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Youth Unemployment In Korea*

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The commonly held idea that Korea has been a country with no serious youth unemployment problem is probably due to the fact that other countries suffer more severe youth unemployment. In fact, compared to other industrialized countries and the Asian neighborhood, the youth unemployment rates in Korea

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have not been particularly high. This study provides a comprehensive review of the youth unemployment in Korea. Some basic figures and stylized facts concerning Korean youth labor market are described with discussion of age and gender-specific unemployment rate. The trend and structure of, and factors affecting youth unemployment are also examined.

I. Introduction

The experience of unemployment of young persons is likely to have serious impact on individuals as well as on society at large. For youth, unemployment implies not only a loss of current income, but also a loss of chance to accumulate valuable working experiences which will undoubtedly extend into the future. Especially the unemployment of highly educated young adults implies a waste of valuable human capital resources. Thus the increased number of these young unemployed would not only pose a serious threat to the smooth operation of the industrial system but also create doubts to the validity of our social and economic system.

This is why there has been a worldwide concern about youth unemployment in developing countries as well as in highly industrialized countries. This concern, in turn, has resulted a spate of studies. See, for example, OECD(1978, 1980), Bureau of Labor Statistics(1981) among others. These studies examined the magnitude of the youth unemployment problem and discussed some of the underlying causes for the large international differences in youth unemployment. Jackson (1985) and Hart(1988) carefully analyzed the UK experience while Franz(1982) and OECD(1984) have covered Federal Republic of Germany and France respectively. On the other hand, only a few studies can be found for the developing countries including Korea.

It is generally known that Korea is a country where there is no serious youth unemployment problem. This is probably due to the fact that other countries suffer more severe youth unemployment. In fact, compared to other industrialized countries and the Asian neighborhood, the youth unemployment rates in Korea have not been particularly high. The youth unemployment rates, however, have been considerably higher than the

adult or overall unemployment rates in Korea.

The aim of this study is to provide a comprehensive review of the youth unemployment in Korea. Some basic figures and stylized facts concerning Korean youth labor market are described with discussion of age and gender-specific unemployment rate in the next section. In doing so, the background to the trend and structure of youth unemployment are examined and are related to the policy initiatives. Section III examines several factors affecting youth unemployment rate. They are the rapid economic growth performance, demographic charac teristics, institutional features, and the government measures to cope with youth unemployment. Section IV presents empirical results on the relationship between youth unemployment rate and its determining factors. Conclusions and caveats are in section V.

Ⅱ. Trends in Youth Unemployment

1. Overall Trend

The unemployment rates of Korean youth[1] have steadily decreased over the last two decades with the exception of the early 1980s. This is well illustrated in Figure 1 which was drawn from Table 1. It is evident that there is not one linear downward trend throughout the whole period. There are two linear downward trends, one up to 1978 and another afterwards: the latter is steeper than the former.

As can be seen from Table 1, over the period of 1966-1988 the Korean unemployment rate for young persons stood at 8. 8 percent on average, a relatively high rate compared with the prevailing international rates. This comes from the high youth unemployment rate in the late 1960s, average of 11. 1 percent. The youth unemployment rates, however, were lowered to 8. 3 percent in the 1970s on an average. This significant improvement

1) In this study, the terms 'youth' and 'Young People' generally refer to the broad category of persons under 25 years of age. This group is divided into 'teenagers'-those under 20 years of age-and 'young adults'-from age of 20 to 24. The lower age limits for youth is 15.

was mainly due to the rapid economic expansion and the structural change in Korean economy. As Korea pursued an export-oriented development strategy, the demand for labor in the manufacturing sector was dramatically increased. This absorbed a large a large number of young workers.

