

Issues Facing the Japanese Labor Market

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I. Introduction and Background

Japan saw its unemployment rate rise more than 2.5 folds between 1990 (2.1 percent) and 2002 (5.4 percent) with the rate of increase accelerating after the late 1990's (Figure 1).¹ At this writing, there is indication that the number of unemployed persons may have peaked by early 2003, when the unemployment rate reached 5.5% in January, but the issues we consider in this chapter remain valid even if the economy continues to recover. Figure 1 also indicates that the steady-state rate of unemployment, or the natural rate of unemployment (NAIRU), rose substantially between 1991 and 2001, by an eye opening rate of 62.5 percent, from 2.4 percent in 1991 to 3.9 percent in 2001.² Such a large increase in the natural rate of unemployment points to structural changes in the economy, rather than cyclical influences, as a cause for the deterioration of the labor market. Indeed, Japan is one of only five OECD countries (Germany, Greece, Finland, and Iceland) that experienced an increase in the natural rate of

¹ We are grateful to Hugh Patrick and Takatoshi Ito for many detailed and constructive comments on our earlier draft. Comments and advice offered by discussant Hiroyuki Chuma and the participants at the Solutions Conference held in Tokyo, June 19-20, are gratefully acknowledged. We thank Minako Mizoguchi and Xueyu Cheng for able research assistance.

² *OECD Employment Outlook: Towards More and Better Jobs 2003*, between 1991 and 2001 (Table 1.3). The natural rate of unemployment is measured by the non-accelerating inflation rate of unemployment (NAIRU).

unemployment between 1991 and 2001; many other countries saw their natural rate of unemployment drop, or remain unchanged, during this period.³

The poorly performing economy has led to labor market problems that affected differently between the sexes, among generations, geographical areas, and sectors. Deterioration in the labor market is of serious concern for the wellbeing of the Japanese population, especially since Japan's social safety nets are less extensive than in the United States or European countries.

The rise in unemployment rate, defined as the ratio of the number of unemployed persons to the number of persons in the labor force, is due to the reduction in the number of employed persons that was greater than the reduction in the size of the labor force. The reduction in the number of employed persons is largely a demand-side phenomenon, i.e., weak aggregate demand, summarized humorously by Calvin Coolidge in 1930, "when more and more people are thrown out of work, unemployment results." If an equivalent of the number of persons losing jobs were to withdraw from the labor force, however, the unemployment rate would fall. The majority of dismissed workers normally stay in the labor force, at least for sometime, so the unemployment rises. Decline in the labor force is a supply-side phenomenon in part reflecting the rise of "hidden" unemployment, i.e., persons who were discouraged and stopped looking for work and in part reflecting a long term demographic phenomenon resulting in the decline in the number of persons of labor force age.

³ The NAIRU rose by 26.5 percent in Finland, 18 percent in Greece, 13 percent in Iceland, and 8.9 percent in Germany. In contrast, twelve countries (Ireland, Netherlands, UK, Denmark, Spain, Canada, Belgium, New Zealand, Norway, Portugal, Australia, France) experienced decreases in the NAIRU. The NAIRU in four countries (US, Italy, Switzerland, and Austria) remained stable.

In addition to the decline in the “quantity” of employment, the quality of employment has declined as well during much of the time period. Such a decline is evidenced, for example, by the rising number non-regular workers, e.g., part-time workers and other workers with little job security, as discussed later in this section (see Table 2 and the related discussion later). The share of regular workers in the total workers had been rising between 1990 and 1997 for both males and females, but after 1997 it fell continuously. In 1997, 94.1 percent of male employees were regular workers, but it fell to 92.1 percent in 2003. For females, the share fell even more, from 80.9 percent to 77.6 percent. It should be kept in mind that Japan is not alone in experiencing a rise of part-time and temporary employment, especially among women. Countries that experienced such trend between the 1980’s and the 1990’s include France, Germany, the Netherlands, and Spain (see Houseman and Osawa 2003).

Another quality problem concerns job training. Japanese firms reduced expenditure on job training during the 1990s in order to economize on labor costs. As a result, the share of direct expenditure on job training in the total labor labor cost fell from 0.38 percent in 1988 to 0.28 percent in 2002 (Ministry of Health, Labour and Welfare, *Total Survey on Employment Condition*). Also, the ratio of establishments which provide the formal OJT or Off-J T decline from 86.4 percent in 1994 to 69.0 percent in 1999 (Ministry of Health, Labour and Welfare, *Total Survey on Employment Condition*). We will discuss this issue further in section II.

The weak aggregate demand for labor in the 1990's is a result of the languishing macro economy. In our judgment, the languishing macro economy was not caused by what structural problems may have existed in the labor market. Instead, it resulted from weak aggregate demand for final products and the slow progress in structural reforms in various sectors of the economy. The lack of convincing progress in structural reforms helped perpetuate the pessimistic assessment of the future of the Japanese economy, thereby discouraging investment in both physical and human capital. As a result, the growth of employment became less and less responsive to upward swings in the economy throughout the 1990's to the early 2000's. For example, the elasticity of the growth rate of the number of employees with respect to the GDP growth fell from 0.52 in 1986-91 to 0.37 in 1993-97, to 0.22 in 1999-2000, and 0.05 in 2002-04.

The overall labor force participation rate, i.e., the rate for the 15-64 olds, declined throughout much of the 1990's, but the decline accelerated after 1997, from almost 64 percent in 1997 to less than 61 percent in 2003. The three percentage point decrease in the labor force participation rate is equivalent to 1.2 million people who withdraw from the labor force during this period. In the same time period, 2.4 million people lost jobs. The net result was an increase of unemployed persons by 1.2 million people.⁴ The ratio of employment to population, the employment ratio, also declined during the period. The difference between the labor force participation rate and the employment ratio is the

⁴ These figures are authors' calculations based on the *Labour Force Survey*.

unemployment ratio, sometimes used as an alternative measure of the extent of labor underutilization. The unemployment ratio has been widening since about 1992, from 1.4 percent in 1992 to 2.9 percent in 1999 and then to 3.2 percent in 2003, mirroring the rise in the unemployment rate.

The aggregate trend in the labor force participation rate masks differences in the trend among age groups. As Figure 2 shows, the decline in the male labor force participation prevailed among most age groups. The rates for females of post-child bearing prime working ages (35-39 years) and (40-44 years) show upward trends during much of the period depicted. Worsening Japanese labor market during the 1990's likely reinforced any long-term decline that existed in the male labor force participation there. For prime aged females, the increasing labor force participation, especially in the latter 1990's, may reflect in part the added worker effect, i.e., wives picking up part-time employment to supplement the loss in husbands' earnings as well as the increased availability of part-time job that enticed women into the labor market (more on this later).

