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GROWING INEQUALITY AND ITS IMPACTS IN KOREA

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Executive Summary

Introduction: Macro background to the inequality trends in Korea, 1980-2011

There has been a great U-turn in inequality trends over the last 3 decades in Korea, the mid-1990s being a turning period when the downward trend of inequality changed upward. This is related to the great economic, social, and political changes which happened in the mid-1990s such as the re-establishment of diplomatic ties with China in 1992, joining the OECD in 1996, and the financial crisis and the change of political power in 1997.

Since mid-1990s, the Korean economy has been fully opened to world economy, and the manufacturing sector continued to grow due to expanding export. Its employment share, however, drastically decreased resulting in jobless growth and labour market dualization.

Going through the financial crisis calling for economic restructuring, not only potential economic growth rate, but also population growth rate and fertility rate have decreased, which deteriorate performance of labour market. Moreover, employment was the most hard-hit by the financial crisis. While the economy recovered its previous level very rapidly, the employment could not. Though the self-employed sector started to be dismantled rapidly and the ratio of wage workers has increased, however, the labour's share in national account has decreased or stagnated since 1996. This may be due to the deterioration of jobs such as increases of non-regular and low-wage workers. The low-performance of labour market both in quantity and quality has been the main driver of growing inequality in Korea.

The nature of Inequality and its Development over Time

Income Inequality

The Gini coefficient shows that the household income inequality accelerated directly after the 1997 financial crisis, and has gradually increased since then. The decile index also shows that the inequality has been growing more rapidly in the lower part of income distribution rather than in the upper part. The relative poverty rate leveled up after the crisis, while the absolute poverty rate came back to its' pre-crisis level.

One specific feature of the inequality of Korea is that the overall level of income inequality is about average of the OECD countries while the labour market income(wage) inequality is the highest in OECD. It might be explained by the relatively high rate of labour supply in lower income classes and

the role of private transfer income. The inequality mitigating effects of higher labour supply of lower income classes, however, has been reduced, which might be due to assortive mating, dualization of female labour market, and relatively higher increasing rate of female participation rate in upper part of spouse-income distribution.

Decompositon of the increasing income inequality over the 15 years shows following results. First, the increase of income inequality within working age households explains the majority of inequality while the effect of the increasing proportion of elderly households is secondary. Second, the increasing inequality in wage earning was proven to be a major factor behind the growing inequality. Third, the redistribution policies such as public transfer and tax payments contributed for the reduction of income inequality, although the policies were not enough to overcome the rapid growth of market income inequality.

Wealth and Debt Inequality

Though the wealth inequality is relative low, the net worth GINI has leveled up with the financial crisis in 1997. The share of tangible assets, particularly house and land, are far more important than the financial ones in household wealth, and the larger the amount of total assets, the larger the relative share of tangible assets within the total assets. So, the wealth inequality became more unequally distributed as house price has risen. Moreover, the debt of the lowest class has risen more rapidly than higher classes as house price has gone down.

Labour Market Inequality

The wage inequality is higher and increasing more rapidly than the household income inequality. The GINI coefficients are higher in hourly wage rather than in total wage. Low wage workers compensate for their lower hourly pay with longer working hours. And, the GINI coefficients change little even when part-time workers are left out. In the wage decile ratios, the P50/P10 ratio started to increase from 1989 while the P90/P50 ratio started to increase from 1999. This implies that the relative wage growth rate of low wage workers has been low since 1989. Of course it has been much lower since 1999 after the financial crisis. On the contrary, the relative wage growth of the middle wage group has been higher for 1981-1997, but lower than those of high wage group for 1998-2007. It can be said that the middle wage group was more hard-hit by the crisis and the overall wage disparities between wage-groups have been enlarged since the crisis.

The wage premium for higher education also began to increase at the same time when the entrance rate to tertiary education started to increase in 1993, which means that there could have been skill-biased technological changes in Korea as well. However, there are many studies which show that the changing trade structure was a main driver inducing larger demand for skilled workforce and reducing demand for lower-skilled one. Although Korea has been very fast in investment and consumption of information technology, the increase of trade intensity and the changes of trade structure from the US to China were faster.

The growing educational wage inequality, however, cannot be fully explained by labour demand and supply. The labour market institution is also an important factor in the growing inequality. Even within the same educational group, the inequality has been increasing, but within the same establishment size, it has not. Establishment size, tenure(job stability), employment types, which are variables related to labour institutions, were also important in worsening wage inequality. This means that extending educational opportunities is not enough and changes in economic and industrial structure and the labour market institutions are important to reduce overall wage inequality in Korea.

The inequality among self-employees is higher than that among wage earners as well. The total GINI coefficient increases by 3.5-7.5% when self-employees are included in the workforce. The effects of including self-employment on income inequality, however, may not be so great considering the decreasing share of self-employment in the workforce.

The stagnating employment performance after the financial crisis of 1997 would have made earning inequality of the entire working-age population higher than earnings inequality among workers. Also, the employment accessibility of lower educated persons has been lowered since 1999, particularly in male labor force, which means that the inequality mitigating effects of relatively higher accessibility to the labor market of low skilled workers have been reduced.

Educational Inequality

Korea has been successful in obtaining so-called 'shared growth'(growth without inequality) for the three decades since 1960s by extending opportunities of education for all. Even after the 1980s, the educational opportunities had been still extended. The average education years was only 7.6 in 1980, 9.5 in 1990, it is now 11.6 in 2010. It is 14.1 for the age group of 20~29, which might be one of the world's highest educational attainment levels.

During the past five decades, the growing educational attainment years have caused more equal distribution of education level in the labor force. The GINI coefficient of educational attainment years

was 22.1 in 1994, and then 18.5 in 2010. Meanwhile, the entrance rate to tertiary education began to increase since the 1990s. It was 34.3% in 1992 to 83.8% in 2008. Since 2009, the female entrance rate took over that of the males.

Even though educational opportunity in terms of quantity has been extended for all for a long time, the differential of educational expenditure by the income has also been enlarged since 1993 when the entrance rate to tertiary education started to increase. The differential of educational expenditure together with growing educational wage inequality has worked as a factor aggravating inequality by increasing differentials of educational quality.

Limits in Data Availability

One caveat in interpreting the inequality is that the available data might underestimate the reality of inequality in Korea. The long-term trends of Gini are calculated only based on the survey data for urban household with 2 or more excluding single household and rural household. The wage inequality is only for regular employees in establishments with 10 or more as well. The Gini from the National Tax Service data 0.503 compared to the Gini from the Basic Wage Survey, 0.373 in 2011. The income share of top 1% is 7-8% from the survey data, but it is more than 16% in the National Tax Service data. The survey data cannot fully grasp asset and top incomes. The real inequality might be higher and worsening faster than the data tells.

The Social Impacts of Inequality

The growing inequality since late 1990s has strong correlations with increasing credit defaulters, poverty, crime rate, suicide rate, family breakdown, divorce rate, and marriage rate, income mobility, mobility by generations even though it is not easy to find evidences of their causations.

The share of personal credit defaulters, as a proxy variable for material deprivation went hand in hand with growing inequality, and crime, suicide, and marriage rate appear to have high correlations with growing inequality. Family breakdown such as increasing single-parent family and divorce rate and decreasing marriage rate also has high correlations with the growing inequality.

The subtle change of housing tenure practice is significant to residential inequality in Korea. With lowering interest rates, many house owners converted *Jeonse*, a unique Korean housing practice to monthly rent, which causes financial burden to house renters who cannot usually afford to own a house. This may strengthen the already-existing residence-related inequality.

As inequality grows, poverty persistency has been raised and income mobility and mobility by generation have decreased. Social mobility in both intra-generational and inter-generational terms has been decreased in the recent two decades. Korean society had been characterized by active social mobility in the age of rapid industrialization, but the poverty persistence and slowdown of income mobility suggest that chances of status advancement were reduced gradually. The reduction of intergenerational mobility poses a more serious problem. Socioeconomic status of one's parents is inherited from generation to generation by the mediating effects of private tutoring. Korea has become a more and more closed and rigid society.

The political and cultural impacts

With the growing inequality, political and cultural life in Korea has changed since 2000s. Tendencies to decline in voter turnout rate and union density, low level of trust in society, pessimistic evaluation on income distribution have persisted throughout the 2000s as inequality has risen.

We can point out some unique features in the development of inequality and its political and cultural impacts. First, although the voter turnout rate has fallen since 1987, political cynicism measured by nonparticipation in voting can be detected for the more educated. It refutes the common wisdom that the more educated, having knowledge and views on politics, have a higher propensity to vote.

Second, despite growing inequality and the low level of satisfaction with politics, the politically conservative climate has changed little. Growing inequality has seemingly reduced the number of self-reported conservatives but they have not converted to liberals but to "neither liberal nor conservative". In 2010 they constitute the largest faction in the political landscape, reflecting another aspect of political cynicism.

Lastly, unlike most advanced countries', discourses on welfare state expansion is now much in vogue in Korea. This phenomenon can be interpreted as a result of an exhaustion of developmental dictatorship model which had driven Korean people to relentless economic growth without social policies. Growing inequality and insecurity after the economic crisis in the late 1990s must have contributed to upsurge of welfare demands. Korea is expected to expand social policies as long as inequality continues to rise.

Effectiveness of Policies in Combating Inequality

As Korea was kind of 'developing country' in social policies, Korea has very weak social policies before the crisis. However, the crisis and growing wage inequality precipitated diverse social policies.

Notwithstanding, their overall effects are somewhat limited at the moment.

As labour income is the major reason of the growing income inequality and there are wide-spread low-wage sector, minimum wage policy is a very powerful means to combat the inequality. The increasing rate of minimum wage began to catch up with the average wage growth rate after the crisis, but the minimum wage has not been successful in raising the relative wage level of low-wage workers. This is because minimum-wage regulations are not strictly enforced and complied with. Considering the supply of low-skilled labor increases in labor market as a result of the introduction of EITC, minimum wage would be a more effective way of supporting the low-income families by preventing wage reduction of low-skilled workers if it is well enforced.

The weak unionization for the disadvantaged and the prevalence of company-level industrial relations has become working as one factor of the growing inequality.

The redistribution effect of tax and social expenditure in Korea is known to be insignificant. The amount of social expenditure itself as a percentage of GDP is still insufficient, although it has increased recently. And, public income transfer depends too much on social insurance system, which has lack of coverage so far. Low income populations are less likely to be covered by social insurance as well. The public pension scheme is not matured enough, although it is progressively designed. Ineffectiveness of public pension to protect the elderly results in very high rates of poverty in the elderly population.

However, there is some evidence for the improvement of policy effectiveness as well. The public transfer and taxation worked positively to reduce income inequality, although the policies were not enough to overcome the rapid growth of labor income inequality. The National Basic Livelihood Security System (NBLSS), implemented in 2000, was effective in reducing poverty.

1 Introduction

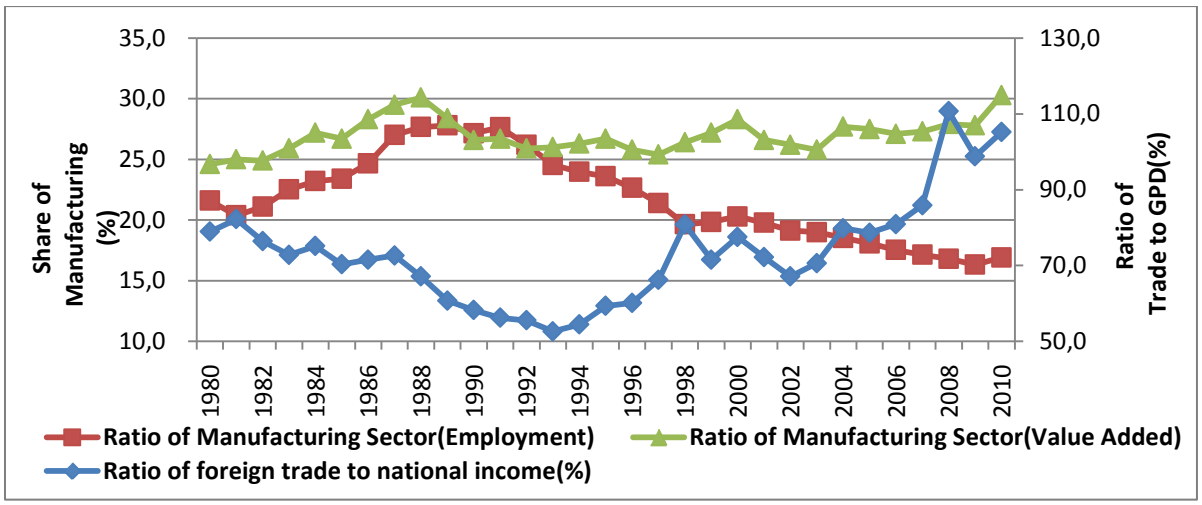
Macro background to the inequality trends in Korea, 1980-2011.

As will be shown in the main part of this report, there has been a great U-turn in the inequality trends over the last 3 decades in Korea. The mid-1990s is a turning period when the downward trend of inequality has changed upward.

This is related to the great economic, social, and political changes which happened in the mid-1990s in Korea. As Korea re-established diplomatic ties with China in 1992, joined OECD as a member country in 1996, and was hard-hit by the financial crisis in 1997, the Korean economy has become fully open to the world economy and discarded the remaining targeted industrial policies.

Figure 1-1 shows that the ratio of foreign trade to national income has increased since 1993. As Korea has developed with the export-oriented economic strategy, the ratio has increased since the 1960s. It was only over the 1980s when the ratio has decreased due to the industrial restructuring of the early-1980s and domestic demand led economic boom of the late-1980s. This short-term trend has been reversed since the 1990s. The momenta were growing economic relationship with China and the financial crisis. The trade volume with China has multiplied 50-fold since 1991. China's share in trade volume has increased from 2.9% in 1991 to 20.4% in 2011.

Figure 1.1 Macro-Trends in Trade, Industry, and Employment in Korea(1980-2010).



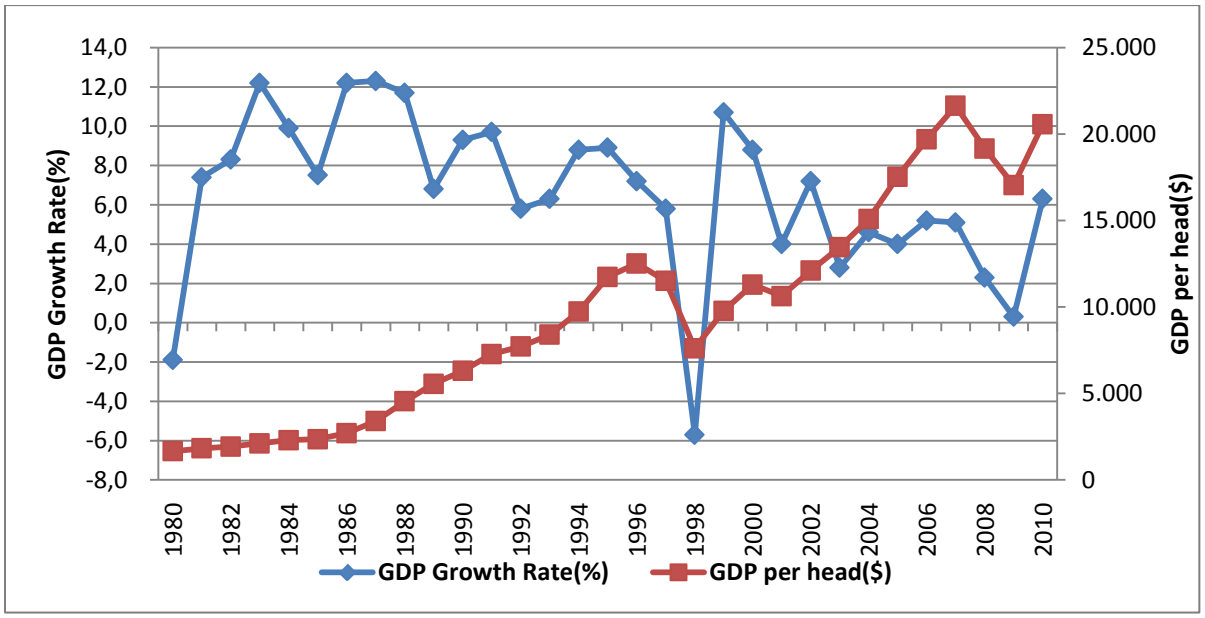
Source: Korea National Statistical Office.

As the trade has grown faster, the manufacturing sector could maintain its share of the total value-added around 30%. Its employment share, however, has been decreased since 1991. It has dropped

from 27.6% in 1991 to 16.9% in 2011. One million jobs have disappeared over 20 years as the manufacturing jobs were 5.16 million in 1991 and 4.09 million in 2011. The so-called jobless growth has happened in the manufacturing sector, which can be seen as one reason for the worsening inequality trends. As the employment share of non-manufacturing increased, while its value-added per capita stagnated, the quality of service jobs had deteriorated and inequality increased.

While the trade and manufacturing sector has been growing faster, the overall economic growth rate had been slowed down after the financial crisis. The Korean economy was one of the fastest growing economies in the world for more than 3 decades since the 1960s. As can be seen in [Figure 1.2], the GDP per capita was only 1,660 $ in 1980, but it is more than 20,000 $ in 2011. According to the Korea Development Institute, however, the potential economic growth rate has been decreased to 4-5% since the 2000s. The real economic growth rates were also around 4-5% except the turbulent periods of the financial crises, 1997-2000 and 2008-2010.

Figure 1.2 GDP Growth Rate and GDP per Capita(1980-2010).

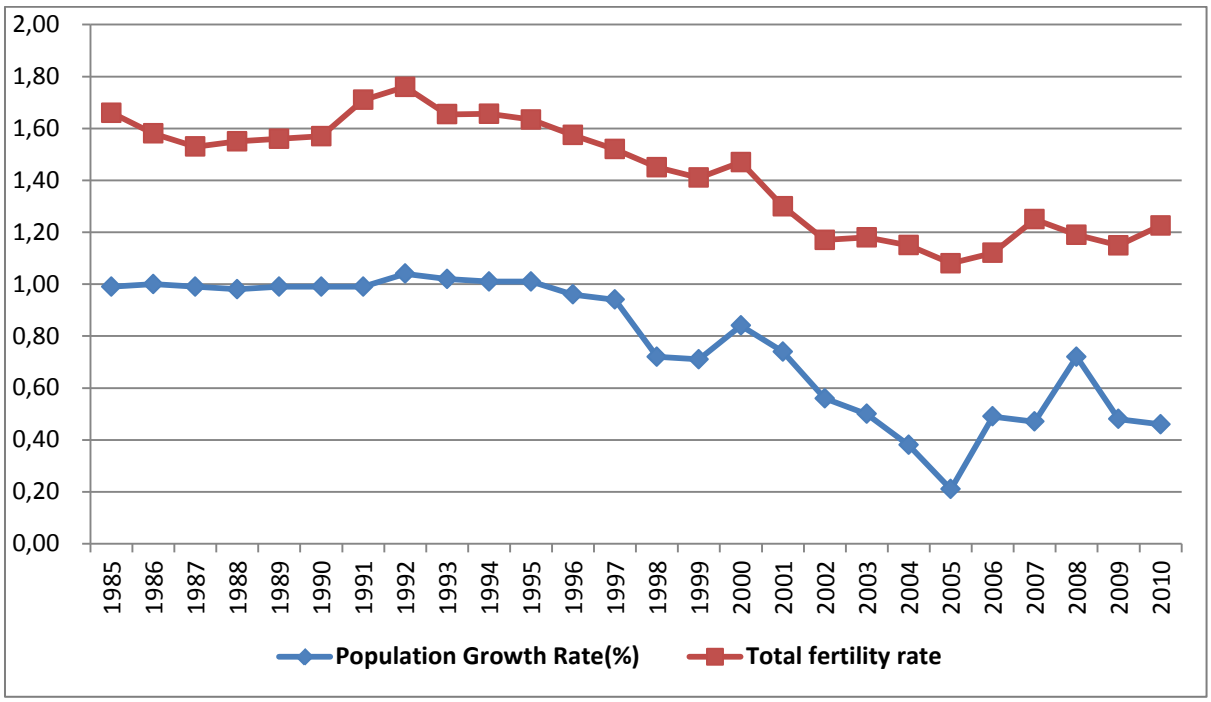


Source: Korea National Statistical Office.

The population growth trends showed almost the same trends. [Figure 1.3] shows that the population growth rate and fertility rate began to decrease since 1992. Though the mortality rate decreased and average life expectancy increased, the population growth rate decreased as the fertility rate decreased. The average life expectancy was 65.7 in 1990, 76.0 in 2000, and 80.1 in 2008, and the mortality rate(per one million) is 59.8 in 1990, 56.4 in 1990, 49.8 in 1990. Korea's fertility rate, however, is 1.23, the lowest in the world after to Singapore, Hong Kong, and Taiwan in 2010. It

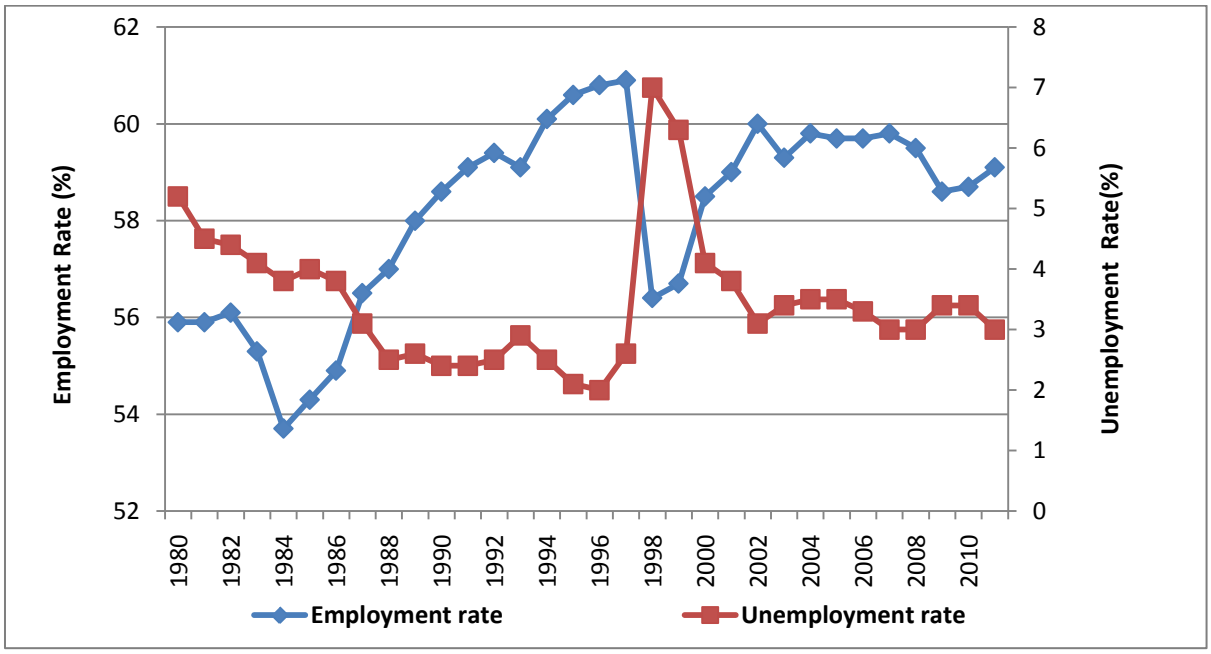
is widely accepted that the decreasing fertility rate is due to higher job-related risks and the growing burden of living expenses (particularly housing and education).

Figure 1.3 Population Growth Rate and Total Fertility Rate(1980-2010).



Source: Korea National Statistical Office.

Figure 1.4 Employment Rate and Unemployment Rate (aged 15 or more).

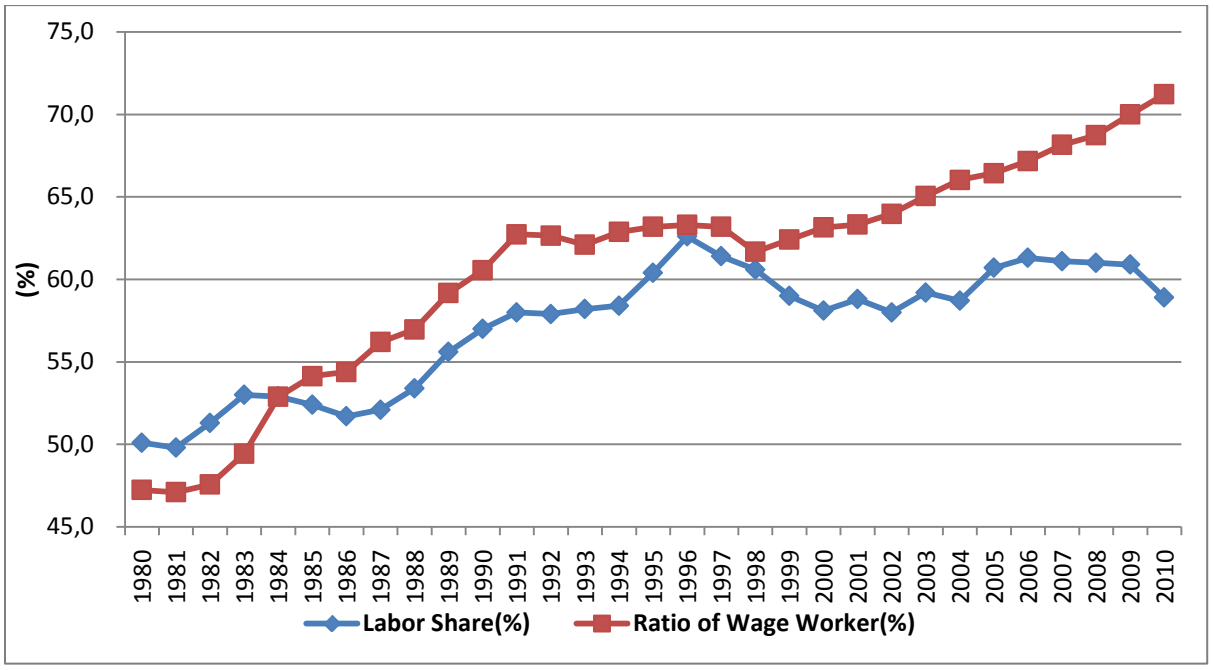


Source: Korea National Statistical Office.

As the potential of economic growth and population has been decreasing, the employment performance of the labor market was subpar. Employment was the most hard-hit by the financial crisis in 2007. While the economy recovered its previous level very rapidly, employment could not. Before the crisis, the employment rate increased from 53.7% in 1984 to 60.9% in 1997, and the unemployment rate was below 3% for 1988-1997. After the crisis, however, the employment rate could not go over 60.0%, and the unemployment rate is over 3%.[1]

In the labor market, the self-employed sector started to be dismantled rapidly and the ratio of wage workers has increased since the 2000s. Labor's share in national income, however, decreased or stagnated. Before the financial crisis of 1997, labor's share and wage worker's ratio has increased together at the same time. In the distribution of factor income, labor share ceased to grow after mid-1990s. This may be due to the deterioration of jobs such as increases of non-regular workers of low-wage workers.

Figure 1.5 Labor Share and Ratio of Wage Workers (1980-2010).



Source: Korea National Statistical Office.

As will be seen in the main part of the report, the entrance rate to tertiary education and the educational attainment of population have been dramatically increased since mid-1990s. While the

[1] Contrary to the developed European countries, the unemployment rate is not a appropriate index to see labour market performance in Korea because still many people go to economic inactivities (not unemployment status) if he/she is put out of work.

quantitative expansion of education contributes to widening opportunities, the low-wage sector is still widespread and its working conditions are continuously deteriorating.

In 1997, Korea experienced not only financial crisis but also for the first time a change of political power. Though the newly ruling democratic party and its president Kim D.J., and Roh, M.H. governments have established and extended the social security system. Now, Korea has been equipped with institutionalized social security system similar to those of developed European welfare states. But, inequality is still increasing. This is due to more worsening of inequality in the market and still insufficient provision of social security.

2 The Nature of Inequality and its Development over Time

2.1 Main Features of Household Income Distribution

2.1.1 Overall level of income inequality

The overall level of income inequality in Korea is similar to the average of the OECD countries. The Gini coefficient of disposable income in 2011 was 0.311, which was slightly higher than the OECD average. On the other hand, market income inequality of Korean households is very low compared to other countries, with a 0.342 Gini coefficient in 2011. The gap between the GINI coefficients of market and disposable income is very narrow, which implies the limited effectiveness of the Korean income redistribution policies.

The relatively low market income inequality is also a puzzle to be explained, because the distribution of wage and salary is widely dispersed in the Korean labor market. Why is it that while labor income of individuals in Korea' labor market is extremely unequal, the household market income is relatively equal? This is a phenomenon that occurs due to the labor supply pattern of households. If a relatively high number of household members from the low income brackets that lack human capital participate in labor supply, income measured on the household level may be found to be distributed equally even if the labor market is unequal. Using LIS mid-2000's data, Chang(2012) found that while the number of labor income earners in the lower 20% income brackets of developed nations were 0.3~0.7 people per household, in Korea, an average of 1.4 people per household participate in labor activities in that same income bracket. Based on this fact, the study suggested that while Korea has an extremely unequal labor market, the individual households participate more in economic activities, making the household income distribution relatively equal.

2.1.2 Long-term Trend of income inequality

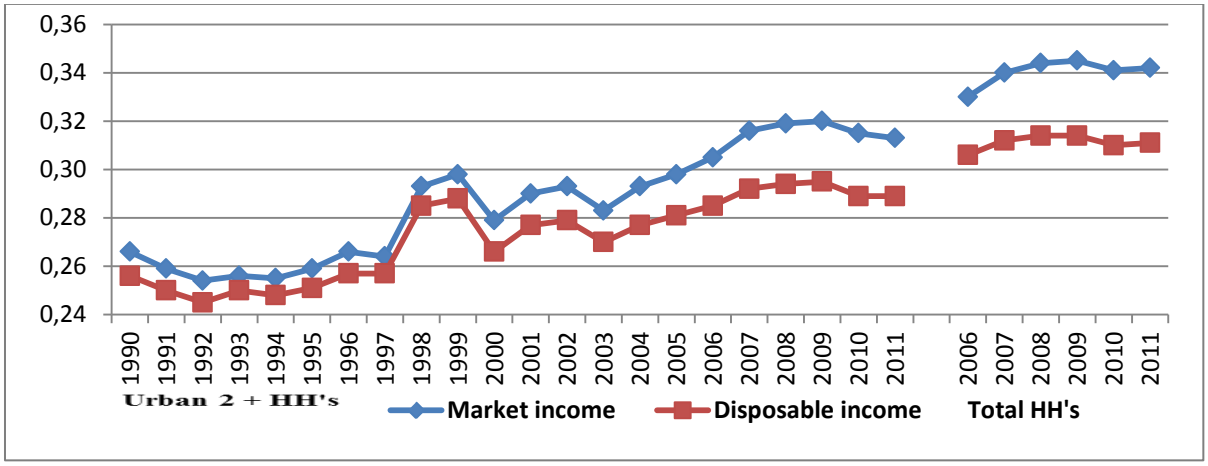
One material appropriate for allowing a time series observation of the income inequality index is the Korea National Statistical Office (KNSO)'s Household Income and Expenditure Survey(HIES) in which total income and expenditure of each household is calculated on a monthly basis through entries in household ledgers. However, because the survey was extended for the entire household after 2006, a reliable time series analysis is only for urban households with two or more members.

[Figure 2.1] shows changes in income distribution since the 1990s measured through the GINI coefficient. According to this figure, until the mid-1990s, income inequality in Korea was much lower

than it is today. It took a sharp increase with the 1997 Asian Financial Crisis, followed by some fluctuation, and continued to increase since the mid and late 2000s. The level of inequality in all households can only be observed after 2006, but it is possible to assume that even before that, inequality in households with two or more members would have shown a similar pattern, although the overall level would have been higher.

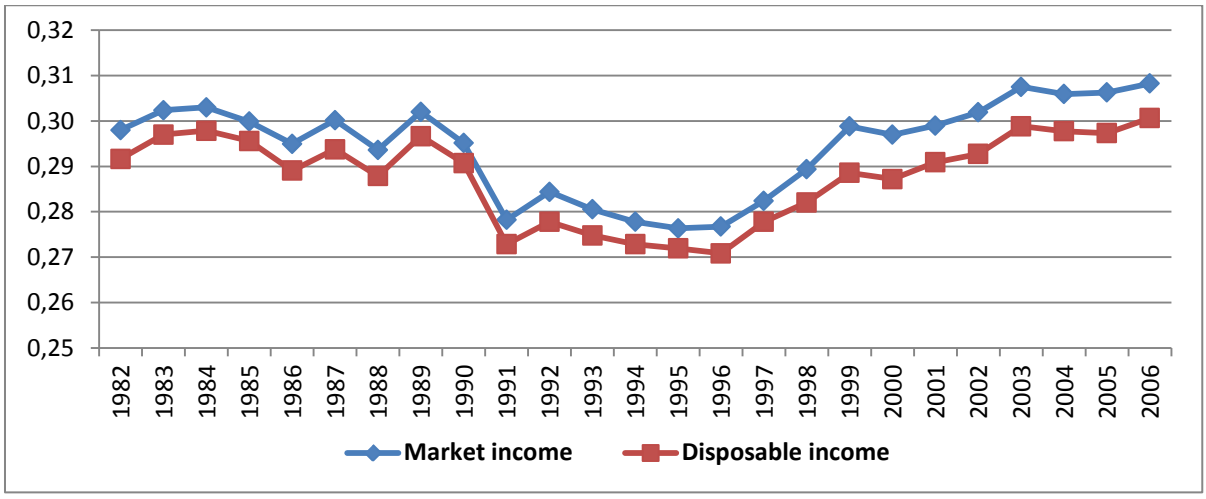
Another notable phenomenon found in [Figure 2.1] is that the difference between market income and disposable income Gini is on the rise since the early 2000s. This can be interpreted that with social security systems having been strengthened since the Asian Financial Crisis of 1997, redistribution policies have begun to have stronger effects than they previously had.

Figure 2.1 GINI Coefficient Trends: Urban 2+ HHs and Total HHs, 1990-2011.



Source: Korea National Statistical Office, Household Income and Expenditure Survey.

Figure 2.2 GINI Coefficient Trends: 1982-2006, Urban 2+ HHs.



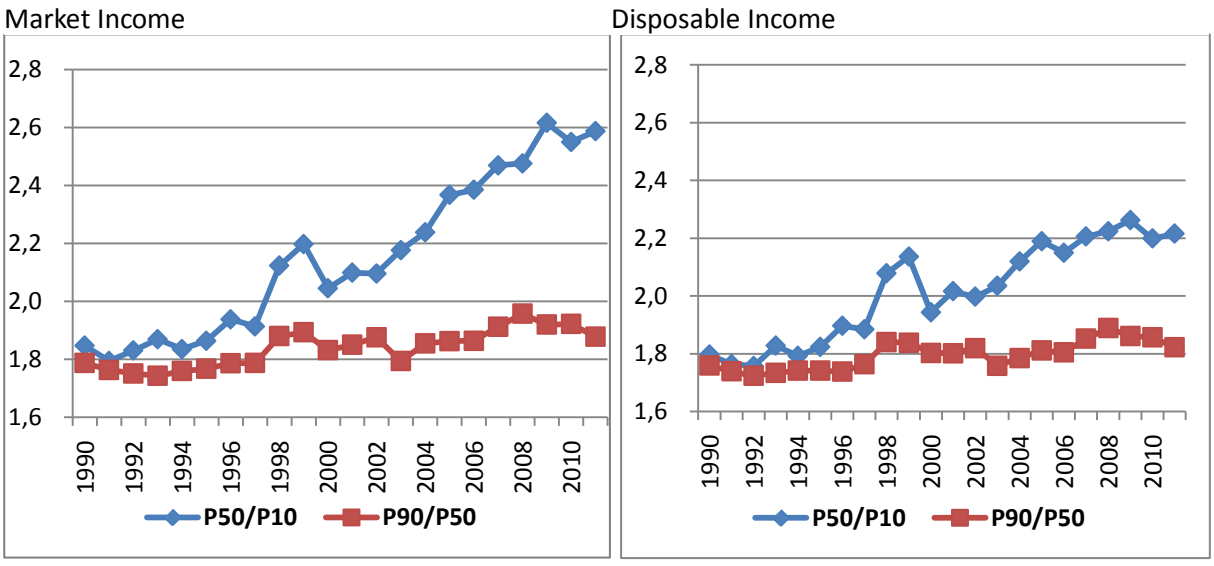
Source: Korea National Statistical Office, Household Income and Expenditure Survey.
Note: Calculations of Dr. Roh Dae-Myung (Korea Institute for Health and Social Affairs)

In order to find out the Gini coefficients during the period before the early and mid-1990s when inequality was relatively low, we added one more figure in [Figure 2.1], which provides data from previous years, although it encompasses only worker households in cities. According to this figure, income was more unequal in the 1980s than the 1990s. Income inequality is likely to have improved following the activation of labor movements during the labor strikes of 1987. In short, income inequality in Korea as observed through time series data was the lowest in the early and mid-1990s, and high in the periods before and after that point. The point in time when income inequality began to decrease corresponds to the point when wages of laborers began to rise due to the labour movement, and the point when income inequality began to rise again during the Asian Financial Crisis of 1997, after which the Gini coefficient continues an upward trend until the late 2000s.

[Figure 2.2] provides P50/P10 and P90/P10 ratio of income deciles in Korea. As we can see, the inequality has worsened in the lower part of income distribution rather than in the upper part. And, the redistribution effects of social policies have been taken more in the lower part since the crisis.

Then, one caveat is that the top income is not well represented in the survey data. While the income share of top 1% is 6-8% if it calculated from the National Survey of Tax and Benefit (the Korea Institute of Public Finance) or the Survey of Household Finance, it is more than 16% in the National Tax Service data(Park, 2012). This may cause P90/P50 to be underestimated.

