

# New Labor Market Challenges in High-Income Korea.

Yong-seong Kim

Research Fellow,  
Public and Private Infrastructure Management Center  
Korea Development Institute

2011. 9.

## Abstracts

In this paper, recently observed structural changes in Korean labor market are reviewed. For several decades, Korean economy has grown steadily from one of the poorest countries to a leading middle income country. However, the economic growth comes at its expense. A recent jobless growth cannot create sufficient jobs, and a young generation has severe difficulties in finding a job. Moreover, labor market becomes segmented between permanent and temporary workers. As a consequence, income distribution is bi-polarized with rising income inequality. Unless these labor market issues are addressed effectively, the substantiality of economic growth might be in a question.

## I. Introduction

Korea is known for a model of economic success to many countries. From one of the poorest countries in 1950s, Korea now becomes one of the leading middle income countries. Starting from low-tech industries such as agriculture, Korean economy has advanced to high-tech and heavy industries such as electronics, semi-conductor, automobile, and ship building. In the course of economic development, GDP has grown at 5~7% per annum. The living standard of people remarkably improves and absolute poverty rate dramatically declined.

While the positive sides of economic success are well recognized, the negative sides receive little attention. Economic growth and fair distribution sometimes go together, but more often they do not. In particular, current labor market challenges facing Korean economy threaten the substantiality of economic growth in the future.

This paper introduces noticeable labor market changes, and their implication on income distribution. The paper is organized as follows. The next section briefly reviews economic development in Korea over decades, showing how it rapidly and successfully improves the living standards and reduces poverty.

In section III, several labor market challenges are pointed out. First, economic growth does not create sufficient jobs in quantity. Under increasing competitive pressures, firms try to minimize the use of labor. As a result, there is a concern about 'jobless growth'. Second, socially disadvantaged groups such as young generation are excluded from the benefits of economic growth. Sizable youths are discouraged in the labor market and they have difficulties in getting jobs. Given that Korea is experiencing rapid population aging, jobless youth is a serious waste of valuable national resources. Third, a labor market is on the way to segmentation between temporary and permanent workers. Economic and social tensions are mounting due to the gaps between permanent and temporary workers.

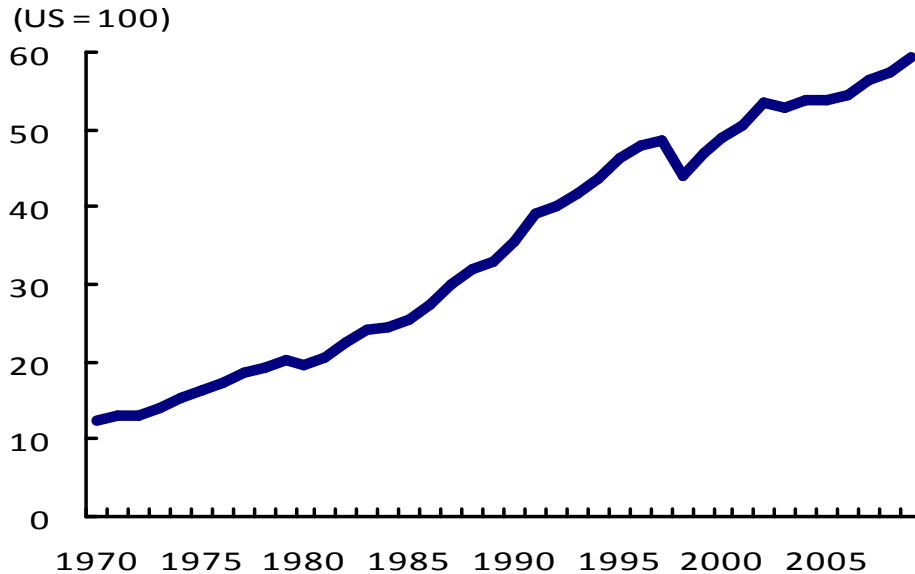
Section IV mentions an increase in income inequality and income bi-polarization. Since labor income is a primary source for a household's income, changes in labor market structure necessarily affects income distribution. Given that recent changes in labor market are structural, unequal income distribution and polarization may persist unless the labor market challenges are addressed effectively. Finally, section V concludes this paper.

## II. Economic growth over time

Korea, one of the poorest countries in 1950s, has experienced rapid economic growth since 1960s. The rate of economic growth recorded 7.7% per annum during 1961~1970, 7.7%, 7.3% during 1971~1980, and 8.6% in the period of 1981~1990. Since then, Korean economy grew slowly at 5.8% during 1991~2000, and 4.5% currently.

As the economy continues to grow, per capita income of Korea has increased dramatically. According to Figure 2-1, in early 1970s per capita income was at only 20% of that of the U.S. Currently, Per capita income of Korea reaches to almost 60% of per capita income of the U.S.

