

Measurement of Unemployment and Extended Unemployment Indicators in Korea*

Hwang, Soo Kyeong**

This paper explores the causes and solutions of the problem that the official unemployment rate does not adequately represent the reality of employment situation in Korea. First, compared to ILO's international standards, there are several differences in the measurement of unemployment in Korea, for example, the treatment of unpaid family workers working less than 18 hours per week, the classification of persons who are waiting for a new job or temporarily laid-off, and the criteria of job search activities. The questionnaire structure of the Labor Force Survey in Korea also misleads the judgment of economic activity state. Comparing the responses of the basic survey to those of the supplementing survey, approximately 90% of the responses show discrepancies and this indicates the possibility of misclassification. Next, this paper suggests the extended unemployment indicators as alternative, based on the current survey. The extended unemployment indicators support the presence of significant amounts of hidden unemployment and underemployment. And, it is found that the analyses using those indicators are very useful for the investigation of many aspects of employment dynamics.

Keywords: Unemployment, Underutilization of Labor Force, ILO's International Standards of Unemployment Indicators, Extended Unemployment Indicators, Korea

* Translated from the article published in the *Labor Economic Journal* 33(3), 2010 with permission from the Korean Labor Economic Association.

This paper was initially intended for publication in the *Journal of Korean Official Statistics* of the Statistical Research Institute 15(1) (submitted on 30/11/2009 and confirmed publication on 4/2/2010) but publication was delayed. Later, it received a reply from the SRI that it could not be published because it had a different opinion from the official viewpoint. Thus the paper was revised and resubmitted to the *Labor Economic Journal*.

** Researcher at the Korea Development Institute.

I. INTRODUCTION

The unemployment rate is the most important indicator of the deterioration of the economy as well as the employment situation. It is imperative that policymakers are sensitive to the current state or fluctuations of the unemployment rate. However, many people raise questions as to whether the unemployment rate in Korea functions well in assessing the labor market situation or accurately identifies policy standards on employment. There is also increasing attention to the gap between the officially reported unemployment rate and the reality.

Criticisms raised regarding the unemployment rate can be summarized into two parts. First is the low calculation of the unemployment level, that is, the number of people without a job. For instance, when the Korean economy plummeted due to the 2009 global financial crisis, the official employment rate did not deviate from 3 percent. In fact, Korea's level of unemployment is the lowest among OECD member states. However, Korea's employment rate (= proportion of the population employed) remains so low only because of the high proportion of the population economically inactive. This implies the possibility of a large presence of hidden employment excluded from the official unemployment rate.

Second is a criticism related to dynamics, which claims that the unemployment rate cannot accurately reflect the volatility of the labor market. During the period between January and May 2009, the number of individuals employed decreased by 169,000, whereas the number of individuals unemployed increased only by 131,000. The discrepancy is explained by the fact that many people who lose their jobs do not remain as part of the unemployed group but instead transfer to the economically inactive population. Kim, D. (2000) and Lee, B. and Jung, J. (2005) have shown that there is a high rate of direct movement between the employed and the economically inactive population in the Korean labor market without undergoing the unemployment stage.

This gap between reality and the unemployment rate has already been discussed not only by the media but also in the academia. Most researches have the perspective that there is a large population with a low degree of

settlement in the labor market and that they act as a buffer against economic shock, which leads to low unemployment rates and low levels of fluctuation. An example of the systematic analysis on the number and dynamics of hidden unemployment—i.e. what is elided from the unemployment rate—is Kim, D. (2002). He points out that the low economic activity of Korean laborers constitute a significant characteristic of labor supply; additionally, he argues that the number of ‘marginal participants’ who hover between economic activity and economic inactivity add up to 14% of the productive population and a quarter of the entire economically active population. Meanwhile, Kang, S. et al. (1999), Kim, Y. (2005), Hwang, S. (2009) and several others emphasize the need for a supplementary unemployment indicator to capture the hidden unemployment unrepresented by the official unemployment rate. Furthermore, Kim, K. and Jang, D. (2005) point out that the unemployment rates are limited in understanding the situation of the labor market due to the fluctuating number of its participants. Instead, they emphasize the utility of the employment rate (=employment-population ratio) instead of the unemployment rate for economic analysis.

However, it remains difficult to find previous studies that have made unemployment statistics itself the subject of analysis. Earlier studies mainly focused on the uniqueness of the Korean labor market, under the assumption that the unemployment rate was accurately measured. However, if there is a problem in the measurement of the unemployment rate and if a considerable portion of unemployment is statistically omitted, that directly affects the unemployment rate and its fluctuation. In this case, a large number of marginal participants would change the underestimated measurement of unemployment, and this would result in movements between actual employment and unemployment being seen as movements between an employed and an economically inactive state. As a result, the economic activity of Korean workers is assessed as excessively low due to an error in measuring the statistical data of unemployment.

This research focuses on the underestimation of the unemployment rate in Korea by dealing with the gap between the official unemployment rate and reality. It will systematically discuss the validity and problems of Korea’s definition of the unemployed and its method of measuring the unemployment rate by conducting a comparative analysis with international standards

of measurement. With the foundations of this analysis, the limitations of our statistical data regarding unemployment rates can be clarified, and an alternative solution can be devised in order to procure a more accurate unemployment rate for labor market diagnosis and policy-making.

The structure of this paper is as follows: the second part of this research introduces ILO debates related to unemployment and underutilization of the workforce in regards to the international standard of unemployment. The third section compares Korea's method of measuring unemployment with the international standard as well as that of the United States and Japan, analyzing their differences and problems. The fourth section contains an extended unemployment indicator that can supplement the shortcomings of the current unemployment rate, and inspects its possible utility. The last section provides a summary of the discussions raised and proposes directions for future research.

II. INTERNATIONAL STANDARDS FOR MEASURING THE UNEMPLOYMENT RATE

1. ILO Definition of Unemployment

Including South Korea, most countries base their official unemployment rate on the labor force approach. In other words, through a sample survey, the individual's labor status is divided into three categories: the employed, the unemployed, and the economically inactive population. The first two groups constitute the size of the labor force (= the economically active population). Here, the unemployment rate is defined as the proportion of individuals without a job, out of the whole economically active population. Here, the most problematic part is the standard used to categorize the employed, the unemployed, and the economically inactive population. In reality, there are individuals situated in between employment and unemployment, and in between unemployment and the economically inactive state. Thus, the size of the labor force as well as the measurement of the unemployment rate can vary according to which standard is used for categorization.

The ILO provides international standards and guidelines of measurement

that were established through long and comprehensive debates. At the 13th ILO International Conference of Labor Statisticians (ICLS) 1982, the basic principles for determining the economically active state and terms of the employed, the unemployed and the economically inactive population as well as their definitions were adopted. At the 16th ICLS in 1998, the standard for distinguishing those in the boundary lines of employment and unemployment was further refined.

According to the standards, the basic principles used to distinguish an individual's labor status is that first, the individual in the age capable of economic activity must be exclusively classified so that he or she belongs to one out of the three categories of the state of economic activity (priority rule). In addition, the categorization standard should be based on the actual activities that the individual carried out (activity principle), and also, it should be conducted at a time when the level of fluctuations due to weather or labor movement is low (snapshot scope). Here, it is important that the economic activity encompasses all market and non-market activities when they are within the System of National Account (SNA).

Since definitions of the employed, the unemployed, and the economically inactive population are mutually related, we will look at the standard used to categorize the economic activity state by focusing on the term of the unemployed. First, the following three conditions need to be satisfied to be categorized as the unemployed.

First, "without work," i.e. were not in paid employment or self-employment; Second, "currently available for work," i.e. were available for paid employment or self-employment during the reference period; and Third, "seeking work," i.e. had taken specific steps in a specified recent period to seek paid employment or self-employment.

The first element is to distinguish the employed from the unemployed, but if an individual has worked for wages or conducted economic activities for his or her private business for at least an hour, that person is considered to have a job, and not unemployed. This 1-hour standard used to determine employment has been subject to many criticisms and debate; claims are that it is excessively loose but it was adopted because it is important to include as much economic activity as possible, to construct statistical data of which the total labor input and total production accord with each other (14th

ICLS). However at the same time, there was emphasis on the need to provide another criterion of ‘underemployment’ within the category of employment, and the standard to determine this was proposed at the 16th ICLS in 1998.

On the other hand, unpaid family workers were regarded unemployed if they work one third of the hours of full time workers, an exception to the 1-hour rule (8th ICLS, 1954). However this exception was judged to go against the general principles of categorizing the state of economic activity and thus eliminated at the 16th ICLS in 1998. Accordingly, the current ILO standard categorizes unpaid family workers as employed, regardless of the number of hours they work.

The second and third conditions are standards used to differentiate the unemployed and the economically inactive population amongst those without work. This means that the standard of determination used should not be subjective; moreover, examples should not be of those who “want a job” but more objective measures such as “seeking work activities” or “availability for work” (activity principle). This means that although an individual wishes to become employed, if that person has not been seeking work in the labor market, or is actually unable to be employed, that person should be excluded from the category of the available labor force.

In fact, the standard for determining job-seeking activity has become the center of discussion. Job-seeking activities include not only signing up for public and private employment agencies, but also using unofficial routes such as seeking assistance from friends or relatives. The 13th ICLS outlined specific examples of job-seeking activities: making registration at a public or private employment exchange; sending applications to employers; checking at worksites, farms, factory gates, market or other assembly places; placing or answering newspaper advertisements; seeking assistance of friends or relatives; looking for land, building, machinery or equipment to establish own enterprise; arranging for financial resources; and applying for permits and licenses. Passive activities such as merely looking at job advertisements are not considered to be job-seeking activities.

However, those who are currently unemployed but are expected to become employed within the reference period or are preparing to launch a private business are categorized as unemployed regardless of their job-seeking activities (13th ICLS, R.10(4)). Also, those who are temporarily laid off

are also allowed a mitigation of the requirements for certain activities being accepted as job-seeking activity (13th ICLS, R.10(5)). Although not directly dealt with in the international standard, this easing of necessary conditions for activities to be accepted as job-seeking activities is acceptable for seasonal jobs; although they do not engage in job-seeking during the off-season, they are in fact treated the same as the temporarily laid-off (Husmanns 2007).