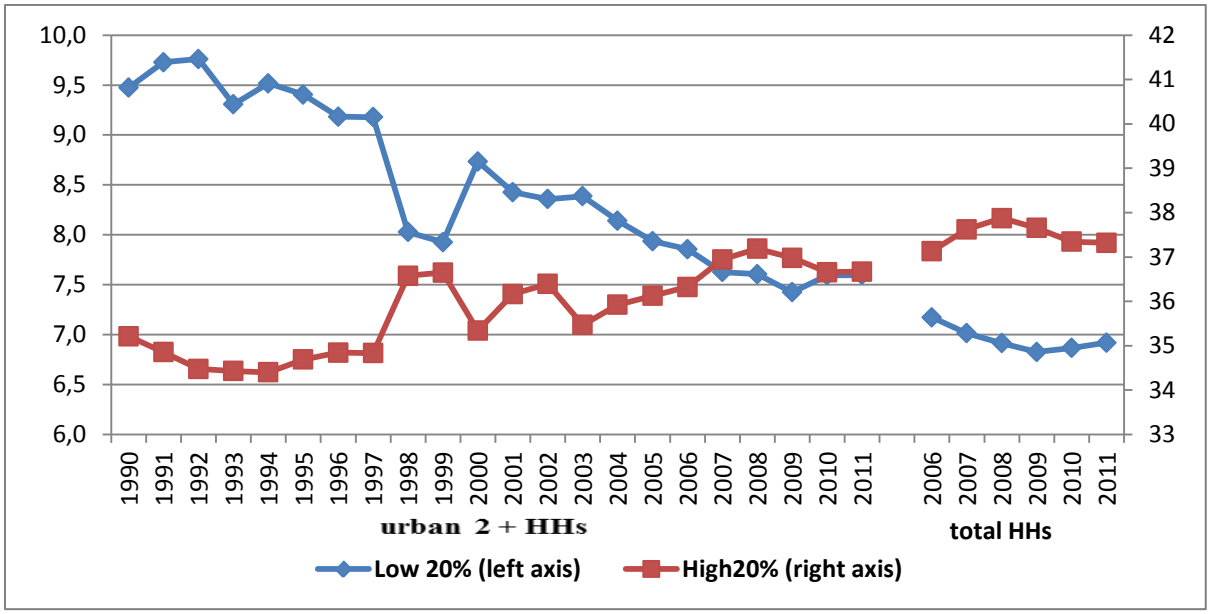
Figure 2.3 GINI Coefficient Trend of Urban HHs With 2 or More Members.



Source: Korea National Statistical Office. Calculated from data on kosis.kr

[Figure 2.3] shows the trend of income share by high and low income groups. Again, we can observe the long term trends of income share only for the urban households with two or more household members. The share of the bottom 20 % of households was continuously decreased from 9.4% of total national income in 1996 to 7.6% in 2011, while the share of the upper 20 % increased during the same period. It is noteworthy that we can observe a steady decline of income share of the low-income group as well as sudden drop of the share during the economic shock period. The share of low income group suddenly dropped during the economic shock period and it has also steadily decreased since then.

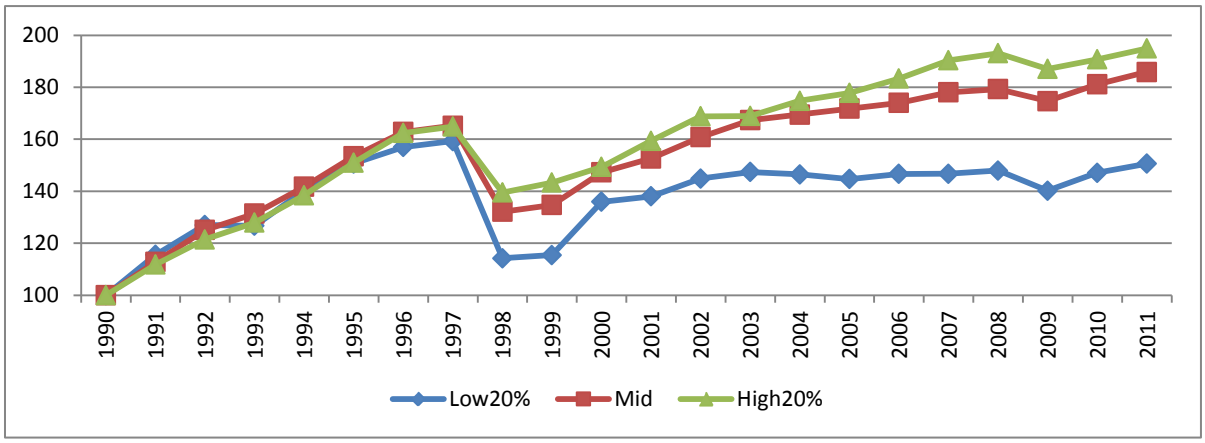
Figure 2.4 Trends of Income Share by income quintile (unit: %).



Source: Korea National Statistical Office, Household Income and Expenditure Survey, each year

The change of real income in the same period tells us similar stories. [Figure 2.4] presents the change of real income for each income group compared with the 1990's income. While the increasing trends had not been quite different among the three income classes until 1997, the gap among the classes is getting wider in the recent decade, mostly due to the stagnating income level of the low-income class.

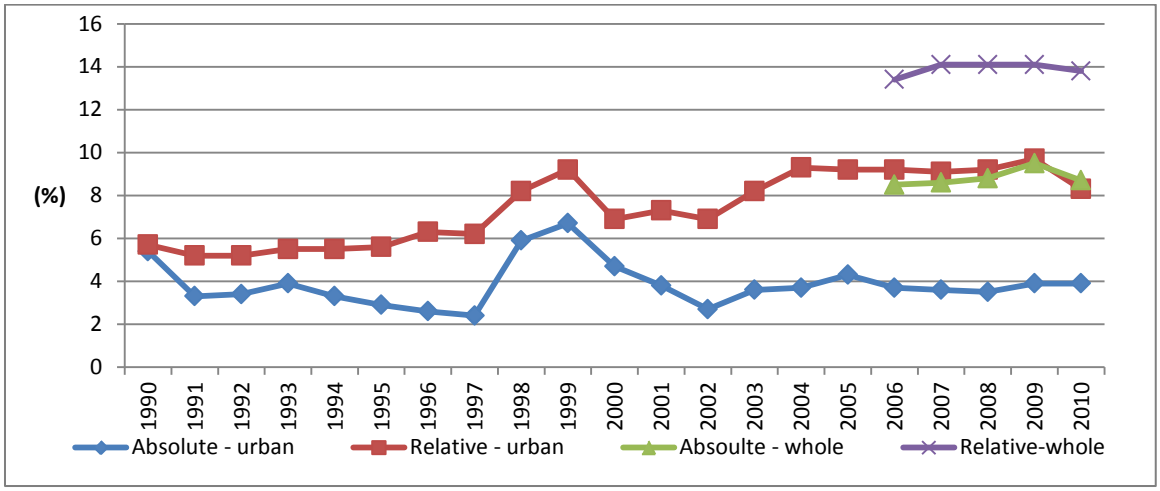
Figure 2.5 Change of Real Income by Income Quintiles.



Notes: Disposable income is used. Middle income class includes mid 60% of households.
Source: Korea National Statistical Office, Household Income and Expenditure Survey, each year.

Another important indicator to measure income inequality is the poverty rate. The poverty rate in Korea is clearly higher than the OECD average, while the GINI coefficient of Korea is around OECD average. [Figure 2.5] shows the absolute and relative poverty ratios based on disposable income. In 1998~1999, the period of Asian economic crisis, the absolute poverty ratio hit the peak and went back to previous level, while the relative poverty ratio seems to remain its high level in 2000's.

Figure 2.6 Absolute and Relative Poverty Ratios based on Disposable Income.



Source: Korea National Statistical Office, Household Income and Expenditure Survey (1990 ~ 2006)

Note 1: urban data = two or more person households which include wage and salary workers. From 2006, HIES provide information on the whole HHs including one-person HHs and non-wage workers HHs.

Note 2: absolute poverty ratio = proportion of persons with equivalized HH income below the minimum cost of living which is measured by government every three years; relative poverty ratio = proportion of persons with income below 50% of equivalized HH median income.

The HIES provides long time series on household income but it included two or more person households only prior to 2006. If we calculate National Expenditure Survey(KNSO) which included the whole population but surveyed only a few times, we can obtain the poverty ratio for the whole population comparable to that of the HEIS of 2006 and later.

2.1.3 Driving Forces of the Increasing Income Inequality

What are the driving forces behind increasing inequality since the late 1990's? Four hypothetical factors may affect the recent trend of inequality: population ageing, change of household labor supply, wage dispersion, and redistribution policies. Each factor can be translated into research questions as follows.

First, how much can the population ageing explain the increasing inequality since the late 1990's? Everything else being equal, population ageing can increase the overall income inequality at the current point of time in Korea, because the proportion of the poor is much higher among the Korean elderly. The proportion of 65 or older population has increased from 5.1% in 1990 to 11.0% in 2010. The relative poverty ratio of the elderly population is 47.1% in 2010.

Second, how strongly does the pattern of female labor supply affect the household income inequality of working age population? Household income inequality is largely affected by two highly correlated factors, household labor supply and wage dispersion in the labor market. The increasing number of one-person households and one-parent families tends to make HH income inequality increased. Among couple families, female labor force participation rates may affect inequality.

It is also useful to observe which income classes the female participants belong to. According to Maxwell(1990), who analyzed the CPS data from 1947 to 1985, wives of low income husbands tended to participate to the labor market with a higher rate than their high income counterparts in the 1950's and 1960's, which means that wives' labor supply reduced the HH income inequality in this period of time in the United States. Since participation rates of middle income earners' wives had increased in 1970's, the positive effects of female labor supply on HH income equality were diminishing. Lee(2008) reports similar stories in the Korean case. He observed enlarged inequality of household income in Korea between 1996 and 2000 and he argued that the most important driving factor was the increasing dispersion of household heads' labor income and that the change of spouses' labor supply contributed to lessen the inequality of household income. On the contrary, Kim and Shin(2008) shows that the female labour participation rates have increased for 2-8 deciles of spouse's income rather 9-10 deciles and that the increase does not contribute to reducing household

income inequality due to increase in assortive mating and female labour market dualization during 1998-2005.

Third, how much does the wage dispersion explain household income inequality while the labor income composes 3/4 of total household income in average in OECD countries (OECD, 2011)? Very high rates of low wage employment and non-regular employment might be the most important factors affecting HH income inequality in Korea, as Lee(2008) observed for the late 1990's.

Fourth, how much does taxation and public income transfer affect work to reduce the disposable income inequality? Social assistance, unemployment payment, and old-age pension systems have been developed during the past several decades in Korea, and we need to ask whether those institutions contributed to attenuate the income inequality.

Decomposition by Household Type:

In order to investigate whether the increasing income inequality originates in population ageing in Korea, we decompose the change of inequality by household type that is identified as working age (18~64 years old) households and elderly households according to their household heads' ages. The measurement of income inequality used in this chapter is Mean Log Deviation (MLD) defined in the following formula. If the incomes are equally distributed, MLD would be zero.

$$MLD = \frac{1}{n}\sum_i \ln\frac{\overline{Y}}{Y_i},$$

Where $\overline{Y}$ is mean income of the population, Y_i is the income of household i, and n is the number of individuals.

Considering the types of households, the total inequality can be decomposed according to the following formula (Static Decomposition).

$$MLD^t = \sum_g w_g^t \cdot MLD_g^t + \sum_g w_g^t \cdot \ln\frac{\overline{Y}}{Y_g},$$

where w_g is the component proportion ratio of members of specific household type (g) among total population, and MLD_g is the inequality measure by household type. The first part of the right-hand side of formula is the within-group component of the inequality and the second part is the between-group component of the inequality.

[Table 2.1] shows the results of the decomposition. MLD in 2011 increased to 0.245 from 0.145 in 1996. The structure of the population has also been changed and the members of elderly households increased. The income inequality was increased in both household types, and that of elderly

households were severe. The within-group component occupies the most part of the inequality in both years. Although the contribution of elderly households to the total inequality increased from 8.7% in 1996 to 25.7% in 2011, the contribution of working age household population was the majority (68.8%) in 2011.

Table 2.1 Decomposition of Income Inequality by Household Type.

(unit: Korean Thousand Won, %)		proportion	mean yearly income	MLD	absolute contribution	relative contribution
1996	elderly HHs	3.5	12,404	0.36487	0.01262	(8.7)
	working age HHs	96.5	20,583	0.13283	0.12824	(88.7)
	within group inequality				0.14086	(97.5)
	between group inequality				0.00368	(2.5)
	total			0.14454	0.14454	(100.0)
2011	elderly HHs	11.9	12,994	0.53039	0.06306	(25.7)
	working age HHs	88.1	22,363	0.19129	0.16854	(68.8)
	within group inequality				0.23161	(94.5)
	between group inequality				0.01346	(5.5)
	total			0.24507	0.24507	(100.0)

Note: 1) Yearly incomes are deflated by 2010 CPI.

Source: Korea National Statistical Office, HES 1996, HIES 2011.

The change of income inequality as time elapses can be decomposed as follows (Oxley et al., 1997).

$$\Delta MLD = MLD^t - MLD^0$$

$$= \sum_g \overline{w_g} \cdot \Delta MLD_g + \sum_g \overline{w_g} \cdot \Delta \ln[\frac{\overline{Y_0}}{Y_g}] + \sum_g \overline{MLD_g} \Delta w_g + \sum_g \overline{[\ln \frac{\overline{Y}}{Y_g}]} \Delta w_g + \sum_g \overline{w_g} \Delta [\ln \frac{\overline{Y}}{\overline{Y_0}}],$$

$$\text{where}, \quad \overline{Y_0} = \sum_g w_g^0 Y_g^t, \quad \overline{Y} = \sum_g w_g^t Y_g^t$$

The first part of the right-hand side of the formula is the change of the within-group inequality while

Table 2.2 Decomposition of Change of Income Inequality by Household Type (1996~2011).

	total	net effect of within-group inequality			net effect of between -group inequality	composition effect
	total	elderly HH	working age HH	sub-total	net effect of between -group inequality	composition effect
absolute contribution	0.10053	0.01270	0.05397	0.06667	0.00205	0.03181
relative contribution	100.0	12.6	53.7	66.3	2.0	31.6

Source: Korea National Statistical Office. HES 1996, HIES 2011.

the proportion of each household type is fixed, and the second part is the change of the between-group inequality while the proportion of each household type is fixed. The remaining three parts are the change of inequality due to the compositional change of each household type while the within-group and the between-group components are fixed.

<Table 2.2> presents the decomposition of inequality change between 1996 and 2011. The increase of within-group inequality contributed as much as 66.3% to the total increase of inequality, and the change of population composition by household type explains 31.6% of inequality change between those two years. Among the effect of within-group inequality, the increase of income inequality within working age households explains the majority of inequality (53.7%). In sum, the increase of income inequality within the working age population was the most important factor and the proportional change of elderly households was the second most important factor in explaining the increasing inequality during the last 15 years of the period.

Decomposition of Income Inequality by Income Sources

In order to identify the effects of each income sources on inequality, we apply the method of GINI coefficient decomposition developed by Shorrocks(1982), and Lerman and Yitzhaki(1985). The GINIcoefficient(G) can identified in terms of income by sources(y_k) as follows.

$$G = \frac{2\sum_{k=1}^{K} cov(y_k, F)}{m},$$

where $cov(y_k, F)$ is the covariance between income source k and the cumulative distribution of total income F, and m is the mean of total income. It is possible to decompose the effects of each income source by multiplying by $cov(y_k, F_k)$ and dividing by m_k.

$$G = \sum_{k=1}^{K} \frac{cov(y_k, F)}{cov(y_k, F_k)} \frac{2cov(y_k, F_k)}{m_k} \frac{m_k}{m} = \sum_{k=1}^{K} R_k G_k S_k,$$

where R_k is GINI correlation between income source k and the cumulative distribution of total income, and G_k is the GINI coefficient of income source k, S_k is k's proportion in total income. The absolute contribution of income k, $C_k = R_k G_k S_k$ and, $\sum_{k=1}^{K} C_k = G$. The relative contribution of k, the percentage of the contribution of each income source is $I_k = C_k / G$, and $\sum_{i=1}^{K} I_k = 1$. Dividing the relative contribution by the proportion of each income source, gives us the relative income inequality (I_k / S_k). If the relative income inequality of an income source is greater than 1, then its contribution can be regarded greater than the proportion of the source. And with income change ey_k in a certain source y_k, the relative marginal effect of the source can be expressed as $\frac{\partial G / \partial e_k}{G} = \frac{R_k G_k S_k}{G} - S_k = I_k - S_k$. The sum of the relative marginal effects is 0.

[Table 2.3] shows the result of decomposition of inequality by income sources such as employment and business income, capital income, and public and private transfer. The GINI coefficient of disposable income increased from 0.275 in 1996 to 0.302 in 2011. The GINI coefficients of employment, business, and capital income increased while those of public and private transfers and tax contributions decreased between 1996 and 2011. The proportions of employment income, public transfer, and tax contribution increased, while the proportion of business income decreased.

The relative contribution of employment income to the total inequality was dramatically increased from 0.474 in 1996 to 0.848 in 2011, while the contribution of business income was reduced from 0.486 to 0.245. The inequality of employment income can be understood as a major factor of the total income inequality in recent years. The contributions of public transfer seem to be insignificant in those two years, while tax and social security contribution works for income redistribution.

The relative inequality and the relative marginal effects show the magnitude of the income sources' effect on the total income inequality while controlling for their proportions. In 2011, the relative marginal effect was greatest in employment income where 1% of employment income increase accompanies 0.102% of inequality of total income. The redistribution effects of public transfer and tax payment was 0.043% and 0.021% each.

Table 2.3 Decomposition of Income Inequality by Income Sources.

	income source	GINI	Proportion	GINI corr.	Absolute contribution	Relative contribution	Relative Inequality	Relative Marginal Effect
		G	S	R	C	I	I/S	I-S
1996	total	0.275	1.000	1.000	0.275	1.000	1.000	0.000
	employment	0.465	0.631	0.444	0.130	0.474	0.751	-0.157
	business	0.769	0.321	0.541	0.134	0.486	1.515	0.165
	capital	0.906	0.048	0.478	0.021	0.076	1.575	0.028
	private transfer	0.925	0.037	-0.014	0.000	-0.002	-0.047	-0.039
	public transfer	0.988	0.007	0.180	0.001	0.005	0.648	-0.003
	tax & social security contribution	-0.586	-0.045	-0.409	-0.011	-0.039	0.871	0.006
2011	total	0.302	1.000	1.000	0.302	1.000	1.000	0.000
	employment	0.491	0.745	0.701	0.256	0.848	1.137	0.102
	business	0.781	0.250	0.380	0.074	0.245	0.981	-0.005
	capital	0.976	0.005	0.325	0.001	0.005	1.050	0.000
	private transfer	0.919	0.050	0.110	0.005	0.017	0.335	-0.033
	public transfer	0.851	0.045	0.012	0.000	0.002	0.034	-0.043
	tax & social security contribution	-0.477	-0.095	-0.775	-0.035	-0.116	1.224	-0.021

Source:Korea National Statistical Office, HES 1996, HIES 2011.

How much did each income source contribute the change of income inequality between 1996 and 2011? Förster(2000) provides a method to decompose the change of absolute contribution of each source (ΔC_k) into parts due to change of inequality of each source and parts due to change of proportion of each sources in total income. The income source k's absolute contribution to GINI coefficient can be expressed as a product of the proportion of each income source(S_k) and the relative inequality with its controlling proportion(C_k / S_k).

$$G_k = S_k \frac{C_k}{S_k}$$

Now, the change of income source k's contribution consists of the component due to the change of inequality of each source ($\Delta G_k \overline{S_k}$) and the component due to the change of the proportion($\Delta S_k \overline{G_k}$).

$$\Delta G_k = G_{kt} - G_{k0} = \Delta G_k \overline{S_k} + \Delta S_k \overline{G_k},$$

where $\Delta S_k \overline{G_k} = (S_{kt} - S_{k0})(\frac{G_{k0} + G_{kt}}{2}), \quad \Delta G_k \overline{S_k} = (G_{kt} - G_{k0})(\frac{S_{k0} + S_{kt}}{2})$.

[Table 2.4] shows the result of static decomposition of income inequality. The GINI coefficient of disposable income increased from 0.275 in 1996 to 0.302 in 2011. Although the change of proportion of each income source works to reduce the inequality, the contribution of the growing inequality of each income source prevailed over the effect of proportional change. In particular, the increasing inequality in employment income was proven to be a major factor of growing inequality.

Table 2.4 Decomposition of Change of Income Inequality by Income Sources (1996 ~ 2011).

	employ-ment	business	capital	private transfer	public transfer	tax&SScont.	total
change of absolute contribution	0.126	-0.060	-0.019	0.006	-0.001	-0.024	0.027
change of proportion	0.031	-0.025	-0.016	0.001	0.004	-0.015	-0.021
change of ineq. of source	0.095	-0.034	-0.003	0.005	-0.004	-0.009	0.049

Source: Korea National Statistical Office, HES 1996, HIES 2011.

Effects of Household Labor Supply and Wage Dispersion on Inequality

We found the growing inequality of employment income a critical factor behind overall income inequality. Then what makes the inequality of employment income higher? Now we try to identify the effects of labor supply of household heads and spouses, and the effects of family structure as well as those of wages and salaries of working individuals. Two frequently asked research questions are closely related with this analysis. First is whether spouse's, particularly female spouse's additional labor supply affect positively or negatively on inequality. Second, how do the increasing one-person households and single-parent families affect income inequality?

Here, again we focus on the working age population, excluding households headed by elderly people.

Inequality is measured by mean income difference between the first and tenth decile of disposable income. Following Lee (2005), we identify mean household income in a specific income decile as follows.

$$N \equiv W_h P_h + + W_s P_s \delta + Q,$$

where subscript h indicates the household head, W is labor income(employment and business income), *P* is the employment rate, δ is the proportion of households whose head and spouse live together. Q stands for other household members' income, capital income, private and public income transfer, and tax and social security contribution combined. The inequality measure, N^* is defined as the log difference between the mean incomes of the highest 10% and lowest 10% households.

$N^* = \ln[N^T] - \ln[N^B]$, where T is highest 10% and B is lowest 10%.

The inequality measure N^* is approximately expressed as follows.

$$N^* \approx \phi_h [W_h^* + P_h^*] + \phi_s [W_s^* + P_s^* + \delta^*] + \phi_Q Q^*$$

where ϕ is the proportion of each income source. For example, $\phi_s \equiv (W_s P_s)/N$ is the proportion of the spouse' labor income in the total household income.

The change of inequality between two time points can be decomposed as follows.

$$\begin{aligned} \Delta N^* \approx\ & \phi_h \Delta W_h^* + \phi_h \Delta P_h^* + \Delta \phi_h (W_{hw}^* + P_{hw}^*) + \\ & \phi_s \Delta W_s^* + \phi_s \Delta P_s^* + \phi_s \Delta \delta_s + \Delta \phi_s (H_s^* + W_s^* + P_s^* + \delta^*) + \\ & \phi_Q \Delta Q^* + \Delta \phi_Q {}^* Q^* \end{aligned}$$

The first part of the right-hand side of the formula stands for the contribution of the change of household head's labor income. The second part reflects the contribution due to change of household heads' employment rate, and the third part reflects the relative contribution of change of proportion of household heads' labor income in total household income. If the distribution of household heads' labor income is more unequal than that of household total income, then the growing proportion of household heads' labor income increases household income inequality. With this method, we compare the households in the same decile of income between two time points. We compare the households in particular income group in 2011 with the households in the counterpart in 1996. In this way, we can say how the gap between today's rich and poor households in heads' wages, spouses' wages, their labor supplies, and public transfers differ from the disparities in those factors between the rich and the poor in the past.

Table 2.5 Composition of HH Income by Income Groups (Working Age HH's).

		1996		2011	
		1st	10th	1st	10th
average yearly income (thousand won)	**HH disposable income**	**4,741**	**28,179**	**7,005**	**49,558**
average yearly income (thousand won)	labor income by heads	4,313	20,251	6,066	37,103
average yearly income (thousand won)	labor income by spouse	1,266	9,035	1,906	16,109
average yearly income (thousand won)	labor income by other families	193	2,616	455	5,404
average yearly income (thousand won)	capital income	234	2,421	48	243
average yearly income (thousand won)	private transfer income	647	806	761	2,233
average yearly income (thousand won)	public transfer income	74	159	949	1,017
average yearly income (thousand won)	tax and social security contribution	-399	-1,247	-686	-5,756
rate/ ratio	employment rate of heads	0.868	0.971	0.822	0.982
rate/ ratio	employment rate of spouses	0.269	0.445	0.413	0.698

		1996		2011	
		1st	10th	1st	10th
rate/ ratio	proportion of couple family	0.732	0.933	0.620	0.887
proportion	labor income by heads	0.789	0.698	0.712	0.735
proportion	labor income by spouse	0.053	0.133	0.070	0.201
proportion	labor income by other families	0.041	0.093	0.065	0.109
proportion	capital income	0.049	0.086	0.007	0.005
proportion	private transfer income	0.136	0.029	0.109	0.045
proportion	public transfer income	0.016	0.006	0.136	0.021
proportion	tax and social security contribution	-0.084	-0.044	-0.098	-0.116

Source: Korea National Statistical Office, HES 1996, HIES 2011.

The decile distribution ratio increased from 5.9 in 1996 to 7.1 in 2011 (Table 2.5). The dispersion of household heads' labor income increased and that of spouses' labor income also rose. The spouses' employment rates increased in both low income and high income groups. The proportion of couple families decreased in both income groups, with a larger drop in the low income group.

<Table 2.6> presents the decomposition of change of household income difference between the highest and the lowest income groups in the period of 1996 and 2011. The dispersion of labor income seems to be more responsible to the increasing inequality in the recent 15 years than the change of labor supply. The difference of labor income is greater than that of total household income (122%). In particular, the household heads' labor income dispersion explains 111% of total household income, which means that labor market inequality has been a key driving force of the household income inequality. The change of labor supply also explains a part of household income inequality. On the other hand, redistribution policies such as public transfer and tax contribution seem to contribute to the reduction of income gap between the high and low income groups.

Table 2.6 Decomposition of Change of Income Inequality: Gap between the highest and the lowest income groups (Working Age HH's).

	estimates	contribution
Total	0.1743	1.0000
Head's labor income (2)	**0.1941**	**1.1133**
Spouse' labor income (5)	0.0193	0.1108
Head's labor supply (3)	0.0476	0.2728
Spouse' labor supply (6)	**0.0025**	**0.0144**
family structure (7)	0.0131	0.0753
labor income by other family members (9)	-0.0102	-0.0585
capital income (11)	-0.0266	-0.1527
private transfer income (13)	0.0682	0.3913
public transfer income (15)	**-0.0310**	**-0.1780**
tax and social security contribution (17)	**-0.0845**	**-0.4846**
composition of income (4+8+10+12+14+16+18)	-0.0303	-0.1739

Notes: Numbers in bracket refer the terms in <Appendix Table 1>.

Source: Korea National Statistical Office, HES 1996, NSHIE 2011.

To sum up

In order to determine factors driving inequality, we compared income inequalities between Korea and other countries through different viewpoints and time series trend changes and analyzed changes during the last 15 years, during which the inequality has escalated. The results are summarized as follows.

First, comparisons with other countries indicate that Korea's market income dispersion is well balanced. This suggests that active labor market participation from the low income class has offset inequality of individual labor income. While household market income is relatively balanced, the dispersion of disposable income drops to the average level of compared countries. The reason is because Korea's redistribution system does not function as well as developed countries.

Second, a time series approach to income inequality shows that the inequality declined significantly in the late 80s, before escalating again in the mid-90s. The changes coincide with the activation of

labor strikes in 1987 and the financial crisis in 1997. We have noted an increasing gap between market income inequality and disposable income inequality.

Third, among the four hypotheses considered to explain the increasing inequality of income over the last 15 years, the inequality of wages seemed to have the largest impact on income inequality. The aging of the society was another factor. During the last 15 years, the inflow of female labor did not have any effect in easing the income inequality, while tax and income transfer helped reduce inequality.

The two most noteworthy factors are wage dispersion and female labor supply. The current analysis shows that the most noteworthy factor driving income equality is the increase of wage inequality in the labor market during the last 15 years. The figures in the following chapters show that the rise and fall of household income inequality coincides with the changes and trends of wages in labor market. Even so, wage inequality did not fully translate to household income inequality thanks to the active labor force participation of the low income classes(Chang 2012). However, it is unlikely that such effects will continue. Labor market participation from low-income class females offset the wage inequality of household heads surrounding the 1997 Asian economic crisis(Lee 2008), but analyses of recent 15 years show that such effects have disappeared. Considering that spouses' labor market participation rate of high-income household heads in Korea is lower than that in developed countries, it is unlikely that the inequality mitigating effects of household labor supply patterns will continue.

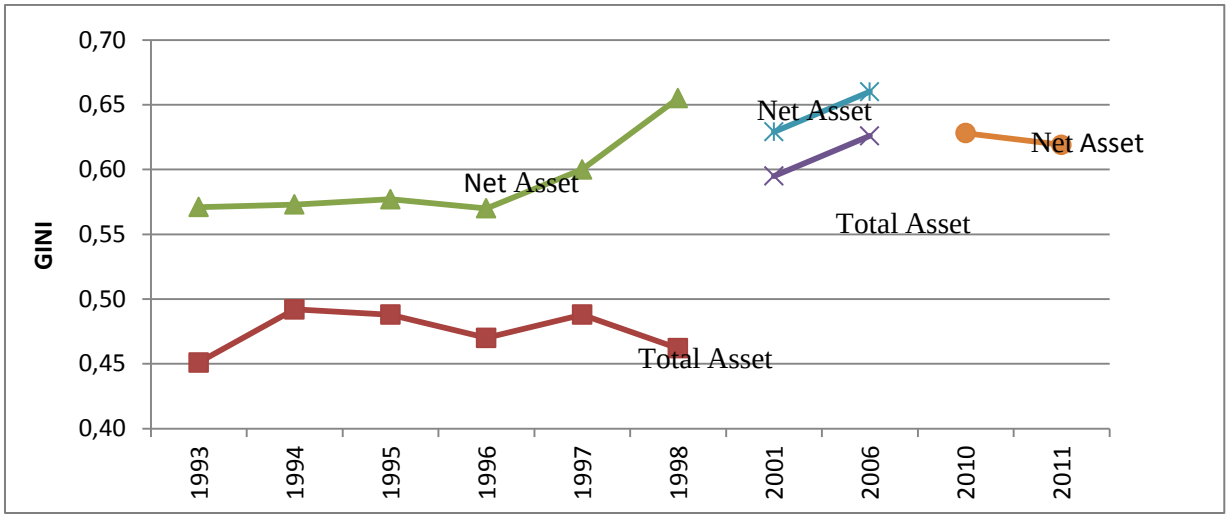
2.2 Wealth and Debt Inequality

In the 2000s, increasing wealth inequality and the household debt problem have come to the fore as one of the most serious social issues in South Korean society. With the worsening of employment situations and job stability, wealth accumulation by way of investment in housing and financial market began to be widely perceived as an alternative to wage earning in the labor market. At the level of policy and institutional environments, the Korean government enacted laws to promote the residential mortgage market and pushed policies to boost the housing market as a reaction to the 1997 Asian financial crisis. These changes affected the radical rise of real house price, the increase of wealth inequality, and the exacerbation of the household debt situation. After the Asian financial crisis, Korean society experienced a simultaneous increase in income and wealth inequality, which reinforced mutually(Shin, 2011a: 225).

Actually, the wealth inequality of Korea is relative low compared to other countries. The net wealth GINI, which is around mid 0.6 in 2011, is lower than the US and Sweden(around 0.8). And, it was not so high before the financial crisis. Korea has very unique housing system*, joense*, in which a renter

makes deposit around half of market price to home owner for the rent period. The deposit is usually debt from financial institutions. So, Lee and Lee (2001) argues that net worth is more adequate than total wealth for measuring wealth inequality due to the deposit. It is 4.9% of total asset in average, but 27.9% for the lowest quintile by asset(see [Table 2.6]). As survey of wealth are not available over long-period, it is impossible to provide consistent evidence, [Figure 2.6] shows that the net worth GINI has leveled up with the financial crisis in 1997. Nahm(2009) estimates that the upper quintile of asset classes gained 71.46% among the total asset increase in Korea from 2001 to 2006, while the bottom quintile only 0.77%.

Table 2.7 Changes in Inequality of Household Asset, 1993-2011 (GINI coefficient).



Source: Daewoo Economic Research Center, Korean Household Panel Study, 1993-1998; Korea National Statistical Office, Survey of Household Wealth, 2001, 2006; cited from Lee and Lee (2001: 44), Nam (2009: 67).Korea National Statistical Office, Survey of Household Finance, 2010, 2011;

Note: The data from 1993 to 1998 do not include households in rural areas.

Among different forms of assets, the tangible assets (real estate), and the housing assets in particular, are far more important than the financial ones in household wealth. In 2001, the share of tangible assets within total household assets of Korea amounts to 72.2%, which is 20%p higher than in Japan during the same period. As we see in [Table 2.7], during the years 2001 through 2006, the share of tangible assets increased by 6.1%p as house price rapidly increased over the period 2002-2007. It was back to 72.5% in 2011 as the house price stagnates.

It is particularly noteworthy that the larger the amount of total assets, the larger the relative share of tangible assets within the total assets, and that the upper quintile possesses a significant part of the wealth in land and building, while the wealth of the middle classes is centered in the housing assets .

Table 2.8 Portfolio Composition of Household Wealth measured by Wealth Quintile (%).

	Quintile by Asset (2011)						Quintile by Income (2011)					
	Total	1st	2nd	3rd	4th	5th	Total	1st	2nd	3rd	4th	5th
Total Assets	100	100	100	100	100	100	100	100	100	100	100	100
Financial Assets	24.0	51.4	46.0	31.4	24.3	18.7	23.2	18.5	21.4	24.7	23.0	24.0
Deposit for Housing	4.9	27.9	24.4	13.1	6.7	2.8	6.3	7.3	8.1	8.2	6.7	4.9
Tangible Assets	72.5	39.3	47.8	64.0	72.2	78.9	73.6	80.1	75.8	71.9	73.6	72.5
Housing	33.8	18	36.2	49.0	47.9	36.1	39.7	51.8	46.3	42.3	42.3	33.8
Land	11.1	4.3	3.1	5.9	9.7	16.5	13	18.4	15.4	14.2	13	11.1
Building	26.7	16.2	8.3	8.8	14.1	25.5	20.3	9.7	13.9	15.2	17.7	26.7
Debt/Total Asset	18.4	106.4	27.5	20.5	16.1	14.2	18.4	17.5	13.3	17.0	16.9	17.6
Net Worth/Total Asset	81.6	-6.4	72.5	79.5	83.9	85.8	81.6	82.5	86.7	83.0	83.1	82.4
	Quintile by Asset(2006)						Quintile by Asset(2001)					
	Total	1st	2nd	3rd	4th	5th	Total	1st	2nd	3rd	4th	5th
Total Assets	100	100	100	100	100	100	100	100	100	100	100	100
Financial Assets	21.7	57.1	38.9	31.0	27.0	16.5	27.8	62.9	59.8	38.6	28.8	21.2
Tangible Assets	78.3	42.9	61.1	69.0	73.0	83.5	72.2	37.1	40.1	61.4	71.2	78.8
Housing	41.1	35.5	52.5	55.1	49.5	35.9	53.1	32.4	37.9	57.5	64.5	50.7
Land	29.3	5.2	7.6	12.2	20.6	36.8	12.9	3.4	2.2	3.1	5.8	18.5
Building	6.6	1.3	0.2	0.5	1.3	9.7	6.2	1.3	0.1	0.7	0.8	9.7
Debt/Total Asset	13.2	78.7	27.4	19.5	14.1	9.1	14.6	99.5	24.2	18.3	15.1	9.9
Net Worth/Total Asset	86.8	21.2	72.6	80.5	85.9	90.9	85.4	0.5	75.8	81.7	84.9	90.1

Source: Korea National Statistical Office. , National Household Survey, 2001 and 2006; cited from Nam (2009: 66).

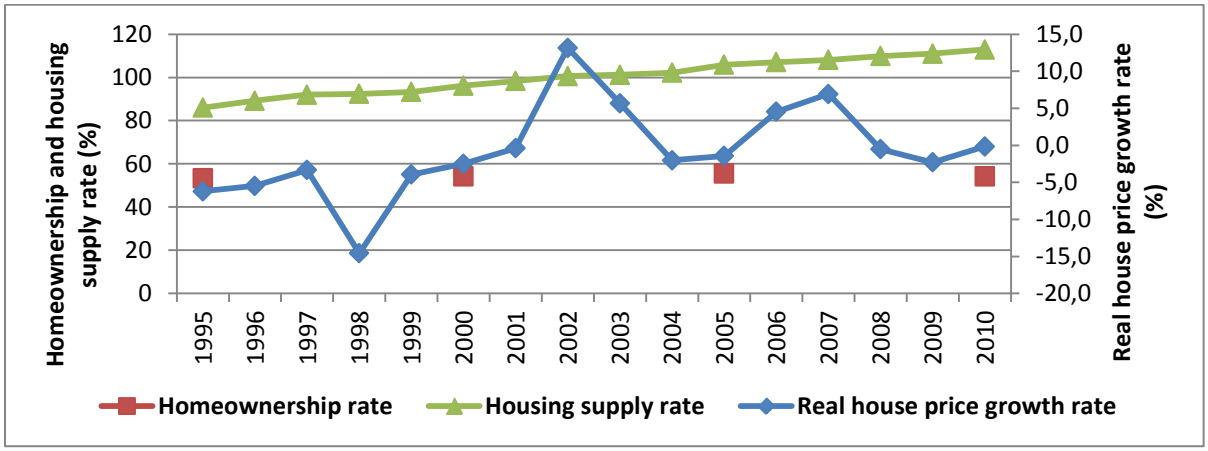
After a short breakdown of the housing market in 1998 caused by the financial crisis, real house prices in Korea soared twice in the 2000s. Although this occurred in close relationship with the expansion of mortgage markets, Korean society did not develop toward a liberal model of

'homeowner society' or 'asset-based welfare,' which presupposes more access to residential mortgage for a broad range of the population and a consequent increase in homeownership rates. Despite the continuous increase of housing supply rate throughout the 2000s, the homeownership rate in Korea remained constant throughout the whole period (Figure 2.7). This means that a limited number of the upper and middle class possessed more houses than before, while more than half of Korean households do not have a change to buy their own house. If we observe the change of housing assets before and after the radical rise of real house prices from 2005 to 2007, it becomes evident that only the upper income class profited from the housing boom, while the low income class did not increase ([Table 2.8]).