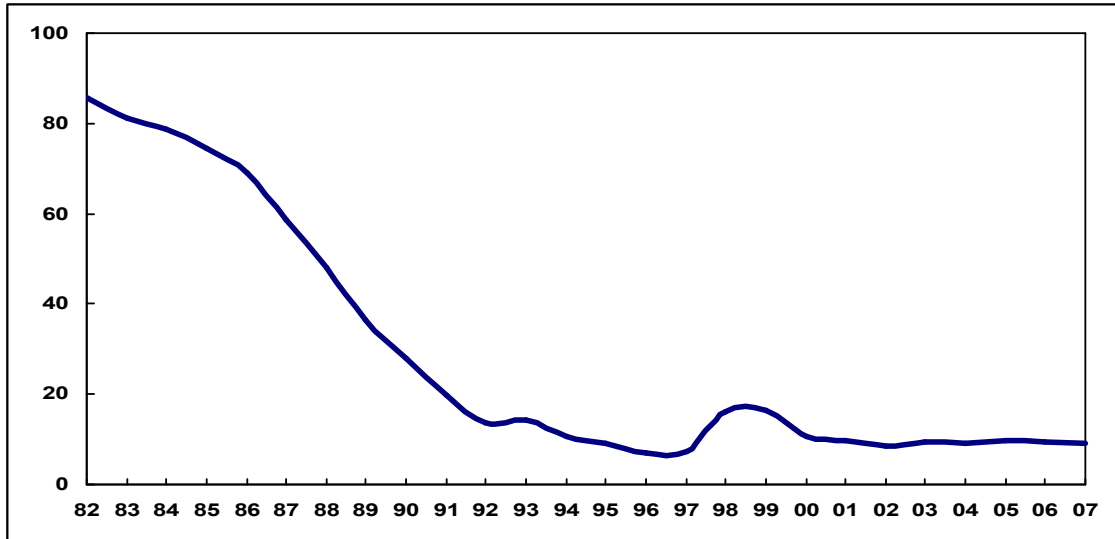
[Figure 2-1] Per capita income of Korea as percent of the U.S. per capita income



Source: OECD

There is no doubt that an economic growth is a main determinant to alleviate poverty in Korea. Figure 2-2 illustrates the trend of the absolute poverty rate based on the official poverty line of year 2000. The proportion of households below the poverty line appears to be approximately 80% in early 1980s. The numbers dramatically decreased to 9.2% in 2007.

[Figure 2-2] Absolute poverty: Korea 1982~2007



Source: National Statistical Office, Family Income and Expenditure Survey, various years

It is fair to say that the economic growth has many positive impacts on the Korean society. However, it is undeniable that the economic growth has created problems of itself as well.

In the following sections, each labor market challenge facing Korean economy is introduced in turn. The relationship between economic growth and overall employment is investigated from the past data and future employment is predicted. In short, total employment becomes less responsive to economic growth. Furthermore decline in rate of economic growth discourages employment and the structure in labor market are changed in a way that employment growth is not as easy as in the past. Economic growth appears to affect labor market participants differently. A young generation has difficulties in finding suitable jobs. Dual labor market dividing workers with the protection of job security and those without it becomes more distinctive. These kinds of labor market challenges are sure to have profound impacts on income distribution and poverty.

### III. Labor market challenges facing Korean economy

#### 3-1. Weakened linkage between growth and employment

As known, rate of economic growth and job creation are related each other through the elasticity of employment with respect to economic growth. From past experiences during several decades, Korean economy witnessed that 1% increase in economic growth was associated with 0.3~0.4% increase in employment. Currently, the elasticity appears to decrease to 0.27, implying that an increase in employment is expected not as much as what it used to be. One of reasons is to do with changes in ongoing industry structure and method of production. In the period of industrialization until 1980, the manufacturing sector could absorb idle labor force and thus created jobs. Since 1990s, a service sector which gradually emerged taking the largest share in labor force fails to generate sufficient jobs. A majority of business in the service sector is in the form of traditional type such as retails and wholesales and restaurants

Furthermore, the rate of growth in economy is forecasted to decrease in mid-long term horizon. In early 2000, a growth accounting estimates potential GDP growth to be mid 4%. For the periods 2011~2020, the rate is estimated as approximately 4% and it will continuously decrease to 1.6% by 2040. A primary reason for declines in GDP growth is a low birth rate and population aging facing Korean society. Aging and declining in population will reduce labor force available and will limit the rate of economic growth in the future. A low elasticity of employment and slowdown in economic growth may cause a problems in job availability in the future.

<Table 3-1> Elasticity of employment with respect to GDP growth

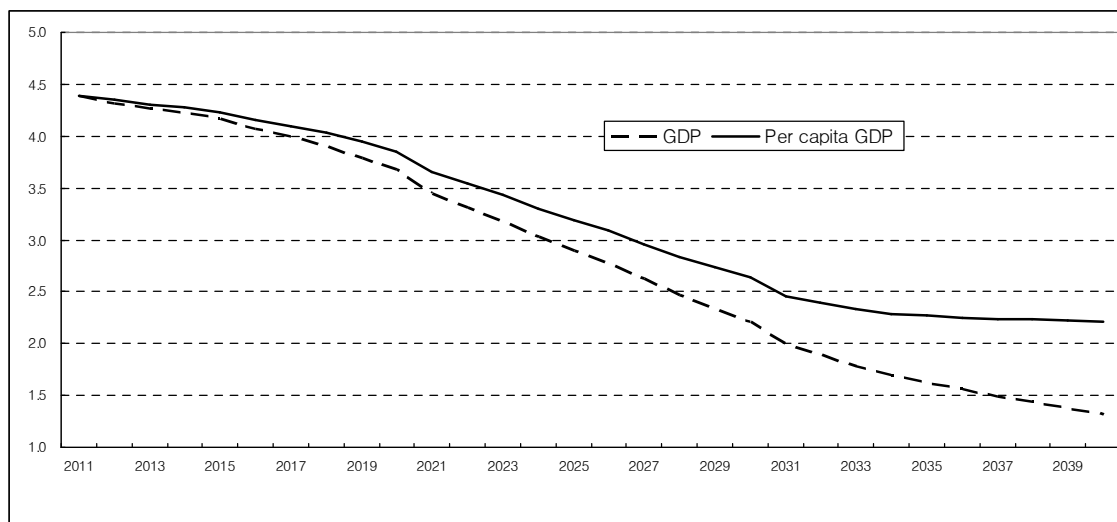
Year	All industries	Manufacturing	Services			
				Whole-retail service and restaurants and Hotels	Producers' services	Social services
1994	0.37	0.07	0.74	0.90	1.02	0.61
1995	0.31	0.11	0.58	0.40	0.88	1.38
1996	0.31	-0.30	0.76	0.76	1.14	0.58
1997	0.37	-0.82	0.87	1.31	1.28	1.15
1998	0.88	1.73	0.68	0.43	1.43	-6.31
1999	0.19	0.13	0.56	0.19	1.41	1.99
2000	0.50	0.39	0.69	0.03	2.01	-1.60
2001	0.51	-0.28	0.83	0.46	2.63	1.12
2002	0.40	-0.08	0.51	0.39	0.43	1.80
2003	-0.04	-0.15	0.23	0.86	2.19	2.12
2004	0.40	0.18	1.51	-1.10	11.25	1.20
2005	0.32	-0.18	0.70	-0.47	1.26	1.92
2006	0.26	-0.19	0.61	-0.22	1.33	1.27
2007	0.27	-0.22	0.50	-0.19	1.14	0.70

