

## A Study Using Macro Data with Respect to Analyses on Regional Structure of Unemployment and Employment

### Summary

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#### Objective and Method of the Study

The unemployment rate in Japan, which used to be stable at around 1-2 percent until the beginning of the 1990s, surged during the long-term recession in the 1990s after the burst of the bubble economy, having reached its worst level (5.4 percent in 2002, and 5.3 percent in 2003).

In order to support the seriously stagnating economy in the 1990s, large-scale public investments were made, which eventually resulted in the accumulated public fixed capital formation of nearly ¥400 trillion<sup>1</sup> in the same decade. Based on the data compiled since 1955 when associated figures started to be available,<sup>2</sup> Japan's accumulated public fixed capital formation has reached ¥900 trillion in total. It is evident that large-scale public investments made in the 1990s, when economic growth was sluggish and tax revenues dropped, were one of the major factors that triggered a

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<sup>1</sup> More precisely, the accumulated public fixed capital formation reached ¥373 trillion between 1990 and 1999.

<sup>2</sup> Since the data on the current investment series are only traceable back to 1980, the figures in 1979 and before were calculated using the 68 series.

financial crisis which our country has yet to overcome.

Regional developments that depend on “uniformed” large-scale public projects by injecting funds from the central government to local authorities, which was symbolically argued in “Building a New Japan: A Plan for Remodeling the Japanese Archipelago” (Kakuei Tanaka, 1972), have been losing policy effects, particularly since 1990. Furthermore, as liabilities that the country and local autonomies assume including special public corporations’ hidden debts have reached as much as ¥1,000 trillion, the conventional ways of local development and employment creation by launching large-scale public construction projects are in effect becoming more and more difficult to bear fruits. Along with the “trinity” reform that realigns financial resources for the national and local governments, the directions of industrial and employment policies are now being diverted towards decentralization.

As represented by the Industrial Relocation Promotion Law and the Law for Development of Comprehensive Resort Areas formulated in the 1970s and 80s, it was common that the central government set forth guidelines for regional developments, and that local governments carried out the projects following generic plans developed in compliance with the guidelines. Many third-sector organizations (i.e. institutions jointly funded by local governments and private companies) were also established in order to promote land developments for factories and constructions of large resort facilities. However, due to the burst of the bubble economy and other associated factors, the demand forecast that formed the foundation of large-scale projects became extremely unreliable. As a result, many third-sector organizations presented difficulties in their business operations during the recession in the 1990s, and are now being forced to close down some of their facilities or even go bankrupt.

Attraction of high-tech enterprises to local regions based on the technopolis policy did not bring about considerable policy effects, since the subject regions were unexpectedly expanded to 26 in severe competitions among prospective autonomies, not to mention due to the uniformed policy stance. Although in the 1980s, many companies in the manufacturing sector built new factories in local regions as social infrastructures including highway networks were developed, these factories were rapidly transferred to China or other foreign countries in the 1990s, which resulted in an unfavorable transition from “job creation” to “job destruction.” Under these circumstances, the number of workers engaged in the manufacturing industry has dramatically decreased by 3.47 million, from 15.69 million in 1992 (at peak) to 12.22 million in 2002 (according to “Labour Force Survey” conducted by the Ministry of Internal Affairs and Communications).

As described above, in terms of local industry promotion and employment development policies until the 1990s, local government tended to set up stereotyped plans compatible with basic guidelines formulated by the central government, so that they could receive subsidies and/or preferential tax treatments which the national government provides. Consequently, quite a few development plans presented by local governments closely resembled one another, hardly reflecting regional characteristics. The resort development projects based on the Law for Development of Comprehensive Resort Areas could be regarded as typical examples of such generic development plans. Since major development companies whose headquarters are situated in Tokyo or Osaka often undertake preliminary planning commissioned by prefectural offices that are responsible for coming up with grand designs of large-scale resort development projects, many resort facilities constructed or planned in various parts of Japan share extremely similar basic concepts.

Even uniformed policies had relatively large policy effects until the 1970s when social infrastructures were yet insufficient. However, these effects drastically declined in the 1990s as hardware infrastructure in the society developed and industrial structure rapidly transformed. In fact, improving effects on local production efficiency brought by social investment stocks such as roads, ports, and airports were halved compared to those of 30 years ago. Moreover, activities of the national government including injection of public investments and provision of social security benefits relatively expanded effects on employment opportunity creation in local communities throughout the 1990s, increasing local governments' dependency with respect to job opportunities on the national government.