The youth unemployment in Korea started to grow in 1980 in contrast to what was achieved over the 1970s. The average youth unemployment rate increased from an average of 8.3 percent in the 1970s to 9.3 percent in the 1980s. Korea experienced high rates of overall and youth unemployment in the early of 1980s. The rate of youth unemployment was at a peak of 11.5 percent in 1980 and remained at 10.1 percent until 1982. The rate reverted to the previous levels in 1985.

Two factors contributed to the deterioration of youth unemployment. One is the recession caused by the second oil price hike combined with the social and political instability in Korea. Another is the decline of the agricultural sector. After 1975, the agricultural employment was declined in absolute terms. In the 1980s the decline was accelerated at a faster pace than in the 1970s. The employment in agriculture was reduced to 25 percent of total employment in 1985. The decline of the agricultural sector has greatly reduced family employment opportunities for young persons in farming. As a result, the youth unemployment in the early 1980s faced a more unfavorable situation in labor markets compared to that of the 1970s.

The largest and the most sustained improvement was recorded during the period of 1987-1988. In 1988, the youth unemployment rate was reduced to the lowest 7. 1 percent. In this period while large scale of selective policies such as the comprehensive system of vocational education, training and placement measures undoubtedly contributed to the improvements, much is owed to the aggregate demand expansion in 1988.

2. A Comparison with Overall Unemployment

The general trend in the overall (age 15 and above) unemployment has reflected youth unemployment. The overall unemployment rates began to decrease fairy steadily by the end of 1978. The declining trend, however, was reversed in 1979 and then unemployment rate remained high at about 4.5 percent in 1982. The worst year was 1980 in which the

unemployment rate reached the peak of 5. 2 percent which was close to those of the late 1960s. As the social disturbances calmed down and the external economic conditions improved, the overall unemployment rates declined gradually again. The noticeable reduction was in 1988 reaching at 2.5 per cent.

In spite of the similarity between the overall and youth unemployment patterns, several distinctive features are noticed. First, youth unemployment rates have always been higher than overall unemployment rates throughout the period examined. The youth to overall unemployment ratio is averaged about 2.5. This evidence suggests the possibility of a negative correlation between unemployment and age. This observation is supported by the fact the teenager to adult unemployment ratio was greater than the young adult to adult unemployment ratio.

Second, even though overall and youth unemployment rates have been moving in the same direction, youth unemployment rates have decreased more than overall unemployment rates over the whole period. During the downward phase of business' cycles the youth unemployment suffered more than the overall unemployment. This phenomenon is consistent with the conventional trend of the youth labor market condition. It has been widely accepted that young people seem to be hit particularly hard in the early years of recession. This is because youth are at the end of employment queue - "hired last and fired first" (OECD, 1978, p. 25).

The wide gaps between youth and overall unemployment rate took place both in 1977 and in 1988. The large gap in 1988 was resulted from the sharp decrease of adult unemployment compared to youth. That is, the rates of the adult employment have increased more quickly than those of youth, even though they have been moved in the same direction. The widest gap in 1977 was different in nature from 1988 incidence. In 1977, while the adult unemployment rate was reduced to 2.2 percent from 2.7 percent in 1976, the youth unemployment rate was increased from 7.4 percent in 1976 to 8. 6 percent. This is difficult to interpret. This phenomenon can neither be viewed as an evidence of the vulnerability of youth employment nor can it be explained by the labor supply side factor.

3. Age Group and Gender-Specific Unemployment Rate

The term youth here includes both teenagers (between the age of 15 and 19) and young

adults (between the age of 20 and 24). The unemployment rates of teenagers are consistently higher than those of young adults except 1969. This result indicates an apparent inverse relationship between age and unemployment. This can be interpreted as an evidence of the assertion that young people tend to spend more time searching for jobs and young teenagers experience a longer unemployment spell than older people.[2)]

This evidence is consistent with the earlier findings in the OECD(1980) study. One of the significant patterns drawn from the data across the ten industrialized countries was that "teenage unemployment rates are consistently higher than those of young adults, who in turn have higher unemployment rates than adults" (OECD, 1980, p. 23).[3)]

One of the significant patterns between male and female youths is that males have generally higher unemployment rates than females with the exceptions of 1967 and 1968. As the sex-differentials in unemployment rates for teenagers and young adults were examined separately, both cases mirrored the trend of youth segment as a whole without any noticeable exception. Moreover, the disadvantageous position of males relative to females is more pronounced among young adults. This is opposite to the case of other industrialized countries. The OECD(1980) study, for example, reported that "teenage girls have generally fared worse than their male counterpart" (p. 23).