note: 1) elasticity of employment=rate of growth in employment/rate of growth in GDP. For 2007, the numbers for 1/4~3/4 qtr

2) producers; service = finance & insurance + real estate & business services

3) social services =public administration, national defense & services for social welfare+educational services+public health

[Figure 3-1] Rate of GDP(real) growth and per capita GDP: Long-term projection



Source: Hahn et al(2006)

### 3-2. Troubled with providing jobs for youth

It is very common that incidence of joblessness is much higher for youth than for prime age workers. <Table 3-2> compares unemployment rate for youth and for prime age group across major OECD countries. The ratio of unemployment rate for youth to prime age group is roughly 2~3, indicating that youth unemployment is a serious problem in most countries. Simple comparison shows that Korea does fair in coping with youth unemployment problem. The unemployment rate is 8% which is the lowest level in the comparison.

<Table 3-2> Comparison of youth and prime age group: unemployment rate

country	Unemployment rate for youth (A)	Unemployment rate for prime age (B)	ratio (A/B)
Korea	8.0	2.8	2.9
Australia	10.8	3.9	2.8
Canada	12.4	5.8	2.1
Germany	15.2	10.4	1.5
France	22.8	8.7	2.6
Italy	24.0	6.7	3.6
Japan	8.7	4.2	2.1
Norway	12.0	4.0	3.0
U.K	11.8	3.5	3.4
U.S.A	11.3	4.1	2.8

Note: 1. Youth: 15~29 old for Korea., 16~24 old for Norway, U.K and U.S., and 15~24 old for other countries.

2. Prime age: 30~60 old for Korea, and 25~55 old for other countries

Source: OECD Employment Outlook, 2006.

However if one looks further in detail, he/she might notice that labor market situation is more serious than it appears. Let  $u$  be unemployment rate,  $p$  be rate of labor force participation rate, and  $e$  be employment rate. Then it can be shown that  $u = 1 - e/p$ . Suppose that  $A$  country has proportionally higher employment rate and labor force participation than  $B$  such that  $e_A = (1 + \beta)e_B$  and  $p_A = (1 + \beta)p_B$ . In that case, both countries have the same unemployment rate (i.e.,  $u_A = u_B$ ). But in  $A$  country, young individuals are more willing to participate labor force and have higher chance of being employed than  $B$  country. Thus, unemployment rate alone can not be instructive to understand the situation of youth labor market.

<Table 3-3> shows cross-country comparison of labor force participation rate. The result is quite striking. Youth labor force participation of Korea is only 48.4% which belongs to a lower group with Italy(33.5%), France(33.7%) and Japan(44.8%). Australia has the highest 71.3% of labor force participation followed by countries like U.K, Canada, U.S.A, and Norway. A low rate of labor force participation is due to either lack of willingness to work or not actively searching for a job. This phenomenon is commonly observed in a situation where a young individual gives up job searching efforts after several times of failure in getting a job.

<Table 3-3> Comparison of youth and prime age group: labor force participation

country	labor force participation rate for youth (A)	labor force participation rate for prime age (B)	ratio (A/B)
Korea	48.8	75.2	0.6
Australia	71.3	82.0	0.9
Canada	65.9	86.3	0.8
Germany	50.2	86.4	0.6
France	33.7	87.2	0.4
Italy	33.5	77.4	0.4
Japan	44.8	82.5	0.5
Norway	60.2	86.6	0.7
U.K	66.7	84.0	0.8
U.S.A	60.8	82.8	0.7

Note: 1. Youth: 15~29 old for Korea, 16~24 old for Norway, U.K and U.S., and 15~24 old for other countries.

2. Prime age: 30~60 old for Korea, and 25~55 old for other countries

Source: OECD Employment Outlook, 2006.

<Table 3-4> shows cross-country comparison in employment rate. As expected, countries with a low labor participation for youth have a low employment rate. Therefore, it is obvious that low unemployment rate for youth in Korea is not because labor market for youth is relative favorable to other countries. Rather it is because young people are less likely to participate labor force, and have lower chance of finding a job.

<Table 3-4> Comparison of youth and prime age group: employment rate

country	employment rate for youth (A)	employment rate for prime age (B)	ratio (A/B)
Korea	44.9	73.1	0.6
Australia	63.6	78.8	0.8
Canada	57.8	81.3	0.7
Germany	42.6	77.4	0.6
France	26.0	79.6	0.3
Italy	25.5	72.2	0.4
Japan	40.9	79.0	0.5
Norway	52.9	83.2	0.6
U.K	58.6	81.1	0.7
U.S.A	53.9	79.3	0.7

Note: 1. Youth: 15~29 old for Korea,, 16~24 old for Norway, U.K and U.S., and 15~24 old for other countries.