Then, what we find in [Table 2.7] is that asset poverty became very severe problem recently. The net worth of 1stquintile by asset became negative in 2011. This might reflect the fact that debt has increased very fast as housing market stagnated since 2007.

The main driver of household income inequality is growing inequality of labour income. This is due to the fact that the share of labour income is still high(more than 70%) even though inequality of asset income is higher and the labour market is the most hard hit by the crisis. Then, there is still a problem that the survey does not grasp all of asset income. As we see in Figure 1.4, the labor share in the national account started to stagnate since 1996 even though the ratio of self-employment decreased and the ratio of wage earners increased, which means that the share of asset income or other incomes increased. Some studies using other data argue that the contribution of asset inequality to income inequality has increased. It is true that labour income is the most important factor of growing inequality, but we could not overlook the asset inequality.

Figure 2.7 Trends in homeownership rate, housing supply rate, and house price, 1995-2010.



Source: For homeownership rate, Korea National Statistical Office, Population Housing Survey, every year; for housing supply rate, Ministry of Land, Transport and Maritime Affairs, Statistical Yearbook; for house price trends, OECD, Economic Outlook 2010, source data.

(Unit: 10,000 won)

Table 2.9 in Housing Assets measured by Income Levels.

	2006	2010	increasing rate
total	11,803	14,507	(22.9)
Low Income	5,607	6,045	(7.8)
Middle Income	10,033	13,313	(32.7)
High Income	27,535	34,228	(24.3)

Source: Korean Research Institute for Human Settlements, Survey of the 2010 Residential Situation in Korea, Statistical Report, p. 15.

Note: The survey included households with null housing asset.

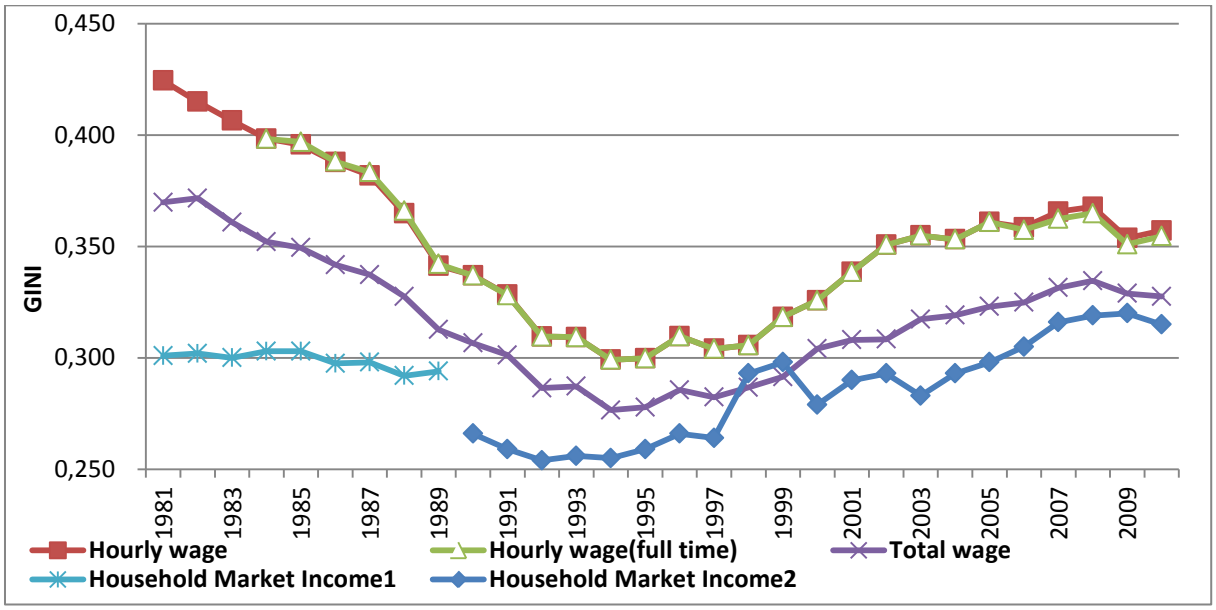
2.3 Labor Market Inequality

As we see in the above, the growing household inequality was driven mainly by the worsening labour market inequality. The wage GINI coefficient is higher than the income one. Considering that the wage inequality index are from the 『Basic Wage Structure Survey』 (the Ministry of Employment and Labor) which covers only regular workers in establishments with 10 or more employees, and the low wage workers are usually concentrated in small establishments, the real wage GINI coefficients would be higher than the statistics.[2] According to OECD(2008, p358), the wage inequality in Korea is the highest after the US in 2006. The wage inequality index for Korea of OECD was calculated using the same survey 『Basic Wage Structure Survey』, including only establishments with 10 or more employees. Seong(2010) compared Korean and US wage inequalities with the same standard to find that the wage inequality of Korea is higher than that of the US between 2000-2010.

The GINI coefficient of hourly wage is higher than that of total wage. Low wage workers compensate for their lower hourly pay with longer working hours([Figure 2.9]). The GINI coefficients change little even when part-time workers are left out.

[2] The total number of employees covered in the 『Basic Wage Structure Survey』 (the Ministry of Employment and Labour) is 6.47 million while the number of employees surveyed in the 『Economically Active Population Survey』 and 『National Survey of Household Income and Expenditure』 (the Korean National Statistical Office) is 16.97 million in 2010. The wage GINI coefficient was calculated 0.503, using tax data on wage income from National Tax Service(Kim, 2012).

Figure 2.8 Trends in GINI Coefficient(1981-2010).

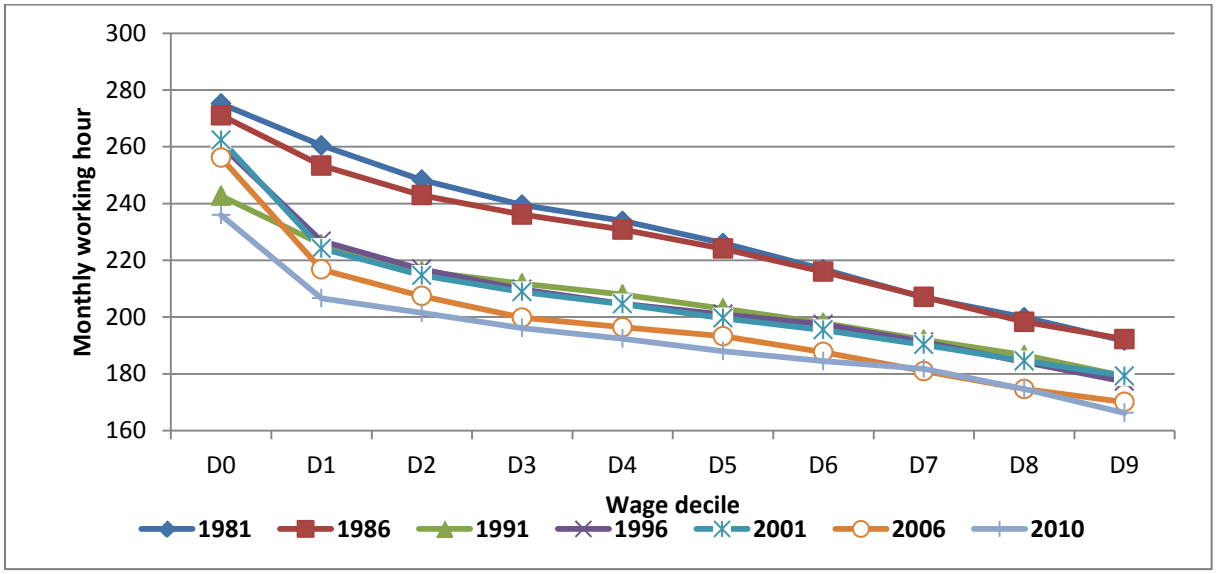


Source: Ministry of Employment and Labor, 『Basic Wage Structure Survey』

Note: 1) Calculations of Dr. RohDae-Myung (Korea Institute for Health and Social Affairs)

2) Korea National Statistical Office.

Figure 2.9 Monthly Working Hour by the Hourly Wage Decile.

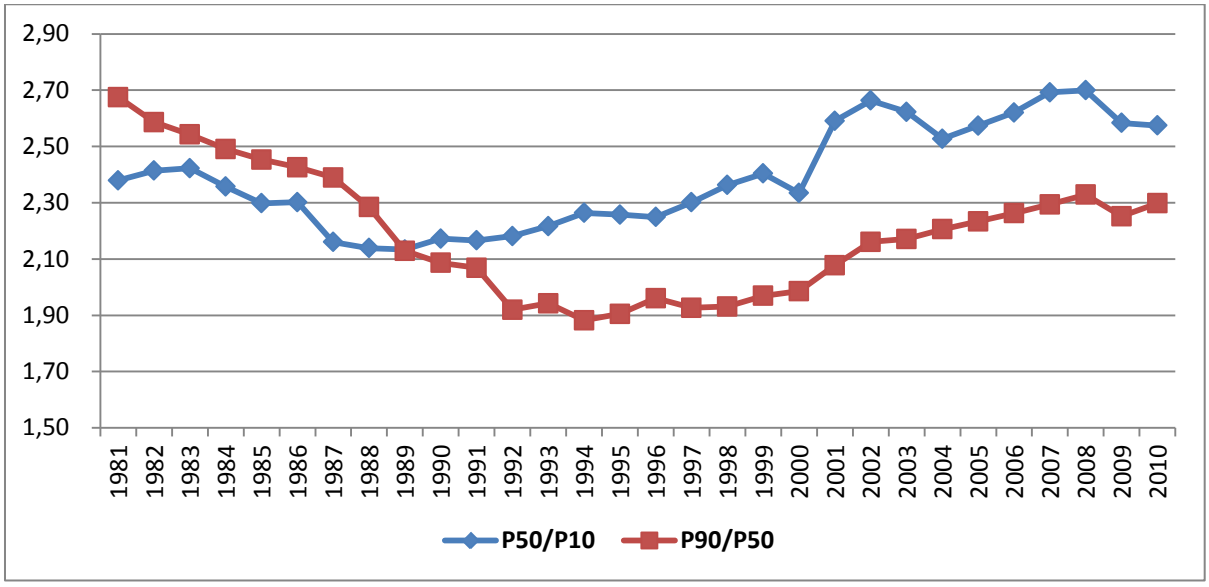


Source: Ministry of Employment and Labor, Raw data of 『Basic Wage Structure Survey』, each year.

What we can see in the wage decile ratios in the [Figure 2.10] ~[Figure 2.13] is that the P50/P10 ratio starts to increase from 1989 while the P90/P50 ratio starts to increase from 1999. This implies that the relative wage growth rate of low wage workers has been low since 1989, and much lower

since 1999 after the financial crisis. On the contrary, the relative wage growth of the middle wage group has been higher for 1981-1997, but lower for 1998-2007 than those of the high wage group. It can be said that the overall wage disparities between wage groups has been enlarged after the financial crisis in 1997.

Figure 2.10 Trends in Decile Ratios (Hourly Wage, 1981-2010).



Source: Ministry of Employment and Labor, Raw data of 『Basic Wage Structure Survey』, each year.

To understand the trends of structure of wage inequality, we estimate Mincer-type wage equations in the form of:

*Log(hourly wage) = α + β1*Male(dummy)+ β2*Age+ β3*Age+ β4*Ten+ β5*Tensq+β6*Establishment Size(dummy)+β7*Manufacturing Sector(dummy)+ β8*Production Occpuation(dummy)+β9*Senior College(dummy)+ β10*Junior College(dummy)+ β11*High School(dummy)+ ε.*

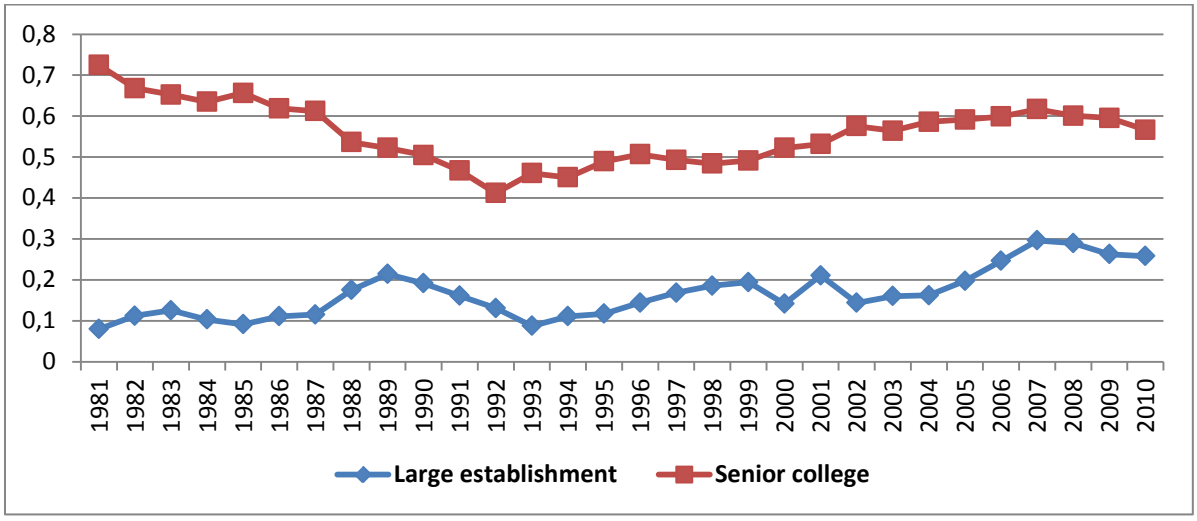
In this equation, we will focus on coefficients on senior college and establishment size. As we see in [Figure 2.11], the turning point is 1992 for senior college and 1993 for large establishments(with 300 or more employees). The college wage premium after 1992 has gone hand in hand with the incredible growth of college graduates(Figure 2.11). It is thought to be due to the skill-biased technological change such as IT(Korea is one of the most rapidly growing country in IT manufacturing and consumption). Then, many studies show that very rapid expansion of trade with China has increased demand for high-skilled workers, destroyed medium-skilled jobs, and raised wage inequality(Nahm 2010a, Nahm 2010b, Ok et al. 2007, Ahn et al. 2007). The degree of dependency of foreign trade has very similar shape with GINI coefficient such that it was 78.9% in 1980, the lowest

55.5% in 1993, and now 105.5% in 2010(Figure 2.12) and the trade structure has changed from the US-oriented to China-Oriented one(Figure 2.12). Nahm(2010) said that the growing wage inequality is kind of opportunity cost for the change from low-skill abundant country to high-skill abundant one with extending trade with China.

The growing educational wage inequality cannot be fully explained only by labour supply and demand. Labour market institutions are also important factor in growing inequality. Kim shows that increase in the share of non-regular employment raised educational wage inequality and Seong(2011) shows that tenure explained the difference between the US and Korea wage inequality which could not be explained by the coefficient on college education. The wage premium for tenure is higher in Korea, and tenure is differently distributed within the same education level group. Particularly, there are bid differences in tenure across firm and establishment size. Tenure is kind of proxy variable for job stability.

Figure 2.13 shows that the figure of GINI coefficients have almost same shape even within the same educational group. Then, the GINI figure of college graduates in large establishment(500 or more employees) had different shape, relative lower increase in 2000s. This means that even within the college graduate group, there could be great wage differentials across establishment size. The economic restructuring in the wake of the financial crisis strengthened the power of the surviving large firms, and the full opening of the market to the world economy weakened SMEs. The fully opened market also favored large firms rather than SMEs. Furthermore, employment has not increased significantly in the large firm sector, increasing only in the SMEs sector. Low wage workers are concentrated in SMEs. As we will see in Chapter 5, the wage equalizing effect of labour unions(particularly concentrated in large establishments) has been diminishing in 2000s, and the effect of minimum wage policy on reducing inequality was not high. This means that extending educational opportunity is not enough and changes in economic structure and industrial organization and labour market institutions are important to reduce overall wage inequality in Korea.

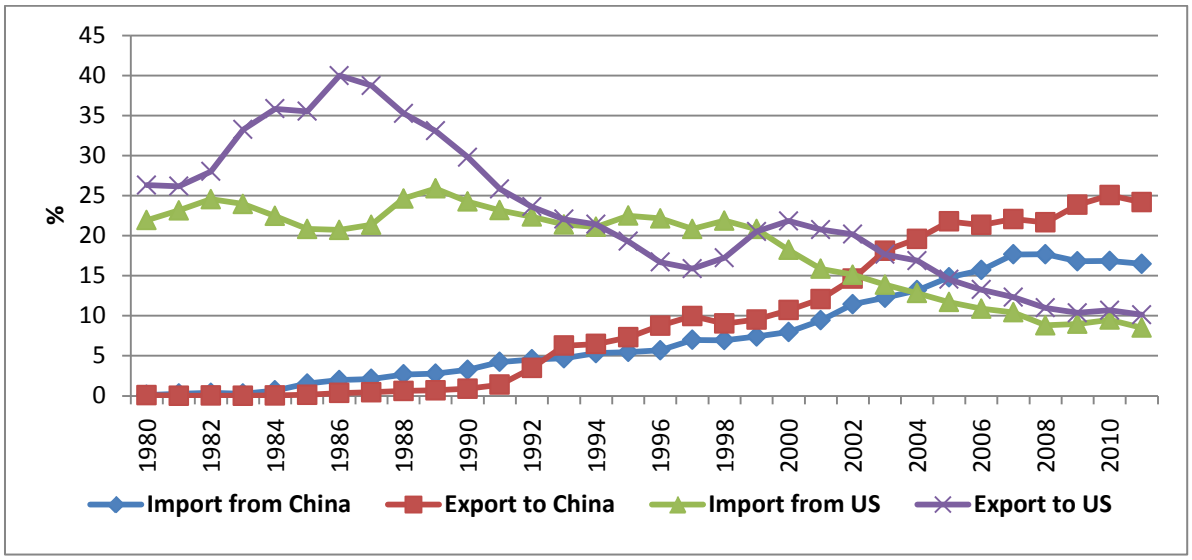
Figure 2.11 Wage Premiums for Senior College and Large Establishments(1981-2010).



Source: Ministry of Employment and Labor, Raw data of 『Basic Wage Structure Survey』, each year.

Note: Large Establishments are those with 300 or more employees.

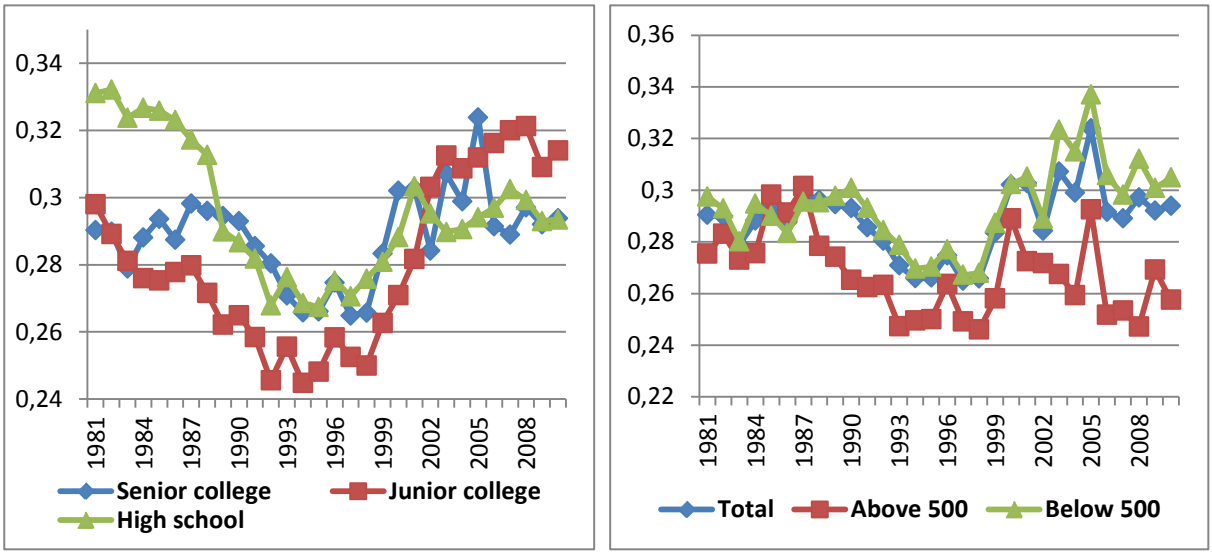
Figure 2.12 Export and Import share to total, 1980-2011.



Source: Korea National Statistical Office.

Figure 2.13 GINI Coefficients by Education and Establishment Size(1980-2010).

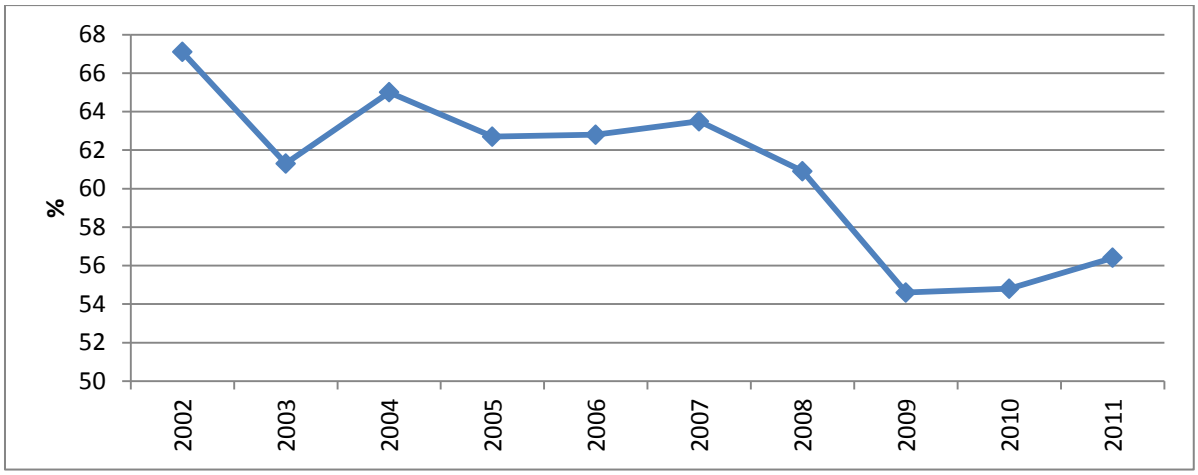
(By educational level) (By establishment size, College Graduates Only)



Source: Ministry of Employment and Labor, Raw data of 『Basic Wage Structure Survey』, each year.

Although we do not have long time series for employment type data, employment type(regular or non-regular) is also one major driver of growing wage inequality. [Figure 2.14] shows that wage of non-regular worker relative to those of regular worker was 67.1% in 2002, but it rapidly decreased to 54.6% in 2009. Labour market flexibilization after the financial crisis increased both the share of non-regular workers and the wage differentials across employment type, which contribute to the overall wage inequality growth.

Figure 2.14 Wage Inequalities by Employment Type (Non-Regular/Regular).

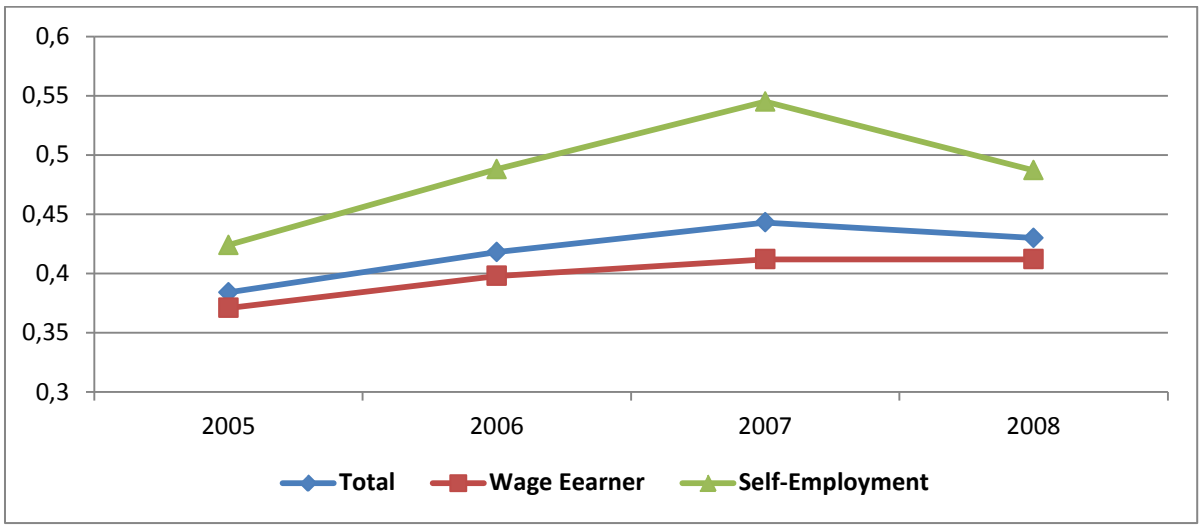


Sources: Korea National Statistical Office, Economically Active Population Survey.

There are very little reliable data on income of self-employees in Korea. The Korea Welfare Panal Study by KIHASA(Korea Institute of Health and Social Affairs) provide income data on self-employees, but the survey started in 2005([Figure 2.15]). Generally, the income inequality among self-employees

is higher than that of wage earners. The total GINI coefficient increases around 3.5-7.5% when self-employees are included in the workforce. Its contribution to the increasing income inequality may not be so great considering the decreasing share of self-employment in the workforce. As we have already seen in the previous chapter(2.1. Decomposition of the change in income inequality), the main driver of inequality increase for 1996-2011 was household labor income, particularly employment income rather than business and capital income.

Figure 2.15 GINI Coefficients of Wage Earners and Self-Employees.

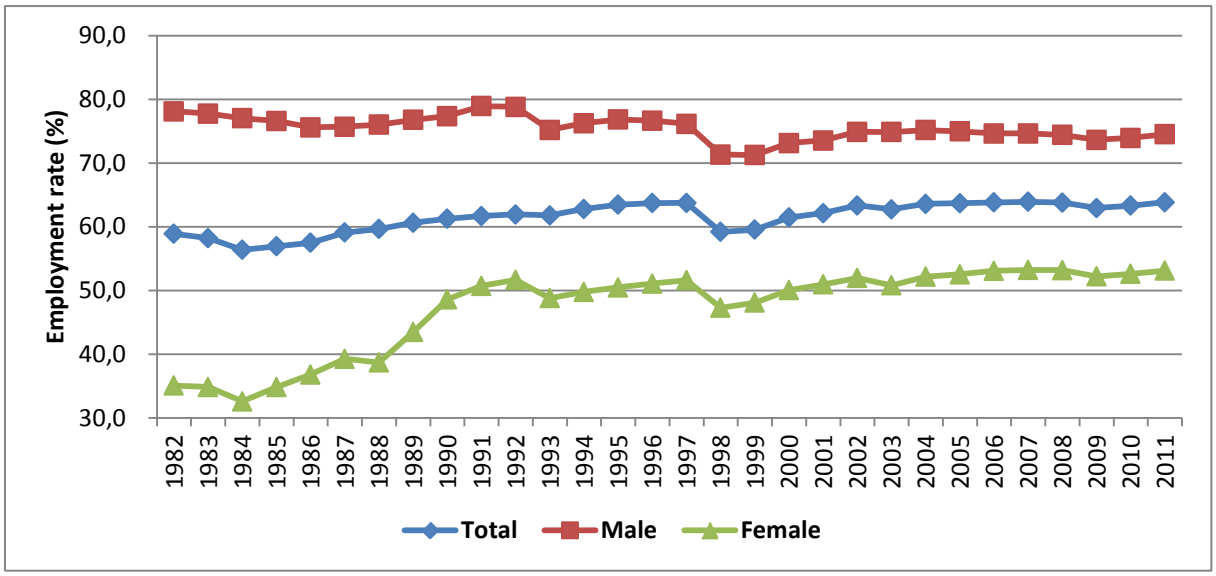


Source: Korea Welfare Panel Study wave 1~4. Ji(2011).

The financial crisis in 1997 caused so-called 'employment crisis', which has been regarded as the main driver of increasing income inequality. The employment rate among those aged 15-64 started to increase in 1984 due to participation growth of female workforce. However, it stagnated after the crisis. The employment rate has not recovered its pre-crisis level even though more than 10 years have passed since the crisis. The stagnating employment rate would have increased the earning inequality of the entire working-age population beyond the earnings inequality among workers.

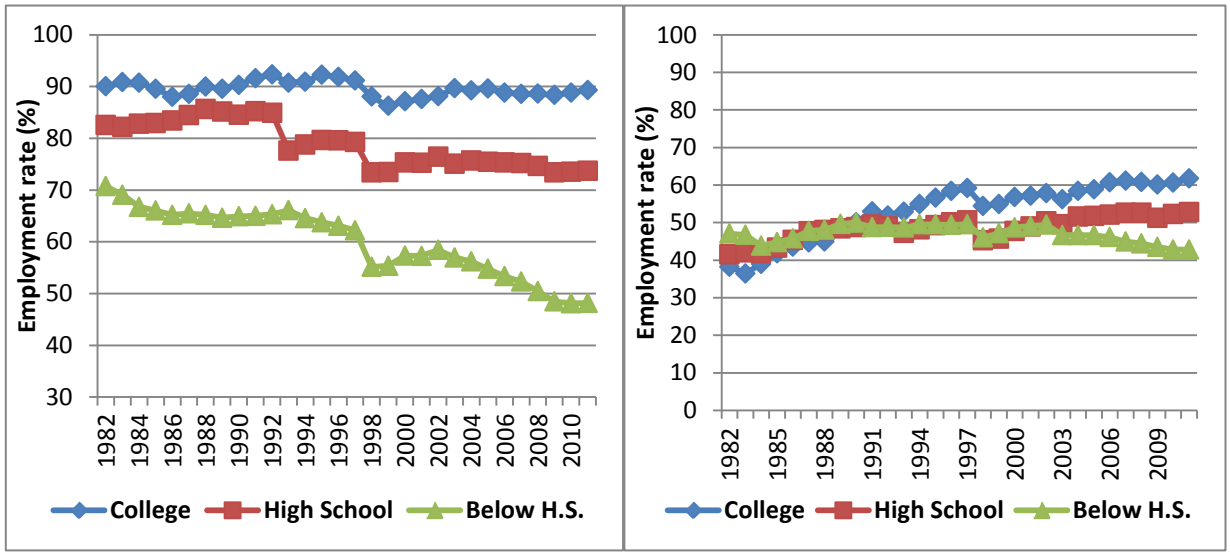
[Figure 2.16] and [Figure 2.17] show the employment rates by gender and education. As we will see in the next section, educational attainment has increased very rapidly since the early 1990s. In the midst of growing academic achievements, employment accessibility of lower educated person has been lowered since 1999, particularly in the male labor force. This means that the inequality mitigating effects of relatively higher accessibility to the labor market of low skilled workers have been reduced.

Figure 2.16 Employment Rate by Gender(aged 15-64, 1982-2011).



Sources: Korea National Statistical Office, Economically Active Population Survey.

Figure 2.17 Employment Rate by Gender and Education(aged 15-64, 1982-2011).



(Male) (Female)

Sources: Korea National Statistical Office, Economically Active Population Survey.

2.4 Education Inequality

In the sphere of development economics, it is well-known that Korea has been successful in obtaining so-called 'shared growth'(growth without inequality) for the 3 decades since the 1960s by extending opportunities in education for all. Even after the 1980s, the educational opportunities have been still extended.

In the [Table 2.9], the average education years was only 7.6 in 1980, 9.5 in 1990, it is now 11.6 in 2010. It is 14.1 for the age group of 20~29, which maybe among one of the world highest educational attainments. Particularly, for this age group, the average education year of female(14.3) is higher than that of males(14.0).

During the past five decades, the growing educational attainment years have caused more equal distribution of education level of labor force in Korea. [Figure 2.18] shows GINI coefficients of educational attainment years since 1994. It was 22.1 in 1994, and then 18.5 in 2010. While the decreasing trends are similar between male and female, there are some differences between age groups. In the younger generation, educational distribution are more equally distributed. This is because the educational system has extended step by step over the long time period from primary school in 1960-70s to middle and high school in 1970-80s, and then to tertiary education in 1990s.

Table 2.10 Average Education Years by Age and Gender Group.

(Total)

	all age	6~19	20~29	30~39	40~49	50~
1980	7.6	6.5	9.9	9.2	7.5	4.2
1985	8.6	6.7	11.0	10.1	8.5	4.6
1990	9.5	7.7	12.0	11.1	9.5	5.5
1995	10.3	7.0	12.7	12.1	10.5	6.3
2000	10.6	5.7	13.1	12.8	11.2	7.2
2005	11.2	4.2	13.8	13.6	12.3	8.2
2010	11.6	4.8	14.1	14.0	13.0	9.1

(Male)

	all age	6~19	20~29	30~39	40~49	50~
1980						
1985	9.7	6.7	11.3	10.9	9.9	6.5
1990	10.6	7.7	12.3	11.8	10.6	7.6
1995	11.2	6.7	12.7	12.8	11.5	8.6

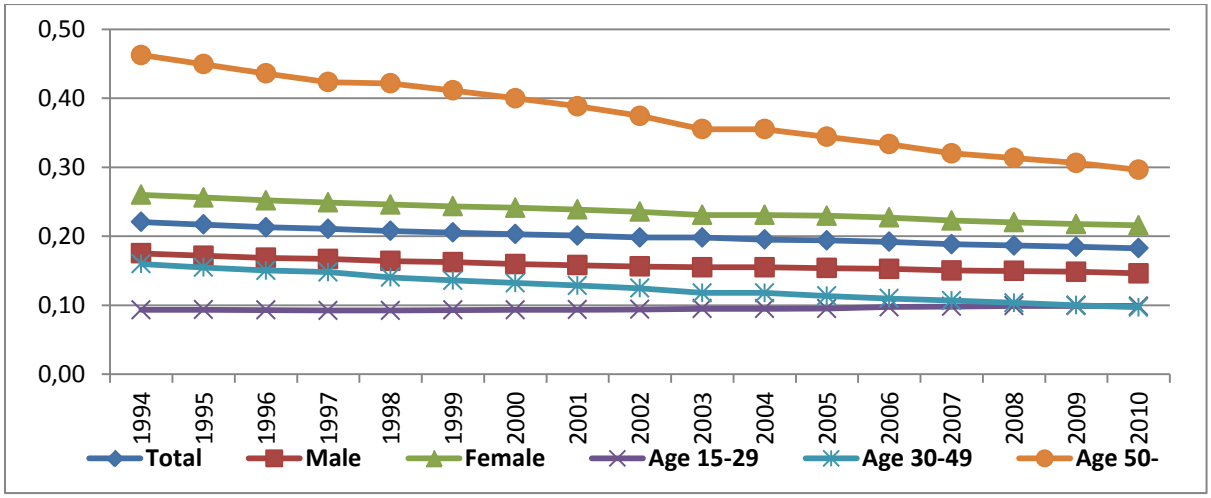
	all age	6~19	20~29	30~39	40~49	50~
2000	11.5	5.3	13.0	13.2	12.0	9.2
2005	12.1	4.0	13.6	13.8	12.9	10.0
2010	12.4	5.0	14.0	14.1	13.4	10.6

(Female)

	all age	6~19	20~29	30~39	40~49	50~
1980						
1985	7.6	6.7	10.6	9.3	7.1	3.1
1990	8.6	7.8	11.8	10.4	8.3	3.9
1995	9.4	7.2	12.7	11.6	9.6	4.8
2000	9.8	6.0	13.2	12.5	10.5	5.5
2005	10.5	4.3	13.9	13.3	11.7	6.7
2010	10.9	4.5	14.3	13.9	12.6	7.7

Sources: Korea National Statistical Office, Household and Population Survey.

Figure 2.18 GINI Coefficient of Educational Years(1994-2010).

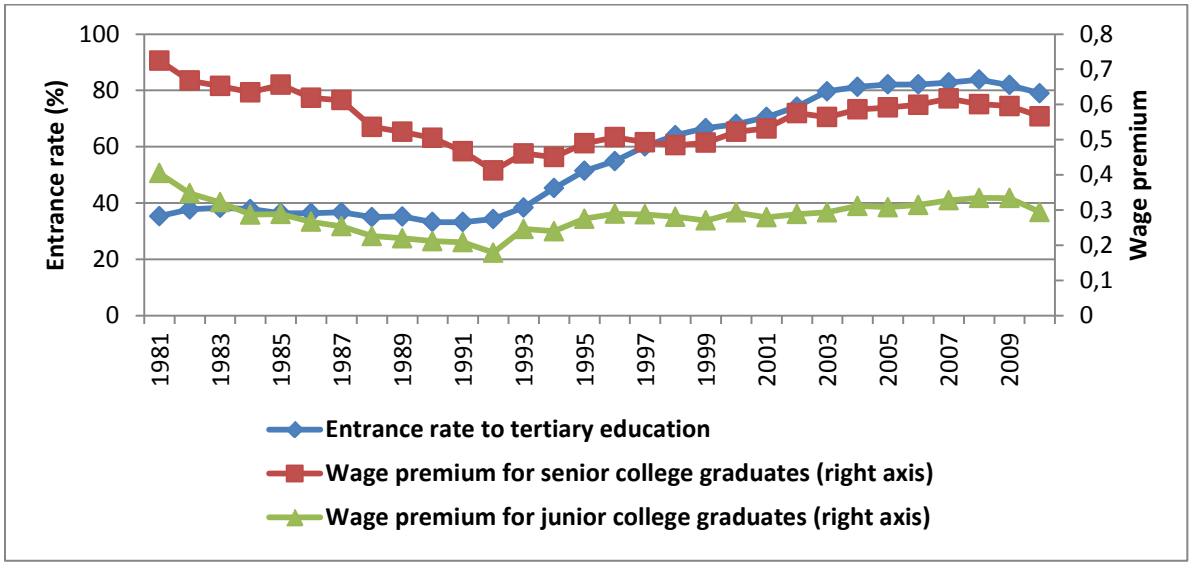


Sources: Korea National Statistical Office, Economically Active Population Survey.