One possible, but remote, explanation for this can be found in the role of women. The Confucian tradition had made it increasingly difficult for women, especially young women, to gain a foothold in the world of work. Since women were discouraged to employment opportunities, they remained in household duties. They remained in non-workers position in the classification of employment. The observed unemployment

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2) Another reason for the higher unemployment rate for teenagers than young adults in Korea is the military draft. All eligible young men aged 20 are required by law to serve in the military form about three and hence are excluded from labor force. This exclusion results in and underestimation of unemployment rate for young adults.

3) The OECD(1980) study conducted a more thorough investigation into the effects of ageing on unemployment rate. Their data demonstrated that within 5-year age groups the strong effects of ageing on unemployment rate. In order to test this claim for Korean labor market we have tried to collect data on employment rates by single year age, but failed to obtain them. The National Bureau of Statistics in Korea possesses the data by single year age group in unpublished form, but they are reluctant to release the data to the public because the sample is too meager to infer reliable results for each single age group.

rate for female youths was, thus, lower than what it actually was.

4. Regional Differences

It has been argued that the area in which a person lives is often the more important determinant of whether one gets a job or not than other factors like skill or training (Franz, 1982, p. 42). Though empirical evidence on this point is sparse, our finding provides some supporting evidence. Based on 1980 census data, the following findings were made.

First, unemployment rates for youth as well as adults are relatively low in industrial areas such as Gumi, Ulsan, Changwon, Iri, and Pohang. The exception is Masan where an industrial zone for export promotion was established, but is now losing out the merits of an industrial city.

Secondly, the large cities tend to have lower unemployment rates. The unemployment rate in Seoul, the largest and capital city of Korea, was 9.5 percent which was below the national average of 10.1 percent. A plausible explanation for this is that it is easier to find a job in large cities than in smaller ones or in rural areas.

Thirdly, the unemployment rates in cities near Seoul have been far above that in Seoul, and higher than the national average. Among the cities around Seoul, Inchon has the highest unemployment rate. One possible explanation for this phenomenon is that since Inchon has been characterized as an industrial area as well as a harbor, the labor turnover rate has been higher than other medium-size cities. The city lured the rural population into the city, but did not provide permanent jobs to the migrants. Thus they quitted the temporary jobs and moved on to larger cities for more secured job. This might cause the high unemployment rate in the cities near the capital city. This observation is supported by the fact that a small-size city, surrounded by rural area, tends to have a higher level of youth unemployment rate.

It is also observed that an area where the adult unemployment rates were relatively low tended to have low level of youth unemployment in general. Adult unemployment rate in Inchon was 11.0 percent, the highest rate among cities in Korea, whereas it was 3.5 percent in Chonan. For young persons, the unemployment rate in Inchon was 26.6

percent while it was 12.4 percent in Chonan.[4] A possible explanation for the positive correlation of unemployment between youth and adult across region is that adult and youth labors are not substitutes but complementary. During the downswings of the economy both the adult and youth unemployment moved in the same direction but with different degrees. The youths are more vulnerable than adults. This explanation is consistent with our earlier explanation of youth to adult unemployment differences.