Also, when a substantial part of the labor market is not institutionalized, the informal sector or the private sector composes a large part of the economic environment, and when the circumstances are such that general job-seeking activities have limited meaning, the ILO judges that the proposed standard for determining the jobless is excessively strict and thus cannot accurately reflect the reality of the labor market. In this case, the ILO allows relaxation of the criteria used to determine job-seeking activities (13th ICLS, R.10(2)). Also, in determining the availability of an individual to be employed, the ILO advises that an appropriate method be devised based on the individual's current wish to work as well as their past working experiences (13th ICLS, R.10(3)).

Meanwhile the ILO does not specify standards regarding the reference period in determining job-seeking activities, and left it open for individual countries to decide on different bases, such as 1-week, 4-week and so on. Most OECD countries use the 4-week standard whereas Japan uses the 1-week standard.¹

2. Ilo Discussions on Labor Force Underutilization

The ILO, in addition to presenting its official unemployment measurement standard under the assumption of full unemployment rate, has also made continuous efforts providing a standard to devise supplementary indicators showing the state of the labor force's underutilization. The 13th ICLS in 1982 completed the international standard for the full unemployment rate, and the 14th and 16th ICLS in 1987 and 1998 made intense attempts to refine the standard for determining the boundary between employment

¹ The official unemployment rate in Japan employs the 1-week standard, but investigations on job-seeking activities in 1-month periods are additionally conducted.

and unemployment—to measure underemployment. Meanwhile, although a specific standard for determining latent unemployment (between the categories of the employed and the economically inactive population) is not provided, it was decided that the standard definition of unemployment determined by the ILO was not sufficient in showing the circumstances of employment according to the different labor markets of each state. They pointed out that in this case, in addition to the official unemployment rate, which is referred to the full employment unemployment rate, a variety of supplementary indicators that can show labor force underutilization should be utilized.²

First, the ILO standard of underemployment must be examined. In countries where social insurances are underdeveloped (developing countries), the individual must become employed in whatever shape possible in order to survive. In this case, there is a high probability that the individual is in an insufficient or improper employment situation, but the official employment rate has difficulty in expressing such circumstances. Underemployment is also rising in developed countries, which entails increasing flexibility in the labor market as well as temporary employment. Due to such circumstances, the ILO advises that states not only determine the full unemployment rates but also underemployment indices.³

The 16th ICLS in 1998 provided a standard for determining underemployment using the number of working hours. According to the 16th ICLS, underemployment is determined first by, the willingness to work more than the current working hours; second, the availability of an individual to work additional hours; and third, having worked less hours than a certain threshold

² ILO maintains that when the international standard of unemployment has only limited meaning, the definition of unemployment should not be altered, but additional supplementary indicators using mitigated standards suitable to each nation's circumstances should be used, while maintaining their official employment and unemployment rates and definitions according to international standards (Husmanns, 2007).

³ The determination of underemployment is a necessary part of the current international structure of employment statistics based on the "1 hour standard." It calls attention to inadequate employment situations, and proposes the need to capture the improper use of the labor force in terms of vocational abilities, danger of job-loss according to economic crisis, industrial safety and health and so on.

of working hours (16th ICLS, R.8(1)). In determining this, the definition must include not only paid employment, but also the self-employed, the temporarily unemployed, comprising the entire number of the employed (Husmanns, 2007).

The first condition of a “desire for additional employment” was proposed (16th ICLS, 1998) to replace having worked less than the general working hours due to an involuntary reason is a criterion that was previously used to capture the state of underemployment (13th ICLS, 1982).⁴ Here, this “desire” must encompass various situations including a desire for additional work, to extend working hours, and to find extra work, for example.

Meanwhile, in the standard for underemployment—in contrast to the unemployed—there is no assumption that the individual must make an overt effort in seeking additional work. However, it requires that he or she be available for additional work within the period that parallels that of the unemployed. Regarding the reference period to determine the possibility of additional employment, it is generally acknowledged that it must be longer than determining the possibility of an unemployed individual’s finding a job, since the time consumed for changing jobs takes relatively longer.

As to the third condition of the time threshold, many standards such as distinguishing full and part time, legal working hours and the like can be used. However degrees of employment is not limited simply to part time labor, but instead should include all those employed who are seeking additional employment regardless of their working hours (16th ICLS, R.8(2)).

The underemployment indicator can be calculated using the head-count measure or the time measure. The former can be constituted by determining the proportion of the underemployed from the total number of employed (= underemployment rate), or the proportion of the underemployed from of the total number of the economically active population (16th ICLS, R.11). Meanwhile, the latter is a measure that determines the unrealized underemployed hours, the standard being the number of hours that an individual actually wants to work. However this time-based measure has limitations in data collection and in reality cannot be used by many countries.

⁴ However many EU countries still places involuntary short-term workers under the category of underemployment.

III. KOREA'S UNEMPLOYMENT CALCULATION METHOD AND ITS PROBLEMS

1. Statistical Definition of Unemployment and Comparison With the International Standards

Like that suggested by ILO, the unemployment rate presented by the Korean National Statistics Office is also based on the labor force approach, using a monthly sample survey. The official sample survey used to measure unemployment is the Economically Active Population Survey, which distinguishes the individual's condition of economic activity using a sample survey of 33,000 households⁵ that represent the nation. The investigation is conducted on the members of these households over the age of 15, every month, on the week that has the 15th day of the month. Household members subject to investigation and are soldiers in active service, public service workers, part of full time reserve forces, combat police (including conscripted policemen), prisoners with confirmed sentences, prisoners in youth detention centers or institutes of forensic psychiatry, or those in security reserve military training units are excluded.⁶

The "employed" according to the Economically Active Population Survey includes persons who, during the week of investigation, worked more than 1 hour for the purpose of income, helped a business or farm owned by another member of their household for more than 18 hours a week to increase some sort of profit although they may not earn direct profits (unpaid family

⁵ While selecting the households subject to investigation, in order to alleviate their burden of responding, to prevent the aging of the sample survey and the possibility of a disjunction of the old and new samples due to entire restructuring, approximately 900 households (1/36 of the sample) are replaced each month—an interlocking sample replacement method.

⁶ Although Korea's unemployment statistics only includes civilians, excluding soldiers, the ILO standard includes them in the paid-worker group according to their international standard classification of occupation (13th ICLS, R.9(9)). Whereas Japan, Taiwan and most European countries include professional soldiers living in a private house in their labor force statistics, USA, Canada and Australia do not.

worker), and those who do have a job or own a business but have been temporarily sick, unsettled due to weather, on a vacation, or on a strike, and thus temporarily on a break.

Meanwhile, the “unemployed” is defined as individuals who, during the week of investigation, do not have a job with an income, have actively searched for a job during the last 4 weeks, and are available to take on a job immediately if offered. Specifically, during the week of investigation the individual must not be employed, must have tried to get a job during the last 4 weeks, and was available to work if given a job. Before June 1999, job-seeking activities within the last 1 week was investigated but after June, activities within the last 4 weeks were additionally taken into account and since July 2005, the construction standard for the official unemployment rate was expanded to 4 weeks from a prior standard of 1 week.

Individuals over the age of 15, who are neither employed nor unemployed during the week of investigation, are classified as the economically inactive population. Housewives who primarily stay home taking care of the household and raising children, students going to school, the elderly and the mentally or physically challenged who cannot work, and those who voluntarily participate in charities or religious groups are included in this group.

The standard currently used in Korea to construct unemployment statistics data seem to be following the international standard established by the ILO on the surface. However, when thoroughly inspected there are several dissimilarities.

First, according to ILO standards, unpaid family workers who have worked more than 1 hour should be categorized as employed (13th ICLS, R.9(5)) but in Korea, unpaid family workers are categorized as employed only if they work for more than 18 hours which mirrors ILO’s previous resolution (8th ICLS, 1954). Individuals are regarded as unemployed if they work for less than 18 hours. Thus, according to current ILO standards, unpaid family workers who work for less than 18 hours are employed, but according to Korean standards they are classified as either unemployed or not in the labor force depending on his or her job-seeking activities. In 2008, the number of unpaid family workers who worked less than 18 hours was 143,000, and while 3,000 of them were unemployed, 140,000 were categorized as part of

the economically inactive population. The U.S. uses a similar standard of 15 hours, and Japan uses the same standard set by the ILO, which is 1 hour. When unpaid family workers who work less than 18 hours are included in the employed category, the unemployment rate decreases by 0.1%p and the employment rate increases by 0.4%p.

Second, the ILO standard regards individuals expecting to begin work or start a business within a certain period as unemployed regardless of their job-seeking activities. Also, those who are temporarily jobless including the seasonal discouraged workers are categorized employed or unemployed according to whether they officially belong to a specific company. Here, it is important that their job-seeking activities are not considered. Those temporarily laid-off in the U.S., and those who are scheduled to start a job in Japan are regarded as unemployed in their respective countries regardless of their job-seeking activities (Table 1). However, Korea does not make any exceptions to the need to conduct job-seeking activities. For instance, sometimes a person waiting for assignment is identified as being part of the economically inactive population (4,000 in 2008). However according to ILO standards, they should be categorized as the employed or unemployed depending on their employment relationships.

Table 1. ILO standard and standard of identification for economic activity state in the US, Japan, and Korea

	ILO standard	US	Japan	Korea
Survey Population	no specific age (soldiers included)	16+ (excluding soldiers)	15+ (including soldiers)	15+ (excluding soldiers)
Unpaid family workers	Employed if works more than 1 hour	Employed if works more than 15 hours a week	Employed if more than 1 hour	employed if works more than 18 hours a week
Reference Period of job-seeking activity	no specific standard	4 weeks	1 week	4 weeks, 1 week
Job-seeking activity requirement	specific action for employment and/or starting a business*	active job-seeking activity*	job-seeking activities and preparing to launch business*	active job-seeking*
Specific job-seeking activities (examples)	• registered to official or private employment	• made applications or conducted interviews	• registered to public employment stabilization	(no examples)**

Table 1. (continued)

	ILO standard	US	Japan	Korea
	agencies <ul style="list-style-type: none"> • sent job applications • checked out workplaces • asked friends and/or family for recommendations • searched for building or facilities, equipment and funding for business • application for authorization or qualification needed for employment 	<ul style="list-style-type: none"> • registered to official or private employment agencies • asked friends and/or family for recommendations • checked out workplaces • visited college employment centers • sent applications and resumes • published advertisements or responded to them • checked associations and institutes • other active job-seeking activities 	tion office or private employment agencies <ul style="list-style-type: none"> • signed up for businesses that dispatch workers • utilized job ads • asked friends and/or family for recommendations • made direct applications to places of business • sought financial and equipment procurement • waiting for result of previous job-seeking activities 	
Scheduled for starting a job	unemployed	jobless (job-seeking activity requirement)	unemployed	jobless (job-seeking activity requirement)
Temporary layoff	employed if he or she has official affiliation, if not, unemployed	if he or she will return to work in 6 months or has a specific date of return, that person is unemployed	jobless (job-seeking activity requirement)	jobless (job-seeking activity requirement)
Availability criterion	required, but no specific standard	he or she was able to become employed previous week (temporarily occurring situation, exception for persons scheduled to work)	currently able to be employed	was able to be employed during previous week (does not ask reason for inability to become employed)

* Does not include passive job-seeking activities such as merely looking at job advertisements

** There are no examples for job-seeking activities but there is a question that asks regarding their means of job-seeking activities, to those who are immediately able to start working if given work.