Changes in the labor-force participation reflect both business cycle effects and long-term effects. As is well known, the United States has experienced declining labor force participation among males for a long span of years.⁵ The United States also experienced rising labor force participation among females throughout much of the post WWII period. These trends reflect the long-term

⁵ In the United States, for example, these trends have been observed since 1900. Focusing on the years after 1970, the U.S. labor force participation for all males 16 years of age or older declined from 80.6 percent in 1970 to 74.1 percent in 2002. The participation rate for women rose from 43.3 percent in 1970 to 59.6 percent in 2002. See *Handbook of Labor Statistics*, Seventeenth Edition (2004), Bernan Press, Table 1-7.

forces that are generated, among others, by rising real income and rising female wages.⁶ In Japan, too, the male labor force participation rate fell from 81.7 percent in 1965 to 77.2 percent in 1990 and to 75.7 percent in 2001. The Japanese female labor force participation rate also seems to have fallen, although not by much, from 50.6 percent in 1965 to 50.1 percent in 1990 and to 49.2 percent in 2001.⁷

As mentioned earlier, Japan saw an increase in non-regular workers (part-time workers, those on *arbeit* status, etc.) from 18.8 percent of employment in 1990 to 25.5 percent in 2002. Particularly noteworthy is that large-sized employers (those with 1000 or more employees) have been relying more and more on part-time workers: Between 1995 and 2001, their proportion of part-timers to total employment grew by 120 percent (from 3.9 percent to 8.6 percent), the largest of all firm-size groups. Since non-regular workers typically are paid less than regular workers, this change in the worker composition must have depressed the disposal income and hence aggregate demand for final products.

It should be kept in mind, however, that Japan is not unique in experiencing the rising part-time work. In many OECD countries, growth of part-time work accounted for a large share of overall employment growth between 1991 and 2001. According to a recent OECD report, rising part-time employment

⁶ Rising real income increased the demand for leisure for males, thereby raising the reservation wage. For females, the effect of rising wages dominated the effect of rising income because females could substitute time away from household work as well as from leisure in response to rising wages. For detailed discussions, see Pencavel (1986) for male labor supply and Killingsworth and Heckman (1986) for female labor supply.

⁷ These labor force participation rates are based on the *Annual Report on the Labour Force Survey* (Ministry of Public Management, Home Affairs, Posts and Telecommunications), as summarized in *Japanese Working Life Profile 2003* (Japan Institute of Labor), Table 13.

was large enough to more than offset declining full-time employment in Austria (0.2% for part-time vs. -0.1% for full-time), Finland (0.3% vs. -0.2%), Italy (0.4% vs. -0.2%), and Japan (0.5% vs. -0.4%).⁸ The OECD report also mentions that part-time work has been a particularly important factor behind employment growth of women, youths, and to a lesser extent, older workers. We will discuss later gender differences in part-time employment (cf. near term issues) and the growth of part-time employment in Japan in the context of the industrial relations practices (cf. long-term issues).

For most of the years, annual growth in the real wage rate for all non-agricultural industries remained in the negative region: -2 percent in 1998, -0.9 percent in 1999, -0.4 percent in 2001 and -1.3 percent in 2002.⁹ The real wage grew in Japan's business sector by only 0.3 percent in both the 1990-95, and 1995-02 periods, in sharp contrast to the growth of 3.3 percent during 1970-80 and 1.3 percent during 1980-90 (OECD, 2003). By comparison, the US real wage growth rate rose to 1.6 percent in the 1995-02 period in contrast to the growth rate of 0.7 percent in the previous five years.¹⁰ Wage growth in Japanese manufacturing started to slow down after 1990, and ended up in the negative region after the mid-1990s. For example, hourly compensation in manufacturing grew by 105.7 percent between 1985 and 1990, by 84.5 percent

⁸ The data are from Table 1.4 in *OECD Employment Outlook: Towards More and Better Jobs*, 2003.

⁹ These are annual changes in the index of monthly real wages for establishment with 5+ workers from the *Monthly Labor Survey* as reported in Table C-1(2) in *Katsuyo Rodo Tokei*, 2004.

¹⁰ OECD Employment Outlook: Towards More and Better Jobs 2003, Table 1.A1.1.

between 1990 and 1995, -8.7 percent between 1995 and 2000, and -14.7 percent in the three year period, 2000-2002.¹¹

What lessons does the recent experience offer for Japan's labor market policies that will help mitigate the adverse effects of future deteriorations in the overall economy, and even speed up the process of job creation, and help promote a thriving economy? The purpose of this chapter is to identify key labor-market problems, some of which are direct consequences of the macro-economy malaise during the past dozen years and others are of more long-term nature. In what follows, we identify and analyze some of the more serious problems facing the Japanese labor markets. We will discuss possible "solutions" for promoting a healthy and nimble labor market in Japan. For some of the problems, we will discuss concrete solution proposals, for others we identify issues that must be addressed to facilitate formulation of sensible solutions. We will group the problems into three categories, near-term problems, intermediate-term problems, and long-term problems.

II. Near-Term Problems and Solutions

Job Training and Worker Satisfaction

In order to raise productivity and to increase long-term competitiveness, Japanese firms should pay increasing attention to job training and job satisfaction. In the 1990s, many firms cut labor costs under the name of "restructure. Restructuring made some of these firms more competitive, but it also resulted in

¹¹ US Economic Report of the President, 2004, Table B-109

a loss of skills and worker morale.¹² As Japanese firms regain economic prowess, they should invest more money in human capital to ensure that their competitiveness will be maintained. Worker satisfaction will rise if they feel that employers are willing to invest in their human capital through training.

As for public policy on training, Japan may consider the applicability of a program similar to the “Jobs for the 21st Century” initiative that President Bush proposed in his state of the union address (January 20, 2004). Included in this initiative is a proposal to strengthen ties between employers and community colleges with a view to retraining unemployed workers. Community colleges now enroll over 10 million students per year and many of them are laid off workers (a news item aired on National Public Radio’s program, “Marketplace” on January 21, 2004). President Bush proposes to leverage community colleges to retrain laid off workers. A statement in the White House press release (January 2004) is relevant for Japan as well:

Helping Americans Access High-Demand Jobs: America's economy is growing, but it is also changing due to higher productivity and new technology. It is more important than ever that Americans have the education and training needed to succeed. The No Child Left Behind Act is bringing important reforms to America's schools by insisting on standards and accountability for results. There are substantial resources available to implement these reforms ...