Ⅲ. Factors affecting Youth Unemployment

1. Demographic Factors

After the Korean War baby boom, Korea began to experience lower fertility rates after the mid-1960s. The substantial decline of fertility rate in the 1960s was well illustrated by the fact that the total fertility rate for urban areas fell from 5.4 children to 3.2; that for rural areas from 6.8 to 4.4 (Hasan and Rao, 1979, p. 129). The rapid decline was largely attributable to the efforts of the government and its family planning program. Since the immigration has not played any role at all in population change in Korea, the population growth tends to have a lagged effect (at least 15 years) on labor supply. As a result the population for 14 years and over grew at a substantially lower rate in the 1980s than previous period.

The labor supply was further slowed down to a large extent by the reduction of labor force participation. This was because a change in the size of the youth population of working age did not completely translate into an equivalent change in the size of youth

4) This pattern of youth umemployment in Korea is contrasted to that of in other countries. In his study on the youth unemployment in Great Britain, Jackson(1985, pp. 42~43) found that an area, where there was a high adult unemployment rate also had a low youth unemployment rate. He interpreted this as an evidence of "discouraged" young workers. When and where the unemployment is generally high, young people may decide to remain in full-time education longer than they would have done otherwise.

labor force. Some working-age youth were neither working nor seeking employment. Most of the non-labor force youths were the students.[5] The school enrollment, especially the secondary education, has gradually increased as the general income level of the nation continued to increase and the tuition support for poor family expanded. The progression rate of middle school graduates has now reached more than 80 percent (Park and Castenada, 1987, p. 10). Also college enrollment was sharply increased in 1980 and since then it has gradually increased.

Another factor that affected the decline in the labor force participation for youths was the acceleration of rural-urban migration in the 1980s. As the industrialization took place, the rural population declined noticeably. Especially the size of economically active population of 14-24 age group in the agricultural sector has declined by one third during the period of 1976-1985. Since the average rate of youth labor force participation in the farm sector had been higher than that of non-farm sector, the outmigration of youth from farm sector resulted in the reduction of youth labor participation rate.

2. Labor Export to the Middle East[6]

In the early 1970s Korea exported labor through the contracting firms on the third country (mainly the U. S.) that operated and set their projects in oil-rich Arab countries. As the demand for Korean labor in the Middle East increased, Korean government actively got involved in promoting the labor export as a means of export expansion. Though the supply of labor was organized by private firms, government provided various supporting and controlling schemes to encourage labor export. As a result, over 382 thousand Korean workers were estimated to engage in various activities in the Middle East in 1975-1980 period.

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5) According to the method of classification in Korean labor force survey, the young people enrolls in high school(both general and vocational), two-year junior college, junior thacher's college, four-college and university, and graduate school are not tabulated by labor force figures. This exclusion of students form the economically active population reduced the youth rate of unemployment. If the students who wanted to work had been included in the labor force, the youth unemployment rates would have been higher than that of actual figures.

6) This section heavily relies on Yoo Bae Kim(1985).

The labor export benefitted Korea to reduce unemployment of youth as well as adult which certainly contributed to easing a serious economic and social problem in Korea. A substantial number of young workers were absorbed into highly-paid semi-skilled jobs. As a result, domestic wages increased and some sectors of domestic labor markets even faced a temporary shortage of manpower.

The labor export also had some serious impact on the training and skill supply. In his well-documented study, Yoo Bae Kim(1985,. pp 175~176) estimated that during 1978~80 period the overseas construction companies trained about 30,000 workers each year. He also pointed out that the number of workers trained by each firm was set more than 10 percent of the total number employed abroad in the previous year.

3. Aggregate Demand

A strong economic growth fosters a high demand for young workers. Even the new young entrants are easily absorbed to the labor markets. The employers recruit young people more actively and are willing to take over youngsters without occupational skills or previous work experience due to the tight labor market condition. On the other hand, a recession of the economy dampens the demand for young workers more than it does for older workers.