2. Prime age: 30~60 old for Korea, and 25~55 old for other countries

Source: OECD Employment Outlook, 2006.

There are a few signs of depressed Korean youth labor market. <Table 3-5> shows the rate of changes in employment over the recent business cycles in Korea. Stating the end of 2008, the global financial crisis hit Korean economy, having its impact on labor market in the first half of 2009. Employment of prime age workers declined and it was reduce to -0.18% by the second quarter of 2009. With a quick recovery of the economy from the crisis, the employment of prime age workers started to increase since the third quarter of 2009.

But a story for youth employment is quite different. Youth labor market responded negatively and immediately to the global financial crisis. In the first quarter of 2009, youth employment already dropped sharply to -5.1%. Unlike prime age group, youth unemployment continued to decline even in the period of economic recovery. This shape of youth employment hints a conjecture that young people are `first-out` (of employment in downturn) and `last-in` (to employment in upturn).

<Table 3-5> Business cycle and rate of change in employment by age groups

	2009 I	2009 II	2009 III	2009 IV	2010 I	2010 II	2010 III
Business cycle index	94.2	96.6	98.6	98.9	100.0	101.4	101.8
Rate of increase in youth(15~29) employment	-5.1	-2.4	-3.0	-1.9	-0.3	-1.4	-1.1
Rate of increase in prime age(30~64) employment(%)	0.34	-0.18	0.62	0.36	0.76	2.48	2.09

Note: year-to-year rate of employment growth

Source: Bank of Korea Business indicator, and National Statistical Office, Survey on economically active population

Another sign for depressed Korean youth labor market comes from the comparison of youth unemployment rates. Unemployment rate can be narrowly (publicly announced) defined unemployment and broadly defined. The National Statistical Office regards the unemployed if he/she has willing to work and actively searches for a job. Many pointed out that this definition is too narrow to capture the situation of youth labor market. In fact, many discouraged young people tend to give up job searching activity after several failures of being employed even if they still wish to work. <Table 3-6> shows narrowly and broadly defined unemployment rates for youth and the differences between them over time. As shown, there is a sizable difference between two rates. Moreover, the gap is increasingly widened, indicating that a 'discouraged worker problem' is serious in Korean youth labor market.

<Table 3-6> Youth unemployment: importance of joblessness

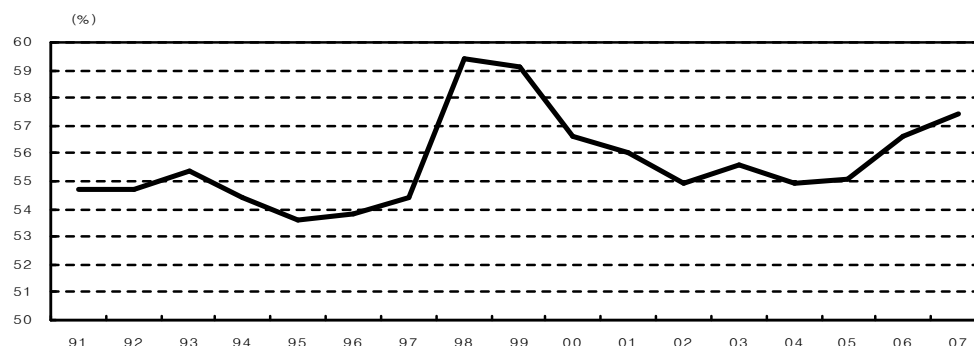
(단위: %)

	official unemployment rate (A)	broadly defined unemployment rate <sup>1</sup> (B)	differences (B-A, %p)
2003	8.0	9.2	1.2
2004	8.3	9.5	1.2
2005	8.0	9.3	1.3
2006	7.9	9.2	1.3
2007	7.3	8.7	1.4
2008	7.1	8.9	1.8
2009	8.1	10.3	2.2
2010 Q1-Q3	8.1	10.7	2.6
평균	7.9	9.5	1.6

Source: National Statistical Office, Survey on economically active population

In order to see what is happening in the youth labor market, it is important to focus on joblessness rather than unemployment. The following figure illustrates the share of jobless youth over time. Before 1997, the share appears to be stable around 55%. The outbreak of the financial crisis raises the share of joblessness dramatically. However, the shock turned out to be temporary such that the share returned back to pre-financial crisis level as the economy recovered from the financial crisis. An interesting point is after the recovery when the economy has expanded without noticeable negative shocks. During that period, the problem of joblessness for youth did not have any substantial improvement. In fact, the problem of joblessness for youth gets worse. It is partly because the financial crisis changed employers' hiring practices to minimize new recruitment as possible as they can. The main victims of this hiring strategy are new entrants of labor market, or young people.

[Figure 3-2] Share of youth without jobs



Source: National Statistical Office, Survey on economically active population .