Meanwhile, the entrance rate to tertiary education has continued to increase since the 1990s. It soared from 34.3% in 1992 to 83.8% in 2008([Figure 2.19]). Since 2009, females took over males in terms of entrance rate to tertiary education. As the government has lifted the regulation which has

contained establishing new universities and extending entrance quota in 1995, university and college entrance have grown at a historically unprecedented rate.

Figure 2.19 Entrance Rate to Tertiary Education(1990-2010).



Source: Ministry of Education, Science, and Technology, Yearbook of Educational Statistics

Source: Korea National Statistical Office. Ministry of Employment and Labor of Korea, Basic Wage Structure Survey.

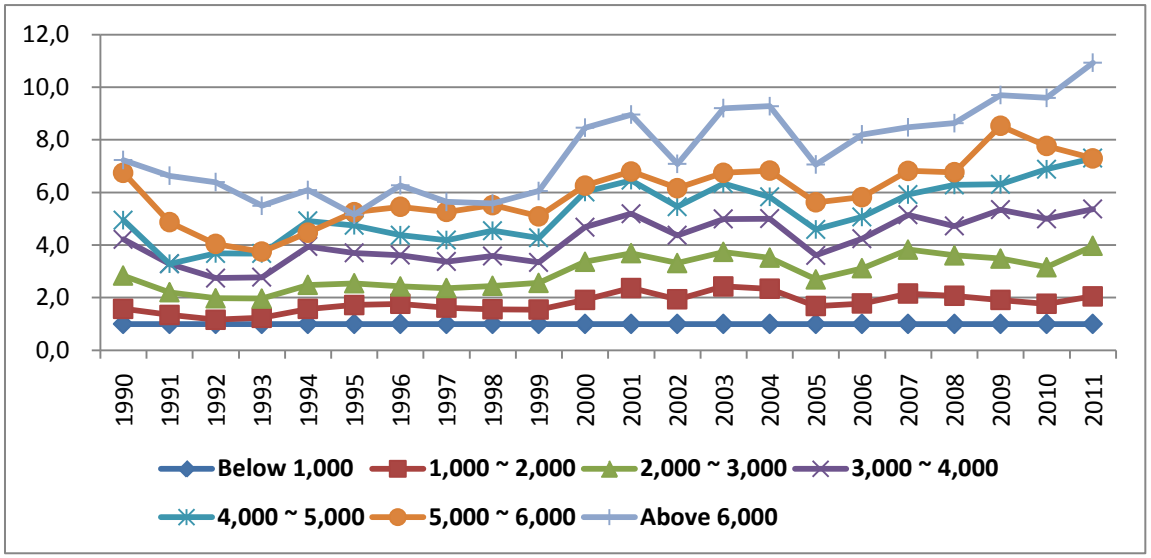
Note: Wage Premium are calculated from Mincer-type wage equations in the form of: *Log(hourly wage) = α + β1*Male(dummy)+ β2*Age+ β3*Age+ β4*Ten+ β5*Tensq+β6*Establishment Size(dummy)+β7*Manufacturing Sector(dummy)+ β8*Production Occpuation(dummy)+β9*Senior College(dummy)+ β10*Junior College(dummy)+ β11*High School(dummy)+ ε.*

Even though the educational opportunity in terms of quantity has been extended for all for a long time, the inequality of educational expenditure by income has also been enlarged since 1993 when the entrance rate to tertiary education started to increase as we can see in [Figure 2.20]. In 2011, high-income households with incomes exceeding 6 million won per month spent 11.7 times more in education than low-income households with incomes of 1 million won or less per month. This figure was only 5.5 times in 1993. This may be due to the increasing expenditure on private education. Korean universities and colleges are thoroughly and exhaustively ranked by scores of entrance examination, which has induced expenditure on private education.

OECD Education at a Glance(2011) shows that private expenditure at the level of primary, secondary, and post-secondary non-tertiary education in Korea is over 70%, which is the highest next to Chile, and more than double the OECD average. The highly heated competition to enter “top class” college might be a mirror to the increasing inequalities in the labor market.

Figure 2.20 The Ratio of Education Expenditure by income level relative to households with 1,000 thousand or less income.

(1990-2010, ten thousand won)



Source: Korea National Statistical Office, National Survey of Household Income and Expenditure.

2.5 Conclusion

The Korean income inequality accelerated after the crisis, and has gradually increased since then. Though diverse factors such as changes in labour market, population and family structure, and redistribution policies, have contributed to this increase, the main driver is household heads' worsening labour income distribution. Though the wealth inequality has leveled up with the crisis, its contribution is not great because not only the share of asset income but also the wealth inequality is still low. The labour income inequality is higher and increasing more rapidly than the overall household market income inequality. Particularly educational wage inequality has accelerated since 1993 due to increasing skill demand caused by increasing trade with China and expanding IT technology.

But the labour supply and demand do not fully explain the educational wage inequality. Labour market institutions, which are reflected on the variables such as establishment size, tenure(job stability), employment types, are also important factor in growing inequality. The effects of including self-employment on increasing income inequality may not be so great considering the decreasing share of self-employment in the workforce.

Education, important inequality-reducing factor, has dramatically expanded and become equally distributed in terms of quantity. The differentials in educational quality, however, have increased due to the increasing differential of educational expenditure by the income.

One caveat in interpreting the inequality is that the available data might underestimate the reality of inequality in Korea. The long-term trends of Gini are calculated only based on the survey data for urban household with 2 or more excluding single household and rural household. The wage inequality is only for regular employees in establishments with 10 or more as well. Kim(2012), who has analyzed the National Tax Service data, shows that the Gini is 0.503 compared to the Gini from the Basic Wage Survey,0.373 in 2011. It is because the survey data has the possibility of excluding the highest income earners and seasonal, causal workers. As we already see, the top 1% income can be underestimated due to the data availability. The stagnating labour share in spite of the increasing wage earners and the decreasing self-employees' income, mean increasing share of asset income or other incomes. The survey data cannot fully grasp asset and top incomes. The real inequality might be higher and faster worsening than the survey data-based inequality index shows.

3 The Social Impacts of Inequality

3.1 Introduction

We have discussed general trends and main drivers of inequality in Korea for the past 3 decades in chapter 2. Growing inequality has various impacts on material deprivation, poverty, social exclusion, family formation, health, housing, crime, happiness, and social mobility. Though inequality is expected to have negative effects, they could change between periods and be different among subgroups. In this chapter, we are trying to focus on changes of effects before and after the mid-1990s – the diminishing and growing period of inequality in Korea. However, it could be limited in that data are not available in many sectors. We also tried to show the relationship between social changes and inequality index(GINI) if data are available. In describing the social impacts of growing inequality we try to draw out some unique features pertaining to Korea.

3.2 Material deprivation

It is a fact that material hardship has been relieved with economic growth in Korea. For example, the share of a family of four with only one room housing was 38.7% in 1980, 19.2% in 1990, and 0.3% in 2010. But, the diverse material deprivations have different figures between income groups(<Table 3.1>). The share of persons experiencing one of material deficiencies(food, housing, utilities, and medical treatments) in one year is 34.2% in the lowest quintile compared to 2.9% in the highest quintile in 2009.

Table 3.1 Experience of material hardship across quintiles of income distributions.

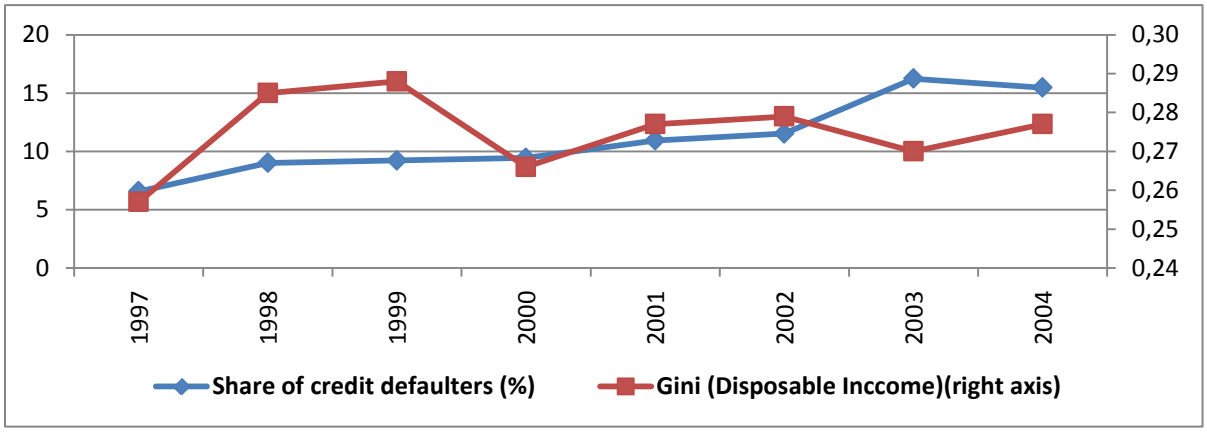
		total	Top Quintile	4th	3th	2th	Bottom Quintile Ⅰ
Experience of material hardship		17.0	2.9	8.7	17.2	21.8	34.2
Deprivation	Food	12.4	1.5	2.7	10.5	16.4	30.8
	Housing	5.0	1.4	5.2	8.3	5.6	4.6
	Utilities	3.9	0.3	1.8	3.9	5.2	8.5
	Medical care Treatment	3.5	0.5	3.0	4.8	4.2	5.2
Multiple deprivation		8.1	1.2	3.9	8.1	9.8	17.3
Number of deprivation areas		0.3	0.0	0.2	0.3	0.4	0.7

Source: Lee(2011). Data Source: Korean Institute of Health and Social Affairs, 2009, Korean Welfare Panel Survey 4th Wave.

Korea has not developed an official and internationally comparable index to estimate the level and trends of material deprivation such as that used in EU-SILC. Then, personal credit default seems to be one of the most relevant indicators reflecting the way inequality has impacts on material deprivation in Korea. Most Korean people borrow money from various financial institutions including commercial banks credit card companies for various ends such as home ownership, housing rent, living costs and even speculation on the stock market. With payments arrears by three consecutive months over 300,000 won (around 250 US $), they became credit defaulters. It becomes difficult for credit defaulters to live an ordinary life. The financial crisis has caused not only the higher inequality but also a growing number of credit defaulters([Figure 3.1]). The share of credit defaulters to economically active persons has increased from 6.57% in 1997 to 15.47% in 2004. In 2005, the government abolished the registering of credit defaulters to abate their burden. But it is known that their share persists up to the present time.

Figure 3.1Share of personal credit defaulters to Economically Active Persons and GINI(Disposable Income).

Unit: %.



Source: Korea Federation of Banks and Korea National Statistical Office.

3.3 Cumulative disadvantage and multidimensional measures of poverty and social exclusion

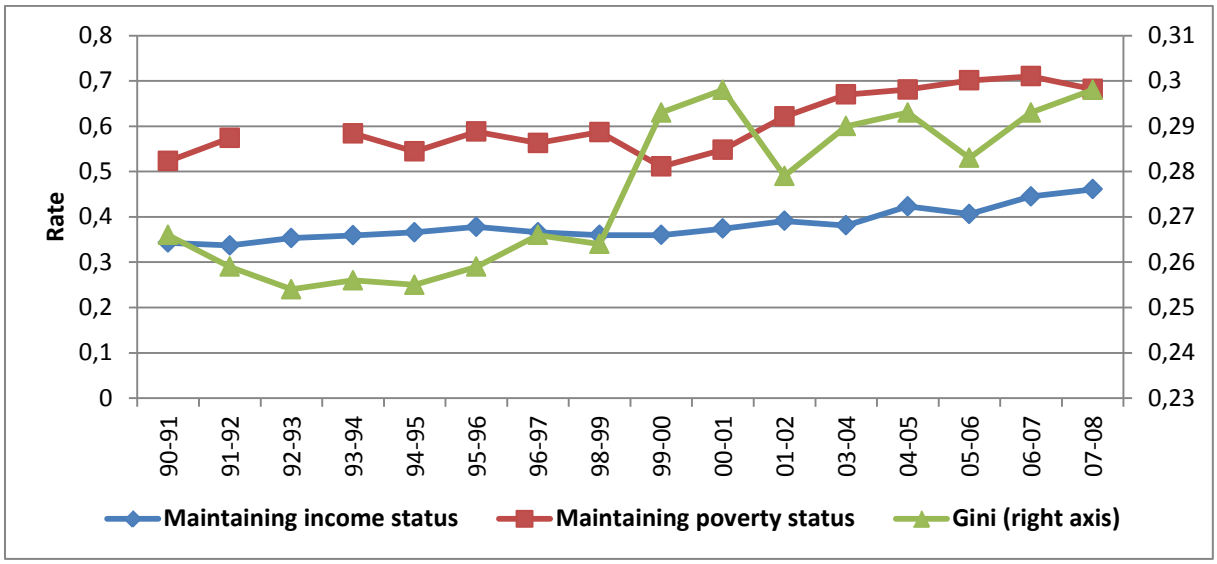
One feature of poverty in Korea is its repetition(Lee and Jung, 2001, Hong 2005). Escaping rate from poverty is relatively high, but the reentering the poor is not rare in Korea. The rate of escaping from absolute poverty within one year has been around 50-60% and one from relative poverty(below 50% of median income) was also over 30%. Three year poverty persistence rate is estimated 14%(Hong 2005), five year 16%(Kim and Noh, 2009). They are not so high compared to other countries. However, the poverty maintaining rate has been increasing since 2000([Figure 3.2]). It is also known that the income mobility in Korea is relatively high compared to other countries, but it has also been increasing since 2000([Figure 3.3]).

Table 3.2 Poverty Entry Rate and Poverty Exit Rate by Year.

	Year	Minimum cost of living		Median income 50%	
		market income	Disposable income	market income	Disposable income
Poverty Entry	2006	5.18	5.98	7.3	7.65
	2007	4.78	5.36	6.53	6.88
	2008	4.32	4.95	6.95	7.31
	2009	4.08	4.49	6.7	6.7
Poverty Exit	2006	55.67	55.25	32.62	35.43
	2007	53.04	53.54	43.97	33.24
	2008	54.58	54.27	29.26	31.05
	2009	55.49	54.64	28.81	31.28

Data: Korean Institute of Health and Social Affairs, 2009, Korean Welfare Panal Survey 1st-4th Wave.

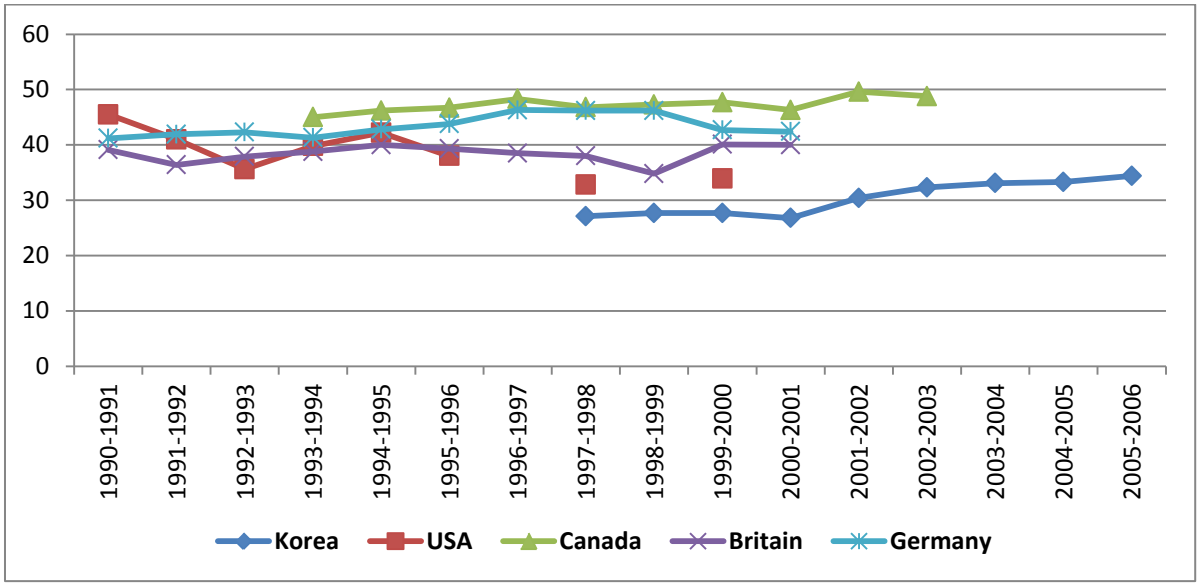
Figure 3.2 Trends in Income Mobility(1year) and GINI(Disposable Income).



Source: Kang et. al(2011)

Data: Korea National Statistical Office, Household Income and Expenditure Survey, each year.

Figure 3.3 Trends in the share of person maintaining income class (1year).



Sources: Chen(2009) &Lee(2009).

Data: CNEF 2005 release. Inequality and mobility are measured using the mean log deviation GE(0), and Korea labor and Income Panal Survey(the Korea Labor Institute).

3.4 Indicators of social cohesion

Discourse on social cohesion is flourishing due to growing inequalities, the growing number of non-regular workers, unequally distributed opportunities for the young, females, and the handicapped. Social exclusion may cause people live in isolation. In Table 3.4, it is examined how many people respondents contact with per day by two criteria: age and household income. In terms of age, it is clear that the older people contacts with less people. Also, household members with higher income contact with more people.

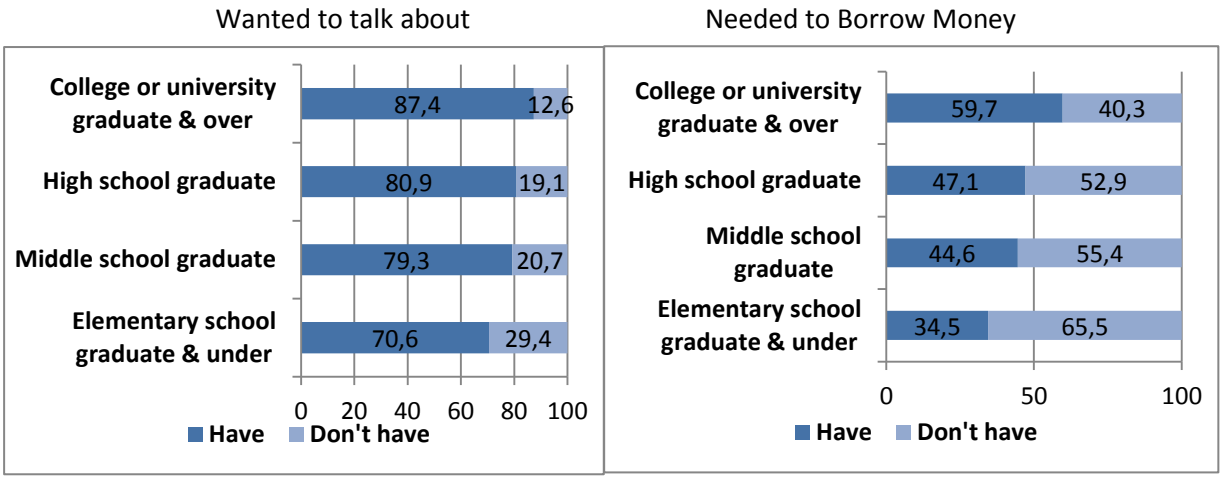
Table 3.3The number of people, contact with per day(%).

		0-4	5-9	10-19	20-49	50-99	100-	Can't choose
Household income (Unit =10,000 Won)	0-100	39.2	27.4	18.4	10.8	1.9	1.4	0.9
	100-199	30.5	27.1	19.8	14.9	4.2	1.5	1.9
	200-299	24.4	27.5	27.1	11.5	5.1	2.0	2.4
	300-399	20.8	27.9	27	14.2	8	2.2	
	400-	13.6	24.0	24.4	22	8.4	7.2	0.4

Source: Korean General Social Survey 2004

We can estimate the social networks of Koreans through examining whether respondents have people to ask for help. According to the Korean General Social Survey data(2004), the majority of respondents reported that they will ask for help to family, such as a spouse or mother. An answer that they will ask for help to social organizations or institutes was insignificant. As shown in Figure 3.1, there are differences in social networks by educational level. When asked whether they have people to consult distress, of the respondents who reported "Have", 87.4% are "college or university graduate over" while 70.6% are "elementary school graduate & under". The relation between educational level and social networks(in terms of consultation of worries) clearly emerges. The difference by educational level is evident especially in economic problems. When asked whether they have someone to borrow money from, of the respondents who reported that "don't have", 40.3% are "college or university graduate & over" and 65.5% are "elementary school graduate & under".

Figure 3.4 Social networks(2011).



Source :Korea National Statistical Office.

3.5 Family formation and breakdown, lone parenthood, and fertility

There has been a great change in family formation in the period of growing inequalities in Korea while the one interacts with the other. As we can see in <Table 3.4>, Shares of single-person family, female house-head family, and divorced house-head family have increased since the mid-1990s when inequality started growing. The changes such as increasing share of single-person or female house-head family might have contribute to growing inequality, which might have contribute to growing divorce by economic problems. The poverty rate of female house-head family is higher than average household poverty rate and started to increase more rapidly since 2000.

As we can see in [Figure 3.5], the crude divorce rate, and the share of divorce by economic problems in particular show similar trend with that of GINI. While there are few studies about causation

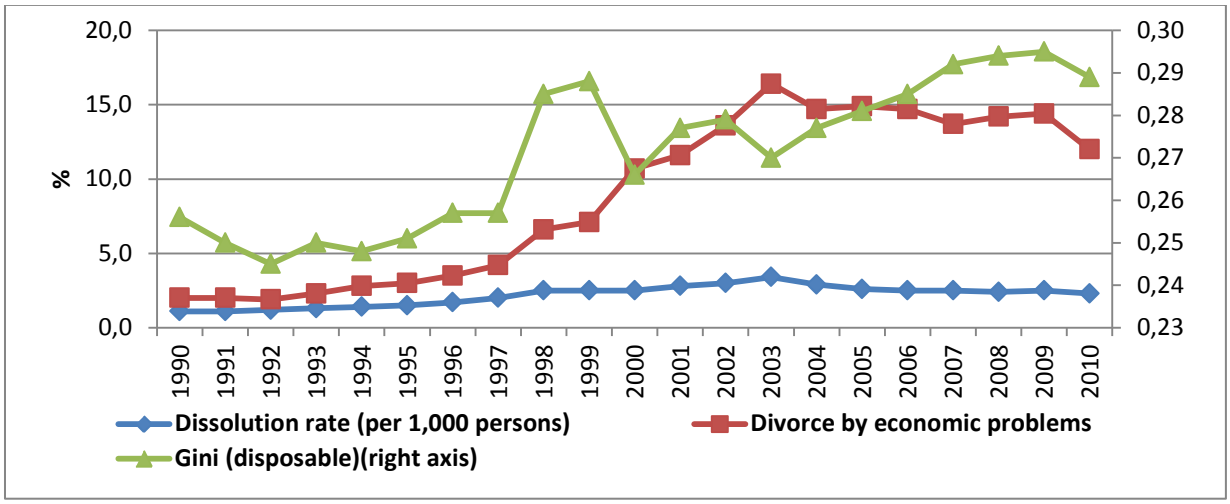
between income distribution and divorce, some studies(Jung 2008, Jung 2004) show that unemployment of male-house-head and increase of housing rent have significantly contributed to increasing crude divorce rate. It is sure that the employment crisis following the financial crisis in 1997 has significant effects on increasing divorce rate and family breakdown. The employment crisis has very close relationship with increasing inequality since 1997 as we see in chapter II.

Table 3.4 Changes in Family Formation.

	average number of family member	single-person family	Divorced-person Household-head family	single-parent family	Female household - head family	relative poverty rate of female household-head family(absolute poverty)
1980	4.5	4.8	0.9	9.3	14.7	
1985	4.1	6.9	1.1	8.9	15.7	
1990	3.7	9.0	1.5	7.8	15.7	
1995	3.3	12.7	2.1	7.4	16.6	
2000	3.1	15.5	3.9	7.9	18.5	14.7(7.4)
2005	2.9	20.0	5.7	8.6	21.9	19.1(9.4)
2010	2.7	23.9	7.3	9.2	25.9	20.1(10.0)

Data: Korea Women's Development Institute, 2011, Gender Statistics in Korea.

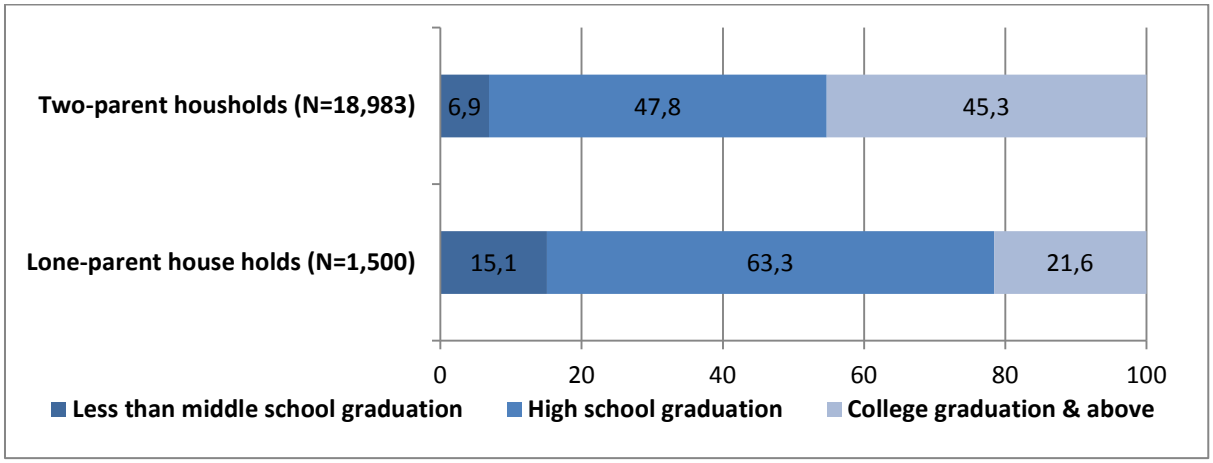
Figure 3.5 Trends in total dissolutions and crude dissolution rate (1989-2011).



Source: Korea National Statistical Office.

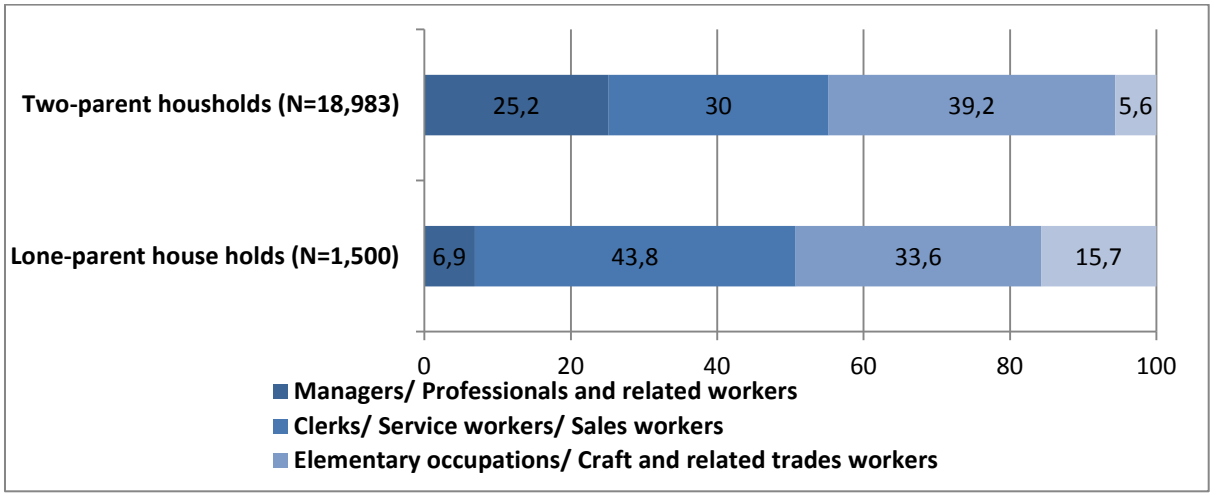
Figure 3.6 and III-7 show features of lone-parent households in comparison to two-parent households by two criteria; educational level and occupation of household heads. In the case of two-parent households, 45.3% of household heads fall under a category of college graduation and above. On the other hand, households whose heads graduated college and above account for 21.6% of total lone-parent households. In terms of occupation, there are clear differences. Although the proportion of elementary occupations and craft workers in two-parent households is higher than in lone-parent households, the proportion of jobless in lone-parent households is much higher than in two-parent households. Also, managers, professional and related workers who earn relatively high incomes centered on two-parent households.

Figure 3.6 Comparison between two-parent households and lone-parent households by educational level in 2008.



Source: Kim(2010).

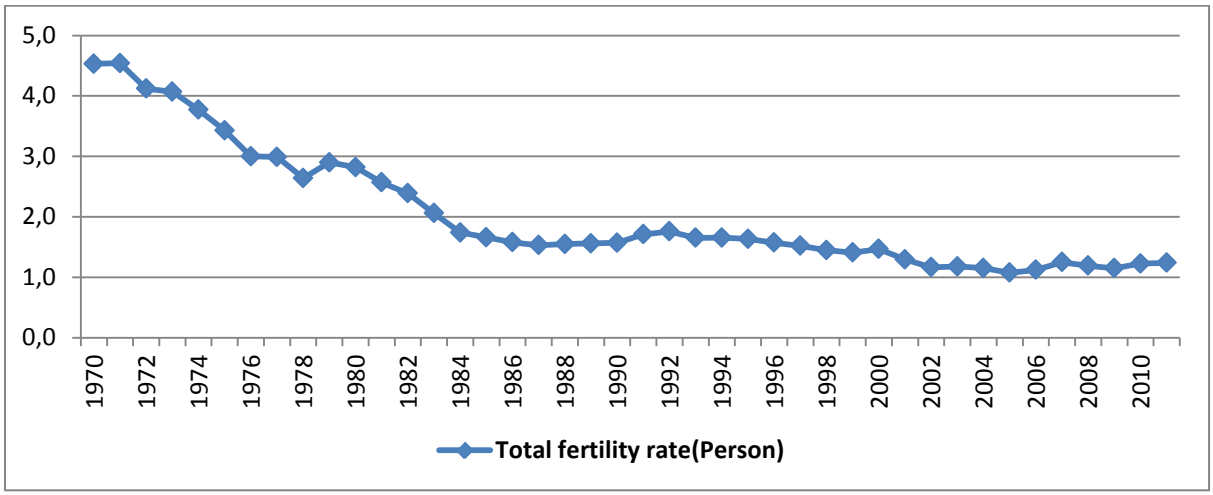
Figure 3.7 Comparison between two-parent households and lone-parent households by occupation in 2008.



Source: Kim(2010)

Low fertility rates are at the center of public attention in Korea. Korea's population increased rapidly in 1950 and 60s, bearing the word "baby-boom generation". This tendency began, however, to slow down after the period of growth and the fertility rates declined dramatically since the 1970s. As shown in Figure 3.8, the fertility rate has kept declining, to 1.12 in 2006, among the lowest in the world.

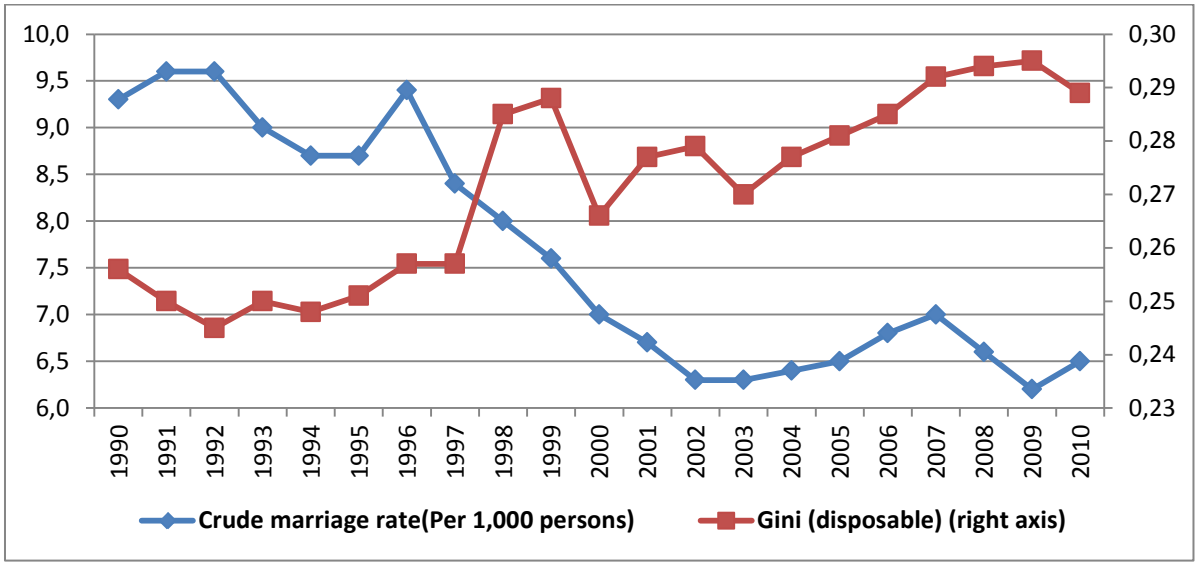
Figure 3.8 Total fertility rate.



Source: Korea National Statistical Office.

Different factors can be suggested as a cause of decreased fertility rates. Practice of birth control policy is mainly pointed out as a main cause of it in the 1970-1980s. Since the 1990s factors bringing about low fertility rates have been usually analyzed in terms of increase in childcare burden due to rising living costs, growing number of two-income families, and poor provision of childcare infrastructures. As shown in Figure 3.9, the number of young married people declined rapidly particularly since the financial crisis in 1997. Drivers of low fertility rates seem also to have effects on the declining number of marriages, especially after the economic crisis in 1997. The age of first marriage also increased, and it seems to reflect economic and cultural changes. Youth unemployment seems to make, among others, the economic situation for young people worse delaying their decision to marry.

Figure 3.9 Trends in crude marriage rate and GINI(disposable income)(1990-2010).



Source: Korea National Statistical Office.

While the family structure are influenced cultural and historical factors, the Korean family has broken down by socio-economic factors in 1997, and could not recover its pre-crisis family structure in terms of family formation, divorce, marriage, and fertility. We think that this is closely related to labor market situations and its effects on income distribution.

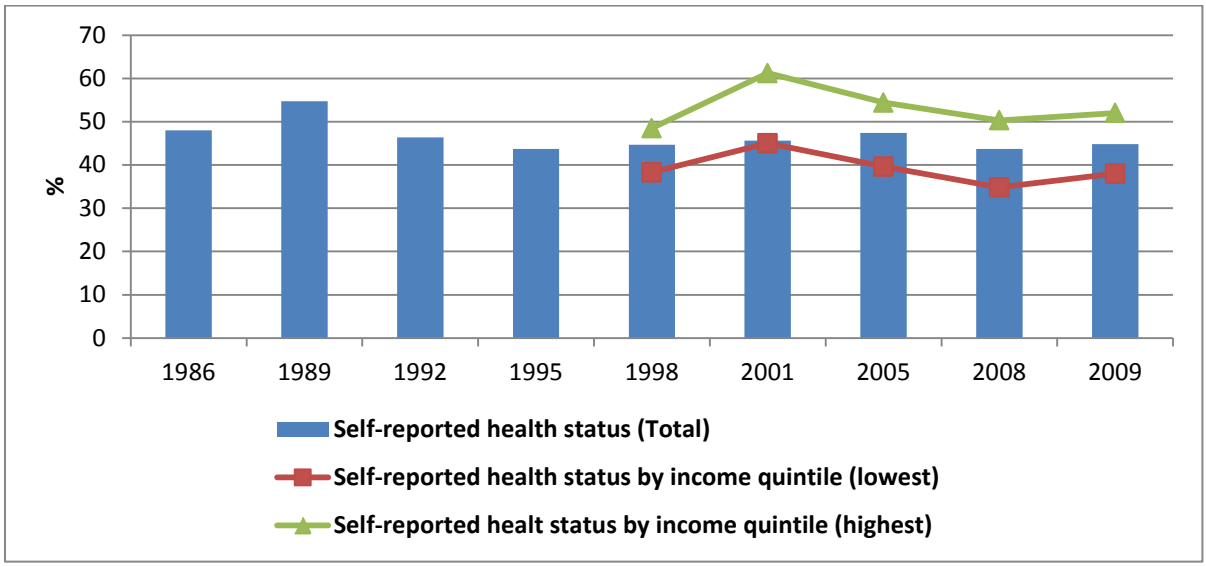
3.6 Health inequalities

Life expectancy at birth in Korea has increased to 77.2 years(for men) and 84.1 years(for women) in 2010. It was only 67.3(for men) and 75.5(for women) in 1990, 61.8(for men) and 70.0(for women) in 1980. There may be several possible explanations for the increased life expectancy. The most persuasive explanation is that it may be due to economic development and improvements in living conditions. The following public health interventions and progress in medical care have contributed to the extension of life expectancy.

Self-reported health status is one of the most apparent indicators reflecting income inequalities. Figure 3.10 shows that although self-reported health status in general measured by percentage of those who reported their health status as ‘good’ or ‘very good’ has maintained relatively constant level in spite of some fluctuation between 1986 and 2009, lower-income groups have consistently reported poorer health status than higher-income groups. This trend persists. While only 38% of people in Korea reported to be in good health in 2010, much lower than the OECD average of 70%, about 42% of the top 20% rated their health as 'good' or 'very good', compared to about 34% for the bottom 20%(http://www.oecdbetterlifeindex.org/topics/health/).