A close look at the Korean data reveals a typical close relationship between the rate of youth unemployment and the growth rate of real GDP. There appear clear parallel movements of these two variables in the same direction. The high rate of youth unemployment in 1971, 1972, and 1975 reflected the slowdown of Korean economy. The striking one is that in 1980. When Korea experienced the lowest growth rate (actually only one negative figure over the whole period), the youth unemployment rate was the highest. It clearly shows that a significant component of the youth unemployment problem in this period can be attributed to the general deficiency in labor demand stemming from the recession.

An alternative way to analyze the effect of aggregate demand fluctuation on youth unemployment is to examine the elasticity of youth employment with respect to income. The average elasticity over the whole period is 0.359. This reveals youth employment

opportunities were quite responsive to the overall level of aggregate demand.

A distinctive feature observed from the trend was the gradual decrease in the elasticity of employment. While the elasticity was 0.9 in 1970~73, it dropped to 0.64 in 1974~1979, and dropped further to 0.27 in 1980~1988. This shows that the labor market absorbed a large labor force, but at a declining rate, with per capita income rising. A possible explanation for this phenomenon is the trend of capital deepening in the Korean manufacturing sector and the tighter manpower management by the large firms over time.

4. Government Measures

The final factor contributing the capacity of youth labor absorption is the government measures. Korean government has adopted active macroeconomic policies which tend to induce huge opportunities of employment. The rapid industrialization based on outward-oriented development strategy has provided employment opportunities to a great number of workers. Since the macroeconomic policies were explained intensively elsewhere, we focus our attention to the government policies aimed directly at increasing job opportunities for young workers.

One of these programs of manpower development is vocational training. The vocational training systems were consisted of three categories: public vocational training, in-plant training, and authorized training.[7] This program played a pivotal role during the early stages of industrialization and contributed a great deal to the economic growth. The vocational training system in Korea has contributed greatly to supplying skilled workers while complementing the formal education system. During the period 1967-1987 more than one and a quarter million persons, mostly young, received vocational training (see Table 2). The quantitative expansion of the vocational training both in public and private sectors not only met the expanded production scale but also played a great part in the skill up-gradation and productivity improvement.

7) For the detail of vocational training system, see Kim and Lee(1990), pp.59~67.

Ⅳ. Empirical Evidence

We have shown several factors affecting youth unemployment rates in the previous section. In order to make a quantitative assessments we introduce a simple empirical model (known as economic demographic model) which was commonly used in explaining the youth unemployment (OECD, 1980) in this section. The estimated equation is as follows:

$$\ln YUR = b_0 + b_1 \ln AUR + b_2 \ln (YUP/TOP) + b_3T$$

where YUR, AUR denote youth and adult unemployment rates respectively, YUP/TOP is the proportion of youth age-specific population to the total population, and T stands for time trend.

We exclude income or aggregate demand variable because they are highly correlated with adult unemployment rate to avoid multicollinearity problem. We also exclude government measures and the labor export to the Middle East due to the unavailability of adequate data.

Regressions were performed using quarterly data from 1980 to 1988 for two age-specific groups of youths: teenager and adult youth. The regression results show that adult unemployment rate undoubtedly dominates other regressors. It is significant at 1 percent level with positive expected signs, whereas other variables are insignificant at 10 percent level. (See Table VI-1). This is consistent with the findings in OECD(1980, p. 8).

The b_1 coefficient measures the elasticity of youth unemployment with respect to the adult unemployment rate. The elasticities for teenager and adult youth are 0. 75 and 0. 46 respectively. These figures are much lower than those of other industrialized countries (see the Tables in OECD(1980), pp. 48-51). The low elasticities in Korea imply that young workers in general have weak positions than adult workers.

Another interesting finding is that the elasticity is much larger for teenager than for young adult group.[8] This evidence does not support the earlier finding in OECD(1980,

8) The same patterns were observed for both males and females in our previous study. It also showed that the elasticity for males is larger than that for females in both age groups. This latter phenomena were coincided with the general pattern found in OECD(1980, P.52)

p. 52). A possible explanation for this contradiction can be found in the structure of the Korean economy. Since most of export sectors produced commodities which required less-skilled workers, the aggregate demand shock from the export sectors usually had a direct impact on unskilled teenager workers rather than semi-skilled young adult workers. Therefore the unskilled and less experienced teenager workers were more vulnerable to the recession.