Many older students and current workers will also need to strengthen their skills to compete for the jobs of tomorrow. President Bush proposed more than \$500 million for a series of measures called Jobs for the 21st Century - designed to provide extra help to middle and high school students who fall behind in reading and math, expand Advanced Placement programs in low-income schools, and invite math and science professionals from the private sector to teach part-time in high schools.

¹² According to the recent study of Japanese electrical, electronic and information industries by Chuma et. al. (2004), worker discontent increased in the 1990’s due in part to weakening participatory employment practices.

The President's Jobs for the 21st Century initiative also increases support for America's community colleges to train workers for the industries that are creating the most new jobs. The initiative will also provide larger Pell Grants for low-income students who prepare for college with demanding courses in high school.

The above issues are relevant to Japan. Japan may leverage *Senmon Gakko* or similar vocational training schools to deal with training. The aim is to facilitate training of workers for skills that will be in high demand and skills that match new and emerging jobs and technology. It is worth noting that the Japanese Ministry of Economy, Trade, and Industry (METI) has proposed a system of tax deductions for job training cost in corporation tax.

Youth Idleness

One of the most pressing concerns is the rate of idleness (unemployment plus those not in the labor force or in school) that is particularly high for teenagers, 15-19 year olds, and youths, 20-24 year olds (Table 1). It should be kept in mind, however, that throughout the OECD countries young people experienced more serious employment problems in the job market in the 1990's than in earlier years. For the most part, the conditions in the aggregate labor market, as measured by the aggregate unemployment rate, was the one dominant variable that "explained" employment and unemployment difficulties experienced by the OECD youths (Blanchflower and Freeman, 2000). Idleness among the young has serious long-term implications through a reduction of human capital formation and an increase in anti-social behaviors. In addition, there is the issue of underemployment of young people as evidenced by the phenomenon of "freeters."

Unemployment rates for teenagers (15-19 year olds) and young adults (20-24 year olds) rose significantly during the past 12 years. As illustrated in Table 1, the rising unemployment rates were widespread throughout Japan. The last two columns of Table 1 show that the increase in idleness (being neither in the labor force nor in school) has been particularly pronounced for 15-19 year olds throughout Japan. Moreover, the wage differential between regular workers and non-regular workers has been increasing since 1990s (Higuchi and MOF Research Center 2003), Higuchi, Ohta and Household Research Institute 2004).

Youth idleness is a serious concern as it could result in anti-social behaviors as well as slowdowns in the formation of human capital. Idle youths are missing out on the opportunity to receive formal education and acquire the knowledge and experience about the world of work. The slow-down in human capital formation has serious long-term implications on Japan's labor productivity. In addition, there are worrisome signs that youth unemployment may be linked to youth crimes.

Figure 3 shows the trends in the arrest data for youths (14-19 and 20-24 year olds) and for adults (20+ year olds). In contrast to the general downward trend for adult arrest rates, youth arrest rate, which trended down between the early 1980's to the early 1990's, started to move up in the 1990's. Particularly alarming is the fact that more and more young persons are getting arrested for such serious crimes as violence and larceny (tabulations available upon request).

Even for youths who are remaining in the labor force, either employed or unemployed, the phenomenon of freeters has attracted a great deal of attention

in Japan. A freeter is defined as the person in the 15-34 years of age, not including students and house wives, who work in part-time jobs or who is an unemployed person looking to work only in part-time job even if a full time job is available. Thus, the distinguishing characteristic of freeters is that they do not aspire to get on the traditional full-time career track, at least at the particular juncture in their life cycle. It is not clear if such an attitude is just a passing phase or a life-long phenomenon. At any rate, the fact that such a term as “freeters” was coined in Japan reveals how different in work attitude the recent young generations are perceived to have become from the past generations.

It is important to keep in mind that the freeters at first was a voluntary supply side phenomenon, a counter culture, as it were, and not a demand-deficiency phenomenon. During the economic boom in the 1980's, an increasing number of youths began choosing working part-time as a career objective.¹³ As recession persisted through the 1990's, however, the freeters became more and more a demand-deficiency phenomenon, as an increasing number of youths had no choice but to work part-time.¹⁴ Moreover, the stagnant economy did little to accommodate adults who once had chosen the life of freeters when the economy was flush but now wanted full time jobs.¹⁵ Either way, since part-time employment typically offers fewer opportunities for on-the-job training than full-

¹³ According to the data cited in Danke (2003), youths aged 20-24 accounted for 42 percent, and those younger than 20 accounted for two percent, of all freeters.

¹⁴ According to the Cabinet Office's *White Paper on the National Lifestyle* for fiscal year 2003, over 86 percent of young males and almost 50 percent of young females were looking for permanent jobs, and of these over 95 percent wish to become permanent employees before they reach age 30. See Chiba (2004) for related discussions.

¹⁵ See Danke (2003) for real life experiences of some of the freeters.

time employment, freeters miss out on investing in employment-based human capital, adversely affecting their productivity in life.

What are the solutions to youth idleness and underemployment? The finding by Blanchflower and Freeman (2000) that aggregate unemployment is the single most important explanatory variable in explaining youth labor market problems points to improving the macro economy as the solution. However, this is only part of the solution, in our view. Recall the elementary theory labor economics of labor supply indicating that an individual compares his reservation wage with the market wage in deciding whether or not to enter the labor market. The theory suggests then that the real wage that is available in the market falls short of the bottom-line wage that a typical young person would be willing to accept to enter the labor market or seek full-time jobs. Here, the real wage is broadly conceived to include “the whole of the advantages and disadvantages” of market work, to use Adam Smith’s terminology, as well as money wage.

According to the above argument, improvements in the macro economy that raises the market real wage, indeed, will be a solution to the problem of non participation in the labor market. On the supply side, the reservation wage of Japanese youths may have become too high; if so, what is required is a reshaping of the appreciation for life- long work. Teachers and parents can help shape children’s reservation wage by adopting a “back-to-the basics” approach and instilling in children the appreciation of educational experience for ensuring that the children will have many options, economic and otherwise, in their adult life.