Then, it is difficult to find an evidence for the hypothesis that the growing income inequalities extend health inequalities since 1997 crisis as is shown in Figure 3.10 and Figure 3.11.

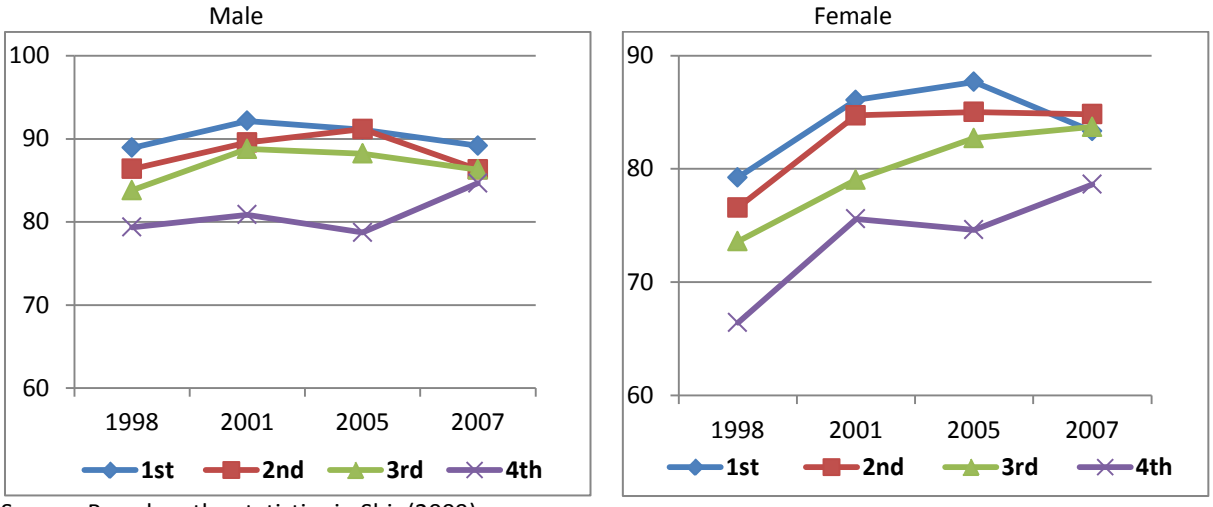
Figure 3.10 Trend in self-reported health status (1986-2009).



Source: OECD statistics.

In Figure 3.11, it is not likely that the inequality gap between income classes in terms of self-reported health status is widened for both male and female since 1998. But it is also difficult to say that the health gap reduced because the survey method has changed in 2007(Shin, 2009). It seems that the relationship between Income inequality and health inequality is not clear in Korea.

Figure 3.11 Share of Self-Reported Health Status as 'Good'(1998-2009).

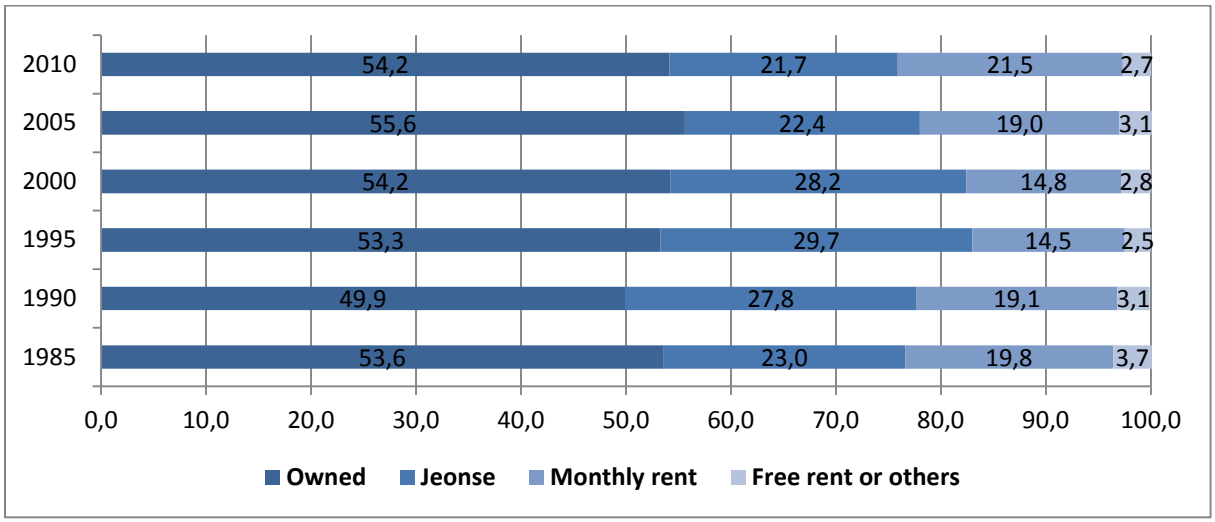


Source: Based on the statistics in Shin(2009).

3.7 Housing tenure

As shown in chapter 2, the housing supply rate has increased continuously, exceeding 100% since the early 2000s. But we can expect there are severe housing inequalities in terms of residence type. Figure 3.12 shows the trends in the type of housing occupancy between 1985 and 2010. The most important feature is that the proportion of tenement and monthly rent is high and the proportion of free rents including public housing is very small. Korean residential systems centered on *jeonse* and monthly rent have institutionalized lack of stability and economic disadvantages for tenants(Shin 2011b).

Figure 3.12 Households by type of housing occupancy (1985-2010).



Source: Korea National Statistical Office.

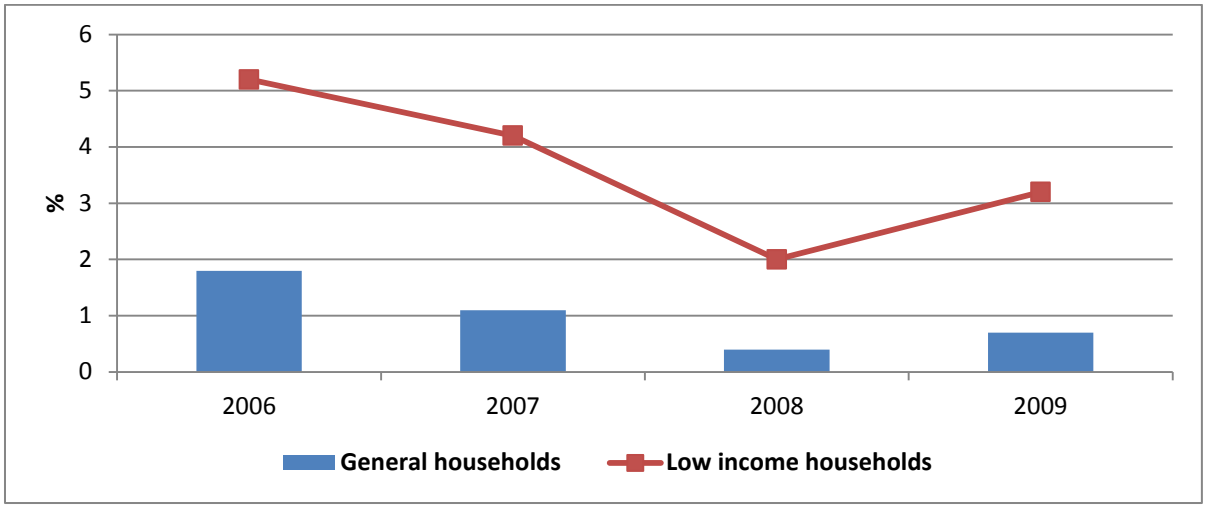
One unique feature of Korean house rent practice lies in the so-called *jeonse*, in which a renter makes a lump-sum deposit on a rental space at some proportion of the market value to house owner instead of paying monthly rent. At the end of the contract, usually after 2 years, the house owner returns the amount to the renter.

While *Jeonse* was established in the early stage of economic development when housing financing was weak, it had a function of easing burden of house rent for the poor and middle classes. And during times of high interest rates and increasing housing prices, house owner can make profits on the lump-sum deposit. But in the 2000s when interest rates went down, some house owner began to convert *jeonse* to monthly rent. As Figure 3.16 shows, the proportion of *jeonse* in household type has fallen 28.2% in 2000 to 21.7% in 2010. It caused financial difficulties to house renters who are usually in low income.

The change of house rent practice might add financial difficulties to the disadvantaged. In Figure 3.13, we see the proportion of households in arrears with rent above 4 times between income groups. The

proportion of low income households is much higher than the proportion of general households, up to five times.

Figure 3.13 Arrears with rent by incomes(2006-2009).



Source: Korea National Statistical Office.

3.8 Crime and punishment

Korea has changed from lower crime and suicide society to high crime and suicide society since 1990s. As we see in Figure 3.14, Crime and suicide have rapidly increased since 1992 and seem to have the strongest correlation with growing inequality. The crimes by economic motives and suicide started increasing almost at the same time with market income household GINI in 1992(The disposable income GINI started increasing in 1993). It is still questionable if they are due to the deterioration of income distribution or only reflect long-term trends according to economic development.

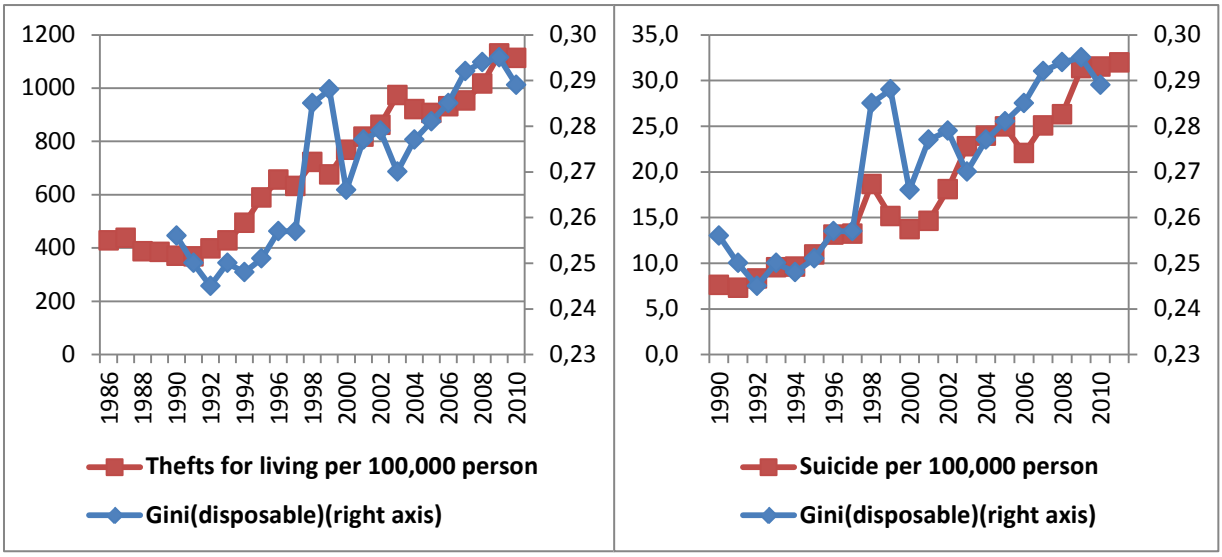
Then, Park et al.(2009), who analyzed causal between crime rate and socio-economic variables between 1966-2007, shows that unemployment rate and GINI have significant effects on crime rate by economic motives even controlling for economic growth rate, number of population per police officer, authority-regime index. More interesting finding is that the period variable(1998-2007) have significant negative effects when controlling for all the other variables. In Korea, growing inequality and employment crisis following the financial crisis seem to have significant effects on crime rates.

And, Figure 3.15 shows strong correlation between suicide per 100,000 persons and relative poverty rate. It is based on statistics of cities and counties in Geonggi province, the largest province in Korea.

Eun(2005) shows that there has been no correlation between suicide rate and socio-economic variables such as economic growth rate, unemployment rate, income distribution, and household

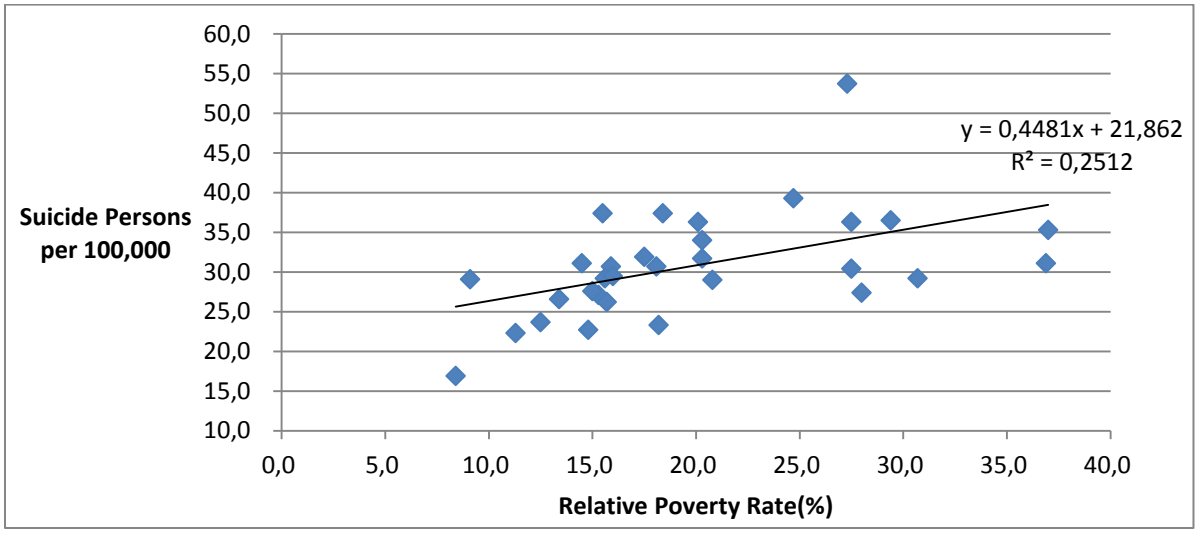
weakness index before 1997, but appeared strong correlation between 1997-2004 when excluding 15-29 aged group.

Figure 3.14 Crime Rate, Suicide Rate and GINI.



Source: Korea National Statistical Office.

Figure 3.15 Suicide Rate and Relative Poverty Rate.



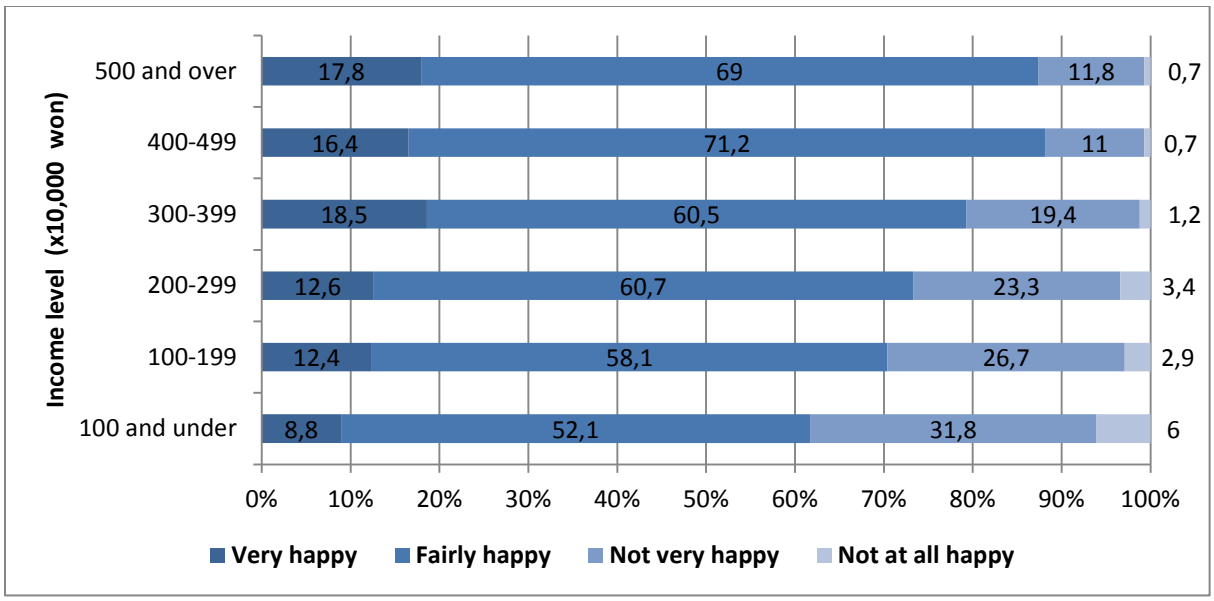
Source: Gyeonggi Welfare Foundation, Gyeonggi Poverty Map, 2012.

3.9 Subjective measures of well-being, satisfaction, "happiness"

When asked, "If you were to consider your life in general these days, how happy or unhappy would you say you are?", 14.5% of all respondents reported "very happy" and 61.6% reported "fairly happy". On the other hand, 20.8% and 2.4% of all respondents answered "not very happy" and "not at all

happy" respectively. There are differences when investigated by income level. The combined proportions of "not very happy" and "not at all happy" of the lowest income group are 39.8%, much higher than 12.5% of the highest income group. As expected, the poor find themselves unhappier than the rich.

Figure 3.16 Life satisfaction by income level (2007).

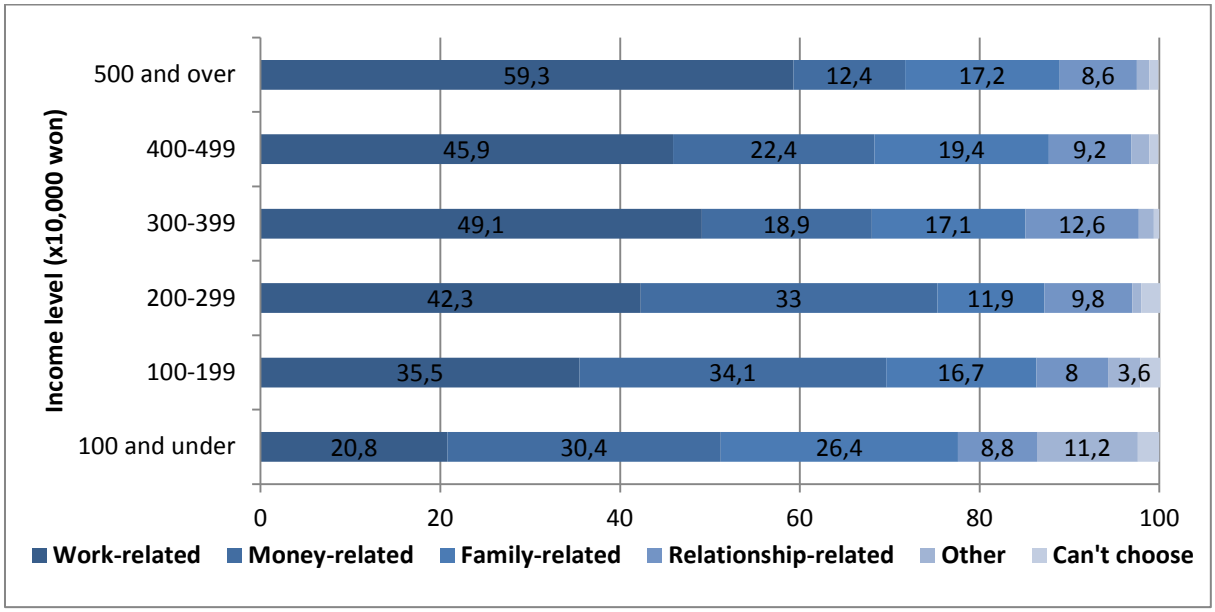


Source: Korean General Social Survey 2007.

According to the OECD life satisfaction indicator, the overall level of life satisfaction in Korea is very low. The score for Korea is 4.52, much lower than the average score of OECD countries, 6.35. Korea is placed 26th among all 34 countries.

In Korea, the cause of stress is mainly related to work. When asked, "What do you think is the main cause of your stress?", 43.8% of whole respondents answered "work-related" and 24.6% answered "money-related". Respondents who answered "Family-related" were 17.3%. However, there are differences in main cause of stress by income level. As shown Figure 3.24, money caused much more stress in the lowest income households while work led to more stress in the highest income group.

Figure 3.17 The main cause of stress by income level (2007).



Source: Korean General Social Survey 2007.

3.10 Intergenerational mobility

Rapid modernization in the last half of the 20th century transformed Korea from an agrarian to an industrial society making the possibility of upward mobility widely open to almost all people. An empirical study using the Korea Welfare Panel Study data conducted in 2005 suggests that mobility in income status between generations was considerably active. As reported in Table 3.5 15.3% of respondents from very poor families and 15.5% from poor families had grown to be rich.

Some studies estimated the elasticity of offspring's income to parent's one as 1.5-2, the lowest level in OECD. Yang(2012), however, estimated it again controlling for sample selection bias, and produced estimates 3.5-4. It is lower than other developing countries, but not lower than other OECD countries.

It is widely known that it is not any more possible for dragon to come into being in the brook(humble family) in Korean society at the moment. Even in the period of wider chances of mobility, the window of opportunity was not evenly distributed depending on family backgrounds. The poorer one was during childhood the more likely that one remains poor in his or her adulthood. It might be that "parent's poverty reduced children's education level and then the low education level increased the likelihood that children experience poverty in their adulthood"(Lee 2008).

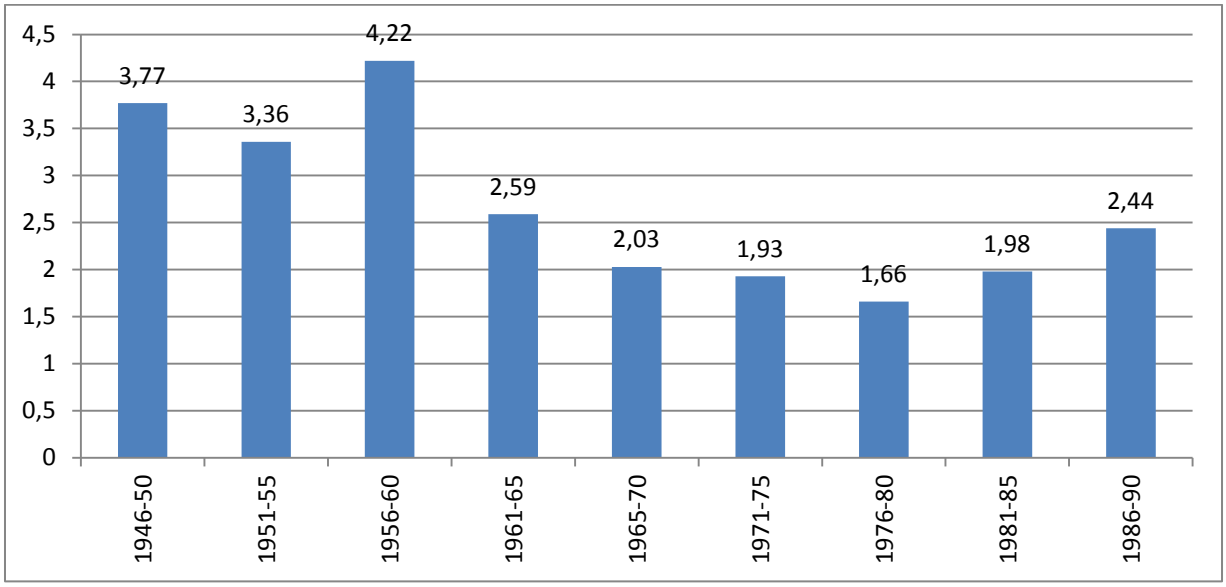
Table 3.5 Intergenerational income mobility.

		Children				
		1 q.	2 q.	3 q.	4 q.	5 q.
Parents	Very poor	33.3	19.7	16.8	15	15.3
	Poor	21.6	21	22.1	19.9	15.5
	Middle	17	19.9	20.4	20.1	22.7
	Rich	20.8	18.2	15.4	22.6	23.1
	Very rich	19.3	20.4	10.8	22.6	26.9

Source: Lee(2008)

Private expenditure on education plays an extraordinary role in reproducing income strata between generations. The relatively active intergenerational income mobility we have seen was attained when private tutoring was forbidden from 1980 to the late 1990s. The odds ratio between the social status of respondents' parents when they were 14 years old and their status in adulthood appears to be comparably low for the cohorts of people born in 1961-1980, who attended middle and high school without private education. Prohibition of private education contributed to increase intergenerational mobility.

Figure 3.18 Intergenerational mobility measured by odds ratio.



Source: Jang &Han(2011)

But since the Constitutional Court judged prohibition of private tutoring unconstitutional in 2000, the private education market has enjoyed unending expansion. Rich parents now spend more money in private teaching for their children than poor parents as Table 3.6 reveals.

Table 3.6 Average private education expenditures per student by household income.

Unit: ten thousand won.

Year	100 & less	100-200	200-300	300-400	400-500	500-600	600-700	700 and over
2007	5.3	10.7	17.7	24.1	30.3	34.4	38.8	46.8
2008	5.4	10.8	17.7	24.5	30.6	35.6	40.2	47.4
2009	6.1	11.0	18.0	24.6	31.0	37.2	42.0	51.4
2010	6.3	10.3	17.0	24.0	29.8	36.2	40.4	48.4
2011	6.8	10.9	17.4	23.4	29.0	34.0	39.4	44.0

Source: Korea National Statistical Office.

Private education has proved to very strongly impact children's school performance. Students within the top 10% in terms of school achievement are usually children of richer parents who spend more money than the poorer. Students with higher school grades are expected to enter so called "top class universities", whose graduates are promising candidates for employment to advantaged establishments that can afford to pay more money than others.

Table 3.7 Average monthly private education expenditures per student by student's school performance.

Unit: ten thousand won.

Year	within top 10%	11-30%	31-60%	61-80%	within bottom 20%
2007	30.0	26.6	21.0	15.9	12.0
2008	31.5	27.5	22.5	17.6	12.9
2009	31.9	28.3	23.2	18.4	13.9
2010	31.7	28.2	23.3	18.2	13.6
2011	30.5	27.7	23.0	18.0	13.2

Source: Korea National Statistical Office.

From 2000 on, private education has served as a transmission belt by which the socioeconomic status of parents is, partly but significantly, conveyed to their children. Comprehensive data has not been accumulated to estimate whether and to what extent private education has impacts on wage inequality in next generation. Graduates who entered universities after private education played the deciding role in admission are now beginning their job careers. However, it is obvious that intergenerational mobility will prove to be highly restricted by the mediating effects of private tutoring. Parents' socioeconomic status is transferred to the next generation via private tutoring.

3.11 Conclusions: Appraisal of the interdependence and the 'national story' of inequality drivers and their social impacts

With growing inequality since late 1990s the poor and less educated have been more exposed to social risks than the rich and more educated in terms of material deprivation, social exclusion, single household, poor health, committing crimes, and feeling unhappy, as can be expected.

Korea experienced so dramatic changes in many respects since mid-1990s, which is the turning point of inequality from decreasing to increasing. So, many social changes are highly correlated with growing inequalities. We could find strong correlations in such areas of share of credit defaulters, poverty and income mobility, crime rate, suicide rate, family breakdown, divorce rate, marriage rate, mobility by generations even though it is difficult to find strong evidence of its causation. But Some empirical studies cited gave some evidence about causation between growing inequality and social changes. The evidence of social impacts of growing inequality could be well found in Korea after mid-1990s.

Material deprivation is found to be concentrated on lower income groups. And, the share of personal credit defaulters go hand in hand with growing inequality, but it is not clear that it is a direct consequence of growing inequality or just reflect the fact that he poor are more vulnerable to economic fluctuation.

In particular, crime, suicide, marriage rate have high correlations with growing inequality. Some empirical studies back this fact up, and show that employment status seems to be more important than changes in disposable income distribution in their causation. Family breakdown such as increasing single-parent family and divorce rate and decreasing marriage rate also has high correlations with growing inequality.

The subtle change of housing tenure practice is significant to residential inequality in Korea. With lowering interest rates, many house owners converted *Jeonse*, a unique Korean housing practice to

monthly rent, which causes financial burden to house renters who cannot usually afford to own a house. This may strengthen the already-existing residence-related inequality.

We also show that the poverty persistency has been raised and income mobility and mobility by generation have decreased as inequality grows. Social mobility in both intra-generational and inter-generational terms has been decreased in the recent two decades. Korean society has been characterized by active social mobility in the age of rapid industrialization, but poverty persistence and slowdown of income mobility suggest that chances of status advancement were reduced gradually. Reduction of intergenerational mobility poses a more serious problem. Socioeconomic status of one's parents is inherited from generation to generation by the mediating effects of private tutoring. Korea has become a more and more closed and rigid society in the recent decades.

4 The political and cultural impacts

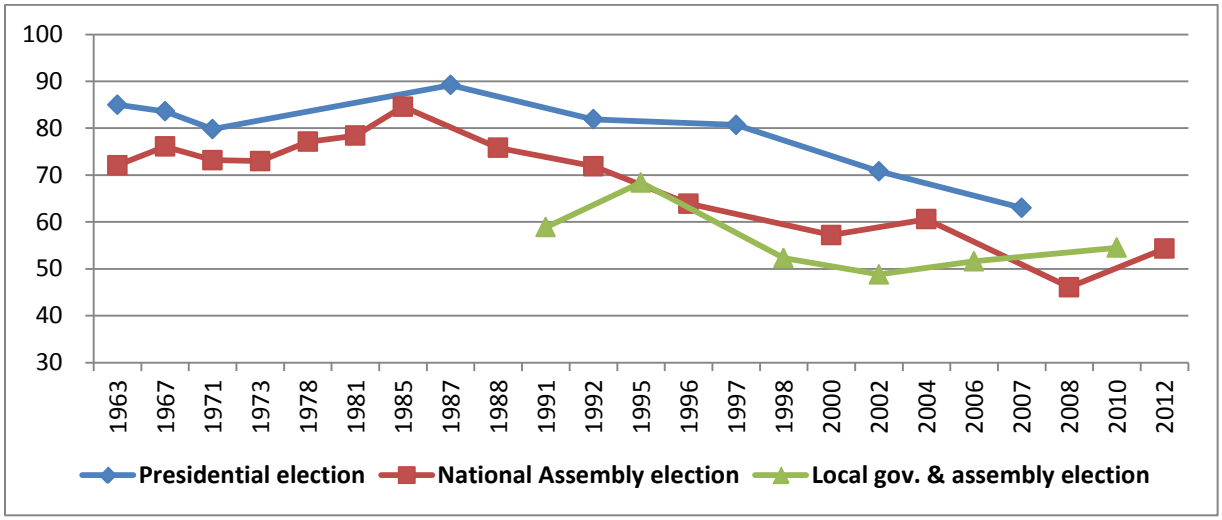
4.1 Introduction

Growing inequality has political and cultural impacts on various aspects of everyday lives, including political and civic participation, social trust, political values and legitimacy, and values about the welfare state. In this chapter we describe the general pattern of growing inequality's impacts on the political and cultural lives of Korean people. We make an attempt to present features unique to Korea.

4.2 Political and civic participation

After a long period of military dictatorship Korea accomplished political democracy in the legal sense in 1987, including direct election of the president. The turnout rate for the presidential election in 1987 was 89.2%, highest in the last three decades. Since then it has gone down consistently to 63% in 2007. The turnout rates for National Assembly elections have also declined from 75.8% in 1988 to 54.3% in April 2012. Turnout rates seem to have decreased with growing inequality, but it is hard to draw a causal relation, as they continued to fall since the 1980s when the GINI coefficient was relatively low, and that various factors other than inequality have effects on them.

Figure 4.1 Average monthly private education expenditures per student by student's school performance.



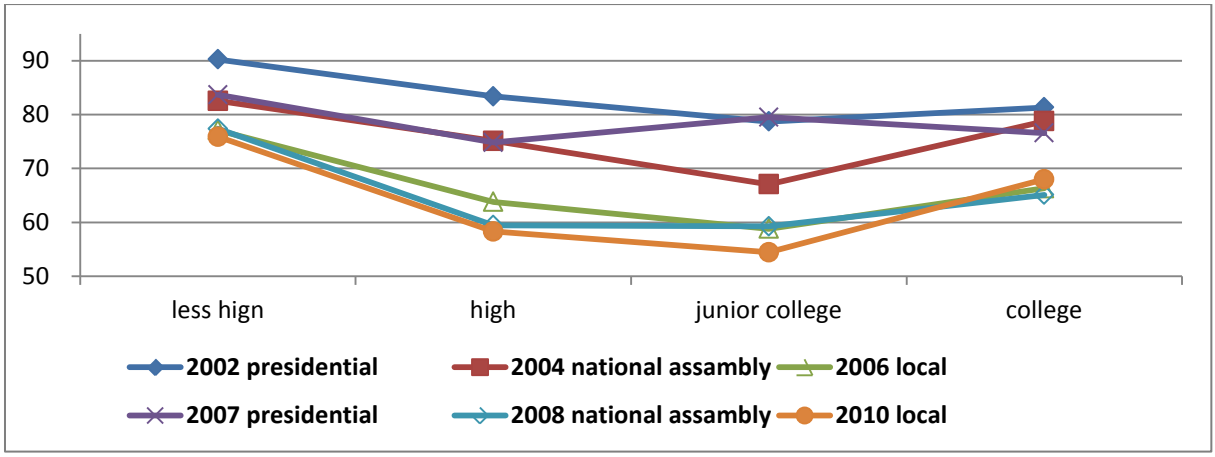
Source: National Election Commission.

One of the peculiarities of voting behavior in Korea is that more educated are less participatory. OECD comparative statistics report that more educated people are more participatory in election. But this is

not the case for Korea. Whereas voter turnout of less educated people was 68.2% in the 2008 general election, that of higher educated people was only 60.1%. The decline in political participation and low participation of more educated people implies that some form of political cynicism has emerged, especially among the educated. The lower participation of highly educated persons can also explained by the high correlation of education and age effects. Because Korean society has experienced rapidly extended educational opportunities in recent several decades, young people tend to be educated more than old people. And young people are more likely to participate to voting in the most countries. According to Figure 4.2 the adults with less than high school education shows very high percentage of voting participation, and most of them are supposed to be older people. Figure 4.3 shows the older people are more likely to participate to vote than the young people do, and the turnout gap between age groups seem to be getting greater.

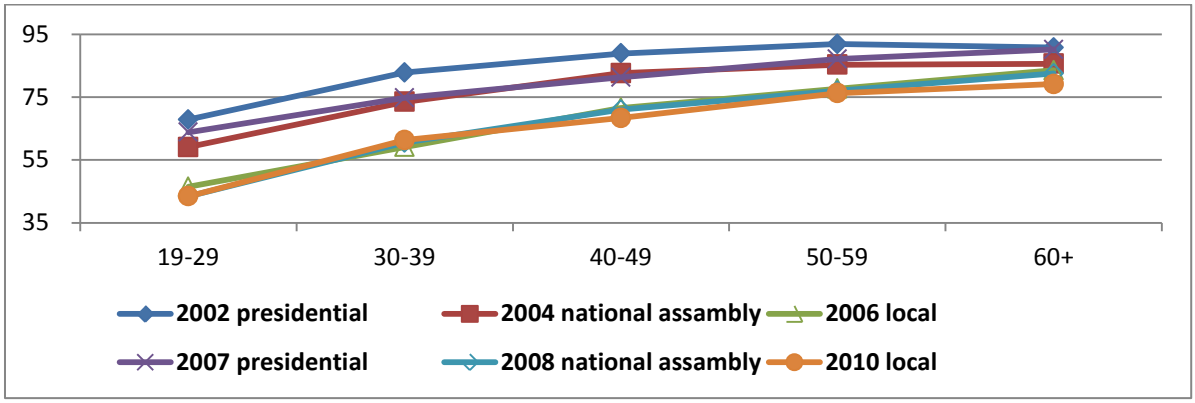
Figure 4.4 tells us the relationship between income level and voter turnout for various elections in the last decade. Whereas for the two Presidential elections in 2002 and in 2007 the turnout difference among income groups doesn't seem to be clear, persons with low income show lower turnout than those with mid or high income in national assembly or local elections. In particular, the second quintile income group participates to voting with lowest percentage.

Figure 4.2 Percentage of voting by education level.



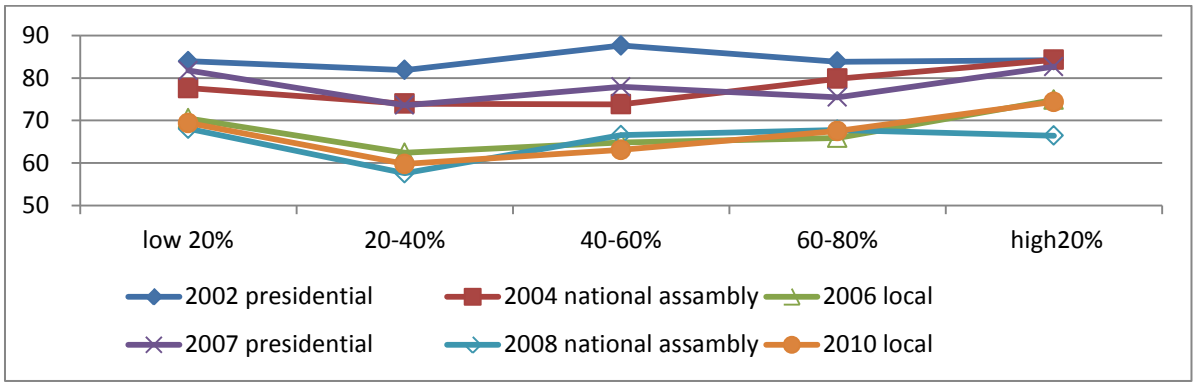
Source: Korean General Social Survey

Figure 4.3 Percentage of voting by age group.



Source: Korean General Social Survey

Figure 4.4 Percentage of voting by income level.