Furthermore, the quality of unemployment becomes deteriorated. One can examine the quality of unemployment by decomposing unemployment rate into its components. Let's define an individual  $i$ 's unemployment rate by  $u_i$ . Then  $u_i$  can be calculated by dividing individual  $i$ 's duration of unemployment( $W_{ui}$ ) by duration of economically active time( $W_{Li}$ ). That is  $u_i = W_{ui} / W_{Li}$ . Once  $u_i$  is defined in the way, overall unemployment rate( $u$ ) is a weighted average of  $u_i$ , where the weight( $p_i$ ) is determined by the proportion of an individual  $i$ 's economically active time( $W_{Li}$ ) to the sum of all  $W_{Li}$ ( $\sum W_{Li}$ ) (Leighton and Mincer, 1982). The following equation shows how overall unemployment is related to each components.

$$(1) \quad u = \frac{\sum(p_i u_i)}{\sum p_i} = \frac{\sum W_{Li} u_i}{\sum W_{Li}} = \frac{\sum W_{ui}}{\sum W_{Li}} = \frac{N}{L} \frac{\overline{W}_u}{\overline{W}_L},$$

where  $p_i = W_{Li} / \sum W_{Li}$ ,  $N$  is number of persons who experience unemployment,  $L$  is number of persons who are economically active(either employed or unemployed),  $\overline{W}_u$  is an average of unemployment duration among those who have experienced unemployment, and  $\overline{W}_L$  is an average of economically active period.

<Table 3-7> presents the decomposition results. For 2003, the officially released unemployment (narrowly defined) rate for youth is 8.0%. The decomposition shows that 20% of youths have experienced unemployment with average duration of 2.34 month(=0.195×12month) in 2003. Interestingly, the rate of unemployment for youth in 2010 recorded 8% as the same level as in 2003. However, in 2010, 15.7% of youths have experienced unemployment. The proportion of unemployed youth decreased from 2003 to 2010. On the other hand, the average duration of unemployment in 2010 is 3.94 month(=0.253×12month) which is longer than in 2003.

<Table 3-7> Decomposition of unemployment rate for youth

Narrowly defined unemployment rate					
	<i>N/L</i>	<i>W<sub>u</sub></i>	<i>W<sub>o</sub></i>	$1/(1-W_o)$	<i>U</i>
2003	0.200	0.195	0.515	2.061	0.080
2004	0.215	0.192	0.500	1.999	0.083
2005	0.183	0.217	0.504	2.015	0.080
2006	0.176	0.220	0.508	2.031	0.079
2007	0.167	0.211	0.512	2.050	0.073
2008	0.169	0.202	0.523	2.094	0.072
2009	0.192	0.206	0.511	2.045	0.081
2010	0.157	0.253	0.504	2.015	0.080
.....					
Broadly defined unemployment rate					
	<i>N/L</i>	<i>W<sub>u</sub></i>	<i>W<sub>o</sub></i>	$1/(1-W_o)$	<i>U</i>
2003	0.266	0.255	0.509	2.036	0.138
2004	0.289	0.257	0.493	1.973	0.147
2005	0.259	0.301	0.497	1.987	0.155
2006	0.262	0.315	0.499	1.995	0.165
2007	0.256	0.313	0.503	2.012	0.161
2008	0.297	0.301	0.502	2.006	0.179
2009	0.265	0.311	0.512	2.050	0.169
2010	0.259	0.358	0.496	1.983	0.184

Source: National Statistical Office, Survey on economically active population

The comparison of the decomposition results between 2003 and 2010 hints that there is substantial changes in unemployment structure in the Korean youth labor market. As shown in table, the proportion of unemployed youth tends to decrease except in 2009, right after the financial crisis. At the same time, the average duration of unemployment for youth tends to increase throughout the periods of interest. In particular, the average duration of unemployment for youth is at its highest level since 2003.

The decomposition results is more striking in the broadly defined unemployment rate. While the narrowly defined unemployment rate remained stable at around 8% during 2003~2010, the broadly defined unemployment rate for youth continued to rise from 13.8% in 2003 to 18.4% in 2010. The proportion of youths who have experienced unemployment appears little changes with a slight decline recently. However, the average duration of unemployment has increased substantially. From this observation, the recent nature of unemployment in Korean youth labor market can be said to "extended duration of unemployment" or long-term unemployment.

In summary, Korean youth labor market recently faces many challenges in spite of relatively good standing in macroeconomic indicators (such as GDP growth and per capita GDP growth). First, a substantial part of youth is economically inactive as evidenced by a low labor force participation rate and a low employment rate. As a result, joblessness and discouraged youth is a socioeconomic problem to be urgently addressed.

Second, the conditions of youth labor market is hard to improve in a short period of time because of the changes in hiring practices and business conditions. The experiences of the recent economic crises and a competitive market situations change employers' recruitment behavior to be stringent in hiring entry-level workers. Thus, an economic recovery may not bring a corresponding increase in youth employment as in the past.

Third, the duration of employment becomes extended. Theories and empirical evidences support that activation of a long-term unemployed is much more difficult and costly than a short-term temporary unemployed.

### 3-3. Labor Market Segmentation: Temporary vs. Permanent Workers

One of the most distinctive features in the recent Korean labor market is the increase in the share of temporary workers. Until mid 1990s, the percentage of temporary to all workers was 40%. With the financial crisis in late 1990s, the number so rapidly rose that more than 50% were temporary workers in 1999~2000. (see [Figure 3-3])

Many optimistically expected the share of temporary workers to return back to pre-financial crisis level once the economy recovered from the financial crisis. Although the share of temporary workers slightly declined after the financial crisis, this is not the case. One can notice that the post-crisis level seems to be higher on average than pre-crisis level, a possibility that increase in temporary workers is not transitory but structural.