As recognized above, it is becoming difficult to maintain the once-effective budget scale and policy method of "uniformed" regional development that the central government passes on to local autonomies, in terms of both finance and prospective policy effects. Against such a background, through the long-term recession in the 1990s after the burst of the bubble economy, the strategies of local industry promotion and employment development policies are now finally changing from those based on uniformed regional development models to those aiming at decentralization.

However, few situation analyses or policy researches have been conducted yet on local employment creation. For the time being, individual local governments are exploring ways to draw up necessary policies. With these current situations in mind, the JILPT has initiated a research project on local employment in FY 2003. First of all, we started this research project by trying to identify how the local structure of unemployment and employment is changing, by analyzing existing macro data.

Our report is a compilation of results of the macro data analyses, aiming at accumulating essential data required to examine the way local employment creation measures should be. We conducted the analyses on local structure of unemployment and employment from the following perspectives: (i) to pay attention to employment and non-employment rates as well as unemployment rates from the standpoint of local community revitalization through employment, (ii) to analyze unemployment and employment structure utilizing not only administrative regional divisions but also those reflecting realities of labor markets, so that factors that trigger regional differences can be determined, and (iii) to analyze influences on unemployment rates in local communities brought by youth unemployment issues and inter-industrial and/or interregional labor mobility costs.

Our macro data analyses were conducted as a preliminary study for the successive reality survey on local employment creation measures, whose results will be combined with our analytic findings to develop a policy theory to present concrete images of effective policies in terms of local industry promotion and employment development.

## **Outline of the Analytic Results**

### **(1) Analyses of interprefectural differences in unemployment and employment**

According to released statistics regarding employment/unemployment situations in each region, although such situations have kept fluctuating affected by general economic conditions, interprefectural gaps have been stably observed, suggesting existence of regional employment disparities. In Chapter 1, we measured the interprefectural differences in unemployment and non-employment rates, controlling demographic characteristics such as gender and age and labor supply and demand-related characteristics such as academic background and industrial structure, and examined factors that trigger such differences incorporating basic methods. The following is the summary of the analytic results.

Firstly, without controlling above-mentioned characteristics, the absolute disparities (i.e. standard deviation) in unemployment rates among prefectures have not significantly decreased in the last 20 years, although some reduction in a relative sense (i.e. coefficient of variation) was recognized. The non-employment rates, on the other hand, are going up in average and regional disparities in these rates are shrinking. In the late 1990s, they showed a strong correlation with unemployment rates, which implied a rise in “discourage worker effect” due to deterioration of unemployment situations.

Secondly, when we controlled the characteristics of industrial structure as well as

those of labor supply, overt regional differences disappeared (except in certain regions). In the recent recession, however, both regional differences in actual wage costs and in economic growth rates yield the gap in terms of unemployment rates.

Thirdly, relative differentials in non-employment rates as well as unemployment rates are more explainable by demographic characteristics such as gender and age, rather than by regional attributes. The interprefectural gaps in non-employment rates taking into account gender, age, and academic background clearly showed (positive) correlations with differences in unemployment rates with the same factors controlled. We confirmed that regions that had higher unemployment rates (or whose unemployment rates noticeably went up in the decade) were more associated with stronger “discouraged worker effect”.

Finally, while the “discouraged worker effect” was a general tendency of non-employment regardless of categories such as “student,” “one engaged in household works,” and “other” in 1990 when Japan was in an economic boom, it brought about a relative increase in non-employed youth classified in the “other” group in 2000. Such a phenomenon was particularly common in the regions where the controlled unemployment rates rose in the ten-year period. It suggests that the “discouraged worker effect” can be considered one of the factors for having NEET youth in prefectures whose labor market situations have deteriorated.