The supply side variable, the youth population ratio, appears to have no explanatory power, even though it has an expected positive sign. The trend variable also appears to have no effect on youth unemployment rate. We do not know whether the competitive position of young workers is improving or weakening over time.

In order to test the seasonal fluctuations due to incoming graduates into the labor market, we reestimated above equation adding seasonal dummy variable. The seasonal dummy is significant at 1 percent level and improves significantly the explanatory power. This implies that the youth unemployment in the first quarter is much higher than those of other quarters due to sudden increase in labor force resulting form graduation. This evidence may indicate a information gap in labor market or time delaying searching process in employment.

The introduction of seasonal dummy variable induces some changes in other regressors. The trend variable appears to be significant with negative signs, whereas the demographic variable remains as insignificant. The adult unemployment rate losses its explanatory power significantly.

Since the above discussed empirical estimations used the data only after 1980 due to the nonavailability of previous data, we extend our data period from 1966 to 1988 by replacing the population ratio with labor force ratio. Although the labor force does not exactly follow the trends of population, it may regards as a reasonable proxy for the supply side variable. In addition the ratio of age-specific youth labor force to total labor force serves well to measure the "cohort overcrowding effect" in the supply side.

The estimated results with the alternative model are also summarized in Table 3. The demographic variable, the ratio of youth to total labor force, appears to have a negative sign with 1 percent of significance level. The negative sign is hard to interpret. This is quite contradictory to the usual belief that the growth of the relative cohort size of youth labor force aggravates youth unemployment problem. Our conclusions on other regressors is not seriously altered. The adult unemployment rate shows an expected positive sign with 1 percent of significance level.

Since the seminal study of Moo-Ki Bae(1982) it is widely accepted that the labor market in Korea had a structural change in 1975. To test whether the structural change in the Korean labor market has had an impact on youth labor market, we employed Chow-test setting the first quarter of 1975 as turning point. The testing results(the F-statistics are 3.65 for teenage and 5.41 for young adults) provide some evidence that the youth labor market also experienced a structural change. The influence of structural change in each youth group can be explained by different sources. The influence of structural changes on female workers caused by a shift in demand for young female workers resulting from the rapid expansion of exports. On the other hand the male youth labor markets experienced a structural change due not only to the rapid expansion of export but also to the massive outmigration to Middle East.

V. Conclusion

In this study a comprehensive review of the youth unemployment in Korea is provided. Some stylized facts were observed. The trends and changes in youth unemployment have followed the similar patterns of those of overall unemployment in general. However, several distinctive features have been noticed. First, youth unemployment rates have always been higher than overall unemployment rates throughout the period examined. Second, even though both youth and overall unemployment rate have been moving in the same direction, youth in Korea bear a disproportionate share of the burden from the cyclical fluctuation.

In addition, as for the regional differences the following three features were found. First, unemployment rates for youth as well as adult are relatively low in industrial areas in general. Second, the large cities tend to have a lower unemployment rate. Third, the unemployment rate in cities near Seoul have been far above the national average. Furthermore, the area where there was a high adult unemployment rate tended to have a high youth unemployment rate.

Several factors contributing the youth unemployment rates were singled out. They were the aggregate demand, demographic characteristics, some institutional features, and govern-

ment measures to cope with youth unemployment. Among these variables, the aggregate demand is the dominant factor in alleviating youth unemployment problem. The government measures as well as supply side factor also contributed to the reduction of youth unemployment.