As for youth crimes, it is well known that a lack of employment opportunities results in criminal conduct. Here, too, an improved macro economy will help reduce youth crimes, especially such economic crimes as pick pocketing and robbery. Youths who commit crimes should face penalty, of course. Levitt (1998) finds evidence for the U.S. that punishing juvenile offenders is an effective means of combating crimes. Public policies must weigh benefits and costs of punishment, however. According to Levitt's evidence, the severity of juvenile sanctions has little impact on later criminal behavior. Freeman (2003) analyzes criminal activities among disadvantaged U.S. youths and concludes that a high cost of crime and incarceration suggests a potentially large returns to prevention programs, be it employment subsidies, training programs, increased expenditure on police, etc.

An important cost of incarcerating offending youths is the stigma effect that may be long-lasting, especially in Japan. An alternative to incarceration, especially for light offenders, is to require that they go through counseling and training sessions on the condition that the criminal record gets expunged sometime after a successful completion of the counseling-training sessions.¹⁶ Such an approach has an advantage, especially in Japan, of minimizing the stigma effects from causing long-term harm to the youths and their future productivity.

¹⁶ In many U.S. municipalities, teenagers who are apprehended for under-age drinking are required to go through a program of counseling and training where they learn the seriousness of drinking and driving and other implications. The record of offence is expunged after a certain number of years.

Gender Gaps in Unemployment

Reversing the traditional gender pattern, male unemployment rate has remained higher than female unemployment rate since 1997 (Figure 1). This gender reversal in unemployment rate reflects such fundamental changes as the shift of economic activities from manufacturing and construction to service and trade. It also reflects employers' increasing reliance on part-time and temporary female workers, underscoring the lack of confidence in the economy's prospect that makes employers reluctant to invest in long-term employees.

As manufacturing employment steadily fell, more and more male workers became unemployed. Actually, manufacturing employment fell slightly more for females (by 1.28 million or by 26 percent) than male employment (by 1.24 million or 14 percent) between these years. In other words, loss of manufacturing jobs contributed slightly more to the rise of female unemployment rate than male unemployment rate.¹⁷

Figure 4 shows that the number of regular workers has declined since 1998 and the number of temporary workers has been increasing since 1995. At the same time, more and more women have been getting temporary and lower-wage jobs. On the demand side, this phenomenon is due to the employers' reluctance to invest in human capital of male workers with long-term employment in the environment of grave uncertainty about the future of the economy. On the

¹⁷ It should be noted that manufacturing jobs are disappearing all over the world, even in China. Between 1995 and 2002, manufacturing employment declined by 15.2 percent in China, 16.1 percent in Japan, 40.8 percent in Hong Kong, and 11.3 percent in the United States. Only five of the twenty largest economies -- Canada, Mexico, Spain, Taiwan, and the Philippines -- experienced increases in manufacturing employment. See Joseph G. Carson, "Manufacturing Job's Global Decline (Part 1)" 2003 Alliance Capital Management L.P.

supply side, it may be partly due to an additional worker phenomenon in which wives of husbands who lost employment, or who experienced wage cuts, enter the labor market to supplement family income to help maintain consumption.

Table 2 documents the trends in part-time and full-time employment after 1980. The top panel shows that the proportion of workers who are part-time is typically higher for women than for men and that there was an overall increase in this proportion for both men and women. The part-time proportion rose throughout these years, but the increases for the 15-24 and 65+ year olds were especially pronounced. Of particular note is that over 46 percent of working women 40 years or older held part-time jobs in 2003, as compared to 29 percent to 35 percent during 1985-90.

The middle panel shows gender shares in the total part-time employment. Clearly, women typically have the larger share of part-time jobs than men. Note, however, that the male share shows an upward trend while the female share tends to be rather stable or to even decline in this time period. The bottom panel shows gender shares in the total full-time employment. Clearly, men typically have the larger share of full-time jobs than women. Not much of a trend is discernible here.

Another way of looking at the high proportion of women working in part time employment and the increase in that proportion is the number of hours worked. There was a notable increase in the number of women working short hours: Between 1995 and 2002, the number of women working 1–14 hours per week increased by 47.7 percent (from 1.07 million to 1.58 million), those working

15-29 hours increased by 34.8 percent (from 3.39 million to 4.57 million), and those working between 30-34 hours increased by 18.3 percent (from 1.86 million to 2.20 million).¹⁸ Female part-time workers suffer from low pay. Although women generally have been gaining in pay -- female wages was a little over 66 percent of male wages in 2001 – female part-timers earned less than 44 percent of all male workers, whereas male part-timers earned almost 51 percent.¹⁹ If this pattern continues, it inevitably will slow the progress of women in gaining equal status with men in the labor market.

There is little doubt that Japan has seen a reduction in the employment of regular workers and increase in temporary workers. In other words, more and more workers have been shifted from high-wage regular employment to low-wage temporary jobs. Some of this problem should disappear once the economy starts growing and employers become persuaded that the recovery is sustainable and that they should invest in long-term employment. Also, it should be kept in mind that some of the workers who are initially hired as part-timers may become regular workers after they prove themselves. Such a practice, referred to as a “trial” employment, should increase as the economic recovery gains momentum. At the same time, labor market barriers to women should continue to be removed (see further discussion in the long-term problems section).

¹⁸ Authors' calculations from *Annual Report on the Labour Force Survey*.

¹⁹ See Figure 1-2-5 in *Kokumin Seikatsu Hakusho (White Paper on Living, Heisei Year 15, or 2003)*.

Spatial Gaps in Unemployment (Tokyo vs. Other Areas)

Unemployment has been rising in rural prefectures exacerbating regional inequality in economic wellbeing. Figure 5 shows that unemployment rate increased between 1998 and 2003 in all areas in Japan, but especially in rural areas, or non-metropolitan prefectures.²⁰ Figure 6 shows that people lost jobs in all areas except in Tokyo, Kanagawa, Saitama and Okinawa prefectures. Such areas as Iwate, Yamanashi, and Wakayama were especially hard hit.

The regional differential is a consequence of two major changes. First, there was a sectoral shift of economic activities from manufacturing to service and trade. Table 3 indicates, for example, that agriculture, fisheries, and forestry continued to lose employment throughout the years after 1980. All other sectors were gaining employment in the 1980's, but manufacturing and finance and insurance industries started to lose employment after 1990. Between 1998 and 2002, jobs were lost in all sectors except for service. As manufacturing started to lose employment, factories in regional areas lost jobs. Second, there was a reduction of government expenditures on public works. This reduction resulted in the loss of employment in the latter 1990's and early 2000's, especially for the construction industry (Table 3). As is well known, such expenditures were used to favor LDP strong holds, i.e., agricultural and rural prefectures.