The fact that regional differences in unemployment rates become smaller when various characteristics are controlled, which was found in this chapter, conversely means that few prefectures are making use of locally-cultivated labor forces and industries respecting their individual identities or originalities. Among others, Hokkaido, some prefectures in the Tohoku Region, Osaka, Wakayama, Shimane, Kochi and all Kyushu prefectures, where controlled unemployment rates are lower than actual employment rates, should promote the utilization of existing labor forces and ease mismatches between job availabilities and job seekers by stepping up measures for employment development and stabilization in the tertiary industry such as service sectors, taking into consideration the current situation that further dependence on manufacturing, by for example attracting factories, is not plausible any more. At present, as seen in “special zones for structural reform” and “regional revitalization plans,” industrial and employment policies compatible with actual situations in local communities have been initiated. It is necessary to verify employment creation effects of such policies, carefully following up individual cases.

## **(2) Youth employment issues in local districts**

In response to the rapidly deteriorating employment environment for young people, an increasing number of economic studies concerning youth employment issues have been compiled in Japan as well. Among them, effects of labor market environments on young people are drawing particular attention. One of the key words for such market environments is “local district.” It is assumed that employment environments for young people as well as their awareness toward job largely depend on where they live. Given this assumption true, the optimal measures against youth unemployment should not be nationally uniformed but be suited to specific regions. Hence, it is extremely important to extract regional characteristics regarding youth employment problems when making policy decisions. In Chapter 2, we attempt to answer the following questions with respect to youth employment issues that local districts face:

- (i) To what extent and why does the youth unemployment rate varies by region?
- (ii) What kind of effect does the interregional movement of young people have on youth unemployment?
- (iii) What are the relationships among unemployment rates, interregional movements, and turnover propensity of young people?
- (iv) How does the awareness toward job of young jobless vary by regions?
- (v) What kind of policy implications can be drawn from the above findings?

Using the data of “Basic Survey on Employment Structure” (Shugyo Kozo Kihon Chosa) , we firstly compared unemployment rate of young people aged between 15 and 24 (regardless of gender) by prefectures. We find that Okinawa (20.8%) had the highest youth unemployment rates, followed by four prefectures in the Shikoku Region, say, Kochi (18.8%), Ehime (16.3%), Tokushima (15.5%), and Kagawa (14.3%). Additionally, the Kansai Region surrounding Osaka and Kyushu Region such as Fukuoka also had a relatively high youth unemployment rates. In contrast, the youth employment rates in Yamagata, Gunma, and Fukui were as low as 6% or less. Differences in the job opportunities for young people, however, could be one of the most important reasons for the huge gaps in youth unemployment rate.

Given the young people choose to move out from place with poor employment opportunities to a place with rich job opportunities, movement cross prefectures will increases and the gap of youth unemployment rate among prefectures will be narrowed. In other words, the net outflow rate of labor is negatively related with youth unemployment rate in the district, leveling the regional gaps in youth unemployment rates. On the other hand, it is the ratio of job offers to new graduates that the most important factor in determining the magnitude of net outflow rate. The data apparently shows that young people are leaving prefectures of low job opening ratios for

those of higher job opening ratios. That is, although a declining of job opening ratios basically leads to a higher unemployment rates, it also indirectly depresses the rates from rising by boosting the number of net outflow.

When people actively move out of their hometown in another prefecture in order to seeking jobs, it serves as a curb to keep the unemployment rate in the home prefecture from going up. These days, however, it is becoming more and more difficult to get a job outside of one's home prefecture, and many young people prefer finding their jobs in their hometown because their parents can often afford to provide financial support for them as the average family size is smaller than ever due to low birth rates. Such current situations may possibly widen regional differences in youth unemployment rates. Furthermore, there are significant interprefectural gaps in employment awareness among young people, which could aggravate problems surrounding youth employment.

The regional differences in employment awareness can be explained to a considerable extent by some basic economic variables: more job availabilities (i.e. higher job opening rates), richer parents (i.e. higher household income), and larger service sectors. These factors allow young people to seek for non-regular employment, to feel less rushed to find jobs, and to have wider employment options. This conversely means that jobless people living in prefectures which can not offer such favorable economic conditions are more likely to face severe and serious difficulties in job hunting.

Our analytic results show that youth employment issues vary depending on local circumstances. It is therefore necessary to change the strategic direction of local industry promotion and employment development policies from those based on uniformed regional development models to those aiming at decentralization. The keywords for this purpose are "regional suitability" and "participation." The former refers to the fact that vocational trainings for young workers are more effective when they are closely linked with local labor markets, while the latter means that what enhances policy effects is active participation by local administrative officials, business owners' associations, and educators, also involving young people on whom employment policies are focused as well as local districts that support young workers.