Third, although not explicitly dealt with, the standard of identifying job-seeking activities can be problematic. According to ILO standards, “specific steps taken for employment or starting a business” (active job-seeking activity) are regarded as job-seeking activities, whereas merely looking at newspaper job advertisements (passive job-seeking activity) are not. Here, the “specific steps” or “active steps” refer to activities that elicit a response from a potential employer (14th ICLS, R.11), and it does not refer to any intensity spectrum although the term “active” does contain such nuances. Looking at the list of examples for job-seeking activities in the U.S. and Japan, we see that they have set standards in parallel with the objectives of ILO standards. Japan includes situations in which an individual is waiting for results from his or her previous job-seeking activities. As this is also based on a request for jobs to employers, it was judged that the activity is an extension of the initial job-seeking activity. However, Korea’s job-seeking activity determination criteria cannot be seen as fully reflecting the objectives of ILO standards. For example, although the best course for youth employment is the government civil service examination or employment exams, most of those preparing for employment who responded that they attended academies or institutions for employment or were preparing for employment were not identified as unemployed but economically inactive population, with their number amounting 600,000. This number is similar to the official unemployment rate (Table 2). If ILO standards are to be met, it is more reasonable that the content of preparation for employment be more specified. If an individual takes employment exams or if he or she is waiting for the results during the reference period, that person should be regarded as having practiced job-seeking activities.

By recalculating the unemployment rate using available data that aligns with ILO standards as much as possible, we will find disparities. Based on the previous discussion, three conditions were considered. First, unpaid family workers who work less than 18 hours are regarded employed according to ILO standards. Second, those who are expected and scheduled to work are regarded as unemployed regardless of their job-seeking activities. Third, taking government civil service examinations or other employment exams and preparations for starting a business are regarded as specific actions for employment and must be determined as unemployment. But unfortunately,

Table 2. Main activities during the past week (2004, 2008)

(unit: 1000)

	2003~2004				2005~		
	2004				2008		
	Employed	Unemployed	Not active		Employed	Unemployed	Not active
1. worked	21,649	0	20	1. worked	22,415	0	11
2. temporary break	289	0	0	2. temporary break	344	0	0
3. job-seeking activities	5	756	8	3. job-seeking activities	2	653	1
4. infant care	52	4	1,510	4. waiting to be assigned	0	4	4
5. housework	275	32	5,212	5. infant care	68	5	1,559
6. attend formal educational institution	164	19	3,548	6. housework	331	29	5,454
7. attend preparatory school	1	0	82	7. attend formal educational institution	203	16	3,946
8. attend academy or institute for employment	4	4	200	8. attend preparatory school	2	0	81
9. preparation for employment	5	12	183	9. attend academy or institute for employment	8	4	234
10. preparation to go on to school	4	1	112	10. preparation for employment	16	18	364
11. old age	18	0	1,544	11. preparation to go on to school	9	0	125
12. mental and/or physical disorder	4	0	466	12. old age	26	1	1,518
13. scheduled for military service	2	0	63	13. mental and/or physical disorder	2	0	437

Table 2. (continued)

	2003~2004				2005~		
	2004				2008		
	Employed	Unemployed	Not active		Employed	Unemployed	Not active
14. preparation for marriage	0	0	9	14. scheduled for military service	2	1	43
15. rest	69	27	1,033	15. preparation for marriage	0	0	12
16. etcetera	17	4	309	16. rest	132	37	1,352
				17. etcetera	17	2	158
Total	22,557	860	14,300		23,577	769	15,251
* persons preparing for employment	10	16	383		24	22	598

Source: Statistical Office, *Economically Active Population Survey* (2004, 2008) source data.

such related direct information cannot be obtained for this investigation. Instead, an individual was determined as unemployed when their main activities were preparation for employment, had wished to become employed, and were in a situation that they could work immediately if given a job during the previous week.

Table 3 compares the important employment indicators, one based on the official unemployment rate and the other based on regulated unemployment rate by the means outlined above. The unemployment rate after regulation rose 0.1%p and similar changes were seen across gender. Participation rates and employment rates show more differences, each increasing by 0.5%p and 0.4%p. However according to the above regulation, aside from recognizing unpaid family workers who work less than 18 hours as employed (+143 thousand persons), the standard for job-seeking activities remains strict. Thus, the problem of arriving at a low calculated number of unemployment remains unsolved. It must be noted that although the unpaid family workers who work less than 18 hours have an unofficial employment status and are not considerable in number, disregarding them may distort the women and

Table 3. Comparison of the employment indicators after adjustment (2008)
(unit: 1000, %)

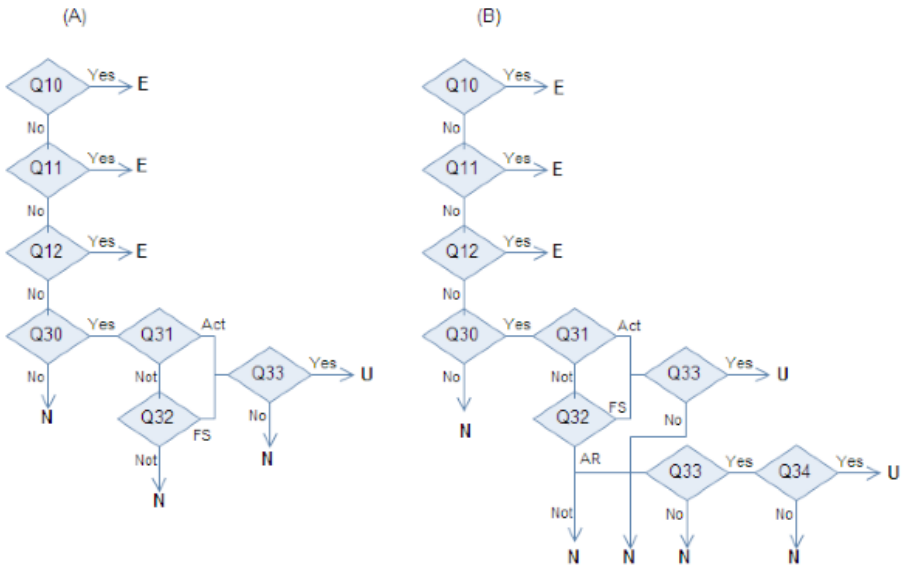
	Before			After		
	Both	Men	Women	Both	Men	Women
Population (15 years old and over)	39,597	19,324	20,273	39,597	19,324	20,273
Economically active	24,347	14,208	10,139	24,534	14,268	10,266
- Employed	23,577	13,703	9,874	23,720 (143)	13,735 (32)	9,984 (110)
- Unemployed	769	505	265	814 (45)	532 (27)	282 (17)
Economically inactive	15,251	5,116	10,134	15,063	5,056	10,007
Participation rate	61.5	73.5	50.0	62.0	73.8	50.6
Unemployment rate	3.2	3.6	2.6	3.3	3.7	2.7
Employment ratio	59.5	70.9	48.7	59.9	71.1	49.2

Note: The numbers in parentheses indicate the difference between the two amounts of before and after adjustment. Adjustment includes: i) unpaid family workers who work less than 18 hours are regarded employed, ii) those who are expected and scheduled to work are regarded as unemployed, iii) an individual was determined as unemployed when their main activities were preparation for employment, had wished to become employed, and were in a situation that they could work immediately.

Source: Statistical Office, *Economically Active Population Survey* (2008) source data.

youth work force statistics in particular.

Although the statistical definitions of employment are partly regulated, contrary to expectation, this does not result in a significant difference. The main reason is that the majority of individuals preparing for employment not only did not engage in job-seeking activities, but were also identified as not wanting a job (people who do not wish to be employed are not asked whether they are available for employment), preventing regulation efforts from having any impact. However, if a considerable number of individuals who replied that they mainly prepared to get a job did not want a job, this would logically be inconsistent. In order to analyze the problem in detail, the next section examines the specific structures of the surveys.



Notes: E =Employed; U = Unemployed; N = Not in labor force;
 Q10. Any work for pay, profit or family gain during reference period?
 Q11. Engaged in any economic activity on the following list during reference period? (activity list)
 Q12. Had a job or enterprise from which temporarily absent during reference period?
 Q30. Wanted work during reference period?
 Q31. Method of job-seeking (list) (=> Act: Active job search)
 Q32. Reasons for not seeking work (list) (=> FS: Future start, AR: Accepted reason for not having sought work)
 Q33. Current availability for work;
 Q34. Test of availability for work;
 Source: Hussmanns et al. (1990: 117-118).

Figure 2. Flow chart of ILO Questionnaire to classify into labor force categories

Individuals who worked mainly during the previous week, those who worked at least minimally to earn an income, and those who did not work but did have a job are determined in each stage and categorized as the employed. Those who are not within this category are asked further questions whether they have been seeking for a job in the previous week or in the previous 4 weeks, whether they would have been able to work if they were given a job

the previous week, and then are categorized as unemployed. Others are categorized as the economically inactive population. Meanwhile, unpaid family workers who work less than 18 hours are first categorized as employed, and then by asking questions on the number of hours they worked they are re-categorized.

When this survey structure is compared with the standard survey structure of ILO (Figure 2), the differences and problems can be identified more clearly. When ILO is using a standard definition regarding unemployment (Figure 2A) the questions are limited to 7, whereas when the standards used to determine job-seeking activities are intended to be relaxed (Figure 2B) they are limited to 8.

In the process of determining the employed, people are initially questioned as to whether they have worked for an income (including family income) (Q10). Those who responded “no” are additionally asked whether they have conducted activities that can be regarded as economic activities (Q11). This way, the subjectivity of the respondents’ answers about ‘work’ can be revised into an objective standard. The way of determining temporary leaves (Q12) is similar to Korea’s method.