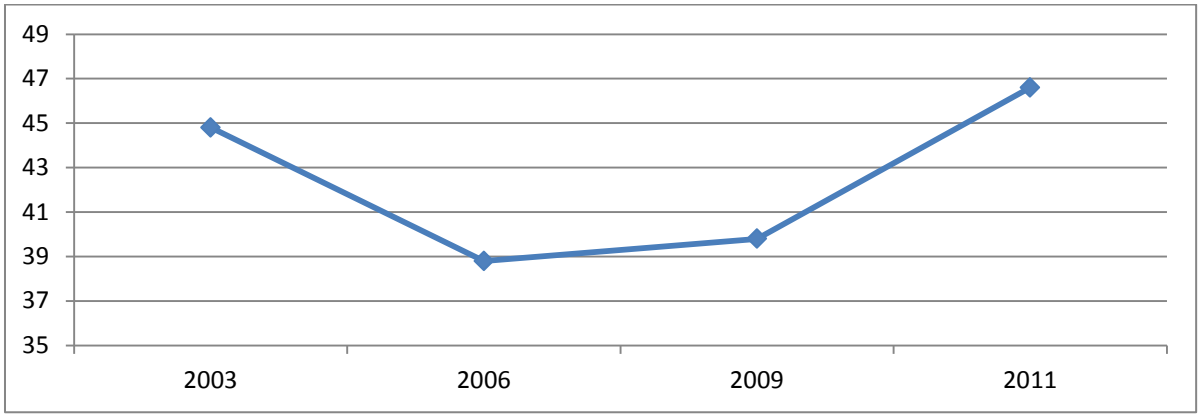


Source: Korean General Social Survey

Another indicator of social participation is informal social activities, such as social meeting, religious organization, hobby and sports, and local community meetings. As we see Figure 4-3, more than half of Korean people are not active in social organization in the 2000s.

Table 4.1 and Figure 4.6 represent community activity participation by income and education. Richer people are frequent participants in various activities. While more than half of people with 3,000 thousand won in household income a month are active in informal social organization in 2011, family members from lower incomes appear to be inactive. Education seems to be another factor determining participation rates in social activities. While more than half of college or university graduates are vigorous participants of social activities low educated people are not so much active as the high educated. Participation in informal social activities is proportional to income and education, and this trend appears to have continued with the increase in inequalities.

Figure 4.5 Participation rate in community activities.



Source: Korea National Statistical Office.

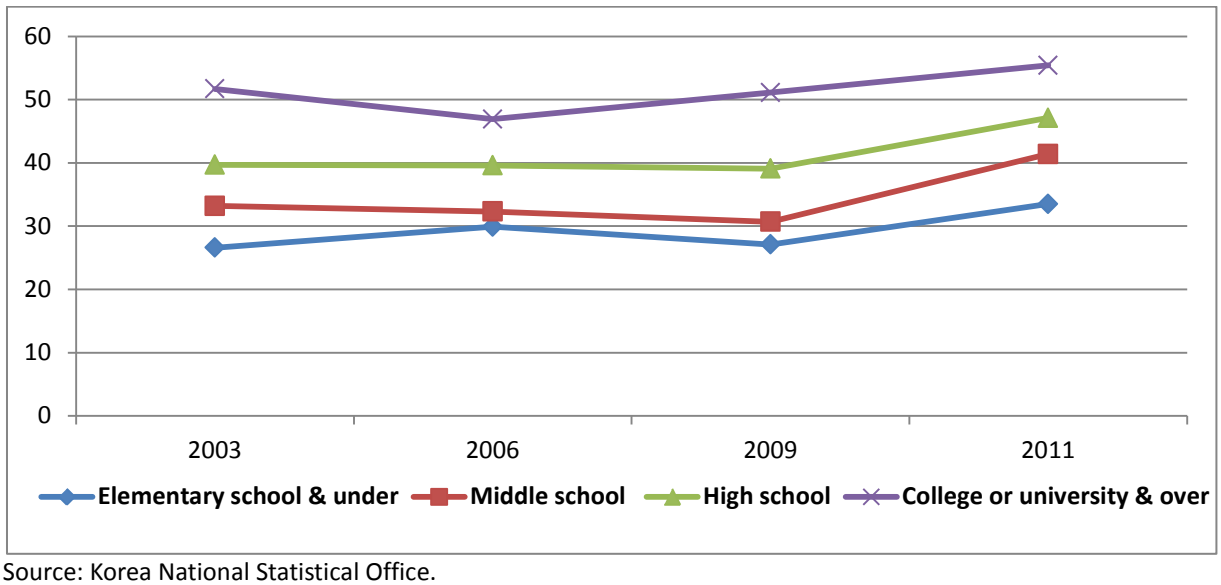
Table 4.1 Community activities participation by household income.

Unit: Ten thousand Won a month, %

Year	under 100	100-200	200-300	300-400	400-500	500-600	600 and over
2006	29.6	36.0	39.6	44.3	48.5		48.9
2009	30.0	35.3	39.5	45.6	49.9	51.7	51.5
2011	33.4	42.1	47.4	50.4	54.1	53.8	60.5

Source: Korea National Statistical Office.

Figure 4.6 Community activities participation by education.



Source: Korea National Statistical Office.

4.3 Trust in others and in institutions

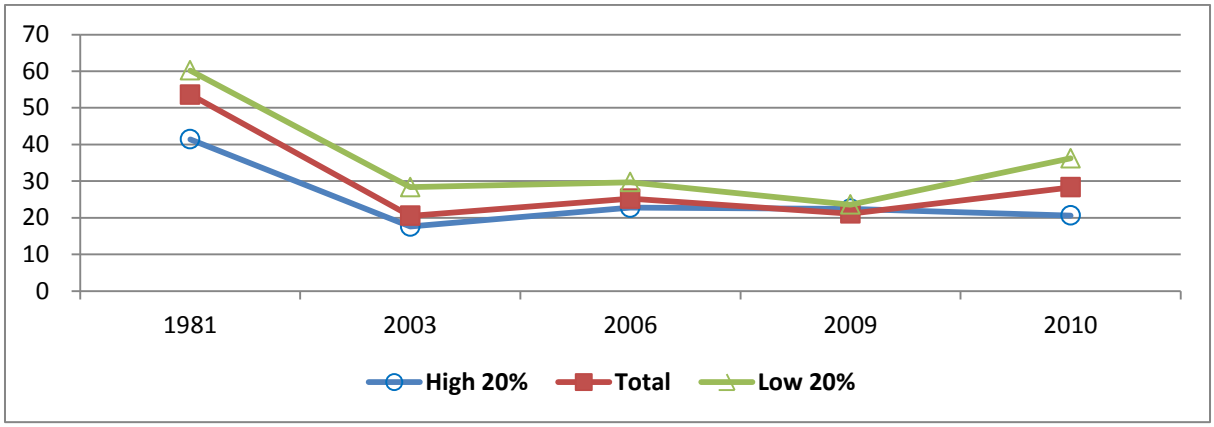
Growing inequalities may affect the level of trust in a given society. Traditionally, Korean society

belongs to the group of low-trust countries. We report how much confident Korean people are with their major political institutions from Figure 4.7 to Figure 4.9. The questionnaire reads: “As far as the people running these institutions are concerned, would you say you have a great deal of confidence, some confidence, or hardly any confidence at all in them?” Figures give us percentages of people who have a great deal of confidence or some confidence. Three stylized features are observed here. First, overall confidential level decreased in 2000’s as comparing to around 1980. Second, members of the National Assembly have been the least trusted among the three political institutions. More than 70% of Korean people have not expressed any confidence in them in recent years. Among the major national institutions, Korean people expressed the most confidence in the Supreme Court. Third, confidences on those institutions are not clearly different by income level.

Figure 4.10 reports how much confident Korean people are with other people in general. The questionnaire reads: “Do you think you can trust the most people in general, or cannot trust?” Whereas about the half of Korean people regards others as trustful, the other half do not trust others or expressed reserved attitudes. The way of asking must be carefully identified. The survey did not ask whether each respondent does agree that most people can be trusted.

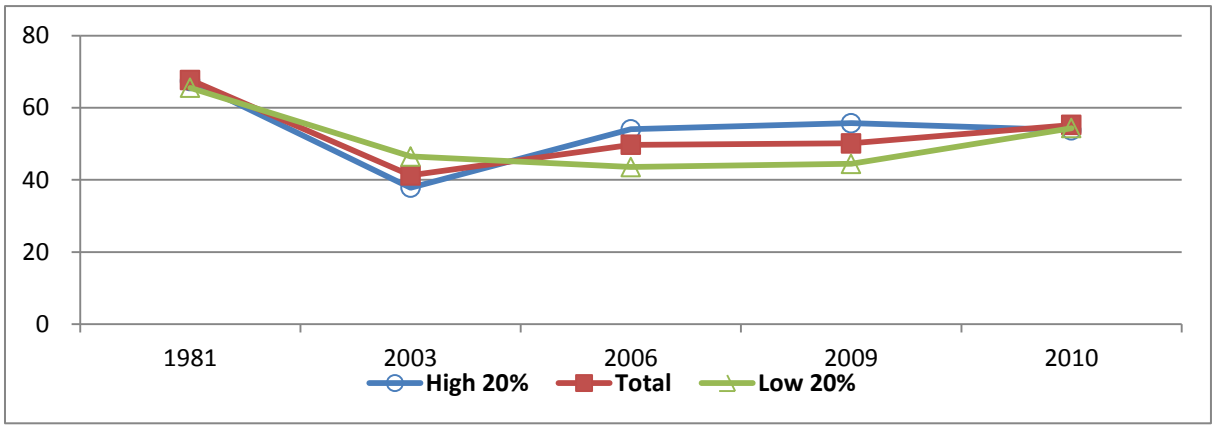
Unfortunately we cannot find old survey asking this general trust questionnaire and cannot identify the long term trend on the issue. However, the recent survey result shows that more people in high income group express trust in others than people in low income group. This result suggests a possibility that persons in economic deprivation may lose their trust in others. Low levels of trust in others and the national institutions have gone in line with the trust level of society in general. The same social survey as Figure 4.10 questioned “Generally, how trustful do you perceive this society to be?” on a 10-point scale. The results reveal that Korean society is regarded as not so much trustful by their people.

Figure 4.7 Trust in parliament by income level.



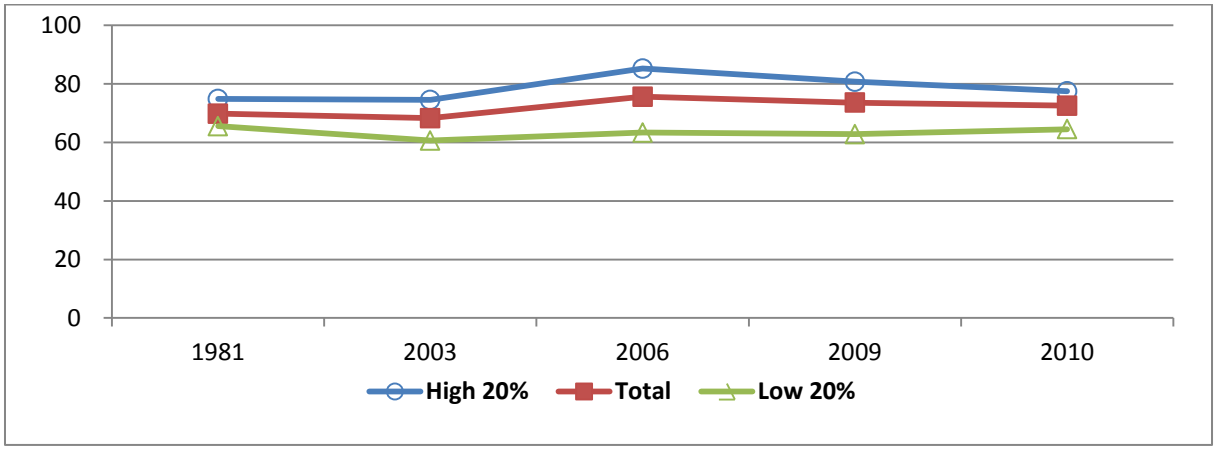
Source: Korean General Social Survey for 2003, 2006, 2009, 2010, Social Development and National Value Survey for 1981

Figure 4.8 Trust in government by income level.



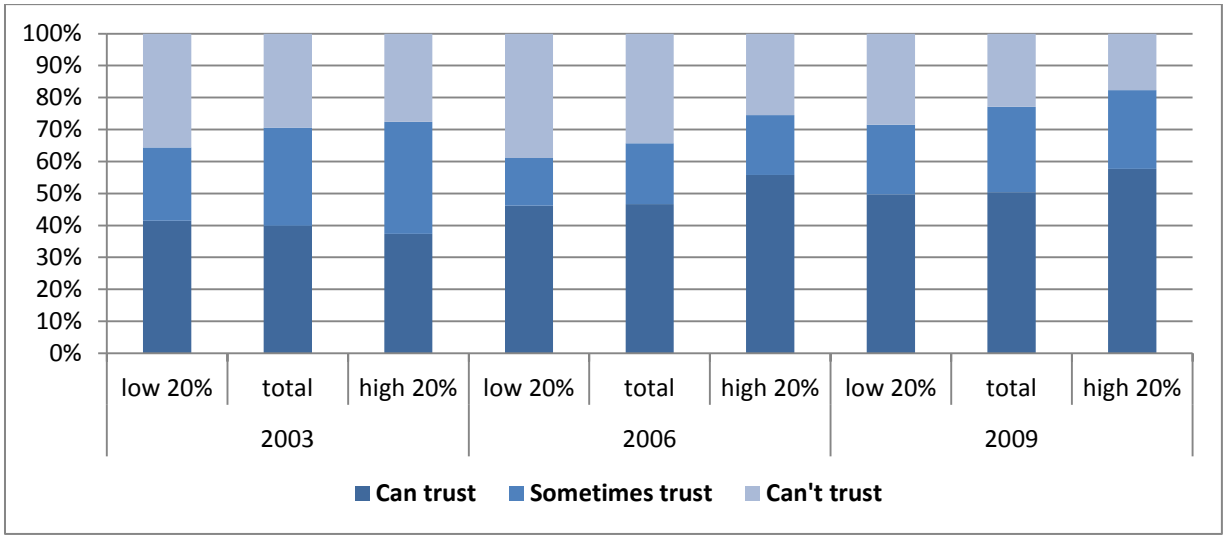
Source: Korean General Social Survey for 2003, 2006, 2009, 2010, Social Development and National Value Survey for 1981

Figure 4.9 Trust in the legal system by income level.



Source: Korean General Social Survey for 2003, 2006, 2009, 2010, Social Development and National Value Survey for 1981

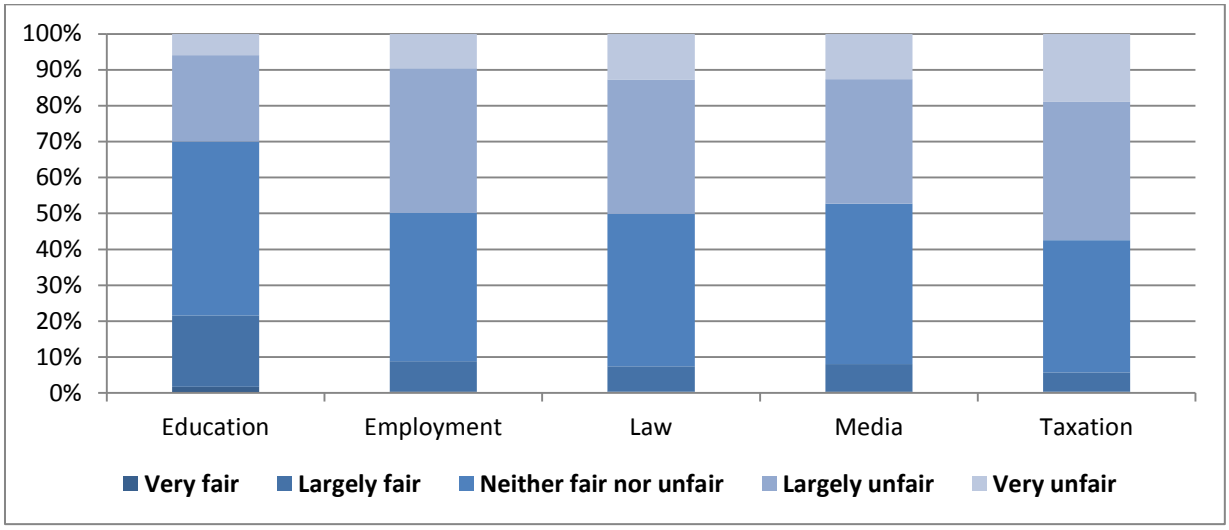
Figure 4.10 Trust in general: % of saying "can trust others in general".



Source: Korean General Social Survey for 2003, 2006, 2009

Trust and fairness can be seen as the two sides of the same coin. Figure 4.11 represents how fair Korean society is perceived to be in areas such as education, employment, legal system, media, and taxation by their citizens. Korean society is deemed unfair in all areas. Among others, taxation and employment are frequently pointed out to have unfair systems. It is natural that these areas are found to be the most in need of urgent improvement for a fair society in the same survey. While we do not report detailed tables or figures, the same survey suggested that the priorities of tasks for a fair society are ranked differently by education and income. While lower educated people think a fairer labor market is the most important, citizens with higher education more frequently picked law enforcement and media to be in need of improvement for a fair society. Similar trends are observed with an angle of income. Family members with lower incomes are inclined to point out employment as being the priority compared to those with higher incomes. It is interesting that the percentage preferring taxation for prior improvement to other areas is stable around 30%, regardless of income. The necessity of more fairness in the tax system seems to be widely acknowledged.

Figure 4.11 Evaluation on state of fairness (2011).



Source: Korea National Statistical Office.

4.4 Political values and legitimacy

Growing inequalities could have impacts on the political terrain. Korean politics has been characterized by longstanding conservatism. But we observe some change in the political atmosphere in recent years.

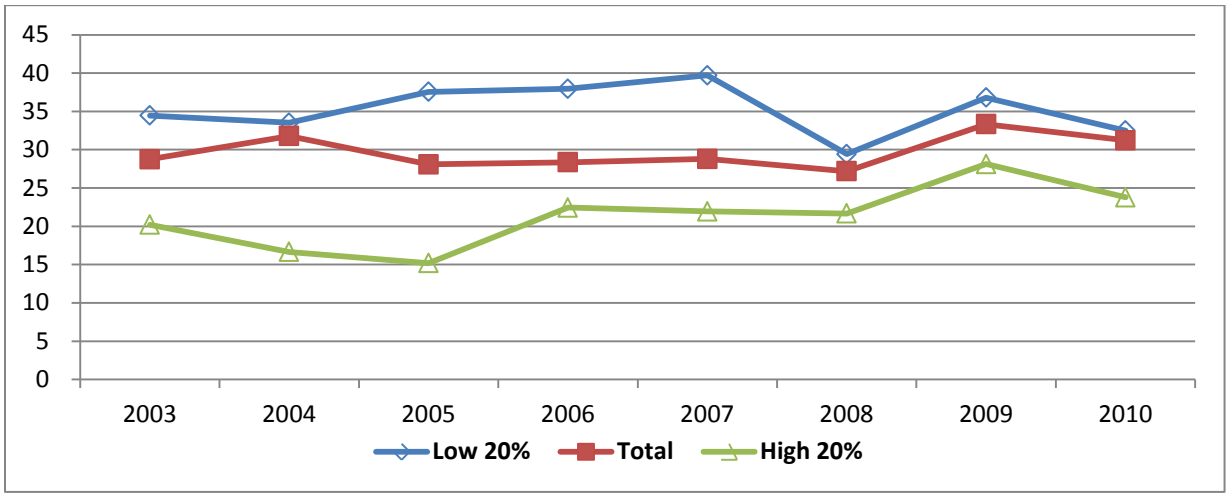
Figure 4.12 and Figure 4.13 show the result of asking “How much do you think you are politically liberal or conservative?” in Korean General Social Survey and getting 5-point measures, such as very

liberal, somewhat liberal, neither liberal nor conservative, somewhat conservative, very conservative. Of course, 'very liberal' nor 'very conservative' is same as 'extreme left nor extreme right'. According to the figures around 30% of overall population are considering themselves liberals, including either very liberal or somewhat liberal. Those identifying themselves as conservatives are also around 30% in 2010. Here, it would be better to mention that either 'very liberal' or 'very conservative' are only less than 10% of all respondents.

The difference of political orientations between the poor and the rich is also worthy to note. The poor tend to be considering themselves liberal than the rich do in Korea. Among people in the lowest 20% of household income group the proportion of liberals was approached to 40% in the mid-2000s. Although people in the highest 20% of income group express themselves liberal with lower percentage than their poor counterpart, those identifying themselves as liberals have increased since the mid 2000s. On the other hand, people considering themselves as conservatives have slightly declined since the survey conducted in 2003. The declining tendency was clearer for both the poor and the rich than for middle income population, with one exceptional year of 2008 when the Presidential election was conducted.

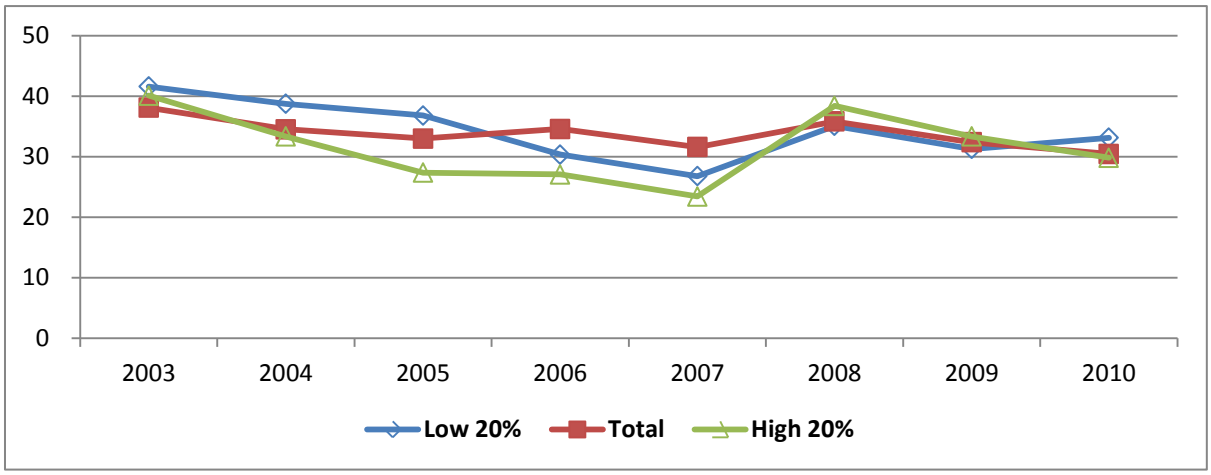
Citizens in Korea have long been discontent with politics. The percentage of those who are satisfied with politics has remained around 10% in the same survey. But it is remarkable that the number of those who are "very dissatisfied" has sharply declined in recent years. However deeply dissatisfied with politics Korean people are, they express some hope. The percentage of people who are positive about future prospects of politics has remained around 50%. However, those whose prospects for politics are "about the same" have accounted for a considerable share, suggesting a slice of political cynicism in that satisfaction with politics has been very low.

Figure 4.12 Political orientation: % of liberal and very liberal by income level.



Source: Korean General Social Survey.(Seonggyungwan Univ. Survey Research Center)

Figure 4.13 Political orientation: % of conservative and very conservative by income level.



Source: Korean General Social Survey.(Seonggyungwan Univ. Survey Research Center)

We have only two years' General Social Survey providing clues on Korean people's attitude to migrant workers in Table 4.2. The questionnaire asks how much the respondents agree to each statement such as "migrant workers reduce jobs for the native Koreans" "migrant workers are helpful for economic development in Korea" "migrant workers are helpful to solve labor shortage problem" "migrant workers are economically more harmful to the poor than to the rich" "migrant workers' welfare requirement results in tax increase." Whereas for the overall population the negative attitude against migrant workers was not getting stronger between 2003 and 2010, the negative attitude of the low income group seemed to be increased clearly. It is interesting that the high income class worry much about tax burden increase, while persons in the low income group think migrant workers' negative effects on them more seriously.

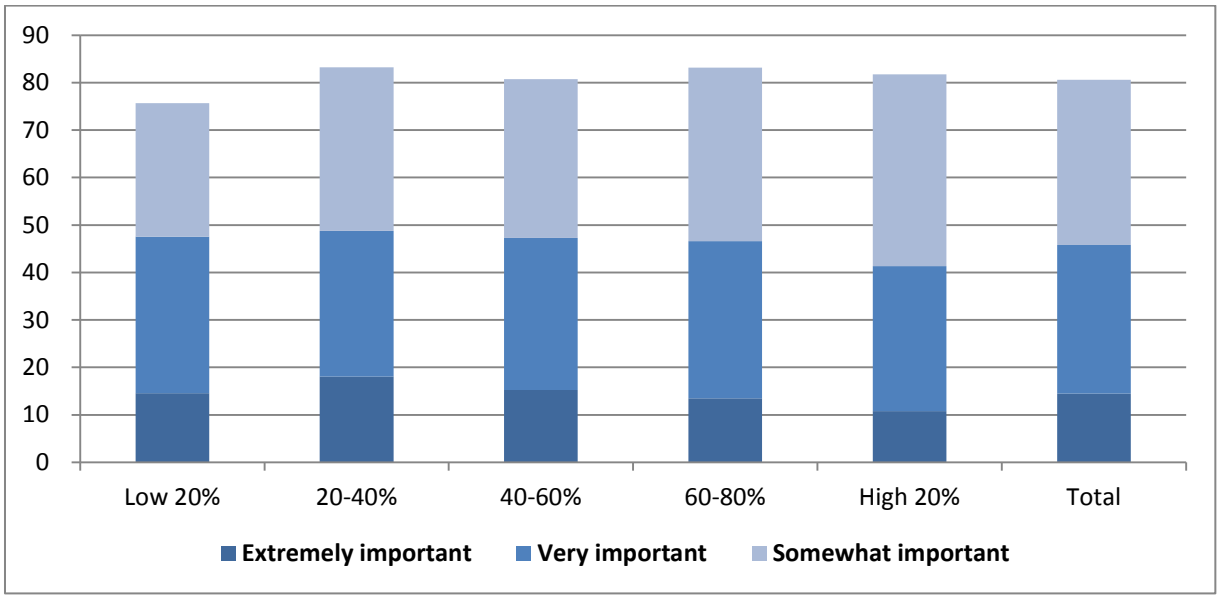
Table 4.2 % agreeing to opinion on migrant workers.

		total	high 20%	low 20%
2003	reduce job availability	23.1	18.0	33.3
	helpful for economy	52.9	57.7	52.1
2010	reduce job availability	28.2	21.9	44.2
	helpful for economy	49.2	58.8	38.5
	helpful for labor supply	76.4	81.3	66.4
	harmful to the poor	36.4	27.5	45.7
	increase tax burden	46.8	56.9	47.2

Source: Korean General Social Survey

Korean General Social Survey tried to measure social legitimacy asking how much the respondents agree that getting ahead in society depends on family background only once in 2009 (Figure 4.14). About 80% of all population considers family background is at least somewhat important for getting ahead. People who believe family background is very or extremely important are found in lower income classes with higher percentage.

Figure 4.14 % saying "family background is important for getting ahead" by income level (2009).



Source: Korean General Social Survey

4.5 Values about social policy and welfare state

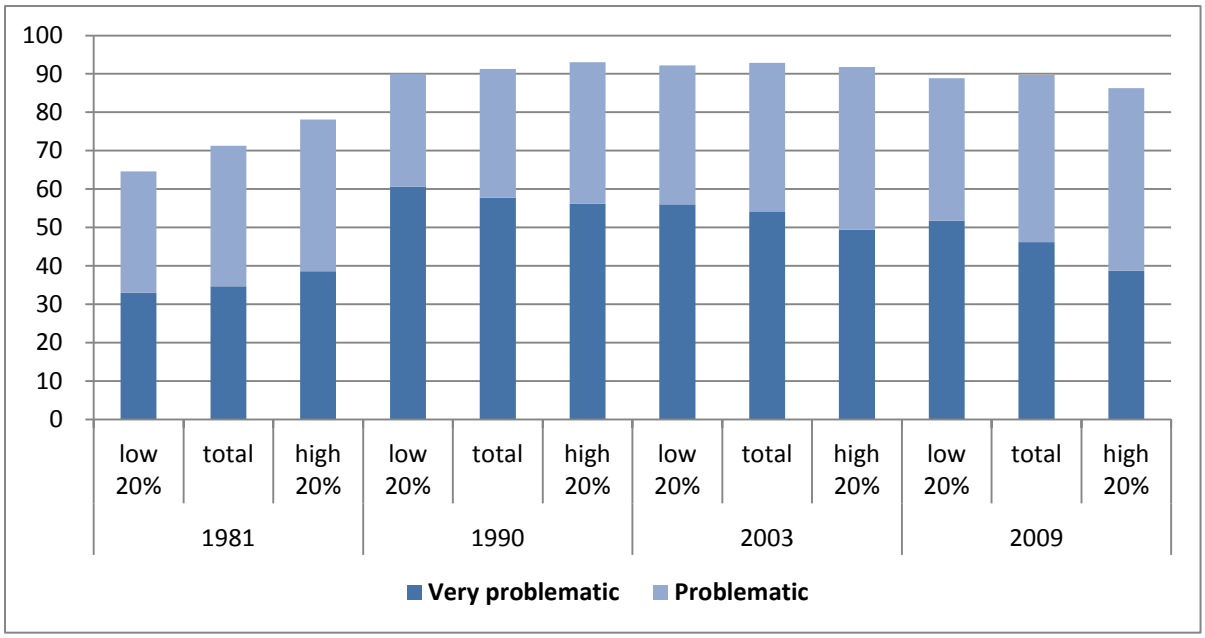
Growing inequalities may cause change of values about social policy and the welfare state. Evidently, this seems to be the case with Korea. Korea has long lagged behind as far as the welfare state is concerned. However, discussions on welfare state expansion - hardly heard of in Western societies in recent years - is much in vogue in Korea currently due to an increased sense of insecurity and growing inequalities.

Korean people are regarded as sensitive to inequalities and having strong orientation towards equality. An absolute majority of them have perceived the state of income distribution to be “very unfair” or “somewhat unfair.” Figure 4.15 shows the change of attitude on inequality during the last decades. The measures come from three different social surveys and it must be mentioned the ways of asking are slightly different from survey to survey, although the overall trend can be identified in the figure. The proportion of people who consider inequality in Korea is very problematic was higher in 1990 than in 1981 and has stayed still since 1990. While the difference among income groups were

not clear in 1990 and in 2003, the concern on inequality was lower among the high income class in 2009.

Not only the state of income distribution but also the income differences have been a cause of growing social uneasiness. Nine out of 10 agree to the assertion that "income differences are too large." Only two or three out of 100 believe that income differences are not too large (Figure 4.16).

Figure 4.15 % agreeing inequalities are problematic in Korea by income level.

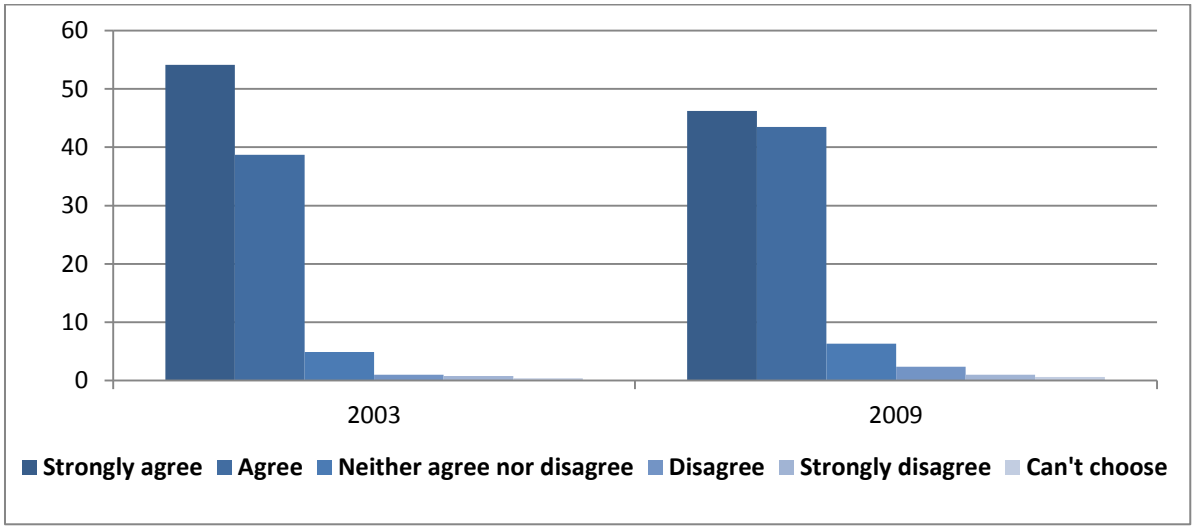


Source: Korean General Social Survey for 2003, 2010

Source: Survey on Korean Society in Transitional Era for 1990 (Seoul National Univ. Center for Population and Development Studies)

Source: Social Development and National Value Survey for 1981

Figure 4.16 Views on the assertion that income differences are too large.



Source: Korean General Social Survey.

Government is expected to reduce the income gap between the rich and the poor (Table 4.3). More than 70% of people agree to the view that "It is the responsibility of the government to reduce the differences in income between people with high incomes and those with low incomes." This kind of attitude seems consistent among income groups. It is difficult to find similar measurement on government role for redistribution in old surveys. However, 1981 survey asked how much the respondents agree to the idea "we need to rapidly realize welfare society even though it requires tax increase" and 42% of respondents agreed. This number of percentage can be comparable to the features on preferred future society in Figure 4.17. Changes in welfare consciousness can be detected by preferred future society. While about half of the respondents want some kind of society with high taxation and high welfare, only 11% of people preferred a society with low taxation and low welfare in 2006. With those table and figure we can interpret the extended role of government for welfare state has been required in recent years than before.

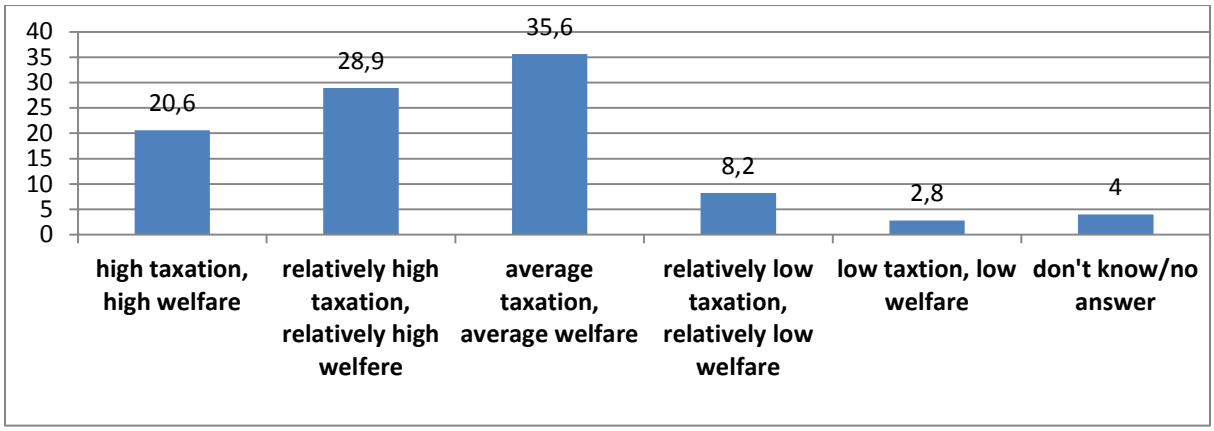
Table 4.3 % agreeing government should reduce inequality by income level.

		Total	high 20%	low 20%
1981	welfare + more tax	**42.3**	39.1	41.3
2003	government role for redistribution	79.8	78.3	79.8
2009	government role for redistribution	74.7	71.0	72.9
	government role of helping the unemployed	80.6	74.3	84.4

Source: Korean General Social Survey for 2003, 2010

Source: Social Development and National Value Survey for 1981

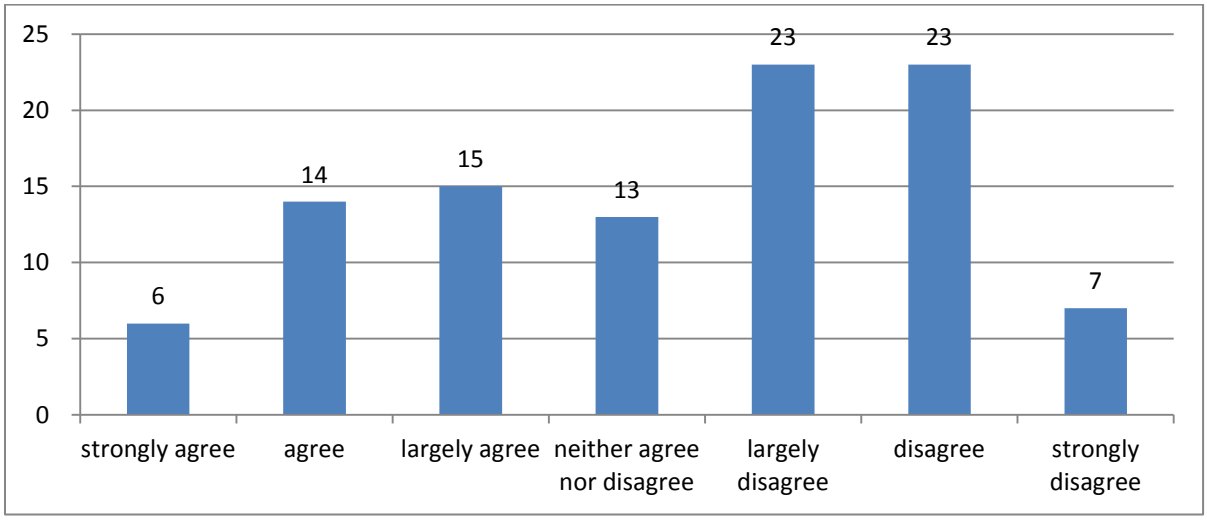
Figure 4.17 Preferred future society (2006).



Source: Korea National Statistical Office.

One of the factors that have hindered the development of a welfare state in Korea has been a fear that welfare would reduce work incentive. However, growing inequalities and increase in perceived insecurity seem to have changed the view. While more than half of people didn't agree to the concern of disincentive, about 35% of people held the traditional perspective (Figure 4.18).