### **(3) Verification of the Sectoral Shift Hypothesis based on data by region**

Chapter 3 focuses on the "sectoral shift hypothesis" generated to explain one of the aspects of structural unemployment, in order to quantitatively analyze impacts of workers' both intra- and inter-regional inter-industrial shifts on unemployment in the entire economy. The sectoral shift hypothesis is one that attempts to explain changes

of unemployment situations focusing on continuous mismatches created in the process where workers mobility from a sector with low labor demand to one with higher labor demand, when such sectoral differentials are apparently observed. Based on this hypothesis, various analyses have been conducted following one by Lilien in 1982 , whose measure (known as the “Lilien measure”) is widely used to indicate the extent of the above-mentioned sectoral shifts. However, as preceding studies have pointed out, the Lilien measure is saddled with diverse problems.

One of them is that the measure can not examine pure influences imposed by such mismatches, as it can be affected by changes in economic conditions when the subject sectors differently react to these changes. Another problem is that although the costs of sectoral shifts (i.e. the extent of how much skills useful in a sector can also be beneficial in other sectors) can be both symmetric and asymmetric, the measure can not distinguish the difference. In this chapter, we first performed a conventional calculation using the Lilien measure. On top of that, we tried to conduct another Lilien measure calculation, this time reflecting asymmetric costs of sectoral shifts, to compare figures obtained by both calculations in respect of impacts on unemployment rates.

The data used in our calculations include: numbers of employees, the newly employed, and job leavers by region and by industry defined in the “Survey on Employment Trends” compiled by the Ministry of Health, Labour and Welfare (Keihanshin Zone: Hyogo, Osaka and Kyoto; South Kanto Zone: Saitama, Chiba, Tokyo and Kanagawa),

First of all, to estimate the costs of inter-industrial and interregional shifts, we verified the impacts that the number of job leavers by industrial sector and region have on the number of the newly employed both by industry within a prefecture and by prefecture. As a result, we learned that the impacts vary according to industry within a prefecture, and also to prefecture itself. Using the estimated figures, we renewed the Lilien measures for each prefecture and examined their relations with unemployment rates. It was found that the (asymmetric) difficulties in shifting both between industries within a prefecture and between zones which each prefecture belongs to serve as a factor to equally push up unemployment rates. We also recognized that the difficulties differ from period to period.

Below are the policy implications induced by the above estimation results: Based on the results, it is possible to assume that the impacts that costs of inter-industrial and interregional shifts have on the unemployment rate within a prefecture vary, which enables us to conclude that desirable employment policies also vary by region. For instance, in comparison between Tokyo and Osaka, it is important in Tokyo to



implement measures including vocational trainings taking into account the changes in difficulty levels upon both inter-industry labor force shift within Tokyo and interprefectural labor force shift, while the importance is less relevant to Osaka. (It is however necessary to further analyze this finding, since we could also interpret it as that in Osaka the high difficulty level of intersectoral shifts is actually depriving jobs from those once counted as labor force.) Concerning the range and frequency of such measures, we can also present a suggestion that it is essential to pay attention to changes in costs of shifts, reflecting for example the age distribution among job leavers.

#### **(4) Regional structures of unemployment and employment rates from the perspective of urban employment areas**

In Chapter 4, we analyzed on the distributions of unemployment and employment rates by region and their gaps, as well as various factors that caused such differences, utilizing “urban employment areas” which are defined based not on administrative units but on actual commuting and employment patterns. The characteristics of this chapter include statistical analyses using panel data and comparisons/analyses of unemployment and employment rates by region conducted on a map using a geographic information system (GIS). The major findings are as follows.

Firstly, according to the information available on the map, areas with low (high) unemployment rate are often found adjacent to those with low (high) unemployment rate, which confirms the existence of spatial correlations concerning unemployment rates. The employment rates also showed spatial correlations to some extent, though less evident than those in unemployment rates. This suggests that employment improvements in certain areas could also positively affect the adjacent areas. In a region where cities and towns with high unemployment rates concentrate, if employment measures are implemented targeting at some cities that located in the center of the region, the unemployment rates in the surrounding towns could be simultaneously lowered.