Meanwhile, in classifying the unemployed and the economically inactive population, the first question is whether an individual wanted work (Q30). Next, for those who wanted work, job-seeking activities are determined using the given examples (Q31). With individuals who have participated in job-seeking activities, the next step distinguishes the unemployed by checking whether they are in a situation in which they can work (Q33). Also, even if they have not conducted job-seeking activities if they provide adequate reasons (Q32) that satisfy recognized standards for unemployment (scheduled for employment), they are classified as the unemployed or the economically inactive depending on whether they are in a possible situation to work (Q33). Meanwhile, the standard for job-seeking activities can be partly relaxed in domestic situations (example of B). In this case, while acknowledging a wider range of reasons for not looking for a job, an additional test (Q34) must be conducted to reconfirm a desire for a job.

Like this, ILO’s standard survey is constructed so that it determines the employed, the unemployed, and the economically inactive step by step, expanding into and confirming each situation within the boundary with as

much objectivity as possible.

Compared to this method, the survey structure of the Economically Active Population Survey is one in which the first question (main activities conducted the previous week) is used to roughly determine the individual's economically active state, then additional questions are used to rearrange that state. The first question regarding the main activities conducted during the previous week is not a necessary question to determine the individual's status in the labor force, nor is it a question that carries an assessment function,⁷ but the answer choices provided are in parallel with the meanings of each labor force status, resulting in a close correlation. Conceptually, the employed are those who have worked or are in a state of temporary leave, the unemployed are those engaged in job-seeking activities or waiting to be assigned, and the economically inactive population includes those who are conducting non economical actions such as infant care, housework, studying and so on. According to responses to a survey, 97% of the actual employed have mainly worked or were in a state of temporary leave during the previous week, 86% of the unemployed were engaged mainly in job-seeking activities or waiting to be assigned, and 99.9% of the economically inactive population were engaged in activities such as infant care, housework, school and the like (see Table 2 on previous page). Determining the status of the labor force can be done if the following questions are carefully planned. In fact, the first question could precede all other standards and work as a constraining factor to determine the status of the labor force.

In our case, the questions that determine employment are the second and third questions, which define whether an individual has worked for an income and check the status of temporary leave. However, there is a possibility for the respondent to answer with an arbitrary judgment because there is no explicit definition as to what is 'work,' nor is there any process for

⁷ The single question after this question that asks, "Have you worked at least an hour for the purpose of earning an income during the previous week?" can include respondents who have worked during the previous week. Also, in that a proportion of those who have worked during the previous week are categorized as economically inactive, and of those who have answered to have conducted job-seeking activities, there are some who are not unemployed, so there is lack of assessment function regarding the labor force state.

confirming objectivity like that of ILO's standard survey. ILO has pointed out that if judgment of 'work' is left to the arbitrary judgment of individuals, there is a danger that much of the non-market economic activity will be omitted.

The more problematic is the process of determining unemployment. Our process of unemployment determination is one that has mechanically adopted the ILO standards. Among the persons without work, individuals who satisfy the conditions of job-seeking activities and the availability for work once employed are regarded unemployed, whereas those who do not are categorized as the economically inactive population. Here, there are no specific criteria for determination or examples regarding job-seeking activities and reasons for not seeking a job, nor any mechanism for guaranteeing objectivity.⁸ In addition, because the ILO standard survey determines the unemployed and those not in the labor force by checking step by step the wish to be employed, reasons for not job-seeking, whether to be available for work and the like, the grey area between unemployment and economically inactive (ex. Discouraged workers) is considered when the demarcation line between the two is defined. However, the Korean method does not consider this grey area. Rather, unemployment is determined first. Then, questions regarding the wish to be employed, reasons for not job-seeking, whether employment is possible, and etc. in the current circumstances are asked only to those who are part of the economically inactive population. Such binary survey structure leaves room for conceptual discordance regarding 'the wish for work' between the unemployed and the economically inactive population.

To check this we used additional survey data of May 2009 of the youth (15-29 years of age) and senior (55-79 years of age) age groups to compare the differences in the responses between the main and supplementary investigations. First, in the additional survey on youth, of 539,000 individuals who responded that they engaged in job-seeking activities those who responded with a desire for work only amounted to 52,000, while 482,000, or 90% responded that they did not (Table 4). Claiming that they do not wish to be employed while preparing for employment exams is contradictory. Here

⁸ The term "job-seeking activity" is defined separately in the surveyor's manual but there are no specific examples or criteria. Also, the National Statistical Office does not reveal this manual in order to avoid dispute.

Table 4. Response discordance in the Supplementary Survey for the Young Population, May 2009

Preparation for employment exam previous week	Q. Did you want a job previous week?			
	Yes	No	n/a*	Total
1. Broadcast, newspaper, and other media	3	7	0	10
2. Public firms, industrial complex, and other public firms	1	26	0	10
3. LE, SME, and other firms	20	82	0	102
4. Teaching, teacher certification examination (including private school teachers)	1	50	0	51
5. Civil service examinations including diplomacy, law, administration, etc.	2	20	0	22
6. General public officers (incl. police, firefighting, military)	16	157	0	174
7. Patent lawyer, CPA, etc. other professional certification	3	48	2	53
8. Beautician, chef, and other technical certification	4	67	1	72
9. Other	2	26	0	28
10. None	60	4,802	5	4,868
Total	112	5,284	10	5,407
Those preparing for employment	52 (9.6)	482 (89.5)	5 (0.9)	539 (100.0)

* This refers to those who have engaged in job-seeking activity but were not able to be employed immediately and thus categorized as economically inactive.

Source: National Statistical Office, 2009. *5 Economically Active Population Survey, Supplementary Survey for the Young* [경제활동인구조사 청년층 부가조사] raw data.

we can presume that respondents were confusing whether they wanted work with whether they were actually available for work.

Likewise, regarding the question of those who “wish to be employed” in the additional survey for the elderly, the number of jobless people who wanted to be employed was 1,248,000. However in the main survey only 112,000 people, which amounts to 9%, responded that they desired

Table 5. Response discordance in the Supplementary Survey for the Older Population, May 2009

Whether the individual wants a paying job and its reasons	Q. Did you want a job the previous week?			
	Yes	No	n/a*	Total
1. Wants to work as long as the individual is physically capable / because working brings satisfaction	22	352	1	376
2. To make a living / the individual is in need of money	81	589	2	672
3. The society is in need of my capabilities (skills and techniques)	0	16	0	16
4. To maintain health	3	56	0	59
5. Staying home is tedious / to pass time	6	116	0	121
6. Etcetera	0	4	0	4
7. Does not want a job	10	3,279	2	3,291
Total	122	4,411	6	4,539
* Those preparing for employment (1-6)	112 (9.0)	1,132 (90.7)	4 (0.3)	1,248 (100.0)

* This refers to those who have engaged in job-seeking activity but were not able to be employed immediately and were thus categorized as economically inactive.

Source: National Statistical Office, 2009. *5 Economically Active Population Survey, Supplementary Survey for the Old Population* raw data.

employment; 1,132,000 people, or 91%, responded that they did not desire employment (Table 5). We can infer from this situation that the desire for work was conflated with their availability for work.

In other words, when an individual is initially asked whether he or she has conducted job-seeking activities, and then when those who responded ‘no’ are asked again if they wish to be employed, they are essentially being asked the same question twice. In this case, the individual’s desire for work will be determined with a much stricter standard than in other cases. This could result in a possible error, categorizing many non-job seekers as individuals not wanting a job.⁹

⁹ This incompatibility can be explained as a behavior pattern according to the ‘anchoring

For those mistakenly categorized as individuals who do not wish to be employed, the survey is structured in such a way that the reasons for not seeking for a job or the availability for work cannot be identified; this makes it impossible to adjust the unemployment rate in accord with ILO standards. Thus, even if it is expanded into a discouraged workers category that assumes a desire for work, there are additional problems. If the gap between the responses regarding the desire for employment is over 90%, the possibility of a categorization error in conducting the survey must be carefully considered.

IV. KOREA'S QUASI-ENEMPLOYMENT AND EXTENDED UNEMPLOYMENT INDICATOR

1. The Need for a Supplementary Unemployment Indicator

The previous section examined the various problems in measuring the unemployment rate in Korea. Of particular interest was the fact that the current unemployment rate does not accurately reflect the employment situation in the youth and senior age groups. Ultimately, we must conduct a careful examination in order to restructure the measurement standard and method of investigation. But a more urgent matter is to utilize additional unemployment indicators to show employment situations that cannot be shown by the official unemployment rate. This supplementary indicator is necessary for revising and correcting the problems and limitations in calculating the official unemployment rate.

According to ILO, the official unemployment rate should be constructed in parallel with the international standard on measuring (full) unemployment. However, instead of completely relying on the official unemployment rate, there is a need to examine the employment situation from a three-dimensional perspective, using diverse supplementary unemployment

effect' proposed by Tversky and Kahneman. In other words, when an individual is judging a specific issue he or she sets a reference point and confirms judgment by adjusting this point; but by becoming entangled in the reference point first set in the adjustment stage, subsequent adjustments cannot be made. As a consequence, a bias can result (Tomono 2008: 81-82).

indicators that reflect the domestic situation of a country. Based on this viewpoint, the current international debate regarding employment indicators are moving from the official unemployment rate towards developing various indicators that reflect the underutilization of the labor force. This is because although the official unemployment rate is said to be most accurate, this data alone only captures full unemployment and recognizes unemployment only when active job-seeking activities are accompanied with joblessness; this approach cannot accurately reflect the state of a nation's employment, which makes taking appropriate responses difficult. Given this common understanding, many countries are constructing and using diverse supplementary indicators in addition to the official unemployment rate to correspond to their national situations. These indicators include underemployment, discouraged workers, and hidden unemployment. Among the OECD countries, there are 27 countries that determine underemployment (involuntary part-time workers), and up to 18 countries regularly determine the number of discouraged workers. What's more, BLS is designing and proposing additional alternative unemployment indicators, U1~U6.