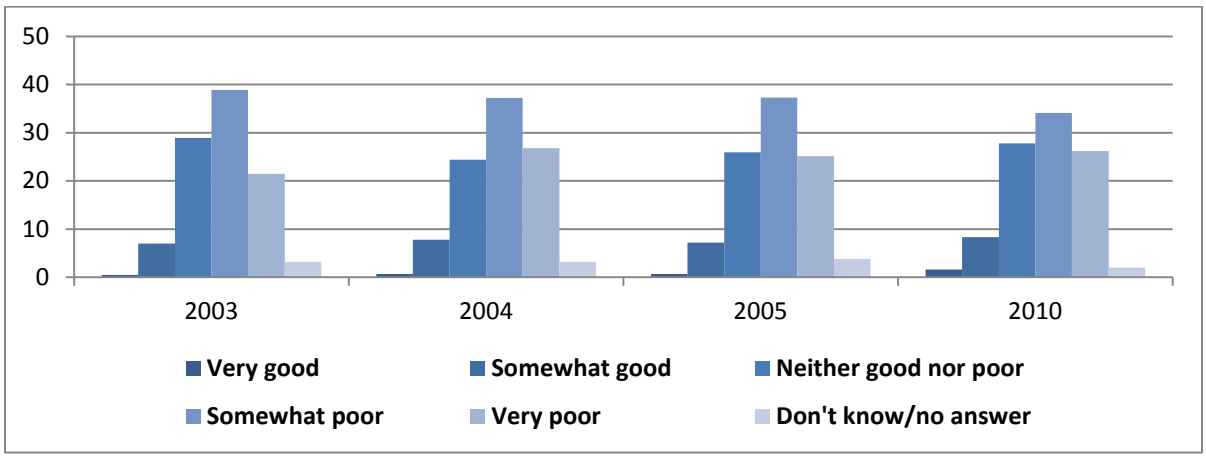
Figure 4.18 People agreeing to the assertion that welfare would reduce work incentive (2007).



Source: Korea National Statistical Office.

According to the same survey, however, Korean governments in the 2000s seem to have failed to satisfy their citizens in alleviating income inequalities (Figure 4.19). More than 60% of people responded negatively to the question that reads "Please tell me how well the government is handling in reducing income gaps between rich and poor." Not more than 10% of people highly approved of government efforts in reducing income inequalities.

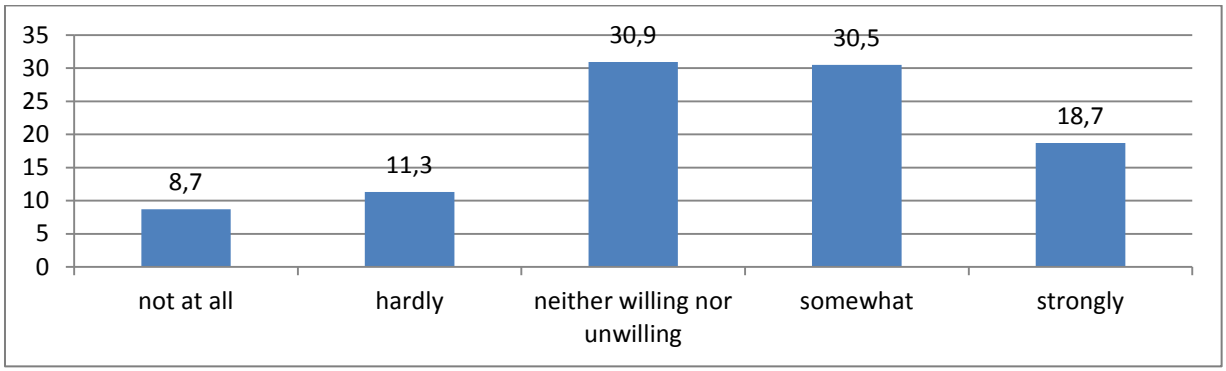
Figure 4.19 Evaluation on government in reducing income differences.



Source: Korean General Social Survey.

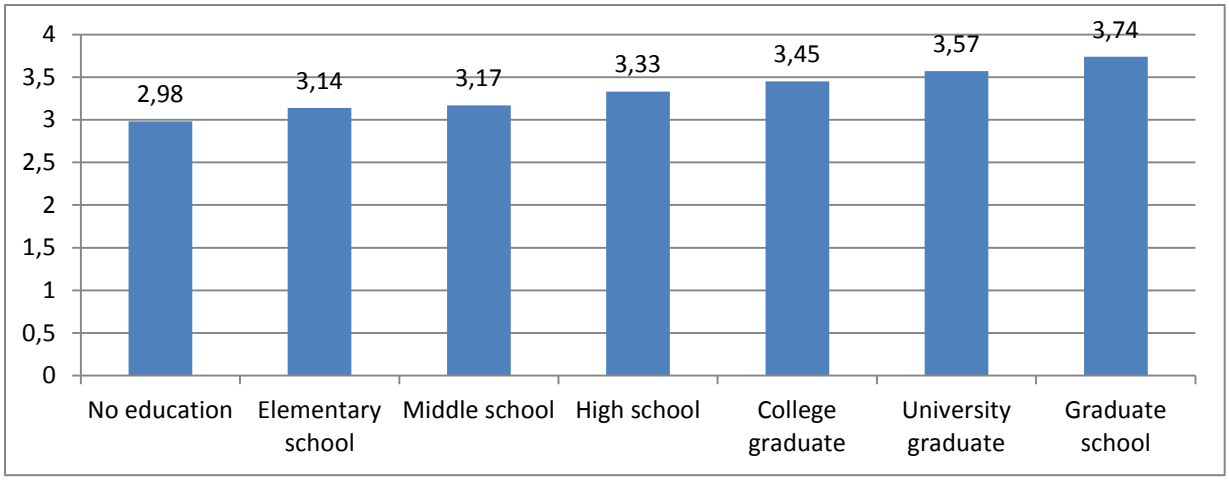
Figure 4.20 and Figure 4.21 show another indicator of welfare consciousness. Whereas about half of the respondents expressed willingness to bear the burden of tax increase for welfare, only 20% of people felt uncomfortable. As Figure 4.21 demonstrates, more educated people are more willing to accept tax increases for welfare. According to Figure 4.22, rich people are the most frequently preferred taxpayer for welfare expansion (35.8%). About one thirds (34.3%) of respondents stated that all citizens should be taxed for welfare expansion. This result could be interpreted as stemming from two views about society and the future. One is that income inequalities are too large and, accordingly the rich are more responsible for welfare than the poor. Another is the increased need for universal welfare. The future of social policy and the welfare state in Korea seems to be formed, in part, by the interpretation struggle between the traditional views about welfare that have impeded the development of welfare state and the newly emerging ideas that consider social policy indispensible for a fair society.

Figure 4.20 Willingness to further taxpaying for welfare (2011).



Source: No(2011)

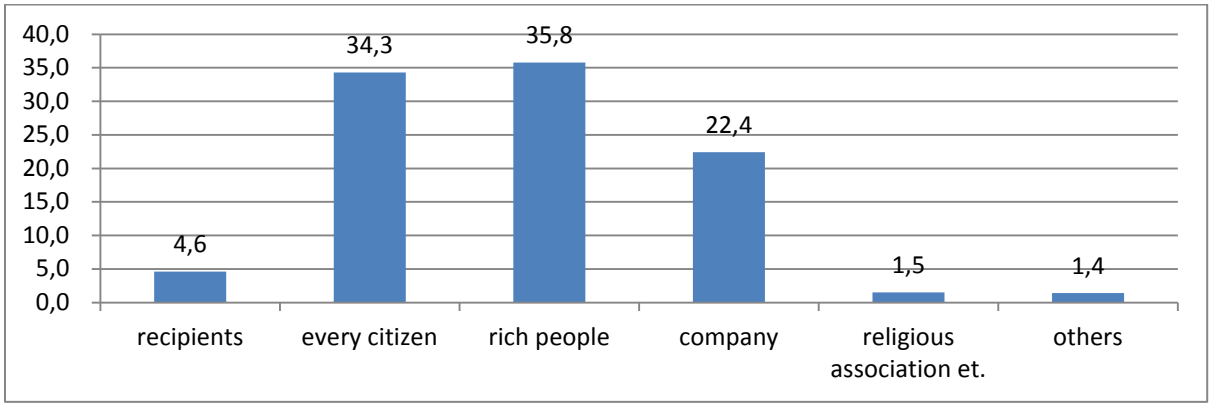
Figure 4.21 Willingness to further taxpaying for welfare, by education (2011).



Notes: F=6.045, P<= 0.001

Source: No(2011)

Figure 4.22 Preferred taxpayer for welfare expansion (2007).



Source: Korea National Statistical Office.

4.6 Conclusions

With growing inequality, political and cultural life in Korea has changed a lot since the 2000s. Tendencies of lower voter turnout rate , low level of trust in society, and pessimistic evaluation of income distribution, have persisted in the 2000s as inequality has risen. However, causal claims between inequality and its political and cultural impacts are elusive to establish because the political and cultural phenomena may have causes other than inequality.

In the concluding section we present some unique features not usually found in most countries covered in the project, as well as the logic behind them. First, although voter turnout has fallen since 1987, political cynicism measured by nonparticipation in voting can be detected in the more educated. It refutes the common wisdom that the more educated, having knowledge and views on politics, have a higher propensity to vote. It could be explained in part by differences in voting commitment between high and low educated people.

Second, despite growing inequality and the low level of satisfaction with politics, the politically conservative climate has changed little. Growing inequality has seemingly reduced the number of self-reported conservatives but they have not converted to liberals but to “neither liberal nor conservative”. In 2010 they constitute the largest faction in the political landscape, reflecting another aspect of political cynicism.

Lastly, unlike in the case of most advanced countries, discourse on welfare state expansion is much in vogue currently in Korea. This phenomenon can be interpreted as a result of the exhaustion of the developmental dictatorship model which had driven Korean people to relentless economic growth without social policies. Growing inequality and increase of perceived insecurity after the economic crisis in the late 1990s must have contributed to the upsurge of welfare demands. Korea is expected to expand social policies as long as inequality continues to rise.

5 Effectiveness of Policies in Combating Inequality

5.1 Introduction

Korea has very weak social policies before the crisis. Increasing rate of minimum wage does not catch up with that of average wage, and it was not well enforced. Although National Pension Scheme and unemployment insurance were introduced in 1988 and 1995, they were also very limited in their application. The crisis and growing wage inequality, however, precipitated introduction and expansion of diverse social policies. In this chapter, we will review inequality-reducing effects of minimum wage, labour union, and tax and social expenditure polices.

5.2 Labor Market and Industrial Relations Policies

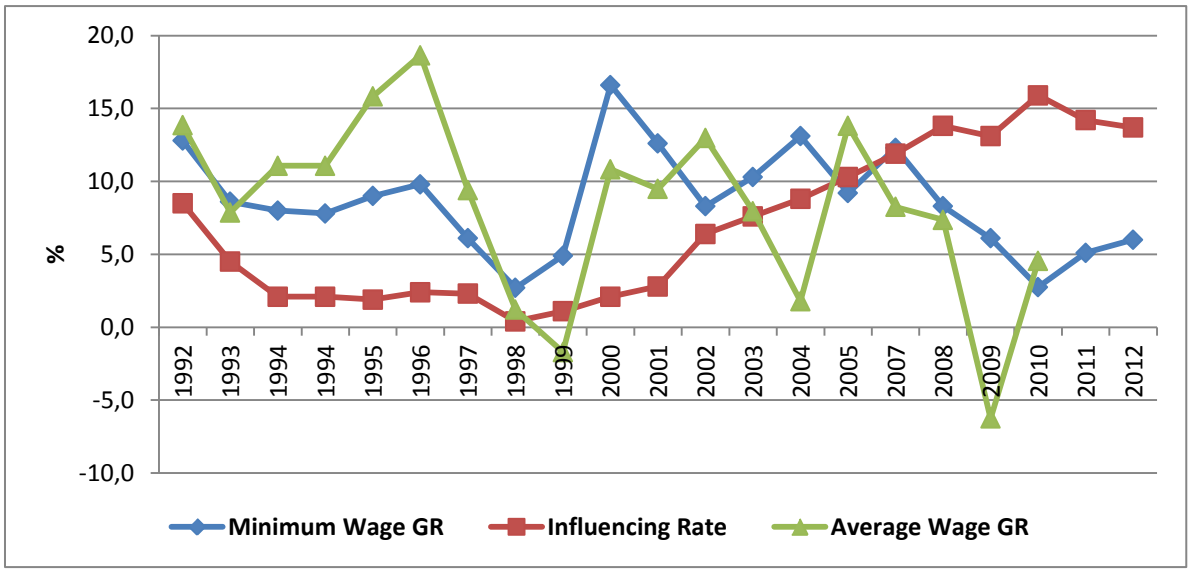
As we see in Chapter Ⅱ, as 'employment crisis' is the major reason for the increasing income inequality, labor market policies are very important to contain the worsening inequality in Korea. Particularly, the Korean labor market is well-known for its highly dualized nature(OECD, 2006), with a large portion of the low-wage sector. Therefore, minimum wage policy could be a very powerful means to combat inequality in Korea.

Even though the Labor Standards Act enacted in 1953 provides the legal grounds for determining the minimum wage, the provisions concerning the minimum wage system in the Labor Standards Act were not applied in the initial stages of industrialization. The Minimum Wage Act was enacted and promulgated on December 31, 1986, and the Act entered into force on January 1, 1988. The minimum wage in 2011 is 4,320 Korean won(around 3.75$) per hour, or 34,560 Korean won per day (based on an 8-hour workday) for all types of businesses.

The minimum wage rate has increased continuously since its initiation in 1988, and the expansion of the workplaces for which the minimum wage is applied has contributed to stabilizing the lives of low-income workers. The number of workers benefiting from the minimum wage has increased significantly, and the minimum wage rate has become a standard for various social security systems, expanding its social influence.

As we see in [Figure 5.1], the increasing rate of minimum wage began to catch up with the average wage growth rate, and the influencing rate(Number of beneficiaries/Number of targeted employee*100) started to increase only after the crisis and the change of political power in 1998.

Figure 5.1 Increasing Rate of Minimum and Average Wage, and Application rate.



Source: Ministry of Employment and Labor Minimum Wage Council

Note : 1) Object of application before '99.8 is establishments whose number of regular employees is 10 & over, '99.9~'00.8 is 5 & over, from '00.9 is all establishments.

2) Influencing rate is 'Number of beneficiaries/Number of applied employee*100'.

Concerning the distributional effects of minimum wage, Jeong(2011) shows that despite the relative increase in the minimum wage(MW/P10), wage-increase rates are still lower at lower wage levels over the past 9 years(2002-2010), as shown in [Table 5.1]. Of course, this does not mean that the minimum wage does not contribute at all to raising the relative wage level of low-wage workers.

Table 5.1 Wage Decile and Minimum-Wage Increase Rate Trends (Unit: %).

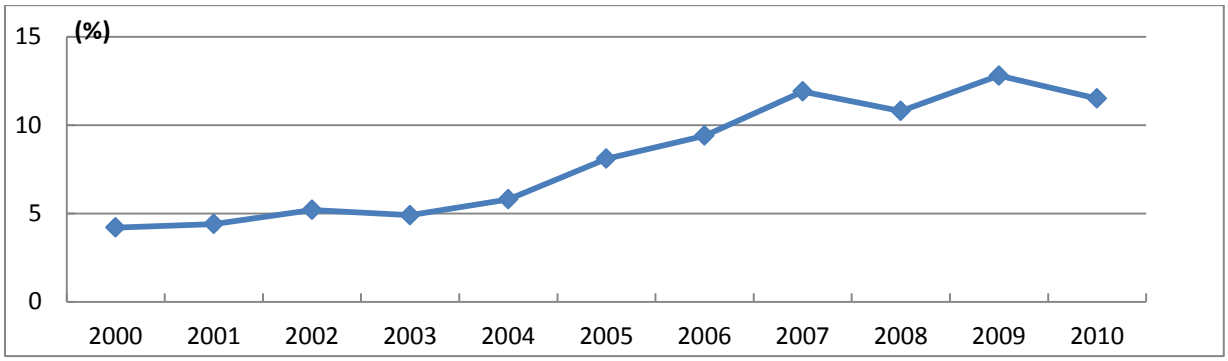
		2002	2003	2004	2005	2006	2007	2008	2009	2010
MW/P10		80.4	83.0	87.3	95.2	97.0	104.3	102.4	104.3	107.2
Absolute increase rate	P10	8.9	4.9	5.0	3.7	7.1	4.4	10.3	4.2	0.0
	P20	5.0	7.1	6.7	4.2	2.9	5.3	10.8	0.0	7.1
	P30	6.7	7.1	7.1	4.6	4.2	4.0	10.8	0.0	4.2
	P40	6.8	8.3	9.1	0.8	9.1	4.0	7.7	2.0	5.0
	P50	6.7	12.5	7.1	2.7	9.1	3.7	7.1	1.2	8.6
	P60	4.5	14.8	6.1	4.8	5.0	7.1	6.7	0.0	8.3
	P70	5.5	14.3	7.7	4.0	4.2	8.0	11.1	0.0	2.2
	P80	5.8	17.3	6.8	3.8	4.2	9.1	10.0	0.0	6.7

	P90	4.5	16.1	6.3	8.5	7.1	0.0	9.6	6.4	0.0
	MW	12.6	8.3	10.3	13.1	9.2	12.3	8.3	6.1	2.8
	P10	2.3	-7.6	-2.1	1.0	-1.9	0.7	3.2	2.9	-8.6
	P20	-1.7	-5.4	-0.5	1.5	-6.2	1.6	3.6	-1.2	-1.5
	P30	0.0	-5.4	-0.1	1.9	-4.9	0.3	3.6	-1.2	-4.5
	P40	0.2	-4.2	1.9	-1.8	0.0	0.3	0.5	0.8	-3.6
Relative increase rate	P50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	P60	-2.1	2.3	-1.1	2.1	-4.1	3.4	-0.5	-1.2	-0.3
	P70	-1.2	1.8	0.5	1.3	-4.9	4.3	4.0	-1.2	-6.4
	P80	-0.9	4.8	-0.3	1.1	-4.9	5.4	2.9	-1.2	-2.0
	P90	-2.1	3.6	-0.9	5.9	-1.9	-3.7	2.5	5.2	-8.6
	MW	5.9	-4.2	3.2	10.5	0.1	8.6	1.2	4.9	-5.9

Note. Relative increase rate is the wage increase rate relative to the wage increase rate of the median P50. Data from *Supplementary Survey to the Economically Active Population Survey,* by Statistics Korea, 2002–2010, Daejeon.

If minimum-wage regulations are strictly enforced and complied with, the wage-increase effect of the minimum wage for low-wage workers would be greater. As shown in [Figure 5.2], the share of workers earning below minimum wage has been increasing from 2000 to 2009. Even at the moment, a considerable number of workers(around 2 million) are below the minimum wage.

Figure 5.2 Share of Workers earning below minimum wage.



Sources: Korean National Statistical Office, Supplementary Survey of Economically Active Population Survey

Sometimes, it is argued that minimum wage is not effective in reducing household income inequality because the minimum wage could result in assisting low-wage workers in high income household. Nam(2011) concluded that minimum wage increase did not succeed in increasing household incomes for the the lowest percentile.

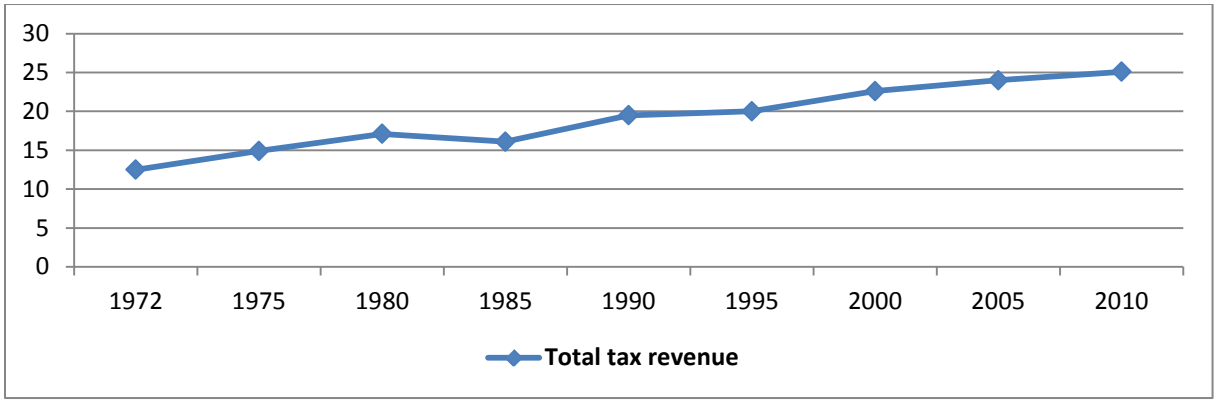
Korea also introduced the so-called EITC(Earned Income Tax Credit) in 2008 to protect low-income families. Kang and Sung(2010), comparing the distributional effects of EITC and the national minimum wage, concluded that the distributional effect of minimum wage is greater than that of EITC, because EITC is limited to a small group of wage income families and the subsidy rate in the phase-in range is low. Moreover, they indicates that when the supply of low-skilled labor increases in the labor market as a result of EITC, minimum wage would be a more effective way of supporting the low income families by preventing wage reduction of low-skilled workers.

5.3 Taxation

The total tax revenue as a percentage of GDP in Korea is about 25.1% in 2010 ([Figure 5.3]), which is relatively low compared to other OECD countries. Countries that show a similar level to Korea are Japan, the U.S., Turkey, and Mexico. The total tax revenue consists of taxes (19.4%) and the social security contributions (5.7%).

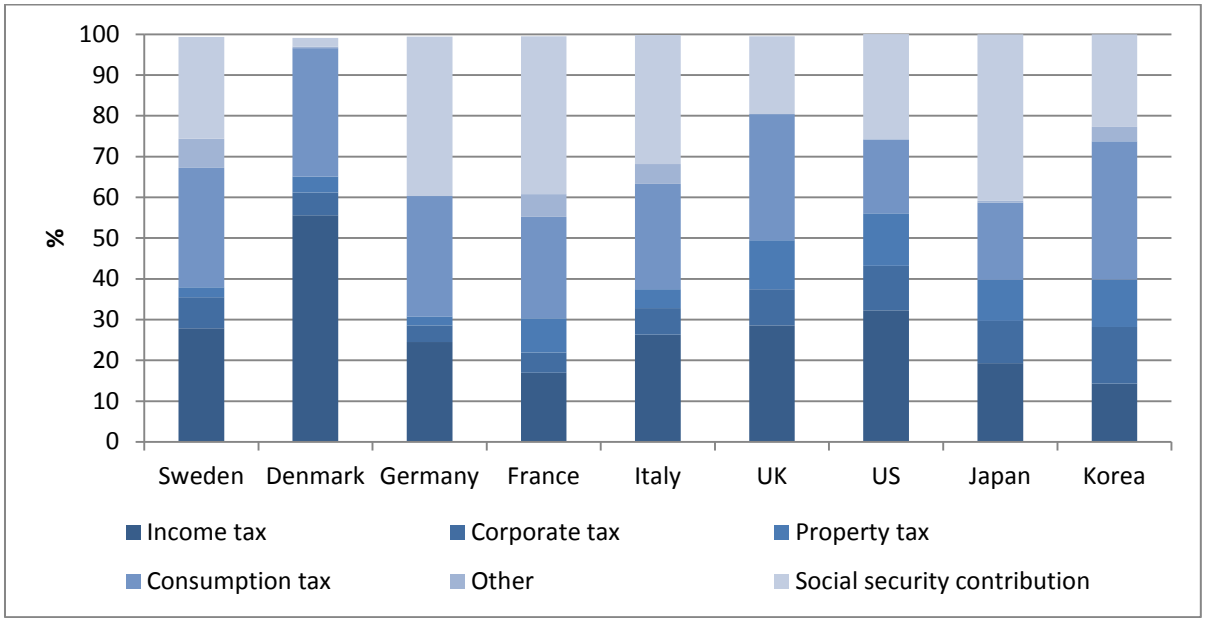
Relatively small rate of tax revenue to GDP and low proportion of income tax are key features of Korean tax system. Yang(2012) explains these characteristics with long lasting policies to support export-oriented economic development. Low income tax and low social security contribution have been required in order to maintain low labor costs, which were necessary to support price competitiveness in export-oriented enterprises. Although industrialization has resulted in increasing social risks such as unemployment, industrial accidents, and retirement, tax revenue has increased with low rate since 1960s.

Figure 5.3 Total Tax Revenue (unit: % of GDP).



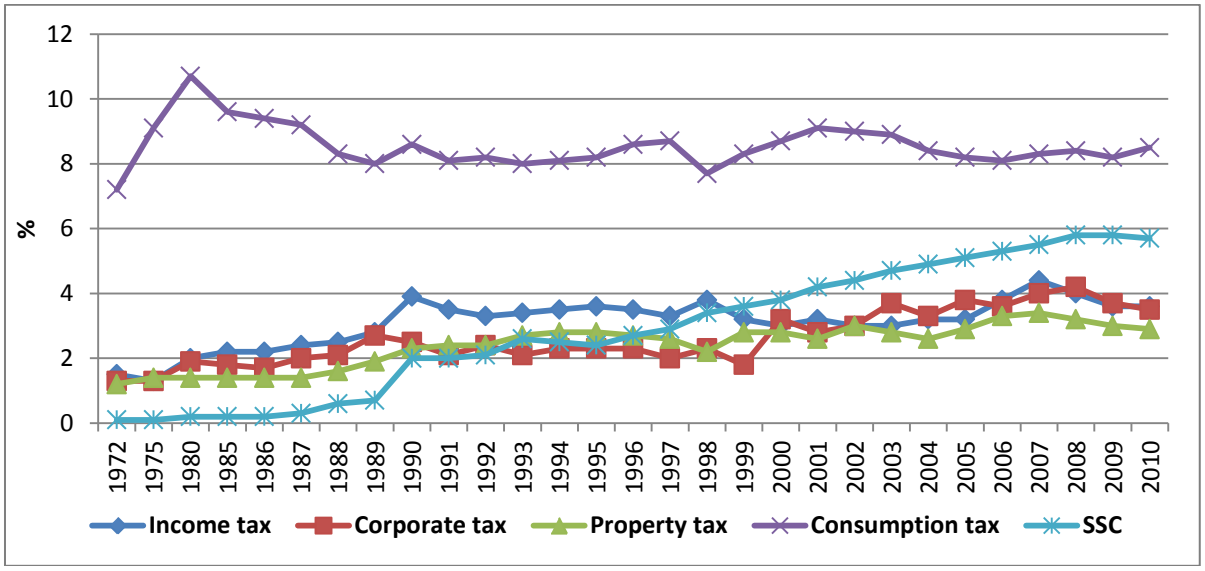
Source: OECD Tax Revenue data

Figure 5.4 Tax Structure by Type (unit: %).



Source: OECD Tax Revenue data, recited from Yang(2012)

Figure 5.5 Change of % of GDP by tax type.



Source: OECD Tax Revenue data, recited from Yang(2012)

[Figure 5.4] shows that the proportion of income tax is relatively low and the property and corporate tax component is rather high in Korea to compare with other countries. Income tax revenue is only 3.6% of GDP and share(s) 14.3% of total tax revenue in 2010. Social security contribution is 5.7% of GDP with 22.7% share of total tax revenue. Although the share of consumption tax is 33.9% of total tax revenue which is about OECD average, it is only 8.5% of GDP. Corporate tax is 3.5% of GDP and 13.9% of total tax revenue. Property tax is 2.9% of GDP and 11.6% share of total tax in 2010.

The component rate of income tax in GDP has not much changed since 1990. Increasing total tax revenue in Korea seems to rely on the rapid increase of the social security contribution during last two decades mostly due to the introduction of national pension scheme and health insurance and their expansions (Figure 5.3 & Figure 5.5).

The reason why the share of income tax in GDP has not increased can be explained as various tax deduction policies. Although the nominal rates of tax are just around OECD average, the effective rates of tax have been maintained at very low level. A single worker with average income pays only 4.5% of his income. A low income worker with 67% of average income pays only 1.4% of his income and a high income worker pays 8.4% of his income for tax. These figures show that the actual tax burden is very low for Korean workers, particularly for low wage workers. Social security contribution is rather regressive like other countries.

Table 5.2 Effective rate of tax and social security contribution (2011).

(unit: % to total income, single worker)

	67% of AW	100% of AW	167% of AW
income tax	1.4	4.3	8.4
social security contribution	8.1	8.1	6.9
total	9.5	12.4	15.3

Source: OECD Tax Revenue data, recited from Yang (2012)

5.4 Social Expenditure

5.4.1 Overall Social Expenditure

The gap between market income inequality and disposable income inequality implies the effectiveness of taxation and income transfer to reduce inequality. In 2006, the GINI coefficient of market income was 0.368 and that of disposable income was 0.311, suggesting that tax and public transfer lead to a 15.7% decrease in the GINI coefficient. This amount of inequality reduction seems relatively small, considering the 30~40% reduction of other countries. As we argue in Chapter 2 of this country report, however, the effectiveness of redistribution policies of Korea has been improved since the 2000's. In this chapter, we review several important redistribution policies and their effects on inequality reduction.

The overall social expenditure as a percentage of GDP is 7.5% in 2010, which is the lowest level in the OECD countries, far behind Japan and the U.S. as well as the Slovak Republic and Estonia (OECD,

Social Expenditure DB, 2010). This results in insufficient expenditure for redistribution policies, and it may be the most important reason of the ineffectiveness of inequality reduction policies in Korea.

The composition of social expenditure as well as its percentage of GDP is quite important in understanding the nature of Korea's welfare state. [Table 5.3] shows the change of social expenditure structure by program since 1990. In-kind benefits for health care consist of huge part of total social expenditure in Korea, although the share has been decreased with other income transfer programs expanded. The share of old age pension in public expenditure seems not very large comparing to other countries, although the number of beneficiary has been increased, mostly because other expenditures have been increases as well. Social assistance belongs to "other" category. The share of "other" area is found to increase in 2000's and accounts for about 10% in total social expenditure.[3] Korean welfare system doesn't have some typical income transfer programs, such as sick pay and family allowance.

Counting mandatory private expenditure, the structure of social expenditure turns out as <Appendix Table 3>. Radical change is found in old age pension area, due to the proportion of mandatory retirement allowance.

Table 5.3 Social expenditure by program (1990, 2000, 2007).

1990	Cash	in-kind	Total
OLD AGE	20.58	0.97	21.55
SURVIVORS	5.32	0.19	5.51
INCAPACITY	9.48	0.92	10.40
HEALTH		54.30	54.30
FAMILY	0.04	1.07	1.11
ALMP		0.94	0.94
UNEMPLOYMENT			
OTHER	5.27	0.93	6.20
Total	40.69	59.31	100.00

[3] Classification of social assistance changed in early 2000's and the large proportion of social assistance is assigned from cash to in-kind benefits.

2000	Cash	in-kind	Total
OLD AGE	25.40	0.44	25.84
SURVIVORS	3.43	0.16	3.59
INCAPACITY	5.82	1.89	7.70
HEALTH		45.43	45.43
FAMILY	0.06	2.23	2.30
ALMP		7.99	7.99
UNEMPLOYMENT	1.63		1.63
OTHER	5.38	0.14	5.53
Total	41.72	58.28	100.00
2007	Cash	in-kind	Total
OLD AGE	19.02	2.27	21.29
SURVIVORS	3.28	0.07	3.35
INCAPACITY	5.74	1.54	7.29
HEALTH		46.24	46.24
FAMILY	0.27	6.32	6.59
ALMP		1.72	1.72
UNEMPLOYMENT	3.30		3.30
OTHER	1.68	8.55	10.23
Total	33.29	66.71	100.00

Source: OECD Social Expenditure DB

How effective are taxation and public transfer programs in reducing income inequality in Korea? The gap between market income and disposable income- based GINI coefficients provides us insight in the overall redistributive effects of taxes and social expenditure in general. [Figure 2.1] and [Figure 2.2] show that the policy effectiveness, although low in absolute terms, has increased since 2000's.

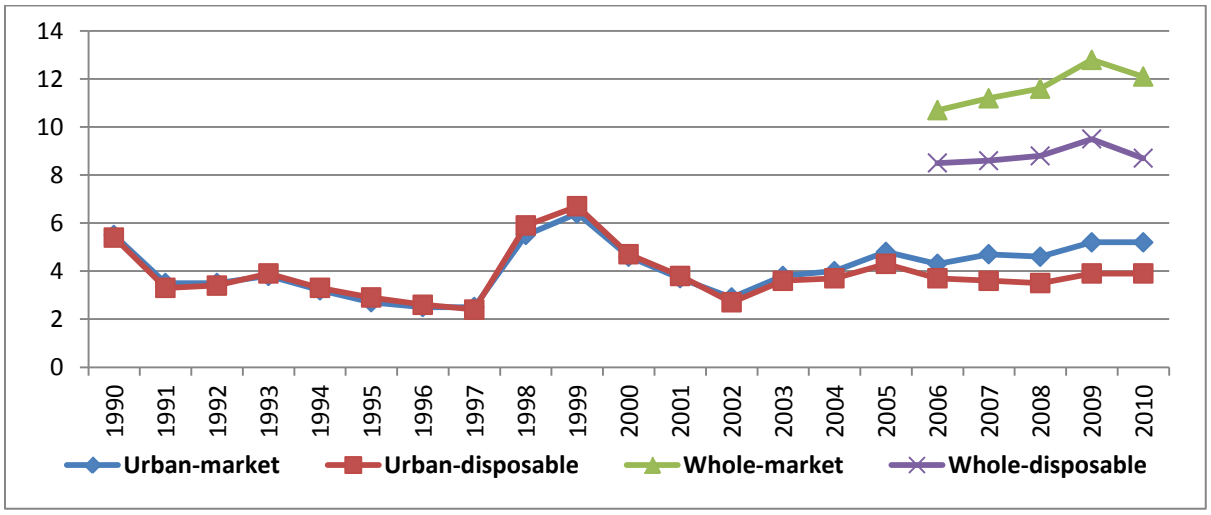
The disposable income-based GINI coefficient was 0.311 and the market income-based GINI coefficient was 0.342 in 2011, which implies a reduction of about 9%.

Tax and public transfer systems seem effective for reduction of absolute poverty, comparing their effects on income inequality measured by GINI coefficients. The absolute poverty ratio for the total

population was 12.1% with market income, and reduced to 8.7% of disposable income in 2010, which is a 28% reduction (Figure 5.6). In terms of relative poverty, the gap between market income and disposable income shows poverty reduction of about 20% for each population group(Figure 5.7).

Major income transfer programs in Korea include social assistance, public pensions, and unemployment benefits. In the next section, we will discuss the effect of each program for inequality reduction.

Figure 5.6 Absolute Poverty Ratios calculated with market and disposable incomes.

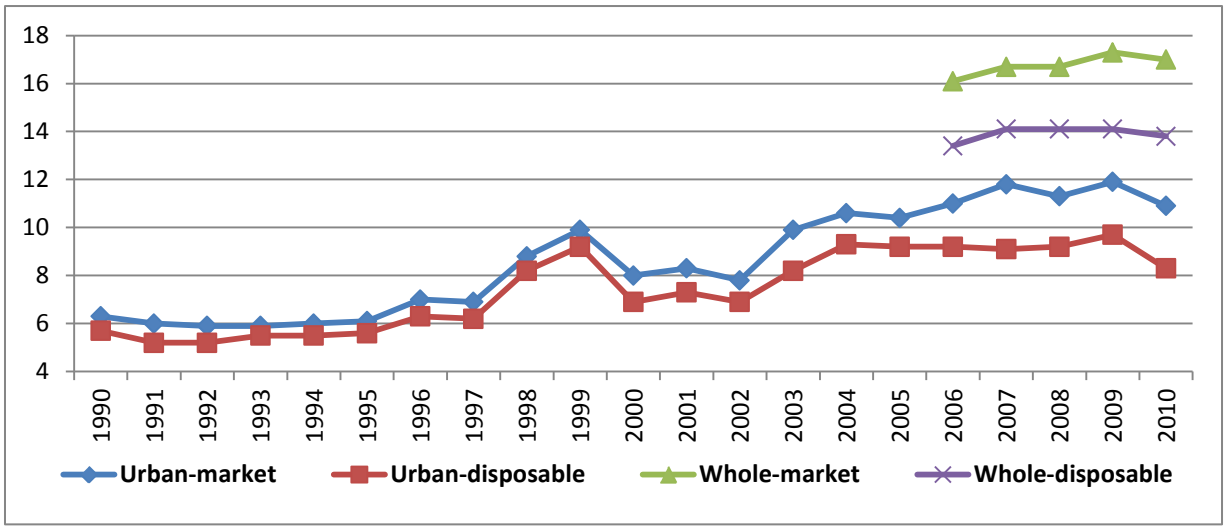


Data: Korea National Statistical Office, Household Income and Expenditure Survey (1990 ~ 2006)

Note 1: urban data = two or more person households which include wage and salary workers. From 2006, HIES
Note 2: provide information on the whole HHs including one-person HHs and non-wage workers HHs.

absolute poverty ratio = proportion of persons with equivalized HH income below the minimum cost of living which is measured by government every three years; relative poverty ratio = proportion of persons with income below 50% of equivalized HH median income

Figure 5.7 Relative Poverty Ratios calculated with market and disposable incomes.



Note: See Figure 5.6.

5.4.2 Public Income Transfer Programs

Social Assistance

The Korean social assistance program, called the National Basic Livelihood Security System (NBLSS), was enacted in 1999 and implemented in 2000. Before 2000, the Livelihood Protection System had worked in order to reduce poverty for 40 years, but under the system the living expenses and medical care were provided only to the poor who are not able to work. The NBLSS was evaluated as a structural reforms and a new paradigm of anti-poverty policies. The new system emphasizes the state's responsibility in poverty reduction and the right of people to receive public assistance regardless of their ability to work. Cash and in-kind benefits are provided to the poor to guarantee a minimum standard of living. It is noteworthy that the year of the program initiation was directly after the Asian financial crisis in 1997. Since 1998 the number of the poor and unemployed had increased rapidly, and an expansion of the social safety net was urgently required.