Globalization of economic activities also is an important reason for spatial changes in employment. Once a steady source of employment for many rural

²⁰ In Japan, there is no special criterion to distinguish between rural and urban areas. Normally, urban areas are defined as 3 major city areas, "Shyutoken", "Toukai" and "Kansai", following the Japan Beureau of Census.

areas, manufacturers increasingly are outsourcing productions overseas in the process known as hollowing out or exiting the market altogether. In contrast, some urban areas, especially Tokyo, have benefited from foreign firms locating in these areas – e.g., in Finance and IT software, and as retail trade and service industries become predominant.²¹

The transformation of rural economies is a reality. Displaced workers in rural areas must face up to this reality and be willing to become retrained for new jobs. Policy options include (1) transferring budget authority for employment creation and training policies from central authority to local government, because how to spend money efficiently is best determined at the local level where the relevant information resides, and (2) facilitating worker migrations, especially for young persons, to areas where new types of jobs are being created. In this regard, it is worth noting that migration of young workers from rural to urban areas has been a persistent phenomenon in Japan's post-war development. It is worrisome, therefore, that the rate of geographical mobility has fallen recently. To what extent this fall is due to parents wanting to keep their children near by them in these days of low birth rates is an interesting issue to explore.

III. Intermediate-Term Problems and Solutions

²¹ The relative importance of job creation by foreign investment in the total job creation is 2.4% in Tokyo, 2.6% in Kanagawa, 2.7% in Hiroshima Prefecture in 1996 (K. Fukao and N. Amano (2004)) . Furthermore, 36 % of total job creation by foreign investment is concentrated in Tokyo, and 13% in Kanagawa and 9% in Osaka.

The data on the relative importance of job creation by foreign investment in the total job creation are not available. However, the data generated by K. Fukao on the number of job creation by foreign investment indicate that 46 percent of total job creation by foreign investment is concentrated in Tokyo, and

Dual Economy, Sectoral Changes, and Re-allocation of Human Resources

As is well known, large differences exist in labor productivity among industries. According to Table 4, only a little over 18 percent of the regular workers were employed in sectors whose total factor productivity exceeded that of the US. Export driven manufacturing, e.g., transportation machinery and electric machinery boast high productivity. High productivity for finance and real estate seems odd given the prevalent concerns about the health of the Japanese financial sectors. This number may be driven by the high productivity in the real estate sector and by the fact that firms in finance sector could raise their value added because they were protected by regulation. What is needed is to raise the productivity for the non-export oriented sectors through rationalization and reorganization.

According to Figure 7, Japan has been experiencing a shift of economic activities from manufacturing and construction to services, and especially medical and welfare services. This shift is in part a reflection of the well known phenomenon of the economy to move from the traditional primary to the secondary sector, and then to the tertiary sector (see Table 3).

What do such shifts portend for the labor market? Are they bad for Japan? Do they call for policy intervention? In contemplating questions, it is well to keep in mind Schumpeter's creating destruction thesis.

The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers, goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates ...the same process of industrial mutation ... that incessantly revolutionizes the economic structure from within, incessantly destroying the old one,

incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in ... Schumpeter (1942).

In other words, a vibrant economy is constantly renewing itself. As real income rises, consumer demand for goods and services change depending on the income elasticities. The decline of manufacturing and a rise of service sector are part of this renewal process, although the decline of construction is due much to the reduction of public works investments in the mid-1990's (see Figure 7 and Table 3). As low cost sources of production become available and as new products emerge, old industries die and old jobs are destroyed, but new industries are born and new jobs are created. As long as the economy is growing, the result is a net increase in employment and incomes. To manage these processes, however, displaced workers from disappearing industries must be retrained and moved to new industries.

Public policies must not impede, and indeed encourage, retraining and mobility of workers from low to high productivity sectors. Retraining and mobility are investments in human capital. To the extent that capital market is imperfect and cannot help meet liquidity needs associated with retraining and mobility, it is sound to subsidize retraining and mobility expenses to help meet such needs. Furthermore, some workers in traditional, low productivity sectors may continue to enjoy job security for such non-economic barriers as political and legal constraints, cultural biases against career changes and mobility, lack of information, etc., all of which reduce the incentive to move out of low-productivity sectors. Such barriers must be eliminated.

Dependency for Employment on Government Sectors

According to Table 7, government expenditures as a source of employment creation are significant, especially in non-metropolitan areas, and they increased between the mid-1980's and the late 1990's. It is well known that Japan has spent enormous sums of money on public works in rural areas. Arguably too much money went to such public works projects as railroads, highways, airports, and other infrastructures. To be sure, some of such investments were needed to bring Japan's countryside on a par with a modern country. It is inevitable, and even desirable, that public money will continue to be spent to benefit the Japanese population in rural as well as urban areas.

Indeed, according to Figure 8, in comparison to the US, UK, France, and Germany, Japan consistently spent the largest share of its GDE to public investments. Table 7 indicates that, throughout the 1990's, Japan's share in the GDE of expenditure on employment policies was low in comparison to the UK, Germany, and France, but not in comparison to the US. There is a slight tendency for the share to increase over time, but the change is also affected by the general unemployment rate, as seen in the sixth row.

Evidence suggests that public investments in Japan no longer raise the overall productivity as they once did. Table 7 shows that the effects of social capital on total factor productivity declined between the mid-1970's and the late 1990's.²² It is past time for policy makers to seriously assess whether such

²² These magnitudes were computed from a regression equation estimated from a pooled data set for 1975-98 by prefecture. The regression model estimated is $\ln TFP = a + bK + cKxT$, where K is social capital stock, T is the number of years lapsed after 1975, and the parameters, a , b and

public expenditures should shift more to stimulate employment and to strengthen safety-net provisions than to public works projects.

IV. Long-Term Problems and Solutions

Ageing Population and Immigration Policy

Japan's population is projected to become the world's oldest by 2025 (*Economist*, September 27, 2003). The population is projected to continue declining for years to come. Thus, it is expected to decline by almost 14 percent, from 126.9 million in year 2000 to 109.3 million in year 2040.²³ During the same time period, the prime working age population (15 to 64 years old) will drop by over 29 percent, from 86.4 million to 61 million, and the older population (65 years of age or older) will rise by almost 65 percent, from 22 million to 36.3 million. As a result the ratio of persons 65 years or older to persons of prime working age will rise from 0.25 to 0.59 in this time frame. The prospect of such an increasing imbalance in the age composition of the population raises serious and urgent issues for Japan's long-term prospect, economic and otherwise.