Secondly, when we superposed the unemployment map on the employment map for comparison, we learned that areas with high unemployment rates have low employment rates, and that those with low unemployment rates have high employment rates. This negative correlation between unemployment and employment rates recognized on the map is also supported by the results of regression analyses. The analytic results showed that unemployment rates are linked with employment rates and that when unemployment rates go down, employment rates go up instead, and vice versa. This means that “reducing unemployment rates” and “improving employment

rates” are not incompatible policy goals.

Thirdly, the results of our statistical analyses indicated that unemployment rates have chronological self-correlation (i.e. persistency) and that the current level of unemployment rate in an area is largely related to its past levels. The same tendency can also be seen for employment rates. That is to say, employment situations in local districts are significantly affected by factors such as population or industrial structure, which can not be easily changed during a short period of time. Thus, it is not practical to expect dramatic improvements in unemployment or employment rates over a short duration. Measures against unemployment should be established from a long-term (not a few years, but a few decades) standpoint.

Fourthly, while absolute gaps in unemployment rates widened in the last 20 years (1980-2000), relative differences in the same period shrank in contrast. The regional gaps in unemployment rates in a relative sense have not been suddenly expanded, contrary to general assumption. On the other hand, the regional differences in employment rates have not presented any visible trends, unlike unemployment rates that showed clear increase or decrease.

Fifthly, according to our estimation based on the panel data by urban employment area, local unemployment and employment rates are influenced by factors associated with both population and industrial structure. In particular, population factors such as ratios of young, elderly, and female workers against the entire labor force population and industrial factors including ratio of service workers have considerable impacts on local unemployment rates. Upon implementing local employment/unemployment measures, we should examine the possibility of prioritizing population and industrial structure-related factors that are relatively easy to modify.

## **Challenges from Here on**

### **(1) Possibility of widening gaps by decentralization**

The results of our macro data analyses on unemployment and employment regional structure indicated that regional gaps have been rather consistent in the last 10-20 years. This means that employment creation effects by injecting funds from the central government to local authorities through public construction projects, etc. were positively confirmed and that labor shifts from places with less employment opportunities to those with more job vacancies (especially those among youth from their hometown to other prefectures) prevented unemployment rates from rising.

However, it is becoming difficult to maintain “uniformed” regional development policies that the central government passes on to local autonomies, in terms of both

finance and prospective policy effects. As symbolically indicated in the Comprehensive Decentralization Law that took effect in 2000, the stance of local development has been rapidly changing its direction towards decentralization. The interprefectural labor shifts that contributed to curb expansion of regional gaps in unemployment rates have been sharply decreasing since 1990, as more and more young people prefer finding their jobs in their hometown where they can even live with their parents, which is more likely to be possible recently due to low birth rates. It is now required for regions with less job opportunities where employment in other prefectures helped prevent their unemployment rates from soaring to independently create employment within each region.

In line with such a stream towards decentralization, what have been initiated include “the trinity reform” as a financial structural reform, intrinsic measures for revitalization of local economies as a local industrial development policy, and employment development collaborated with local governments as a local employment creation program. Each region has started to shift the directions they follow by planning and realizing policies that can make the most of local characteristics. Decentralization-oriented industrial and employment policies pursue promoting development suitable for individual regions’ characteristics and circumstances.

However, it can not be presumed that local governments which are used to planning policies in compliance with the national government framework of local industry promotion and employment development policies have ability and capacity to organize and implement measures that reflect each region’s originality and identity. In fact, only about 200 local governments have so far succeeded in bringing out their uniqueness, incorporating programs such as “special zones for structural reform” and “regional revitalization plans.” The headquarters of regional revitalization plans aims to realize the scenario of decentralization focusing on revitalization of local economies, local employment creation, and sustainable local recovery, by urging each region to plan and implement original and independent measures, which could result in widening regional gaps.

Actually, recent active job opening ratios have shown expansion of regional differentials. In comparison of active job opening rates by region in January 2005, we found that while Tokai (1.35), North Kanto and Koshin (1.07), South Kanto (1.02), and Chugoku (1.03) maintained the rates at higher than 1, those in Hokkaido, Tohoku, Shikoku, and Kyushu were always lower than 1. In the regions with the rates of higher than 1, production bases have been concentrated and the service sector and information and telecommunications industry are progressively growing. On the other

hand, the regions with the rates of lower than 1 have not eliminated their dependency on public construction projects, having failed to reinforce their weak industrial bases.