Figure 3 shows the concepts and necessities for supplementary indicators. Measuring the unemployment rate begins with defining the boundaries between employment and unemployment, and between unemployment and the economically inactive population. However, in reality this division is less clear. Individuals in the grey area between employment and unemployment (A: underemployment) and the grey area between unemployment and the economically inactive population (B: hidden unemployment) are not officially regarded as the unemployed but in a state of semi-unemployment. Determining their number and seeking an appropriate countermeasure for them becomes a significant task in labor market policy. The cause for this gap between reality and the official unemployment rate in Korea is the lack of representation for the youth, women, and older population. For example, women are not fully integrated in the labor market and their rate of movement between employment and the economically inactive state is reported as high. However, it is highly probable that this represents movement between the underemployment and hidden unemployment. Similar problems arise in terms of the youth and elderly population; if being in a state of unemployment, in other words if conducting active job-seeking activities

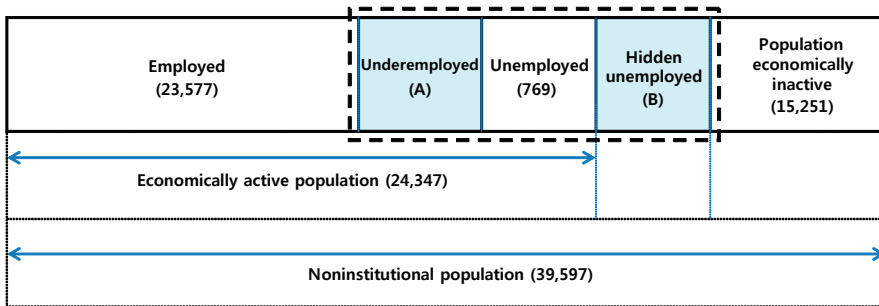


Figure 3. Labor force state of non-institutional population

are not advantageous (persons preparing for government or LE employment examinations) or if there are no separate incentives such as unemployment allowances, these people might consider remaining economically inactive or partially-employed while looking for a good job more advantageous. Given this, there is a basic limitation for the official unemployment rate to accurately reflect the Korean labor market, especially the employment situation of the more vulnerable population. There is a high probability that quasi-unemployment exists, and using diverse supplementary indicators to discern their movements would provide a useful tool for meaningful policy-making.

However Korea has been passive in constructing supplementary unemployment indicators because this may cause confusion. The National Statistical Office however does provide some supplementary indicators for individuals desiring additional work currently working less than 18 hours/36 hours, individuals who gave up job-seeking, job preparers, and those who are taking a hiatus.

“Persons who want additional work,” a substitute indicator for underemployment, are defined as those who worked less than 36 hours because of an economic reason (job unavailable, business slump, and ceased operations), thus want additional employment. Table 6 examines the desire for additional work for each group of people according to the hours they worked during the previous week. Excluding individuals who responded that they “wish to remain working the same hours,” the rest are categorized as part-time workers seeking additional work, and those people who could

Table 6. Desire for additional employment according to each group sorted by the number of working hours (2008)

(Unit: 1000)

Desire for additional employment	hours worked the previous week			
	0	1-17	18-35	total
1. I wish to increase the number of hours I work				
2. I want to work additionally to what I do now	33 (21)	150 (100)	320 (230)	504 (351)
3. I want a different job where I can work more hours	7 (3)	44 (20)	97 (64)	148 (65)
4. I am satisfied with the current hours	304 (34)	628 (116)	2,125 (329)	3,057 (479)
Total	349 (60)	850 (249)	2,597 (621)	3,796 (930)
* Involuntary part-time workers	44 (26)	222 (133)	472 (293)	739 (451)

Note: 1) Question regarding desire for additional employment was not asked to persons working more than 36 hours.

2) When the number of hours worked is 0, this is regarded as a state of leave of absence

3) The number in () indicates the frequency of working short term due to economic reasons (such as job unavailability, business slump, ceased operations and the like)

Source: National Statistical Office, 2008 *Economically Active Population Survey*, raw data.

work only these specific hours due to lack of work, business slump, ceased operations or other economic reason are categorized as “persons who want additional work” in parallel with the definition set by the National Statistical Office.

When compared with the ILO definition of underemployment, the difference here is that outside of the conditions of the possibility of employment, there is an additional condition that must account for short work hours of work for economic reasons. This is based on the ILO’s previous debate in 1998, which resembles measuring the involuntary part-time workers like many OECD countries including the U.S. (ILO KLIM 6th). However the problem is that whereas the Statistical Office includes individuals working less than 18 hours a day who desire additional employment (133,000 people)

and those working less than 36 hours a day (133,000 + 293,000 people), they exclude those who have not been able to work even one hour or are temporarily on leave due to lack of job availability (26,000 people). This not only conflicts with the ILO definition of underemployment, but also renders the concept and meaning of “persons who want additional work” significantly vague. To avoid inaccuracy and confusion, it would be best to use the term ‘involuntary part-time workers’ or “the underemployed,” which is more conceptual and objective, rather than terms such as “persons who want additional work” which involves the subjective intention of involuntary part-time.

“Despaired jobseekers” is a substitute indicator for discouraged workers. The National Statistical Office defines “despaired jobseekers” as people within the economically inactive population who intend to become employed and have the capability to do so, but have not conducted job-seeking activities during the last 4 weeks because of labor market conditions.¹⁰ These people have experienced such activities during the last year. In general, “discouraged workers” is a term which relaxes the standard of job-seeking activity for the officially unemployed. The term refers to persons who have not conducted job-seeking activities because they believe there is a low possibility of finding a job in the current labor market; therefore, these people are not defined as unemployed. However in the case of Korea, “despaired jobseekers” refers to a confined group of people who, among discouraged workers, have conducted job-seeking activities during the past year.¹¹ Including the condition of job-seeking activities within the past year has resulted in many discouraged workers being excluded from the despaired jobseeker statistics. Non-job seekers or discouraged workers (because of the labor market) are 286,000 in number but the despaired jobseekers according to definition of the National Statistical Office is only 118,000 (Table 7).

¹⁰ Labor market causes include 1) likeliness that there would be no appropriate job (major/specialty, experience, wage level, working conditions, and environment), 2) have tried job-seeking before but couldn't find a job, 3) insufficient qualification (education, techniques, lack of experience, age discordance).

¹¹ The U.S. has similar job-seeking experience limitations when determining discouraged workers, and European countries do not attach such specific limited condition related to past experiences of job-seeking.

The definition of despaired jobseekers used by the National Statistical Office today is one that was adopted from the standard for determining discouraged workers and was revised in the U.S. in 1994. Prior to this, the condition of “job-seeking activities during the past year” was not included, but it was a change made reflecting criticisms that the discouraged workers indicator only reflects subjective factors such as the “desire for work” and “judgment regarding the circumstances of the labor market.” The new designation was more a objective, indicator reflecting the individual’s actual settlement in the labor market (Yamagami 2002).

Table 7. Reasons for not job-seeking among those who wish to be employed (2004, 2008)

2000-2004	2005~	
	2004	2008
1. There doesn't seem to be an appropriate job regarding profession (major) or experience	32	33
2. There doesn't seem to be a job with a satisfying salary level or working conditions	78	68
3. There seems to be no work nearby	71	47
4. Lack of education or technical experience	10	8
5. The employer may think that the individual is too old or too young	35	43
6. The individual has attempted job-seeking before but there was no work available	74	88
7. Infant care, housework	14	5
8. School	5	10
9. Etcetera	17	4
		3
		14
Total	336	322
* Discouraged workers (1-6)	300	286
* Despaired jobseekers (National Statistical Office)	100	118

Table 8. Discouraged workers including experiences of participating in economic activities during the past year

(Unit: 1000)

	2004	2005	2006	2007	2008	
Discouraged workers	300	328	290	270	286	(100.0)
+ Experience of job-seeking activities in the past year → despaired jobseekers (National Statistical Office)	100	125	121	108	118	(41.3)
+ Experience of employment in the past year	181	193	155	149	160	(55.9)
+ Experience of employment or job-seeking activities in the past year	218	237	211	199	213	(74.5)

Source: National Statistical Office, *Economically Active Population Survey* [경제활동인구조사], data from each year.

However the flaw in Korea's designation of job-seeking experience is not merely that the yardstick for determining job-seeking activities is strict, but also in that it is not an indicator that accurately reflects the Korean labor market. When considering the large number of movements from employment straight into the economically inactive population, it is more useful to include employment experience rather than experiences of job-seeking activities during the past year to determine the extent of settlement in the labor market.

Table 8 shows that in Korea's reality there are more discouraged workers with work experience than those with job-seeking activities. When the former is included, the number of despaired jobseekers increases to 213,000, including 74.5% of the discouraged workers.

The most problematic of all supplementary indicators utilized by the government are those regarding 'persons preparing for employment'¹² and 'persons on a break.' This merely reflects their main activities during the last week, and thus by definition cannot be distinguished from other economic activity indicators. For instance, those who have replied that they have been

¹² This refers to those within the group of economically inactive persons who have replied that their main activity during the previous week had been "attending institutions or academies preparing for employment," or "preparing for employment."

preparing for employment or have been taking a break, includes everyone: those who are employed, unemployed and those who are economically inactive. Moreover, although it may be limited to the economically inactive population, this concept overlaps with despaired jobseekers. The use of such a non-conceptual indicator provides an excuse for the media and others to produce inaccurate statistical information. Specifically, the number of people who conform to the groups of despaired jobseekers, ‘persons preparing for employment,’ and who have been “taking a break” can be easily included in those who are “the actually unemployed,” “employment difficulty,” or “*de facto* unemployed.”¹³ Especially given labor market conditions, those “taking a break” cannot be viewed as sharing enough commonalities to allow the prediction of constant and uniform behavior. Although one may be “out of a job,” this itself cannot be referred to as “hidden unemployment” or “the group with employment difficulties.” Because using a non-conceptual indicator blurs the problem blurrier and amplifies statistical distrust rather than improving an understanding of the labor market, it is necessary to construct a more meaningful and objective employment indicator regarding the behavior of the labor market.

2. Quasi-Unemployment Measurement Using the Supplementary Indicator of the U.S. Bureau of Labor Statistics

Among complementary indicators, the most frequently cited among is the U.S. BLS supplementary unemployment rate system of U1~U6. With the official unemployment rate U3 as a standard, U1 and U2 determine the ratio of the unemployed in specific conditions; U4 and U5 are indicators that include the discouraged workers and marginally attached workers among the economically inactive population; and U6 is a supplementary indicator of the most broad meaning by encompassing underemployment (table 9).¹⁴ These indicators demonstrate specific types of unemployed and jobless; they

¹³ If “individuals preparing for employment,” or individuals who are “taking a break” are simply summed up, an overlap occurs.

¹⁴ BLS has been proposing complementary unemployment indicators U1-U7 since 1976; its form changed into a U1-U6 system when the labor force research investigation was redesigned.