There are some caveats in this study. First, the duration of unemployment alongside the examination of trends must be carefully investigated. Secondly, the effect of relative wages on youth unemployment must be pursued. The lack of necessary data prevents us from analyzing these relationships. The meagerness of data on working women who compete with young people in labor markets also restricts any meaningful analysis. The scope of government measures to cope with youth unemployment and evaluation of the results of these programs should have been examined more thoroughly.

〈Table 1〉 Unemploymetn Rate

year	Youth (15~24)	Teenage (15~19)	Young Adult (20~24)	Overall (15 & above)	Youth/Adult (15~24)(25 & above)
1966	12.7	12.7	12.7	7.0	2.46
1967	12.7	13.2	12.1	6.1	3.19
1968	9.6	9.9	9.3	5.0	2.64
1969	9.3	8.6	10.1	4.7	2.82
1970	8.8	8.9	8.8	4.4	2.96
1971	9.8	11.4	7.8	4.4	3.52
1972	8.7	8.9	8.6	4.5	2.83
1973	7.2	7.5	6.7	3.9	2.51
1974	8.2	8.7	7.7	4.0	3.07
1975	8.7	9.2	8.1	4.1	3.27
1976	7.4	7.7	7.1	3.9	2.74
1977	8.6	9.1	89.2	3.8	3.93
1978	7.3	8.2	6.6	3.2	3.89
1979	8.5	9.5	7.9	3.8	3.52
1980	11.5	13.3	10.3	5.2	3.36
1981	10.1	12.2	9.0	4.5	3.33
1982	10.1	12.7	8.9	4.4	3.46
1983	9.2	10.9	8.4	4.1	3.17
1984	8.9	10.5	8.2	3.8	3.28
1985	10.0	10.9	9.7	4.0	3.60
1986	9.0	9.5	8.8	3.8	3.21
1987	7.7	8.7	7.2	3.1	3.44
1988	7.1	8.3	6.7	2.5	4.10

Source: National Bureau of Statistics, Economic Planning Board, Annual Report on the Economically Active Population Survey, Seoul, Korea

〈Table 2〉 Achievement of Skilled Manpower Training

Centents	1969～1987	1967～1971	1972～1976	1977～1981	1982～1986	1987
Total	1,225,783	99,308	314,133	501,147	297,155	61,393
Craftsman	1,226,548	98,863	312,736	495,739	273,151	46,059
Public	381,365	36,317	61,294	120,117	121,044	22,593
KOVTMA	149,762	1,091	11,200	56,417	66,474	14,580
Central govt.	124,802	12,717	36,232	34,239	34,947	6,767
Local govt.	92,128	18,432	27,452	26,646	18,366	1,232
KNOP	14,573	4,077	6,410	2,815	1,257	14
In-plant	691,944	48,225	177,350	337,388	114,733	14,208
Authorized	153,239	14,321	54,092	38,234	37,334	9,258
Mastercraftsman	1,556	–	–	–	1,282	274
Supervisor & Manager	4,607	–	–	–	3,036	
Instructor	9,000	455	1,397	5,408	1,696	64
Employee	13,425	–	–	–	–	13,425