## **(2) Human resource development in local districts**

One of the major causes to widen regional gaps is the differentials in ability to plan and envisage projects, that is, those in human resources. When adopting centralized and uniformed industrial and employment policies, local governments had only to organize plans following the guidelines that the national government presented, which formed a structure where the gaps in ability for program planning were not visibly outstanding. In fact, estimations on regional differentials from 1980 to 2000 showed that gaps in employment and unemployment situations remained almost stable.

Once decentralization starts questioning about each community's ability for policy planning, the differentials could get wider. Recently, some indices regarding employment and unemployment are actually indicating that the regional gaps have begun to expand. Both the difference between Tokyo and Osaka and noticeable increases in workers or newly employed people in Mie and Okinawa seem to be affected to a large extent by the leadership of their governors.

More precisely, although both Tokyo and Osaka once elected a TV entertainer as their governor, their successors turned out to be totally different. In Tokyo, a well-known political figure came to the office and is exercising his strong leadership in policy making, showing that a real structural reform which exceeds mere merits gained from industrial accumulation has been occurring. In contrast, the leadership of the successive governor in Osaka who used to work as an administrative official seems to be less powerful than that of her Tokyo counterpart. Osaka's industrial structural change is lagging behind, and accumulation of professional service sectors such as IT industry has not advanced yet to the extent that Tokyo has already achieved. It is also obvious that Osaka is less successful than Tokyo in terms of redevelopment of infrastructure, as symbolized in the case of the Kansai Airport.

Mie and Okinawa have remarkably succeeded in industrial development and employment creation. In both prefectures, the governors' leadership has contributed to the revitalization. The two prefectures have equally implemented policies to strategically attract specific enterprises in certain industries into their local communities, which over a relatively short term turned out to be a success accompanied by considerable employment creation. Under governors who have strong leadership, local officials are enthusiastically devoted themselves to planning measures for industrial development and employment creation which are suitable for each

community's characteristics and to realizing such measures within their financial capacities.

It is highly likely that large gaps will be generated between autonomies rich in ability to plan and implement policies and those poor in this ability. What the national government as well as ministries and agencies have to do now is not to uniformly transfer fixed financial funds to local governments, but to establish and further enhance a system designed for education and human resource development to improve local personnels' ability for program planning.

The future challenges for research projects focusing on policies regarding local industry and employment development are to explore policies that can help prevent regional gaps owing to decentralization from widening, taking local characteristics into consideration. After successfully establishing policies reflecting regional characteristics, our next task will be to investigate and scrutinize individual cases that have actually confirmed positive effects from such policies, and to examine and present further advanced ways of policy planning and implementation.

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Table 3: List of Merged Cities and Towns

## References (excerpt)

- Kanemoto, Y. and K. Tokuoka “Proposal for the Standards of Metropolitan Areas of Japan” in *Journal of Applied Regional Science*, No.7, pp.1-15, 2002 (in Japanese).
- Lilien, D.M. “Sectoral shifts and cyclical unemployment” in *Journal of Political Economy*, vol.90, pp.777-793, 1982.
- Mizuno, A. *Unemployment Behaviour in Japan*, Chuo Daigaku Shuppanbu, 1992 (in Japanese).
- Ohta, S. “A Review on Youth Unemployment” in *Restructuring Measures and the Mechanism of Job-Swithing – The Economics of Labour Mobility*. Eds. Genda and Nakata. Chap.11, pp.249-275, Toyo Keizai Shimpo-sya, 2000 (in Japanese).
- Ohta, S. “Why Do Young People Try to Find the Job Locally?” in *Economist*, August 5, 2003 (in Japanese).
- Ohta, S. and Y. Genda “Employment and Unemployment: Their Relationship and New Aspects” in *The Monthly Journal of The Japan Institute of Labour*, No.466, pp.2-13, 1999 (in Japanese).
- Sakurai, K. and T. Tachibanaki “Japanese Labor Market and Unemployment” in *Economics today*, vol.9, pp.2-54, 1988 (in Japanese).
- Yugami, K. “Analysis of the Factors Triggering the Interprefectural Differences in Unemployment Rates” in *Interprefectural Differences in Employment-Unemployment Situation*, JILPT Research Report No.9, Chap.2, pp.19-35, 2004 (in Japanese).