Table 9. Supplementary unemployment rate of BLS

		(Unit: %)	
	Definition	2008. 8	2009. 8
U-1 (long term unemployment)	The proportion of the unemployed who among the economically active population are in a state of long-term unemployment of more than 15 weeks	2.1	4.9
U-2 (involuntary unemployment)	Among the economically active population, the proportion of job losers or persons whose temporary work is finished	3.0	6.0
U-3 (full unemployment)	Among the economically active population, the proportion of all unemployed	6.1	9.6
U-4 (Unemployment including discouraged workers)	Among the economically active population and discouraged workers, the proportion of the unemployed and discouraged workers	6.3 (1.03)	10.0 (1.04)
U-5 (Unemployment including marginally attached workers)	Among the economically active population and marginally attached workers (= discouraged workers+ other marginally attached workers), the proportion of the unemployed and marginally attached workers	7.1 (1.16)	10.9 (1.14)
U-6 (Unemployment including marginally attached workers and the underemployed)	Among the economically active population and marginally attached workers, the proportion of unemployed, marginally attached workers, and short term workers with economic reasons	10.7 (1.75)	16.5 (1.72)

Note: Marginally attached workers are persons who, among the economically inactive population, wish employment, can work right away, and have sought jobs during the past year. Discouraged workers are those who, among the marginally attached workers, did not carry out job-seeking activities due to labor market related reasons. The underemployed are part-time workers with reasons related to the economy. () refers to its ratio to the official unemployment rate.

Source: Bregger and Haugen (1995); BLS, Economic News Release on Employment Situation, 2009. 9. 4.

supplement the official unemployment rate to determine the specificities of the underutilized labor force.

However the BLS indicator cannot be used for cross-national investigations because it uses a different standard from that in Europe. It includes past job-

Table 10. Quasi-unemployment rate of the U.S. and Japan, U3~U6 (1994-2000 average)
(Unit: %)

	United States			Japan		
	Total	Men	Women	Total	Men	Women
U3	5.0	4.9	5.0	3.5 (3.8)	3.1 (3.8)	3.9 (3.7)
U4	5.2	5.2	5.2	4.7	4.2	5.4
U5	6.0	5.8	6.2	4.9	4.3	5.7
U6	8.8	8.4	9.3	8.0	6.2	10.7
U4/U3	1.05	1.06	1.04	1.36	1.35	1.38
U5/U3	1.20	1.18	1.23	1.41	1.39	1.45
U6/U3	1.78	1.71	1.86	2.31	1.98	2.72

Note: Japan regards the prospectively employed (persons waiting for the results of their application for employment) as the unemployed; this categorization is made according to standards used by the U.S. () is the official unemployment rate of Japan.

Source: U.S.: Current Population Survey; Japan: Special Survey of the Labor Force Survey. Recited from Yamagami (2002).

seeking activities in defining discouraged workers (Haugen 2009). Only limited cross-national comparative studies have been conducted, such as one conducted by Yamagami (2002) (Table 10).

Table 11 represents an examination of Korea's quasi-unemployment using the U3~U6 of the BLS supplementary unemployment indicators. U1 and U2 were excluded because they are indicators showing the long-term and involuntarily unemployed among the full unemployed persons. The following statistical definitions were used to construct U3~U6. Discouraged workers are those among the economically inactive population who desire work, are available for work but did not engage in job-seeking activities due to reasons related to the labor market (see footnote 10), and those who have worked during the past year. Marginally attached workers are those whose reasons for not job-seeking include personal situations such as infant care and housework. The underemployed are defined as individuals who work short hours (less than 36 hours a week) for economic reasons (no job available or slump in business, cessation of operations, etc.) and who want additional work.

Meanwhile, the BLS definition of discouraged workers and marginally

attached worker is limited to circumstances where the individual has job-seeking experience within the past year. When the fact that Korea's job-seeking activity conditions being relatively strict is considered, including employment experiences as an indicator that reflects the extent of the labor market settlement would be more corresponding to the original objectives. The three last rows of Table 11 are the results of reconstituting the index by including individuals who have employment experience with the discouraged workers and marginally attached workers.

U4, calculated by adding discouraged workers to the officially unemployed is 3.63%, U5 which includes discouraged workers and other marginally attached workers is 3.68%, and U6 which includes the underemployed is 5.52—they appear to be 1.15, 1.16, 1.75 times larger than the official unemployment rate of 3.16% respectively. When calculation was made by adding the number of those who had work experience during the past year to the discouraged and marginally attached workers, U4 was recorded 4.00%, U5 4.10%, and U6 5.93%, each 1.27, 1.30, and 1.88 times larger than the official unemployment rate respectively. In the case of extending the unemployment index to U4~U6, the range of captured state of semi-unemployment becomes wider in the case of women compared to men. This reflects the fact that the degree of women's labor market settlement is relatively low.

One feature identified by the above results is that Korea's U4~U6 structure shows a more similar appearance to that of the U.S. than that of Japan. A significant gap still remains between Korea and Japan, even when adjustment is made by including work experience. This is an unexpected result, especially when we consider the relative similarity between their labor markets, culture, and society.

The core cause is related to how individuals preparing for employment are dealt with. Japan identifies individuals waiting for their results of employment applications without conducting further job-seeking activities as the officially unemployed, but Yamagami (2002) reclassified them into discouraged workers in order to match it with U.S. standards. However in the case of Korea, if these persons waiting employment application results have not carried out additional job-seeking activities, they are categorized as part of the economically inactive population and are made to respond to additional questions regarding their wish for a job. However as examined before (refer

Table 11. Korea's state of quasi-unemployment examined by U3-U6

	BLS standard			BLS adjusted		
	Total	Men	Women	Total	Men	Women
(Officially) Unemployed	769	505	265	-	-	-
Unemployed + Discouraged workers	888	576	312	982	628	354
Unemployed + Marginally attached workers	900	582	318	1,007	639	368
Unemployed + Marginally attached workers + Underemployed	1,351	874	477	1,458	931	527
U3 (= official unemployment rate)	3.16	3.55	2.61	-	-	-
U4	3.63	4.03	3.06	4.00	4.38	3.46
U5	3.68	4.07	3.12	4.10	4.46	3.59
U6	5.52	6.12	4.68	5.93	6.49	5.15
U4/U3	1.15	1.14	1.17	1.27	1.23	1.33
U4/U5	1.16	1.15	1.19	1.30	1.25	1.38
U6/U3	1.75	1.72	1.79	1.88	1.83	1.97

Note: 1) Marginally attached workers are persons who, among the economically inactive population, wish employment, can work right away, and have experience of job seeking during the past year. Discouraged workers are those who, among the marginally attached workers, did not carry out job-seeking activities due to labor market related reasons. The underemployed are part-time workers with reasons related to the economy.

2) Includes individuals who wish employment, can start to work immediately, and have employment experience in the past year, within the marginally attached workers and discouraged workers.

Source: National Statistical Office, *Economically Active Population Survey* [경제활동인구조사], 2008.

to Table 4), a large number of individuals preparing for employment were excluded because only a few responded that they wish to get a job, not satisfying the conditions for discouraged or marginally attached workers. Only 8.5% of the individuals preparing for employment in an economically inactive state in 2008 responded that they want work.

The second feature is that compared to the U.S. or Japan, Korea shows nearly no difference between U4 and U5. The results are substantially the same even when the conditions for job-seeking experience are alleviated. This means that there is hardly any distinction between the discouraged

workers and the marginally attached workers; wish for a job and experiences of employment or job-seeking activities worked out to be a stronger control factor than the reasons for not looking for a job.

Based on the above analysis, the supplementary unemployment indicators of BLS are understood to be insufficient in its utility as a supplementary index to determine the fluctuations and urgency of Korea's employment situation.

3. Composition of Extended Unemployment Indicators¹⁵

Based on the above analysis the core elements that must be considered for a supplementary indicator that suits Korea's circumstances can be summarized as the following:

First, in order to capture the potential unemployment we must be able to distinguish individuals who, although they want work, cannot be identified as the unemployed due to their inability to satisfy the requirements of job-seeking activities or availability for diverse reasons. Also it should be able to supplement the problems of individuals being omitted from the group of discouraged workers in the course of individuals who mainly conducted activities of employment preparation being identified as not wanting work in their responses to questions, a result due to a deficiency in the investigation method.

Next, the group of the underemployed whose workforce is underutilized must be identified among the employed. While doing so, going beyond the generally mentioned 'involuntary part-time workers,' it should be able to distinguish those underemployed who sought employment for survival but are in fact semi-employed due to the lack of available work.

The following distinguishing standards can be used to identify the potentially unemployed and the underemployed in the current data available from the Economically Active Population Survey.¹⁶

¹⁵ It is noted that this section is part of Hwang, Soo Kyeong's debate (2009) partially edited and expanded.

¹⁶ A diverse range of standards has been proposed in previous studies to calculate hidden unemployment. Kim, D. (2000) has connected data on economic activity to a panel and defined individuals who participated in economic activities for only a few months out of a year as "marginal participants." While these "marginal participants"

First, the non-job-seekers with a labor market related reason can be identified as discouraged workers by partially easing the standard used to determine job-seeking activities. This is in accordance with the discouraged worker definition of OECD.

Second, individuals who wish for work and have recent experience of economic activity (job-seeking or employment) can be categorized as marginally attached workers, because these people can enter the labor market at any time. In relation to this, there is a need to make a judgment about individuals who conducted job-seeking activities but were still categorized as the economically inactive population. Individuals should be counted as having had the intention of employment if they were job-seeking, but the current investigation structure does not ask this intention at all if individuals do not satisfy the condition of 'having been available for work during the previous week,' discluding them from all categorizing standards distinguished from intentions of employment. Accordingly, it is most reasonable to categorize job-seekers who recently conducted economic activities (employment or job-seeking) as marginally attached workers, although they may not meet the condition of availability.

Third, job preparing individuals excluded from the discouraged worker and marginally attached worker groups also need to be identified as a separate category. This is to remedy the problem of omitting individuals who have prepared for a job during the previous week but responded that they do not want a job, from the category of discouraged or marginally attached workers. Despite their responses, job-preparing activities indicate intent for employment. Individuals preparing to get a job can be used to show the characteristics of the youth age group's patterns for entering the labor market. This group of individuals does not yet have past experiences of economic activity.

Fourth, the underemployed are individuals who desire additional work but only work short hours due to economic reasons. Put differently, these

may agree with the intent of research, it is not useful in determining trends in the labor market for each month. Meanwhile, Kang, S. et al. (1999) and Hwang, S. (2009) propose diverse supplementary indexes that have applied the BLS indicators, but the grounds for each indicator have not yet been fully dealt with.