The proportion of recipients among total population increased from less than one percent to about three percent following the NBLSS reform. The number of public assistance recipients increased from 385 thousand persons in 1995 to 1,412 thousand persons in 2000. The benefit per person also increased about threefold following the NBLSS reform. The share of the public assistance budget has been increased and was recorded as 35% of social security expenditure, 12% of government expenditure and 0.7% of GDP in 2007 (Table 5.4).

Table 5.4 NBLSS Benefit Recipients and Budget Share.

		1995	2000	2005	2010
recipients	no. of recipients(thousand persons)	385	1,412	1,513	1,550
	% of total population	0.66	3.0	2.9	3.0
Budget	% of social security expenditure	-	29.8	34.0	34.9*
	% of GDP	-	0.4	0.5	0.7*

* year of 2007

Note: Korean Ministry of Health and Social Welfare website for 2000~2010 statistics, Kang(2008) for 1995 statistics

How effective is the NBLSS program in reducing poverty in Korea? According to Yeo & Song(2010) who calculated the poverty ratio reduction effect of NBLSS for the working age population using the Korea Welfare Panel Survey (KoWePS) 2008 data, the redistributive effects of public transfer mostly step from social assistance, although the share of transfer income to disposable income itself is quite

small in Korea. The poverty ratio of market income was 12.1, and after adding social assistance benefit, the rate was reduced to 10.0(Table 5.5). Although the poverty reduction effect of social assistance is still quite low relative to other advanced countries, the program's effectiveness has increased since the reform in 2000. [Figure 5.6] and [Figure 5.7] show the changes of the poverty ratios and the increasing gap between the market and the current income, which might be understood as the results of the extended public assistance of NBLSS.

Table 5.5 Poverty Ratios after Each Public Income Transfer in selected countries.

	market income + 0	+ social allowance	+ public pension	+ unemployment insurance	+ other social insurance	+ social assistance	+ total transfer
Korea	**12.1**	12.1	11.0	12.0	11.9	10.0	**8.5**
Germany	**15.8**	14.8	12.4	14.1	13.9	14.0	**5.2**
Sweden	**17.3**	16.4	16.2	14.5	8.8	15.8	**3.0**
UK	**21.0**	20.0	20.3	20.9	18.8	11.5	**5.4**

Source: Yeo &Song(2010)

notes: Poverty ratio is defined as 40% or less income of median income in this table. Population is limited to people in HHs headed by working age persons. data: KoWePS 2008 for Korea, LIS wage iv for all other countries

Old-Age Pension

The old-age pension expenditure as a percentage of GDP is only 1.82% in 2010, which is low among OECD countries. Immaturity of the public pension scheme and the relatively young population structure mostly explain the low level of pension expenditure. Korea is a rapidly aging country but still has a relatively young population structure compared to other developed countries. Korea introduced an income related national pension scheme in 1988, but the proportion of pension recipients among the old population is still low because of the requirement of at least 20 years of subscription. As a consequence, the old-age poverty ratio is 45%, which is the highest among the selected countries (Table 5.6).

The structure of old-age income security is presented in [Figure 5.8]. The first pillar of Korea's public pension system consists of two parts. The first is the tax-based "Basic Old Age Pension." Some 70% of those aged 65 and over received the means-tested Basic Age Pension in 2010. This benefit is very small amount of less than 100US$, which is fixed at the level of 5% of the earnings of the insured of the national pension. The second part of public pension system is the National Pension Scheme, which is an earnings-related social insurance. The public pension in Korea is the National Pension Scheme(NPS), which is an income maintenance against economic distress due to retirement. The public pension scheme was first provided to public servants, military personnel, and school teachers in the 1960's and 1970's. The National Pension Scheme for all Korean citizens was established by the National Pension Act in 1986 and implemented in 1988. The NPS is compulsory insurance for employees and the self-employed, while it is voluntary insurance for housewives and students. The insured will be entitled to the Old Age Pension upon reaching age of 60, so long as the person insured has contributed pension premiums for at least 10 years. The second pillar of the pension system is the retirement allowance or occupational pension which is compulsory, although these are not counted as a public income security system.

The major part of the old-age pension system, National Pension Scheme, is evaluated as a rather progressive system including redistributive functions, since benefits are decided on the bases of the average earnings of the insured as a whole as well as on the individual earnings of the insured. The statutory replacement rate of the pension for 40 years of contributions was 50% in 2008, but will be reduced 0.5pt every year up to 2028 until reaching 40%. The actual replacement rate can be estimated as [Table 5.7], reflecting the change of statutory replacement rate and applying more realistic durations of contribution.

Table 5.6 Old Age pension expenditure and poverty ratios in selected countries.

(units: %)

	proportion of elderly population	pension expenditure to GDP	poverty ratios of the elderly population	working age income support to GDP	poverty ratios of the working age population
Canada	13.9	4.80	7.25	3.14	12.69
Germany	20.3	13.23	8.28	5.25	11.76
Greece	18.7	13.18	20.51	2.22	10.19
Japan	22.8	10.70	20.55	1.88	12.47
Korea	**10.7**	**1.82**	**45.10**	**1.56**	**10.91**

	proportion of elderly population	pension expenditure to GDP	poverty ratios of the elderly population	working age income support to GDP	poverty ratios of the working age population
Netherlands	15.2	5.77	2.35	7.12	8.39
Sweden	18.1	8.76	6.08	7.76	5.17
United Kingdom	16.3	6.21	10.43	5.03	7.87
United States	12.8	6.83	23.72	2.21	16.07

Source: Seok(2012)

Table 5.7 Structure of Old-age Income Security (2010).

<table>
<tr><td colspan="2" rowspan="2">Private</td><td rowspan="4"></td><td>3'rd Pillar</td><td colspan="3">Private pension</td></tr>
<tr><td>2'nd Pillar</td><td>Statutory Retirement Allowance or Occupational Pension</td><td></td><td>Retirement Allowance</td></tr>
<tr><td rowspan="3">Public</td><td>Income-Related (social insurance)</td><td>1'st Pillar (1-2)</td><td colspan="2">National Pension Scheme (recipients: 28.3%)</td><td>Special Occ. Pension (Civil Servants and others)</td></tr>
<tr><td>Fixed-Rate (Tax-based)</td><td>1'st Pillar (1-1)</td><td colspan="3">Basic Old Age Pension (recipients: 70%; 22% of them benefit NPS as well. 8.5% of them benefit NBLSS as well.)</td></tr>
<tr><td>Public Assistance</td><td>0 pillar</td><td colspan="3">National Basic Livelihood Security System (recipients: 8.5%)</td></tr>
</table>

Source: Seok(2012)

(unit: %)

Table 5.8 Expected Actual Replacement Rates of NPS by Joining Time.

Income	join in 1988	join in 2008
150% of mean	42.5	31.3
mean	52.5	37.5
1/2 of mean	82.6	56.2

Note: Seok(2012), estimated on the assumption of 30 years of contribution.

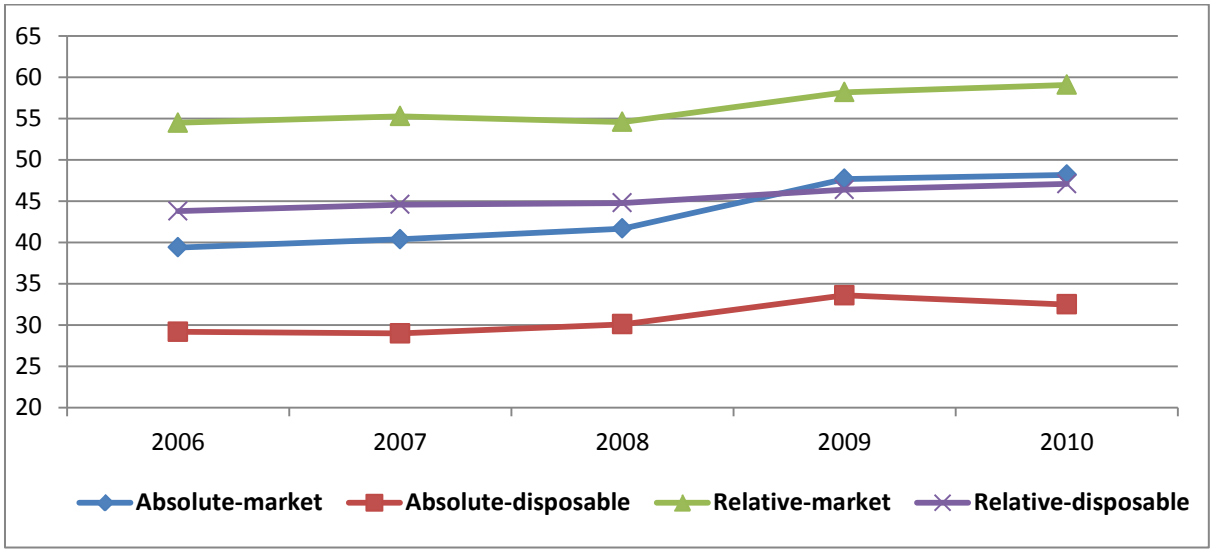
[Table 5.8] and [Figure 5.9] shows us estimates of the effect of the old age pension system on reducing the poverty of the elderly. The extremely high poverty ratio of the elderly does not decrease even after applying several public income transfer programs to them. Although the national pension scheme makes the largest contribution to poverty reduction, the effects are far from impressive. This is partly because the pension scheme has not matured yet since the initiation in 1988 and also because regular workers in large-sized companies were covered by the scheme at the early stage of program development, which means the poorer elderly are still not covered by the scheme. The basic old age pension does not contribute to old age poverty reduction, although the program covers all the elderly persons except the highest 30%. With such small amounts of income transfers, poverty reduction effects cannot be realized.

Table 5.9 Relative Poverty Ratios after Each Public Income Transfer.

	Market income				
	+ 0	+ national pension	+ basic pension	+ other transfer	**+ total public transfer**
total pop	**25.8**	23.9	25.5	25.5	**22.3**
younger than 60	**14.9**	14.6	14.7	14.7	**13.5**
60 or older	**60.7**	53.7	59.9	59.9	**50.4**

Source: Kang &Choi(2011) data: Korea National Statistical Office, Household Income and Expenditure Survey 2009

Figure 5.8 Absolute and Relative Poverty Ratio of the people 65+.



Note: See Figure 5.6. The old is defined as people who aged 65 or older.

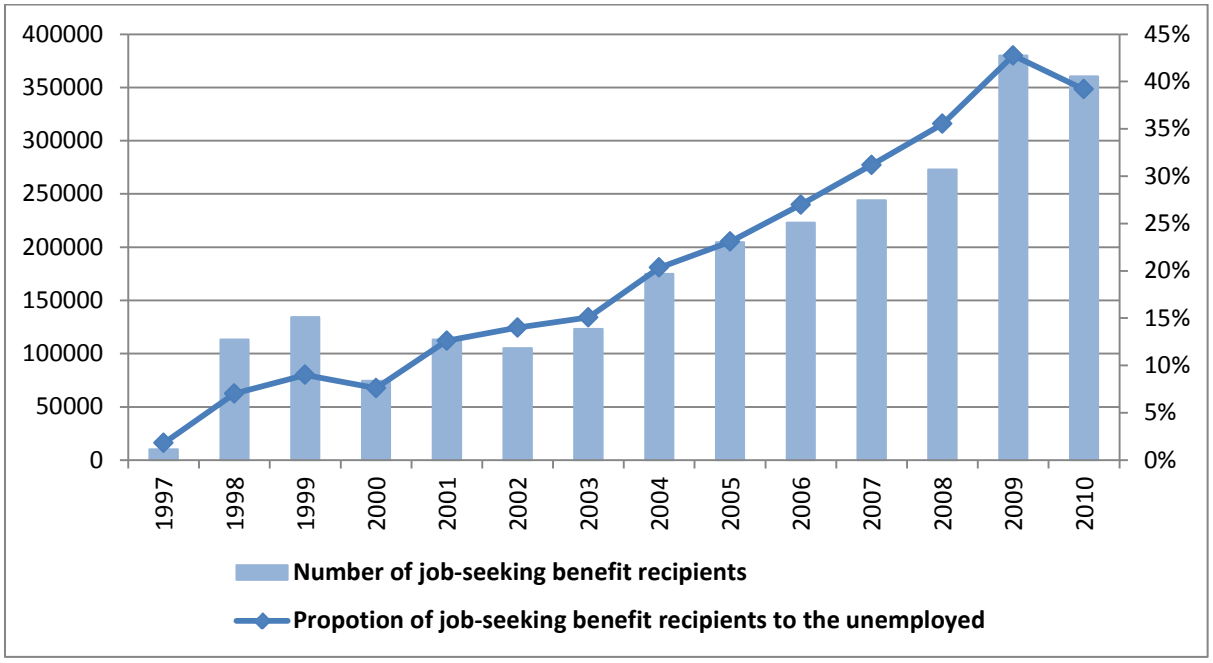
Unemployment Benefits Program

Korea's Employment Insurance System (EIS) and its unemployment benefits program (UB) were launched in 1995 and have gone through a series of institutional improvements for the purpose of reinforcing its effectiveness as a safety net for the unemployed. During the last economic downturn caused by the Global Financial Crisis, more than 40% of the unemployed received benefits in 2009.

[Figure 5.10] shows an indicator of the UB's effectiveness as a safety net, the proportion of UB recipients to the unemployed. The monthly average number of UB recipients and its proportion to the unemployed has increased since the year of program initiation, mostly due to three important institutional changes (Hwang 2012). First, the legal coverage of the UB program has been extended from the firms with thirty or more workers in 1995 to the firms with one or more workers in 1998.[4] Second, the eligibility criteria for UB have been changed in terms of the minimum insured period, the validity of the reason for job separation, and registering for job search. Third, the prescribed periods of UB have been increased.

[4] But, daily workers were not covered at this point of time. The legal coverage of the UB was extended to daily workers in 2004.

Figure 5.9 Trends in the proportion of UB recipients to the unemployed.



Note. Number of UB recipients is average of UB recipients in each month in a particular year

Source: KEIS, Employment Insurance Annual Report; Korea National Statistical Office, Economically Active Population Survey (from Hwang, 2012)

The proportion of UB recipients in [Figure 5.10] is simply a ratio of the number of unemployment benefits recipients to the number of unemployed and it is relatively overstated when compared with that of major European countries which is based on survey. A large proportion people separated from jobs move out of the labor market rather than staying in as unemployed workers, which make the denominator small in calculating the proportion of UB recipients to the unemployed. Lee(2011) provides improved estimates using supplementary information from the Economically Active Population Survey. [Table 5.9] shows that only 11.3% of unemployed wage workers separated within 1 year of survey date are receiving benefits as of August 2009. The gap in the proportion among employment status is quite large. The factors that caused the low rate of benefit receipt can be summarized as follows: First, many workers, particularly irregular workers, are not covered by the UB; Second, strict eligibility criteria deprives benefits from most voluntary workers; Third, a substantial proportion of unemployed workers do not satisfy the contribution criteria because their employment status is unstable (Hwang 2012).

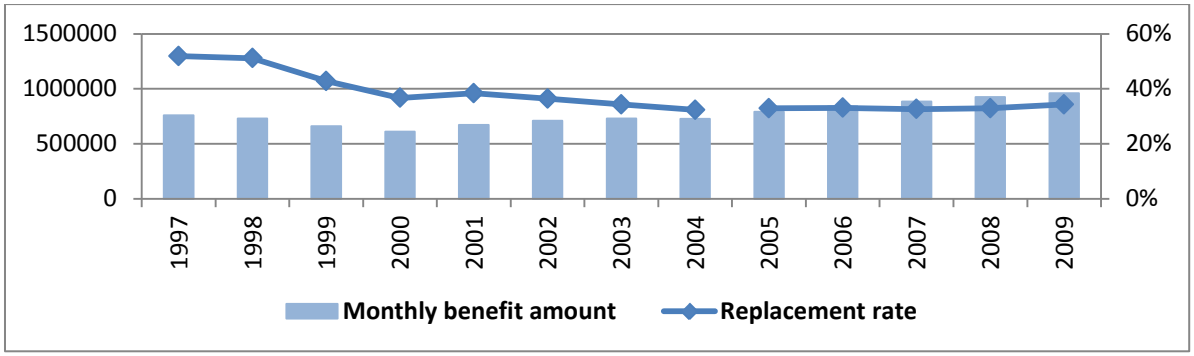
Table 5.10 Distribution of reasons of not receiving UB by employment status. Unit (%)

	not receiving benefits					
	not insured	no sufficient contribution	cause of seperation	others	exhaustion of benefits	receiving benefits
Total	45.0	11.1	22.9	6.8	2.9	11.3
Permanent	9.0	5.7	34.2	7.6	6.6	37.0
temporary	46.9	11.6	25.1	6.5	2.7	7.2
Daily	61.6	13.5	14.9	6.6	1.1	2.3

Source: Korea National Statistical Office, Economically Active Population Survey (Supplementary Survey, 2009. April). Cited from Lee(2011)

The actual daily amount of job-seeking benefits would be set at less than 50 % since it is bound by upper and lower limits. According to [Figure 5.11], the earnings replacement rate, the ratio of the average monthly job-seeking benefits to the average total earnings, declined steadily from more than 51.9% in 1997 to a mere 32.3% in 2004. Regular workers in relatively large firms were included to the UB coverage at the initial stage of the institution but a great number of workers with relatively poorer working conditions entered the UB with the expansion of the coverage in 1998. This explains the decline of earning replacement rates from 1998 to 2000. Average duration of the unemployment benefits is about 120 days since the mid-2000's, although the maximum duration is defined up to 240 days. This is mostly because Korean workers' tenure is much shorter than in other developed counties. Considering eligibility criteria, duration of benefits, and the replacement rates, Korean UB shows relatively low generosity compared to other OECD countries(Hwang, 2011).

Figure 5.10 Trends in monthly benefit amount and replacement rate.



Source: KEIS, Employment Insurance Annual Report (from Hwang, 2012)

Note: The Blue line is broken between 2004 and 2005 because the Korea Employment Information Service provides a different estimate of average monthly job-seeking benefits, which resulted in a slight increase in the indicator from 2005.

5.4.3 Coverage of Social Insurance

For the past several decades, Korea has established a social insurance system including public pension, health insurance, unemployment benefits, and industrial accident insurance. The proportion of social insurance payments in the total social expenditures is huge. Therefore, incomplete coverage of social insurance holds great meaning as to the effectiveness of redistribution policies and disposable income inequality. Who exactly do the social insurance schemes protect?

In particular, national pension and employment insurance serve the function of providing income security, but these two schemes have extremely large blind spots. Jong-gun Kim(2007) warns that, "The very large blind spots in Korea's social insurance schemes erode the foundation of Korea's social security and threaten to turn welfare schemes into new mechanisms that deepen inequality." This implies that greater welfare expenditures will end up exacerbating polarization if the expenditures are used in a manner that excludes the lowest income groups. This danger is rooted in the fact that Korea's social insurance schemes exist within a dual labor market.

First, let us consider the self-employed. Among all employed persons, wage workers account for about 70% while the remaining 30% consist of employers, the self-employed, unpaid family workers and other non-wage workers. Social insurance contributions for wage workers (who subscribe through the workplace) are split equally between the employers and the workers, whereas non-wage workers (region-based subscribers) must shoulder all contributions by themselves, leading to a low rate of subscription for self-employed persons and owners of very small businesses. The 2009 Supplementary Survey on Non-wage Workers conducted as part of the Economically Active Population Survey asked about national pension subscription and found that 21.8% of employers and 44.3% of business owners with no employees did not subscribe to the national pension(Table 5.10). We can surmise that there is a very high possibility that owners of very small businesses remain beyond the protective reach of the safety net that is provided through social insurance.

Table 5.11 Subscription to and receipt of national pension by non-wage workers.

	Employers	Self-employed small business owners	Total
Workplace-based subscribers	40.3	6.7	15.4
Region-based subscribers	33.2	34.7	34.3

	Employers	Self-employed small business owners	Total
Recipients(eligible persons)	4.8	14.3	11.9
Non-subscribers	21.8	44.3	38.4
Total (1,000 persons, %)	1493.7 (25.9%)	4265.9 (74.1%)	5759.6

Source: Korea National Statistical Office. , Economically Active Population Survey Supplementary Survey, August 2009

Wage workers, too, sometimes remain in blind spots and are not protected by the social safety net. [Table 5.11] categorizes wage workers by gender, firm size, wage level and employment type, and looks at employment insurance subscription for each group. In terms of health insurance, all wage workers should be workplace-based subscribers by law, but we discover that many wage workers are in fact region-based subscribers or are enrolled for health insurance as a dependent of another family member. Although this does imply that the law is not being fully complied with, since these wage workers are being still protected by health insurance – albeit in a manner different from that provided for by law – and are therefore not neglected by the social safety net, this part of the study does not focus on health insurance coverage. As for employment insurance, we note that civil servants and extraordinary postal service workers are not eligible for employment insurance but are covered by a different protective mechanism. Meanwhile, those excluded by law from employment insurance coverage include atypical workers who engage in part-time work or are independent contractors, who work under extremely unstable and poor conditions. Therefore, problems that arise due to the lack of employment insurance coverage will mostly arise with the 'excluded' and 'unsubscribed' among the groups in [Table 5.11].

Among all wage workers, 27.1% do not subscribe to the national pension, while for employment insurance, the excluded and the unsubscribed account for 33.4% of all wage workers. Utilizing our previous definitions for the primary and the secondary labor markets, we see that a very insignificant 1.4% and 3.2% of workers in the primary labor market (regular workers in firms with at least 100 persons) are not covered by national pension and employment insurance, while among workers in the secondary labor market, 32.6% do not subscribe to the national pension and 39.8% (including the 'excluded' group) do not subscribe to employment insurance. This tells us that social insurance is not doing very much in terms of providing an employment safety net in the secondary labor market which already suffers from unstable employment and lower wages. This, in turn, implies that it is

extremely difficult for social insurance schemes to achieve their original goal of providing protection against social risks, namely, the loss of income.

This same issue appears in a similar manner in terms of the social insurance subscription rates by wage level, firm size and employment type. Lower-wage groups will require more help from the social safety net provided by state welfare when they experience an interruption to their wage income, but the reality is that these groups are not able to subscribe to the social insurance schemes. Of the low-wage workers who earn less than 2/3 of the median wage, 60% are not covered by the national pension and 66.2% are not protected by employment insurance.

Workers in micro businesses and irregular workers have very unstable employment. As described in the previous section, these groups are constantly exposed to the threat of unemployment and therefore most urgently need protection through the employment safety net. In reality, however, these groups are neglected beyond the scope of protection provided by employment insurance. Among workers in workplaces with less than 5 workers, 61% are not covered by the national pension, while an alarming 73.9% are not covered by employment insurance. Irregular workers also suffer from a similar situation. 48% of irregular workers lack national pension coverage, while 56.8% are not covered by employment insurance.

Table 5.12 Wage worker social insurance subscription rates.

(Unit: %)

All		National pension (+Special occupational pension)			Health insurance				Employment insurance			
		U	WB	CB	U	WB	CB	MA	WBD	CS	S	Ex	U
Wage workers		27.1	65.6	7.3	2.4	67.6	17.6	1.0	11.4	7.7	58.9	8.6	24.8
Wage group	Low-wage	60.0	30.0	10.0	5.6	35.0	31.2	2.8	25.4	0.3	33.6	16.4	49.8
	Mid-wage	22.0	69.7	8.3	1.8	70.7	18.0	0.5	8.9	3.4	67.2	6.8	22.6
	High-wage	4.4	92.6	3.0	0.3	93.2	4.4	0.0	2.1	21.5	69.5	4.0	5.1
Firm size	1-4	61.0	25.6	13.4	5.3	27.1	39.0	2.4	26.2	0.4	25.7	16.1	57.8
	5-9	38.4	51.1	10.6	3.8	54.1	25.9	1.1	15.1	0.9	51.8	6.1	41.2
	10-29	23.5	69.5	7.0	2.1	72.3	15.0	1.0	9.5	4.7	67.3	9.4	18.7

	30-99	13.4	81.5	5.1	1.0	83.6	9.1	0.5	5.9	14.6	68.1	8.8	8.5
	100-299	6.2	91.8	2.0	0.6	92.5	4.0	0.1	2.8	12.0	79.6	3.4	5.1
	300-	3.6	95.4	1.0	0.1	95.9	2.1	0.1	1.8	19.8	74.5	2.0	3.8
Employment type	Regular	16.8	78.6	4.6	1.7	79.6	11.8	0.5	6.4	10.9	67.2	1.5	20.4
	Irregular	48.0	39.3	12.7	3.8	43.3	29.6	1.9	21.4	1.3	42.1	22.8	33.9
	Contingent	31.7	60.9	7.4	3.0	66.9	16.3	1.5	12.3	2.1	63.8	12.3	21.9
	Part-time	81.4	8.4	10.2	6.2	9.6	36.7	3.4	44.1	0.7	10.0	37.6	51.7
	Atypical	57.8	21.4	20.8	3.6	28.0	42.7	2.3	23.2	0.1	28.1	36.8	35.1

Note1: U = unsubscribed, WB = workplace-based, CB = community-based, MA = medical aid, WBD = workplace subscriber dependent, CS = civil servants and others, Ex= legally excluded, S = subscribed.

Note2: For wage groups, 'low-wage' is less than 2/3 of the median value for hourly wage, 'high-wage' is at least 3/2 of the median value, and 'mid-wage' is in between 2/3 and 3/2.

Note3: Irregular=contingent, part-time & atypical; Contingent=fixed-term & repeat contractual; Atypical=dispatched, agency, independent contractor, home-based and daily workers

Data: National Statistics Korea, Economically Active Population Survey march 2010 (Supplementary survey on Employment Type)

5.4.4 Remarks on Redistributive Effects of Tax and Social Expenditure

The redistribution effect of taxes and social expenditure in Korea is known to be insignificant. GINI coefficients of market income and those of disposable income for Korea were 0.368 and 0.311, respectively, in 2006. After adding publically transferred income to HH market income and subtracting tax and social security contribution, the GINI coefficient is reduced only of 15% in Korea, while the reduction as a percentage is 40% or more in all the Nordic and western European countries. Southern European countries and English speaking countries tends to show lower percentage reductions, but is still much greater than Korea.

Three reasons for the less effective redistribution policies can be identified from the observations described before. First, the volume of social expenditure itself as a percentage of GDP is still insufficient, although it has increased during the recent several decades. Second, public income transfer non-proportionally depends on the social insurance system, which has lack of coverage so far. The low income population is less likely to be covered by social insurance as well. Third, the public pension scheme has not yet matured, although it is progressively designed. Ineffectiveness of the public pension in protecting the elderly results in a very high rate of poverty in elderly population(45%).

However, there is some evidence of the improvement of policy effectiveness as well. The decomposition of inequality change in the recent 15 years reveals that the public transfer and taxation worked positively to reduce the income inequality, although the policies were not enough to overcome the rapid growth of labor income inequality. According to [Table 2.6], public transfer contributed to reduce the income gap between the highest and lowest income groups as much as 18%, and tax and social security payment contributed to a 48% reduction of inequality, while employment income is responsible for 122% of the inequality increase during the period between 1996 and 2011.

It is worth mentioning that the 1999 public assistance reform improved the policy effectiveness to reduce poverty. The National Basic Livelihood Security System (NBLSS) was implemented in 2000, and under this system, cash and in-kind benefits are provided to the poor to guarantee a minimum standard of living, regardless of their ability to work. The benefit per person also increased about threefold following the NBLSS reform. The effectiveness of public assistance can be measured by how much the policy decreases the poverty ratio rather than the income inequality in general. The difference between poverty ratios based on market income and on current income were 0.09%p in 1996 and the figure increased to 1.30%p in 2006.

5.5 Conclusion

As labour income is the major reason behind the increasing income inequality, labor market policies are very important to contain worsening inequality in Korea. Particularly in the midst of the wide-spread low-wage sector, the minimum wage policy is a very powerful means to combat inequality.

The Minimum Wage Act was enacted in 1987, and entered into force in 1988. The increasing rate of minimum wage began to catch up with the average wage growth rate, and the influencing rate (Number of beneficiaries/Number of applied employee*100) started to increase only after the crisis and the change of political power in 1998.

It is known that the minimum wage has not been successful in raising the relative wage level of low-wage workers. This is because minimum-wage regulations are not strictly enforced and complied with. The share of workers earning below minimum wage has been increasing from 2000 to 2009. Even at the moment, a considerable number of workers(around 2 million) are below the minimum wage.

Even though it is argued that minimum wage is not effective in reducing household income inequality because the minimum wage could result in assisting low-wage workers in high income households, the distributional effect of minimum wage is greater than that of EITC, which was introduced in 2008

to purportedly protect low-income families. Considering the supply of low-skilled labor increases in labor market as a result of EITC, MW would be a more effective way of supporting the low-income families by preventing wage reduction of low-skilled workers.

Already existing socioeconomic inequalities are reproduced by weak unionization for the disadvantaged and the prevalence of company-level industrial relations limiting collective bargaining coverage. The company union system of Korea does not contribute to reducing wage inequality. This means that improvement of inequality will be partly dependent on changes in Korea's industrial relation system.

The redistribution effect of tax and social expenditure in Korea is known to be insignificant. GINI coefficients of market income and of disposable income for Korea were 0.368 and 0.311, respectively, in 2006. After adding publically transferred income to HH market income and subtracting tax and social security contribution, GINI coefficient is reduced by only 15% in Korea.

Three reasons for the less effective redistribution policies are identified from the observations in this chapter. First, the amount of social expenditure itself as a percentage of GDP is still insufficient, although it has increased during the recent several decades. Second, public income transfer non-proportionally depends on social insurance system, which has lack of coverage so far. Low income populations are less likely to be covered by social insurance as well. Third, the public pension scheme is not matured enough, although it is progressively designed. Ineffectiveness of public pension to protect the elderly results in very high rates of poverty in the elderly population.

However, there is some evidence for the improvement of policy effectiveness as well. The decomposition of inequality change over the recent 15 years reveals that the public transfer and taxation worked positively to reduce income inequality, although the policies were not enough to overcome the rapid growth of labor income inequality.

The National Basic Livelihood Security System (NBLSS), implemented in 2000, was effective in reducing poverty. With the public assistance reform, cash and in-kind benefits are provided to the poor to guarantee a minimum level of living, regardless of their ability to work. The difference between poverty rates based in market income and in current income were 0.09%p in 1996 and the figure increased to 1.30%p in 2006.

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Appendix

Appendix Table 1 Decomposition of Income Inequality: Gap between the highest and the lowest income groups (Working Age HH's) - extended version of Table 2.6

	estimates	contribution
(1) ΔN^*	0.1743	1.0000
(2) $\phi_h \Delta W_h^*$	0.1941	1.1133
(3) $\phi_h \Delta P_h^*$	0.0476	0.2728
(4) $\Delta\phi_h (W_h^* + P_h^*)$	-0.0367	-0.2106
(5) $\phi_s \Delta W_s^*$	0.0193	0.1108
(6) $\phi_s \Delta P_s^*$	0.0025	0.0144
(7) $\phi_s \Delta \delta^{*a}$	0.0131	0.0753
(8) $\Delta\phi_s (W_s^* + P_s^* + \delta^*)$	0.1223	0.7013
(9) $\phi_O \Delta O^*$	-0.0102	-0.0585
(10) $\Delta\phi_O O^*$	0.0515	0.2952
(11) $\phi_C \Delta C^*$	-0.0266	-0.1527
(12) $\Delta\phi_C C^*$	-0.1219	-0.6992
(13) $\phi_{PRT} \Delta PRT^*$	0.0682	0.3913
(14) $\Delta\phi_{PRT} PRT^*$	-0.0037	-0.0210
(15) $\phi_{PUT} \Delta PUT^*$	-0.0310	-0.1780
(16) $\Delta\phi_{PUT} PUT^*$	0.0283	0.1621
(17) $\phi_{TAX} \Delta TAX^*$	-0.0845	-0.4846
(18) $\Delta\phi_{TAX} TAX^*$	-0.0700	-0.4018
(19) ε	0.0122	0.0699

notes : Oother family member's labor income, Ccapital income, PRTprivate transfer income, PUTpublic transfer income, TAXtax and social security contribution.
Source: Korea National Statistical Office, HES 1996, NSHIE 2011.

Appendix Table 2 Social expenditure by program including mandatory private expenditure.

1990	Cash	in-kind	Total
OLD AGE	24.91	0.89	25.80
SURVIVORS	4.87	0.18	5.04
INCAPACITY	11.09	0.84	11.93
HEALTH	-	49.69	49.69
FAMILY	0.04	0.98	1.01
ALMP	-	0.86	0.86
UNEMPLOYMENT	-	-	-
OTHER	4.82	0.85	5.67
Total	45.72	54.28	100.00

2000	Cash	in-kind	Total
OLD AGE	32.40	0.67	33.07
SURVIVORS	2.97	0.14	3.11
INCAPACITY	6.55	2.10	8.66
HEALTH	-	39.36	39.36
FAMILY	0.69	1.94	2.63
ALMP	-	6.92	6.92
UNEMPLOYMENT	1.41	-	1.41
OTHER	4.67	0.18	4.85
Total	48.69	51.31	100.00

Total	48.69	51.31	100.00
2007	Cash	in-kind	Total
OLD AGE	22.25	2.55	24.81
SURVIVORS	3.05	0.06	3.11
INCAPACITY	6.20	2.08	8.28
HEALTH	-	42.90	42.90
FAMILY	0.82	5.87	6.69
ALMP	-	1.59	1.59

Total	48.69	51.31	100.00
UNEMPLOYMENT	3.06	-	3.06
OTHER	1.56	7.99	9.55
Total	36.95	63.05	100.00

Source: OECD Social Expenditure DB.

Appendix Table 3 Log-Table Korea

		1981-1987	1988-1993	1993-1997	1997-2003	2003-2008	2008-2011	Figure in Report
Chapter 1	Share of Employment of Manufacturing	↗	↘	↘	→	↘	→	Figure 1.1
	Ratio of Foreign Trade to GDP	↘	↘	↗	↘	↗	→	Figure 1.1
	Population Growth Rate	→	→	→	↘	↘	→	Figure 1.3
	Total Fertility Rate	→	→	↘	↘	↗	↘	Figure 1.3
	Employment Rate	↗	↗	↗	↘↗	→	→	Figure 1.4
	Unemployment Rate	↘	↘	↘	↗↘	→	→	Figure 1.4
	Ratio of Wage Earners to Total Employees	↗	↗	→	↗	↗	↗	Figure 1.5
	Labour' Share	→	↗	↗	↘	→	→	Figure 1.5
Chapter 2	GINI(household market income)	→	↘	→	↗	↗	→	Figure 2.2
	GINI(household disposable income)	→	↘	→	↗	↗	→	Figure 2.2
	Share of Lowest 20%	n.a.	n.a.	↘	↘	↘	→	Figure 2.3
	Share of top 20%	n.a.	n.a.	→	↗	↗	→	Figure 2.3
	Absolute Poverty Rate	n.a.	n.a.	↘	↗↘	→	→	Figure 2.5
	Relative Poverty Rate	n.a.	n.a.	→	↗↘	↗	→	Figure 2.5
	Wealth Inequality	n.a.	n.a.	↘	↗	→	→	Figure 2.6

	Wage Inequality	↘	↘	→	↗	↗	→	Figure 2.8
	(P90/P10) of Wage	↘	↘	→	↗	↗	→	Figure 2.8
	(P90/P50) of Wage	↘	↘	→	↗	↗	→	Figure 2.8
	(P50/P10) of Wage	↘	↗	↗	↗	↗	→	Figure 2.8
	Wage Premium for College	↘	↘	↗	↗	↗	↘	Figure 2.11
	Number of College Graduate	↗	→	↗	↗	↗	↘	Figure 2.19
	Wage Premium for Lagre Establishments	→	↗↘	↗	→	↗	↘	Figure 2.11
	Share of Export to the US	↗	↘	↘	↗↘	↘	↘	Figure 2.12
	Share of Export to China	n.a.	n.a.	↗	↗	↗	→	Figure 2.12
	Gini of Educational Years	n.a.	n.a.	↘	↘	↘	↘	Figure 2.18
	Inequality of Education Expenditure	n.a.	↘	→	↗	↗	↗	Figure 2.20
	Income Mobility: Maintaining Income Status	n.a.	n.a.	→	→	↗		Figure 3.2
Chapter 3	Income Mobility: Maintaining Poverty Status	n.a.	n.a.	↗	→	↗		Figure 3.2
	Divorce Rate by Economic Problems		→	↗	↗	→	↘	Figure 3.5
	Marriage Rate	n.a.	n.a.	→	↘	↗↘	→	Figure 3.9
	Inequality in Self-Reported Health Status	n.a.	n.a.		→	→	→	Figure 3.10
	Crime for a living	n.a.	n.a.	→	↗	↗	→	Figure 3.14
	Suicide Rate	n.a.	n.a.	→	↗	↗	→	Figure 3.14

	Vote Turnout Rate	n.a.	↗	↘	↘	↘	→	Figure 4.1
Chapter 4	Participation rate in community activities	n.a.	n.a.	n.a.	n.a.	↘	↗	Figure 4.5
	Political Orientation towards liberal	n.a.	n.a.	n.a.	n.a.	→	↗	Figure 4.12
	Agreeing inequalities are problematic	↗	↗	→	→	→	n.a.	Figure 4.15
	Minimum Wage Growth Rate	n.a.	n.a.	↘	↗↘	→	↘	Figure 5.1
Chapter 5	Share of Workers earning below minimum wage	n.a.	n.a.	↗	↗	↗	→	Figure 5.2
	Ratio of Income Tax to GDP	n.a.	↘	→	↗	→	→	Figure 5.5
	Social Security Contribution	n.a.	↗	↗	↗	↗	→	Figure 5.5
	Proportion of UB recipients to the unemployed	n.a.	n.a.	n.a.	↗	↗	→	Figure 5.10
	Replacement Rate of UB	n.a.	n.a.	n.a.	↘	→	→	Figure 5.11