Given the seriousness of the population issue for Japan, it is worth asking: To what extent would Japan be willing to sacrifice her ethnic homogeneity in the prime age population by allowing increased immigration of foreign workers? We are not talking here about contract workers on temporary visa but about permanent worker, many of who would bring their families along and even

c vary among prefectures. Table 7 shows the simulation results of the effect of an increase of one million yen in social capital on *TFP* in 1975 and 1988.

²³ Katsuyo Rodo Tokei, 2004, Table K-2.

become Japanese citizens.²⁴ We realize that such permanent immigration may be unacceptable to many Japanese at this time. We believe, however, that sooner or later, Japan will have to confront this question.

It is interesting that Germany just passed a path-breaking law that introduces a system of allowing qualified skilled foreign workers to settle in that country permanently.²⁵ The law was drafted with an eye towards the country's aging population as well as its skill shortages based on German's realization that the country needs foreigners to prosper.

If Japan chooses to remain ethnically homogeneous, she most certainly will become a smaller sized country with an increasingly older population, unless, of course, the current low fertility rate makes a dramatic turn upward. An increase in fertility sufficient to offset the effects of the rapidly aging population seems unlikely, however.²⁶ People will retire later and later in life, and they will have to fund more and more of their own pensions in the face of the shrinking prime-age workers. Older workers must be retrained to stay productively employed. An optimistic scenario may be that as long as labor productivity keeps rising through technological progress and capital investment, the Japanese citizen for the most part will continue to enjoy an affluent life. The key

²⁴ According to a recent United Nations report, Japan will need 17 million new immigrants by 2050, which would be 18 percent of the population as compared to the current one percent. Other estimates indicate that Japan needs to admit 400,000 new immigrants each year. See Howard French, "Insular Japan Needs, but Resists, Immigration," *New York Times*, July 24, 2003.

²⁵ The law is set to take effect on January 1, 2005. A potential immigrant must possess skills in certain fields such as engineering, information technology or sciences. The law also establishes services to help immigrants assimilate into the German society. See "Germans Rethink Immigration," *Wall Street Journal* (July 9, 2004)

²⁶ See, however, a somewhat optimistic view on the Japanese fertility rate by David Weinstein in this volume.

to this scenario is for the technological progress and capital investment to keep occurring.

On the other hand, Japan may take a bold step and begin accepting a small but steady increase in the immigration of carefully selected prime age foreign workers, many of who would be integrated into the mainstream Japanese society. In this scenario, Japan gradually will become transformed into a melting pot, much like the United States, with an increasing ethnic diversity and a more balanced age composition of her population. Prime age foreign workers will help alleviate the difficulties of financing pensions in the face of growing number of retirees.

The choice between these alternatives is not simply a matter of economics. In fact, economic considerations may be secondary. Concerns about the loss of the uniquely Japanese culture and social customs are legitimate and must be carefully weighed against the benefits of such immigration. Implications of increased ethnic diversity on the cost of enforcing laws and social norms must be clearly understood. We believe it is worth undertaking a serious reassessment of the fundamental value system of the society and developing a consensus on what kind of country Japan should look like in 40 to 50 years. Avoiding these choices would mean simply muddling along hoping for increased labor productivity to alleviate economic problems and just allowing a small number of foreign immigrants to enter the country on temporary bases, most of whom will not be granted Japanese citizenship.

Japan indeed has been tackling the issue of temporary foreign labor for more than a decade. In 1990, Japan took steps to facilitate immigration of foreign professional workers, on a temporary basis. According to a very informative discussion of Japan's immigration policies and their effects by Fuess (2003), Japan changed the certificate-of-eligibility procedure to facilitate entry of foreign professionals.²⁷ What was the effect of this change? The Fuess' data show only a modest acceleration in the annual growth rate of entry of highly skilled foreign workers -- to almost 10 percent between 1990 and 2000 from 9.5 percent between 1982 and 1989 -- in part because the Japanese economy was in a deep recession throughout much of this period. The overall number of foreign workers grew noticeably between 1990 and 2002. In 1990, there were 260,000 legal foreign workers in Japan, an equivalent of 0.5 percent of all employed persons. By 2002, foreign workers had grown almost three folds to 760,000, an equivalent of 1.4 percent of all employed persons.²⁸

It is worth mentioning that, at this writing Japan is considering a specific program for allowing rotational immigration from the Philippines in such occupations as nurses and care workers for the elderly. Under this program, Ms. Marcos would be allowed to work in Japan for five years and then she must return to her country. Mr. Gonzales would then take up her position for the

²⁷ Japan reformed her immigration policy in 1982 by specifying procedure for accepting refugees and defining six categories of specialists who could work in Japan. However, the category definition was vague, and the decisions by the authority to approve or deny visa appeared to be arbitrary. In the 1990 change, before entering Japan a worker must have his/her potential employer obtain a certificate of eligibility for twelve specialized category of work, double the number of categories that was introduced in 1982. The Japanese Consulate then issues the entry visa to the worker, and the visa can be valid for three years, one year, or six month, and is renewable for an unlimited number of times.

²⁸ These data are tabulations by the Ministry of Welfare and Labour (*Kosei Rodo Sho*).

subsequent five years, and so on. Clearly, this arrangement is best characterized as a foreign guest worker program rather than an immigration program.

The aforementioned developments are promising steps towards alleviating near- and intermediate-term labor shortages in certain occupational categories. To address the long-term issue of the declining prime age population, however, Japan needs to confront the more fundamental issue of the tradeoff between staying ethnically homogeneous and becoming smaller in size or allowing increased immigration of prime age foreign labor to counteract the aging of its native population.

Mandatory Retirement in the Aging Society

The aging of the Japanese population calls for a reexamination of the retirement system. Should mandatory retirement practice continue?²⁹ Lazear's theory of mandatory retirement (1979) would imply that, for Japan, mandatory retirement system made sense when long-term employment, or "lifetime employment," was the norm. If there is a diminution of long-term employment in Japan, as seems plausible, this practice will lose Lazear's theoretical justification. There is the issue of age discrimination as well.