[Figure 3-3] Unemployment rate and share of temporary workers



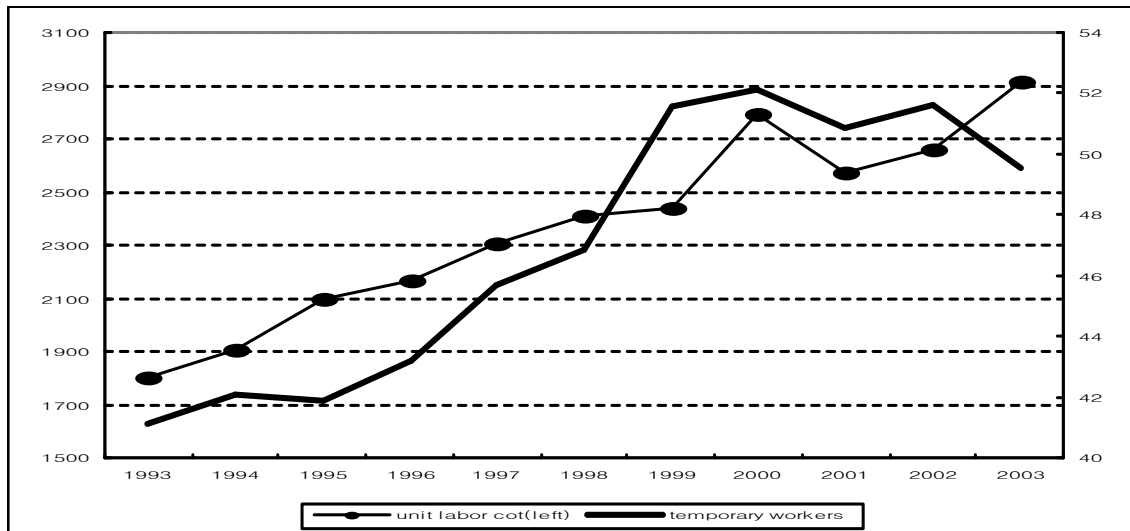
Among many economic and institutional factors that could explain an increase in temporary workers, researchers and policy-makers pay attention to labor cost and labor legal system in labor market. As mentioned, the financial crisis in late 1990s is a breakpoint in Korean economy that switched the economy from a government-driven to a market-driven system. Public and private sectors were restructured to enhance efficiency so that they could remain competitive in a market environment. Cost-saving became an important agenda in many fields and labor market was not exceptional.

Before the crisis, it is hard to say that labor market achieved its economic efficiency. Regular workers in middle and large size firms were usually guaranteed lifetime employment and their wages and salaries were determined by seniority base. These patterns of employment and compensations made firms difficult to adjust labor costs and maximize output efficiency. Under the pressure of the financial crisis, employers tried to save labor costs by introducing more flexible employment practice and compensations. In stead of lifetime guaranteed employment, fixed-time(or temporary) employment contract became prevalent. This is because the shorter the duration of employment contract, the easier the adjustment of workforce. In general, a fixed-time contract specifies the terms and conditions of employment including wages and salaries. Compared to a seniority based the compensation, contractual wages and salaries tend to be closely related to the performance of workers.

[Figure 3-4] illustrates a unit labor cost and the share of temporary workers over time. As shown, there is strong positive correlation between two variables, supporting that temporary employment is the result of employers' efforts to save labor costs.

[Figure 3-4] Unit labor cost and share of temporary workers

(unit: 1,000 Won, %)

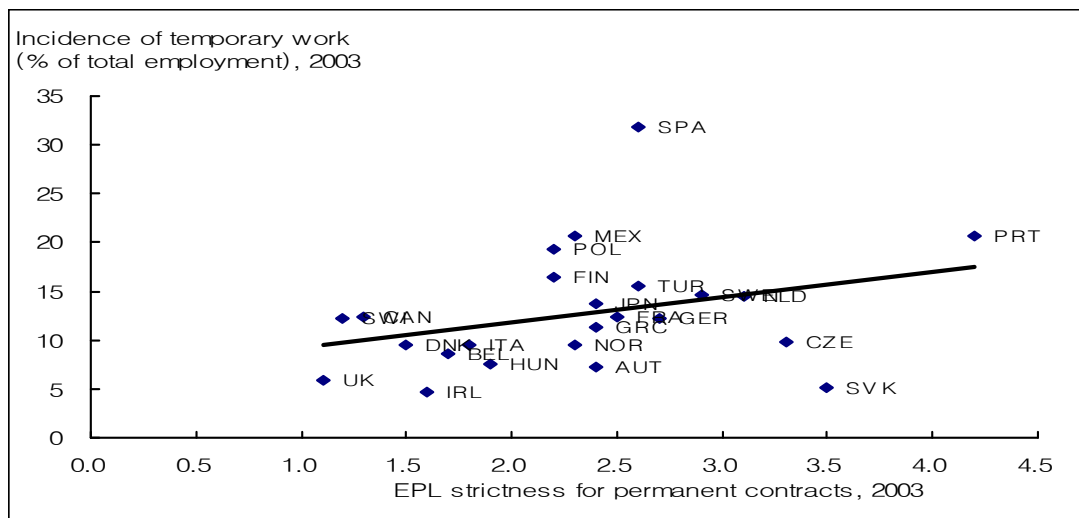


Note: unit labor cost based on 2000 data.

Source: Ministry of labor, 「Survey on labor costs of establishments」, National Statistical Office, Survey on economically active population

Institutional aspect of labor market is also responsible for the increases in temporary workers. Many economists point out employment protection law(EPL) for permanent and regular workers as a cause for a increase in temporary workers. Comparative studies using cross-country data show a positive relationship between EPL degree and incidence of temporary employment(see [Figure 3-5]). Korean EPL has protected permanent workers heavily while it has provided few employment protections for temporary workers. Termination of employment relationship with a permanent worker is almost impossible in reality unless a permanent worker voluntarily quits a job or makes a serious reason for dismissal.

