger, "Wealth and the Distribution of Income: Permanent and Transitory Effects," *Review of Income and Wealth*, Series 52, No. 4, December 2006, pp. 493-508.
- Wolff, Edward N., "Wealth Holdings and Poverty Status in the U.S.," *Review of Income and Wealth*, vol. 36, Issue 2, Jun. 1990, pp. 143-165.
- Wolfson, Michael C., "Wealth and the Distribution of Income, Canada 1969-70," *Review of Income and Wealth*, vol. 25, Issue 2, Jun. 1979, pp. 129-140.
- Yeo, Eugene, *et al.*, *Trend and Decomposition Analysis of the Poverty and Inequality in Korea*, KIHASA Report No. 2005-11, 2005. (in Korean)

Appendix

<Appx. 1> Descriptive Statistics

(unit: year, 10,000 KRW, person)

hh	var.	obs.	Mean	s.d.	Min.	Max.
total	age of h. head	6,580	52.2	14.920	16	98
	owns fin wealth	6,580	0.8	0.358	0	1
	current income	6,580	3,526.8	3,268.042	0	100,900
	household size	6,580	2.9	1.280	1	8
	special job	6,580	0.1	0.288	0	1
	own business	6,580	0.2	0.369	0	1
	own house	6,580	0.5	0.498	0	1
	urban area	6,580	0.5	0.499	0	1
	net asset	6,580	10,844.9	19,827.2	-176,777	332,918
poor	age of h. head	1,647	66.8	13.834	16	98
	owns fin wealth	1,647	0.7	0.468	0	1
	current income	1,647	604.8	282.812	0	1,595
	household size	1,647	1.9	1.084	1	6
	special job	1,647	0.1	0.341	0	1
	own business	1,647	0.2	0.358	0	1
	own house	1,647	0.4	0.498	0	1
	urban area	1,647	0.4	0.491	0	1
	net asset	1,647	4,417.5	10,666.9	-176,776	312,116
non-poor	age of h. head	4,933	49.7	13.606	19	97
	owns fin wealth	4,933	0.9	0.327	0	1
	current income	4,933	4,030.7	3,283.606	668	100,900
	household size	4,933	3.1	1.229	1	8
	special job	4,933	0.1	0.277	0	1
	own business	4,933	0.2	0.370	0	1
	own house	4,933	0.6	0.496	0	1
	urban area	4,933	0.5	0.499	0	1
	net asset	4,933	11,953.2	20,807.7	-113,195	332,918

note: Household with less than 40% of median current income is classified as income poor.