One outcome would be that retirement becomes voluntary, and to induce voluntary retirement earnings profiles would have to be configured to induce retirement in an optimal way. The age at which a person becomes eligible to receive social security will play a role in inducing voluntary retirement. Another

²⁹ In the United States, laws prohibiting employment discrimination by age resulted in a prohibition of mandatory a quarter of century ago.

outcome would be that mandatory retirement is retained but productive older workers receive post-mandatory-retirement contract so they may keep contributing to the economy. Indeed, it is important that older workers can continue contributing to the economy, especially since the health of the elderly likely will continue improving. On a practical side, given that population aging will make funding the social security system more and more challenging, the eligible age for social security and the threshold retirement age need to become more and more flexible.

Women in the Workforce

Women arguably have been the most under-utilized human resource in Japan. Indeed, last year the World Economic Forum ranked Japan 69th of 75 member nations in empowering its women.³⁰ According to a recent survey conducted by *Naikaku-fu*, 60.4 percent of women think they are discriminated against in wages, 31.3 percent think their talents are not accurately evaluated and appreciated, and almost 31 percent think that discrimination exists in promotion (*Survey on Equal Gender Participatory Society* 2002). Having this significant source of economic talent be more fully deployed would help sustain a thriving economy; in addition, doing so would alleviate the impending shortage of prime age workers resulting from the aging.

To be sure, Japan did make some progress after 1980 in reducing gender differential in wages. According to Blau and Kahn (2000), Japan along with many countries succeeded in reducing pay inequity between the early 1980's to

³⁰ Howard W. French, "Japan's Neglected Resource: Female Workers," *The New York Times*, July 25, 2003.

the late 1990's. The female-male wage ratio in Japan increased from 0.587 in 1979-81 to 0.590 in 1980-90 and to 0.636 in 1994-08. This record is not particularly impressive, however. In fact, the Japanese wage ratio still was the lowest among the thirteen countries studied.³¹ The Japanese wage ratio in the late 1990s is only a little higher than it was in the days of the Old Testament.³²

Did women suffer disproportionately during the economic downturn during the last 10 years? Employment data are unclear on this question, in part because the data masks the tendency for women to be moved into low wage part-time, temporary and other non-regular workforce. What is worrisome is that the wage gap between full-time and part-time women has been increasing. As of year 2000, such women earned less than 44 percent of full time men; in contrast, part-time men earned almost 51 percent of full-time men. Clearly, Japan can do more to empower women and get the most out of this human resource for her collective good, social and economic.

Japanese women are increasingly moving into higher positions. According to the data compiled by Labor and Welfare Ministry (based on Basic Wage Survey), the proportion of private sector managerial positions held by women has risen from five percent in 1990 to 8.3 percent in 2001, a 66 percent increase. However, there is much room left for improvement, as evidenced by the fact that while 40

³¹ The ratio refers to median weekly earnings of full-time workers. According to the Blau-Kahn study, the US ratio rose from 0.625 to 0.706 and to 0.763 during this time frame. During 1994-98, France had the highest female-male wage ratio at 0.899, followed by Australia at 0.868. Japan had the lowest ratio just below Canada at 0.698.

³² The Lord spoke to Moses and said, Speak to the Israelites in these words. When a man makes a special vow to the Lord which requires your valuation of living persons, a male between twenty and fifty years old shall be valued at fifty silver shekels, that is shekels by the sacred standard. If it is a female, she shall be valued at thirty shekels (Leviticus 27: 1-4).

percent of Japanese women work, they hold only nine percent of managerial positions, as compared with about 45 percent for the United States.³³

What policies are needed to promote an increased use of women in the workforce? We suggest that two general policies be considered and one specific policy. The first general policy is a continued strengthening of the equal employment laws. The other policy is to pursue a proactive approach to ensuring that women can continue to stay in the labor force as much as possible. We discuss these policies below.

The Japanese Constitution guarantees gender equality under law. Under the existing Labor Standard Law in Japan, the employers are required to pay the same wage to workers performing the same job responsibilities regardless of sex. In addition, the Equal Employment Opportunity Law (EEO) was implemented in 1986, and later strengthened in the amendment that became effective in 1999.

The EEO is intended to promote equal opportunities for men and women, fair treatment in employment settings, and measures for ensuring the health of female employees during pregnancy and after childbirth. Before 1999, the employers were not obliged to change practices that impeded women's progress in the work place, a glaring example being the prohibition of long working hours, which in effect prevented women from being promoted to higher managerial positions. The 1999 amendment prohibits any discrimination against women in recruitment, employment, job assignment and promotion. It also has created a system of publicizing the names of corporations that did not comply with the law

³³ This information is from International Labor Organization as quoted by Howard French in "Japan's Neglected Resource: Female Workers," New York Times, July 25, 2003.

as well as improve the mediation system. In addition, the amended EEO gives employees the right to sue their employers when mediation fails.³⁴ Clearly, Japan has been making notable progress in strengthening the enforcement of equal employment laws during the past 18 years. Japan needs to continue to make sure that the spirit of the EEO is whole-heartedly met.³⁵

The second general policy is to assist women in building their labor market attachment by reducing employment interruptions as they go through child bearing and rearing. When enduring employment relationships matter for productivity, as in high skilled and professional jobs, work interruptions are detrimental, especially when they result in changing employers. According to a recent research, the relative improvement in American women's wages during the 1980's and 1990's was due mainly to an increase in the labor market attachment of women, accounting for up to 50 percent of the increase in the female-male wage ratio between the 1970s and 1990's (Blau and Kahn, 1997). The U.S. experience points to the need for helping women minimize interruptions in their career due to child births and rearing. Interruptions in work experience are costly for jobs in which human capital depreciates from non-use and for jobs

³⁴ The number of law suits has increased recently especially in Tokyo and Osaka areas. The Japan Airlines case is well publicized.

³⁵ There are good signs for this. Presidents of several leading companies, e.g., Japan IBM, Ricoh, appear eager to promote female employees to higher managerial positions. They have joined the Committee for Promotion of Female Employees organized by the Ministry of Welfare and Labor. The Committee identified that the key to achieving their objective is the attitude of top of corporations. The Committee found that there is a significantly positive relation between the female managerial employees and profit. It plans to publicize the names of companies with exemplary effort and achievements in this matter.

that require continued investment in human capital, i.e., highly skilled jobs including professional and managerial jobs.