Table 12. Typology and concepts of extended unemployment

Type	Statistical definition
Unemployed	
(Fully) unemployed	Conducted job-seeking activities with wish for employment, can become employed immediately, but were unable to find a job (=the officially unemployed)
Economically inactive population	
Discouraged workers	Has the intention to work and can start working immediately, but were unable to become employed due to labor market reasons (easing of job-seeking activity standard requirements)
Marginally attached workers	Has the intention to work, has experience of economic activities (employment or job-seeking), and not a discouraged worker (easing of standard for the possibility to work immediately)
Potentially jobless (hidden unemployment)	Discouraged workers + marginally attached workers + employment preparing individuals
Employed	
Underemployed	Short-hour workers due to economic reasons (no job available or business slump) but wishing for additional work
Partially unemployed	Underemployed individuals who work less than 18 hours
Extended unemployed and unemployment rate	
Extended unemployed	Unemployed + the potentially jobless (among economically inactive population) + partially unemployed (among the employed)
* Extended unemployment rate	$(\text{Unemployed} + \text{potentially jobless} + \text{partially unemployed}) / (\text{economically active population} + \text{potentially jobless}) \times 100$

individuals can be defined as involuntary part-time workers. This definition is in accordance with the definition of underemployment used by the OECD. Individuals who have worked less than 18 hours among the underemployed have been subject to significant underutilization; they are defined as the partially unemployed and can be included in the extended concept of unemployment.

Based on this typology, the extended concept of employment identifies hidden and partial unemployment as part of official unemployment, defining

Table 13. Scale of each extended unemployment type

(Unit: 1000, %)

	2003	2004	2005	2006	2007	2008	2009.1-8
<Total>							
(Fully) Unemployed	818	860	887	827	783	769	923
Discouraged workers	252	300	328	290	270	286	393
Marginally attached workers	59	70	71	81	70	64	89
Employment-preparing individuals	318	355	426	488	502	547	537
Potentially unemployed	629	725	825	859	843	898	1019
Underemployed	344	470	515	469	454	451	596
Partially employed	120	177	185	173	155	159	211
Extended employed	1,566	1,761	1,897	1,859	1,781	1,826	2,153
*Official unemployment rate	3.6	3.7	3.7	3.5	3.2	3.2	3.8
*Extended unemployment rate	6.6	7.3	7.7	7.5	7.1	7.2	8.5
(multiples ratio)	(1.86)	(1.99)	(2.07)	(2.17)	(2.20)	(2.29)	(2.24)
<Men>							
(Fully) Unemployed	508	534	552	533	517	505	610
Discouraged workers	123	143	167	161	154	161	229
Marginally attached workers	23	28	34	38	31	29	40
Employment preparing individuals	176	195	232	274	287	308	288
Potentially unemployed	322	367	434	473	473	498	557
Underemployed	191	270	317	295	297	292	386
Partially employed	59	94	108	95	88	94	133
*Extended employed	889	995	1,095	1,102	1,078	1,097	1,299
*Official unemployment rate	3.8	3.9	4.0	3.8	3.7	3.6	4.3
Extended unemployment rate	6.4	7.1	7.6	7.6	7.4	7.5	8.7
(multiples ratio)	(1.71)	(1.81)	(1.92)	(2.00)	(2.02)	(2.10)	(2.05)
<Women>							
(Fully) Unemployed	310	326	334	294	266	265	314
Discouraged workers	129	157	161	129	116	125	164
Marginally attached workers	36	42	37	43	38	35	49
Employment-preparing individuals	142	159	194	215	215	239	249
Potentially unemployed	307	358	391	386	370	400	462
Underemployed	153	200	198	174	156	159	210
Partially employed	61	83	77	78	67	65	78
Extended employed	677	766	802	758	703	729	854
*Official unemployment rate	3.3	3.4	3.4	2.9	2.6	2.6	3.1
*Extended unemployment rate	7.0	7.6	7.8	7.3	6.7	6.9	8.1
(multiples ratio)	(2.12)	(2.27)	(2.31)	(2.48)	(2.55)	(2.65)	(2.60)

Note: () is the ratio to official unemployment rate

Source: National Statistical Office, *Economically Active Population Survey*.

this as 'extended unemployment.' Table 12 shows each of the types and statistical definitions of the extended unemployment. The scale of each extended unemployment category from 2003, the earliest data available, to the most current year is recorded in Table 13.

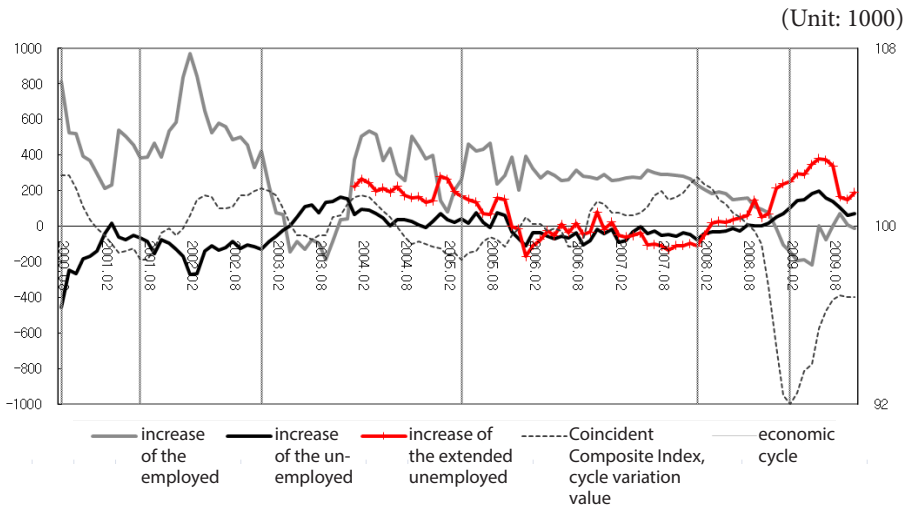
The number of the potentially unemployed masked in the economically inactive population increased from 629,000 in 2003 to 898,000 in 2008. The ratio of this number to the number of the officially unemployed increased from 0.77 to 1.17. The scale of the potentially unemployed shows a sudden surge to 1,019,000 in 2009 (January-August in average) when the economic crisis became prevalent. Such a rapid rise of hidden unemployment was caused by the surging number of individuals preparing for employment. During 2003-2008, their numbers increased by 230,000, while the number of discouraged and marginally attached workers remained stable until the 2009 financial crisis when they suddenly soared. This data shows that many job-lossers during financial crisis were in a hidden unemployment state rather than the official unemployment state.

Meanwhile, the underemployed increased overall during the same period and showed a marked increase in 2009. Part-time workers who worked less than 18 hours (the partially unemployed) among the underemployed are also identified to have increased significantly. The proportion of the partially unemployed among the underemployed remained stable at 35%.

The extended unemployment rate that encompasses hidden unemployment and partial unemployment was 8.5% during January-August 2009, 2.24 times higher than the official unemployment rate of 3.8%. The multiples ratio of the extended unemployment rate rose from 1.86 in 2003 to 2.29 in 2008 and it shows that the official unemployment rate's representativeness is becoming increasingly weak. Meanwhile this multiples ratio still remains higher among women than men, showing that the official unemployment rate has even more limitations in reflecting the employment crisis for women.

4. Utility of Extended Unemployment Indicators

For an extended unemployment indicator to be useful for policy-making, it must be accurately capture the fluctuations of the labor market affected by market situations. Figure 4 shows increasing market fluctuations as



Note: The business cycle reference until April 2005 is the official reference date reported by the National Statistical Committee and the data after that is the assumption of the researcher.

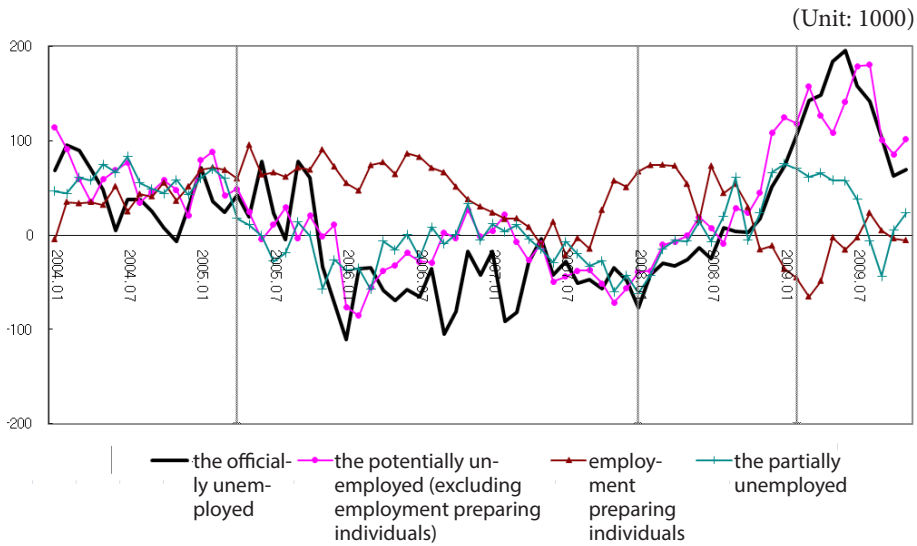
Source: National Statistical Office, *Economically Active Population Survey*, dataset from each year.

Figure 4. Business and employment fluctuations using extended unemployment indicator

fluctuations for the employed, officially unemployed, and the extended unemployed. Figure 5 shows the fluctuating trend according to each type of the extended unemployed.¹⁷

First, the range of fluctuation of the unemployed following economic fluctuations are noticeably low compared to the fluctuation range of the employed, but when it is identified by the fluctuations of the extended unemployed, the difference markedly decreases. This is because when the

¹⁷ In order to thoroughly analyze the economic fluctuations, the Beveridge-Nelson decomposition, Hodrick-Prescott filter, Baxter-King filter and other methods must utilize only the cycle variation value without the secular trend variation value. However the extended unemployment data can only be constructed from the year 2003, and thus a time series for filtering is insufficient. Here, only a rough economic fluctuation is identified using year to year variation analyses, which accounts on for seasonal change.



Source: National Statistical Office, *Economically Active Population Survey*, dataset from each year

Figure 5. Increasing trend for extended unemployment by type

number of jobs decreases with the deteriorating economy, only a portion of the unemployed is identified as the officially unemployed and the rest lie dormant in the labor market in the form of hidden or partial unemployment.