[Figure 3-5] Share of temporary workers and degree of protection for permanent workers



Moreover, Korean EPL treats permanent(regular) and temporary workers differently. For example, an employer pays a substantial amount of severance bonus to a permanent workers at the termination of employment. To a temporary worker, such a severance bonus is seldomly paid. In the presence of heavy employment protection for permanent workers, employers naturally have incentives to replace permanent workers with temporary ones.

Problems of temporary jobs are well recognized. First, workers employed at temporary basis suffer the instability of job security. Recent data show that an average job tenure of a permanent worker is about 6 years while an average job tenure of a temporary worker is only about 2 years.

The insecurity of a temporary job prevents a worker from formulating labor market experiences and accumulating human capitals. Frequent terminations of labor contracts and fewer opportunity for job training are primary reasons for this. <Table 6-3> compares the participation rate and hours of job training between a permanent and temporary worker. According to the table, 36.7% of permanent workers participated job training programs while 24.7% of temporary workers did. As a result, temporary workers have less opportunities to receive job training than permanent workers. Moreover, job training is not enough to temporary workers for those who have job training. For permanent workers, job training lasts for 14.5 hours but for temporary workers it lasts for only 8.5 hours. Given fixed costs of job training, employers are less likely to provide job training opportunities to temporary workers with short-term employment contracts and frequent job separations. This causes the lack of human capital accumulation of temporary workers, making them difficult settle down a secure and career-developing job - a

vicious cycle.

<Table 3-8> Job training: Permanent vs. Temporary job

	Permanent	Temporary
participation rate of job training(%)	36.4	24.7
hours of job training(horus)	14.5	8.5

source: Yoo(2009)

Second, gaps in the terms and conditions of employment between a permanent and temporary worker create social tensions. <Table 3-9> compares an average of wages and salaries and the coverages of social insurance between permanent and temporary workers in Korea. According to the table, temporary workers receive approximately 60% of wages and salaries paid to permanent workers. In 2009, the ratio declined to 56.9%. The wage gap between permanent and temporary workers is not necessary regarded as discrimination because two groups are known to have significant differences in the underlying factors(such as labor market experiences, job tenures) which determine wages and salaries. However, many studies found that even after controlling the differences in wage determinants, the gap between temporary and permanent workers would not disappear. This finding implies that there might be wage discrimination between temporary and permanent workers.

While the issues on wage discrimination and it's size are controversial, the difference in the coverage of social insurance can be largely seen as the result of discrimination against temporary workers. In Korea, major social insurances(national pension, unemployment insurance and health insurance) are mandatory so that employers are legally required to cover their employees. In reality, employers do not provide the social insurances to their workers(both temporary and permanent) due to the burden of premium. Given that not all workers are covered, there is still substantial differences in the coverages of the social insurances between temporary and permanent workers. <Table 3-9> shows that about 70~80% of permanent workers are covered by the social insurances. In contrast, only about 40% of temporary workers are in the social insurances system.

A frequent job separation, the lack of opportunities to accumulate human capital, low wages and the social insurance coverages altogether creates a problem of labor market segmentation in which heavily protected insiders and unprotected outsiders continue to accelerate socio-economic tensions

<Table 3-9> Gaps in the terms and conditions of employment: Permanent vs. Temporary

	Wages and salaries (KRW 10,000)			national pension(%)			Health insurance (%)			Unemployment Insurance(%)		
	all	perm anent	temp orary	all	perm anent	temp orary	all	perm anent	temp orary	all	perm anent	temp orary
2001. 8	140.6	155.9	99.0	52.2	63.2	22.2	54.7	65.8	24.2	47.4	56.9	21.6
2003. 8	156.1	178.6	109.4	57.7	70.8	30.5	59.5	72.5	32.6	49.8	59.7	29.2
2005. 8	159.3	184.6	115.6	61.4	75.7	36.6	61.9	75.9	37.7	53.1	63.8	34.5
2007. 8	166.6	191.6	121.8	63.2	76.3	40.0	64.4	76.7	42.5	55.3	64.3	39.2
2008. 8	168.3	193.9	118.1	64.3	77.3	39.0	65.6	78.0	41.5	56.8	65.8	39.2
2009. 3	165.0	192.8	109.6	64.9	78.7	37.6	66.6	79.5	41.0	57.9	67.3	39.1

source: Yoo(2009)

#### IV. Bi-polarization: Disappearing Middle Income Class

Recent economic growth cannot fully respond labor market challenges. In the course of economic growth, ability to create jobs deteriorates, youth joblessness persists and labor market segmentation continues to remain as a serious problem. These labor market challenges partly lead to the bio-polarization of income class that is recently observed in Korean society.

There is a growing concern on income polarization since 1990s. A research found that the percentage of households in an upper and a lower class increased during 1994-2004. In 1994, 21% of households are classified by an upper income group.(see <Table 4-1>) In 2004 the number slightly increased to 22.5%. During the same period, the percentage of households in a low class rose 13.6% in 2004 from 8.8% in 1994. This change indicates that many households in a middle class fell to a low income class during the period. As shown, a middle class once 70.2% of households in 1994 rapidly decreased to 63.9% in 2004. Researchers call this phenomenon by 'disappearing middle class'.

A formal approach to investigate bi-polarization is to look at the polarization indices introduced by Wolfson(1994) or Esteban, Gardin and Ray(2005). Figure 4-1 illustrates the polarization indices together with an income inequality measure(Gini coefficient) From the figure, one can verify that the income polarization indices in the post-financial crisis periods lie above those in the pre-financial crisis periods, implying that the financial crisis in late 1990s is a turning point to change the shape of income distribution. In addition, income polarization did not come alone. During the period of income polarization, income inequality measure by the Gini coefficient also increased.