Sorce: Ministry of Labor(1988), pp. 41～42

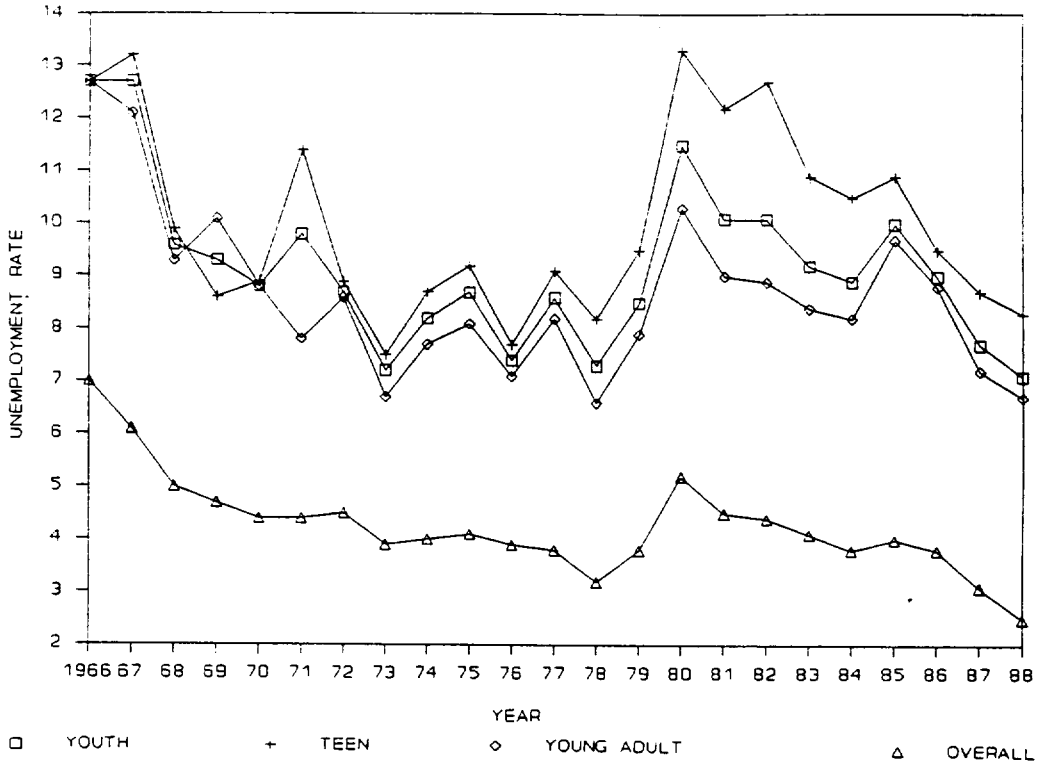
Note: KOVTMA, KNOP stands for Korean Vocational Training and Management Agency and Korea National Outplacement Program respectively.

〈Table 3〉 Regression Results for Youth Unemployment Rate

$$\ln YUR = b0 + b1 \ln AUR + b2 \ln (YUP/TOP) + b3T$$

AGE	CONST	AUR	YUP/TOP	YLF/TLF	TREND	DUMMY	R-SQ(DW)	PERIOD
Teenage	0.615	0.754	0.059		−0.002		0.45	1980～88
(15～19)	(0.92)	(3.77)	(1.12)		(−0.39)		(1.93)	
Y.A.	−0.704	0.463	0.038		0.000		0.37	1980～88
(20～24)	(−1.58)	(3.52)	(0.68)		(0.00)		(1.99)	
Teenage	−1.760	0.121	−0.038		−0.015	0.587	0.87	1980～88
(15～19)	(−4.29)	(1.03)	(−1.34)		(−5.02)	(9.76)	(2.12)	
Y.A	−1.519	0.259	−0.016		−0.004	0.195	0.48	1980～88
(20～24)	(−3.00)	(1.83)	(−0.30)		(−1.21)	(2.72)	(1.98)	
Teenage	−1.022	0.661		−0.534	−0.001		0.49	1966～88
(15～19)	(−2.60)	(6.53)		(−5.86)	(−2.45)		(1.98)	
Y.A	−1.099	0.639		−0.398	0.001		0.57	1966～88
(15～19)	(−2.87)	(9.91)		(−2.20)	(1.56)		(1.95)	

1. Estimation method: Cochran-Orcutt iterative method.
2. The t-statistics are shown in parentheses.
3. Y. A. : Young Adults
   YUR(AUR): Youth (Adult) Unemployment Rate
   YUP(TOP): Youth (Total) Population
   YLF(TLF): Youth (Total) Labor Force
   R-SQ: Adjusted R-Square



〈Fig. 1〉 Unemployment Rate(1966~1988)

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