When the extended unemployment is examined by type, fluctuations of the officially unemployed, the potentially unemployed (excluding individuals preparing for employment), and the partially unemployment move in reverse directions from the economy. However, the fact that individuals preparing for employment are showing economic cyclicality is a distinguishing factor. This can be explained intuitively. When the economy is in good shape the individual expects increased employment opportunities in the future, resulting in an increase in the number of people joining to prepare for better employment. On the other hand when the economy is deteriorating the individual is in concern of the decreased opportunities for employment. So, the individual may give up preparation for getting a job. After giving up, whether they would show tendency to first settle with whatever they can get

Table 14. Relationship between economic growth rate and the unemployment rate fluctuations (2003.1/4~2009.3/4)

	Growth rate → Unemployment rate		Unemployment rate → Growth rate	
	official unemployment rate	extended unemployment rate	official unemployment rate	extended unemployment rate
growth rate	-0.071 (0.015)*	-0.165 (0.032)*	-	-
unemployment rate	-	-	-6.915 (1.577)*	-3.417 (0.670)*
trend	-0.032 (0.028)	-0.153 (0.056)*	-0.715 (0.237)*	-0.942 (0.212)*
R ²	0.472	0.522	0.614	0.671

Note: Unemployment rate fluctuations are comparisons with previous year; () is standard error. N=23. * is 1% significance level

Source: National Statistical Office, KOSIS National Statistics Portal; *Economically Active Population Survey* [경제활동인구조사], dataset from each year.

their hands on, or would remain in an economically inactive state can be determined only with additional research, such as dynamic analysis.¹⁸

Table 14 shows the relationship between fluctuations of the economy and the unemployment rate according to Okun's Law, using a simple regression analysis. When the official unemployment rate is used, it is analyzed that for every 1% of GDP increase the unemployment rate decreases by 0.071~0.145%p, but when the extended unemployment rate is used, it decreases

¹⁸ Two hypotheses are possible. The first is that if the employment-preparing individuals are a group with a relatively low degree of labor market settlement compared to the unemployed (i.e. a person currently engaging in job-seeking activities), fluctuations of the employment preparing individual would be closely related with the fluctuations of the economically inactive population that encompasses the discouraged workers. That is, a large proportion of decreased employment individuals preparing for employment will be transferred to the economically inactive population. However if the employment preparing individuals that will be future job-seekers show no difference in their willingness compared to current job-seekers, there is a high probability that the decreased number of employment preparing individuals will appear coincident with an increase in the underemployed or the employed. This is because they will take the job that is available to them for now, if there is not much possibility that they will get a good job in the future.

Table 15. Fluctuations in the state of the labor force, according to previous status of work of the extended unemployed

	type	regular worker	temporary worker	daily worker	employer	self employed	unpaid family worker	total
current job	Fully employed	356	-2	-182	-20	-280	-58	-186
	Underemployed	11	27	27	6	35	4	109
	_Underemployment*	6	19	20	3	20	4	72
	_Partial unemployment	4	7	7	3	15	0	37
	Subtotal	367	25	-155	-14	-245	-54	-77
previous job	Officially unemployed	52	13	45	-1	0	1	109
	Hidden unemployed	15	32	35	1	5	-1	86
	_Discouraged workers	12	15	26	0	6	2	61
	_Marginally attached worker	6	8	13	1	-1	0	26
	_Job preparers	-3	9	-5	0	0	-3	-1
	Purely economically inactive	28	34	-24	3	4	38	84
	Subtotal	95	78	56	3	9	38	279

Note: This is an average of January-November of each year.

Source: National Statistical Office, *Economically Active Population Survey*.

by 0.165~0.293%. The latter shows doubled sensitivity to the economic fluctuations.

Also, the extended unemployment indicators are useful in identifying the dynamics of the labor market by each category: gender, age, status of workers and so on. Table 15 shows the fluctuations in the state of the labor force according to the status of the extended unemployed. During the year 2009, employment plummeted, especially for the self-employed and day laborers, and simultaneously the underemployed increased significantly. Meanwhile, individuals who were regular workers in their previous jobs are transferred to the officially unemployed when they lose their jobs, but temporary or day workers tend to transfer to the potentially unemployed group instead. Temporary and day workers are the first target of employment adjustment, but their numbers are difficult to represent in unemployment indicators. This is also the reason why an approximate 3% unemployment rate could

be maintained despite the actual deterioration of the recent employment situation.

As broadly examined above, the size of the potentially employed and partially unemployed that are not captured as the unemployed is large, exceeding twice the official unemployment rate. Also, it can be seen that it responds dynamically to economic fluctuations. In addition, each indicator provides a useful analysis framework for understanding the different labor market behaviors according to the types of workers. This is why we must examine their size and characteristics, as well as the progress of fluctuations.

V. CONCLUSION

Korea shows a stable unemployment rate of approximately 3%. Ironically, this results in a side effect of amplifying distrust in statistics. There is a wide gap between the official unemployment rate and the perceived unemployment rate. This research paper intends to solve this mistrust and seeks to find room in calculating the unemployment rate, systematically inspecting it in comparison with international standards.

When compared with ILO standards in measuring the unemployment rate, Korea's unemployment rate seems to comply generally with international standards but when analyzed in detail, differences can be identified. This disparity is seen especially in dealing with nonpaid family workers who work less than 18 hours, judgments of the prospectively employed or individuals waiting to be assigned, and requirements for job-seeking activities.

However not all countries determine their unemployment rates in exact accord with ILO standards, and countries are given discretion in interpreting parts of it so it complies with the specific domestic situations. This is why the ILO does not designate even minor detailed standards. What is most important is whether national standards parallel ILO standards in a given domestic situation by reflecting ILO principles and guidelines.

In light of this, determining Korea's unemployment rate is weakest in its lack of an objective standard that determines an individual's desire for work and how to determine whether an individual has conducted job-seeking activities. If the response is divorced from reality by 90%, checking errors

in categorization caused by faulty methodology must be foremost. It is also necessary to reconstruct the investigation to avoid omitting actual jobseekers or errors in categorization caused by job-seeking activity requirements; that entails providing uniform and objective concepts of ‘work’ and ‘employment’ and investigating the individual’s desire for employment, whether they have conducted specific job-seeking activities, specific reasons for not job-seeking step by step. Considering time series stability of the statistics, the discrepancies caused by different investigation methods also should be carefully investigated and analyzed. I leave the specific investigation structure construction to future research.

There is also a need for a three-dimensional approach to domestic unemployment using supplementary indicators that are specific to Korea. This paper proposed using extended unemployment indicators based on current investigations to identify and measure hidden employment and underemployment. There are limitations in quantifying exact numbers with current investigative methods, but this study was able to identify different aspects of the labor market’s dynamics. This demonstrates the potential for the extended unemployment indicator as a useful tool for analyzing the fluctuations in the labor market.

REFERENCES

Books and Articles in Korean

- Hwang, Soo Kyeong. 2009. “Structure and Scale of Hidden Unemployment” *Monthly Labor Review* 4. Korea Labor Institute (“잠재실업의 구조와 규모.” 『월간 노동리뷰』 4월호, 한국노동연구원).
- Kang, Soon Hee, Jae Sik Jeon, and Kay O Lee. 1990. *Study on Improvements for Unemployment Statistics*. Korea Labor Institute (“실업통계의 개선방안”).
- Kim, Dae Il. 2000. “Marginal Participation and Unemployment.” *Korean Economy Analysis* 6(1). Korea Institute of Finance (“한계적 경제활동참가자와 실업” 『한국경제의 분석』 6권 1호, 한국금융연구원).
- Kim, Ki Ho and Dong Gu Chang. 2005. “Significance of the Employment Rate and its Utility Analysis.” *Economic Analysis* 11(2). Financial Economy Institute, Bank of Korea (“고용률의 의의와 유용성 분석.” 『경제분석』 11권 2호.

한국은행 금융경제연구소).

- Kim, Yong Hyun. 2005. "Unemployment level assessment by progress of quasi-unemployment." *Monthly Labor Review*. Korea Labor Institute ("유사실업률 추이를 통한 실업률 수준 평가." 『월간 노동리뷰』 창간호. 한국노동연구원).
- Lee, Byung Hee and Jae Ho Chung. 2005. *Labor Mobility and Manpower Development*. Korea Labor Institute (『노동이동과 인력개발 연구』).
- Moon, Kwoun Soon. 2002. "Story of Economic Life: Understanding Labor Statistics." *Economic Education* 11(1). Korean Development Institute ("생활경제이야기: 고용통계의 이해." 『경제교육』 11권 1호(통권 제19·20호 합본). 한국개발연구원).
- National Statistical Office. Various Issues. *Economically Active Population Survey* (『경제활동인구조사』).
- Tomono, Norono. 2008. *Behavioral Economics*. Jihyung Publishers (『행동경제학』 지형출판사).

Books and Articles in English

- BLS. 2008. "The Unemployment Rate and Beyond: Alternative Measures of Labor Underutilization." *Issues in Labor Statistics* Summary 08-06. U.S. Department of Labor & U.S. Bureau of Labor Statistics.
- Bregger, J.E. and S.E. Haugen. 1995. "BLS Introduces New Range of Alternative Unemployment Measures." *Monthly Labor Review* Oct: 19-26.
- Haugen, S.E. 2009. *Measures of Labor Underutilization from the Current Population Survey*. BLS Working Papers.
- Hussmanns, R. 2007. "Measurement of Employment, Unemployment and Underemployment: Current International Standards and Issues in their Application." *Bulletin of Labour Statistics*. ILO.
- Hussmanns, R., F. Mehran, and V. Verma. 1990. *Surveys of Economically Active Population, Employment, Unemployment and Underemployment: An ILO Manual on Concepts and Methods*. ILO.
- ILO 13th ICLS. 1982. *Resolution Concerning Statistics of the Economically Active Population, Employment, Unemployment and Underemployment*.
- ILO 14th ICLS. 1987. *Guidelines on the Implications of Employment Promotion Schemes on the Measurement of Employment and Inemployment*.
- ILO 16th ICLS. 1998. *Resolution Concerning the Measurement of Underemployment and Inadequate Employment Situations*.
- _____. 1998. *Guidelines Concerning Treatment in Employment and Unemployment Statistics of Persons on Extended Absences from Work*.

Sorrentino, C. 2000. "International unemployment rates: how comparable are they?" *Monthly Labor Review* June. BLS.

Yamagami, T. 2002. "Utilization of Labor Resources in Japan and the United States." *Monthly Labor Review* April. BLS.