<Table 4-1> Percentage of Income class over time

(unit: %)

		1994	1996	1998	2000	2002	2004
upper		21.0	22.8	22.9	22.0	22.6	22.5
middle	total	70.2	67.5	65.4	66.1	65.1	63.9
	mid-high	55.0	53.6	51.6	51.7	50.7	50.6
	mid-low	15.2	13.9	13.8	14.5	14.4	13.3
low		8.8	9.7	11.7	11.9	12.4	13.6

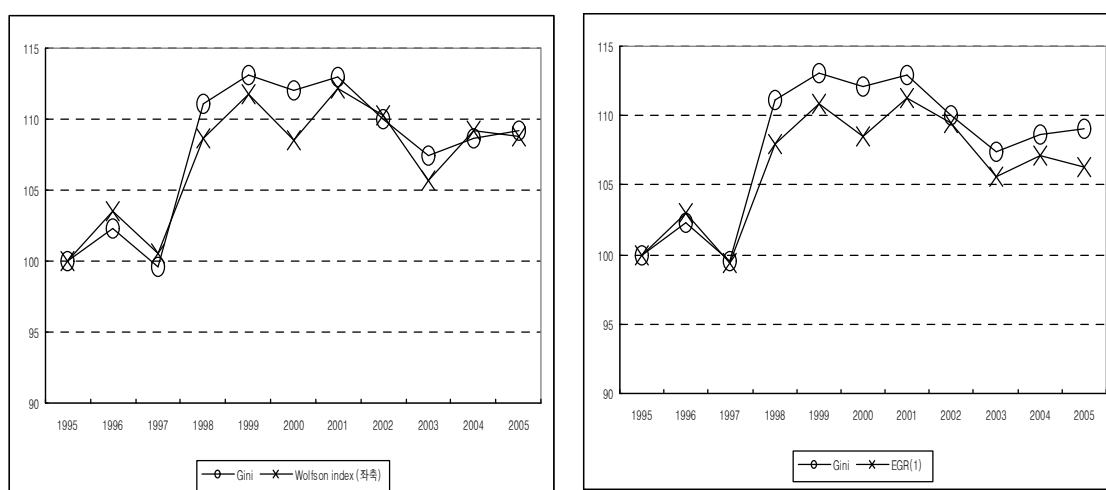
Note: 1) Upper is 150% of median income and above, low is below 50% of median income, middle-low is 50~70% of median income, and middle-high is 70~150% of median income.

2) Based on household total income.

3) single households are excluded

Source: Yoo(2005)

[Figure 4-1] Polarization and Income inequality: total income



Source: Kim(2007).

A question is whether the nature of bi-polarization is temporal or structural. The answer for the question depends closely on labor market situations because a primary income source of a household comes in the form of labor earnings. Along this line of logic, it is very likely that income polarization may persist for considerable time because of the changes in labor market mentioned in the previous section.

The nature of bi-polarization becomes clear from <Table 4-2>. It shows how economic growth affects income quintile differently. As shown, the 1st quintile, the lowest income group, does not virtually grew in the period of 2004-2010. On the other hand, the highest income growth is observed in the 5th quintile, the richest group. An interesting point is that the rate of income growth increases as one moves from the lowest to the highest quintile.

〈Table 4-2〉 Rate of income growth by quintile

(unit: %)

Year	Rate of real income growth				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
2004	0.99%	-0.30%	1.05%	2.68%	3.72%
2005	-3.53%	0.37%	1.23%	1.09%	2.21%
2006	1.36%	1.19%	1.86%	3.46%	2.81%
2007	-0.37%	2.31%	2.26%	1.90%	3.88%
2008	1.30%	0.58%	0.86%	0.83%	1.80%
2009	-1.18%	-0.09%	-0.16%	-0.95%	-3.22%
2010	5.13%	5.42%	3.26%	2.32%	1.42%
average	0.50%	1.34%	1.47%	1.61%	1.78%

source: National Statistical Office

Briefly, income bi-polarization, and deterioration of income equality may partly be attributable to the recent labor market problems. Jobs are not qualitatively enough, and not decent in quality. Income for the disadvantaged group in the labor market stay stagnant, and usually they are not covered by a social safety net.

## V. Conclusion

No one can deny that the economic success of Korea over decades has improved the living standard of the people. Per capita GDP has risen dramatically and absolute poverty rate has declined substantially. However, positive impacts of economic growth comes at costs. Economic growth are not evenly shared so that certain groups such as the youth and temporary workers are excluded from the benefits.

Unprecedentedly, economic growth does not create sufficient and decent jobs for the socially disadvantaged groups. A young generation is experiencing difficulties in finding jobs. A segmented labor market between temporary and permanent workers creates not only economic problems but also social tensions. A percentage of households in the middle income class gradually decrease with rising income inequality and bi-polarization. Facing these labor market challenges, Korean economy is at a crossroads for sustaining growth or falling back form the past prosperity.

## References

Esteban Joan-Maria, Gardin, Carlos, and Debraj Ray(2005), "Extension of a Measurement of Polarization, with an Application to the Income Distribution of Five OECD Countries"

Hahn et al(2006), KDI Forecasting Macro Economy in the Aging Society, KDI

Kim, Yong-seong(2006), Studies on Income Polarization, KDI

Leighton, Linda and Mincer, Jacob(1982), Labor Turnover and Youth Unemployment, in Richard Freeman and David Wise eds, The Youth Labor Market Problem: Its Nature, Causes, and Consequences.

Yoo, Gyeongjoon(2009) "Studies on Irregular Workers in Korea," KDI

Wolfson, Michael C.(1994), "When inequalities diverge," American Economic Review, 84(2), pp.401~421.