Interruption in work experience may be one of the most serious issue affecting young Japanese women. Traditionally, Japanese women would work for several years after completing formal schooling, and then get married and withdraw from the labor force. After their children grow up, some of the mothers would reenter the labor force but most of them would work part-time. Modern women need to be able to become mothers and keep their jobs without penalty. This is important because these women are at the critical stage of acquiring employment-related human capital. According to the Ministry of Health, Labour, and Welfare, two-thirds of all employed women were found to have given up their jobs upon the birth of their first child. Some 25.6 percent were not working one year before childbirth, whereas 73.5 percent were. In contrast, six months after giving birth, 74.3 percent were not working and 24.6 percent were. Among women who were working a year before childbirth, only 36.8 percent returned to their jobs six months later. Interestingly, when the child was not the first child, the proportion returning to work was rather high, 74.5 percent.³⁶

There is no single measure that would solve this issue. Instead, a consortium of multiple measures would need to be developed. One such measure, obviously, is to increase the availability of affordable and conveniently located childcare facilities will help keep mothers in the labor force, as will reducing, if not eliminating, work hours extending into the evenings. Another measure is to

³⁶ The above information is contained in "Two-Thirds of Working Women Leave Job Upon Birth of First Baby," Japan Labor Bulletin, vol. 42, No. 1 (January 2003).

develop a distant-working system using the information technologies so that women can work from home while they care for their young children.

We recommend eliminating provisions that exist in the current tax and pension laws as well as company practices that discourage women from participating in the labor-force. The Japanese tax system along with a prevalent practice by firms generate strong disincentive against wives' earning above a certain amount. In the current Japanese tax system, if the wife earns less than the threshold amount of ¥1,030,000 per year (a little over \$9,000) then the couple can deduct ¥380,000 yen from their taxable income. However, as the wife's earning rises above ¥1,030,000 the deductible amount is reduced according to how much the wife's earning exceeds the threshold amount. Clearly, this system discourages wives from participating in the labor force, and particularly in high paying full-time employment.

The Japanese public pension law contains built-in disincentives for wives as well. The wife whose husband belongs to the public welfare pension system receives her basic pension benefits, even if she does not contribute to the system, as long as her annual earnings are less than ¥1,300,000 (about \$12,000) or her weekly hours of work are less than 75 percent of hours worked by a typical worker. If her annual earnings or weekly hours exceed the threshold values, she, of course, can contribute to the system and receive the corresponding benefits. It is clear, however,

that, at the margin, the law discourages women from earning more, or working more hours, than the threshold values.

Working Hours

In 1988, there was a revision of the Labor Standards Law stipulating a phasing in over several years of a reduction in the statutory workweek from 48 hours down to 40 hours per week. The workweek length declined from 44 hours in 1988 to 40 hours in 1993, as a result. Three additional national holidays were added during this period. Government offices were closed on Saturdays every other week beginning in 1989, and since 1992 have been closed every Saturday. Financial institutions have been closed every Saturday since 1989. A new temporary law was introduced in 1992 to bring about a further reduction in hours worked. In addition, the 1998 revision of the Labor Standards Law added one day to paid vacation.³⁷ It is interesting to note that some German employers and unions are moving towards increasing standard work hours to stay competitive.

The extent of compliance with the work hour regulation is an open question. Many employees appear to continue to work long working hours: the proportion of employees working 60 hours per week or longer is increasing in spite of employees' complaints about the excessive hours (Statistics Bureau Ministry of Public Management, Home Affairs, Posts and Telecommunications, *Labour Force Survey*). Based on informal discussions with owners/managers of medium-sized companies, long working hours are common among younger regular workers. Normally, workers in a new cohort hired fresh out of school, as

³⁷ The above summary is from Hayashi and Prescott (2002).

has been the norm, receive the same compensation as one another for several years. However, these workers compete with one another for future promotions. One way to compete is to put in long hours to impress their bosses. This scenario suggests that at least part of the long hours that these workers are spending amounts to an unproductive rent seeking behavior.³⁸

The current long working hours also could reflect the upturn in the economy, and employers are choosing to meet increased demand by increasing work hours rather than hiring new workers. This is a sensible approach on the part of employers given the uncertainty the economy faces as to how long-lasting the recovery is. This possibility notwithstanding, it would be desirable if employers were to become proactive in reducing both excessive and unproductive long working hours.

Industrial Relations System

Japanese industrial relations have been undergoing rapid changes in the last decade. Japanese employers used to emphasize ensuring the livelihood of their employees by offering strong job security and paying their employees based on seniority. In turn, employees were expected to put up with such inconveniences

³⁸ The calibration of the Hayashi and Prescott (2002) model suggests that the mandated reduction in work hours in the early 1990's contributed to the slow growth rate of the Japanese economy during the 1990's. Just how important this factor was cannot be ascertained from their model calibrations. In evaluating how the hours reduction affected economic growth, it is critical to ascertain the extent of compliance with the regulation. It seems far from being complete. Moreover, it is possible that the marginal product of hours had been close to zero or even negative prior to the change in the law – workers simply hang around until late hours because that was the thing to do. A manager of the medium sized company told us that some of the workers do sloppy work during the daytime, knowing that they can polish it up latter in the day. The marginal product was negative, then the hours regulation should have increased productivity. These and other interesting issues are left for a future study.

as long working hours and frequent relocations. However, Japanese employers have relied more and more on wage settings and job security based on merit, especially after the severe and long-lasting economic recession during the past 12 years. This change meant that employers have come to rely more and more on employees' self-reliance and responsibility. Perhaps reflecting these changes, Shunto negotiations recently have shifted from demanding wage increases to demanding promotion of job security and revising the wage table. Interestingly, according to Houseman and Osawa (2003b) the recent shift away from the *nenko* wage and long-term employment for regular full-time employment is the underlying reason for the dramatic rise of part-time employment in Japan noted earlier.³⁹ They point out that although the recession in the 1990's may have accelerated it, the growth of part-time employment began well before the recession.

Two important challenges face Japanese industrial relations. First, as Hashimoto and Raisian (1985, 1992) demonstrated in their comparative studies of Japanese and U.S. labor markets, Japan's "unique" employment system -- Cole's (1971) *nenko* promotion, *nenko* wages, and "lifetime" employment -- was prevalent in Japan throughout high growth years, *albeit* more so among larger-sized firms, but smaller firms tried to emulate these practices. These practices are likely to become less and less common, even in large-sized firms, as Japan comes to rely more on merit based decision-making for wages and

³⁹ Their careful analysis indicates that the growth in part-time employment in Japan is due largely to an increased incidence of part-time employment within industry and within demographic groups.

employment.⁴⁰ This development raises an important issue on the nature of job training in Japan.

Under the *nenko* system, senior workers could train young workers on the job without fear of weakening their own standing. If wages and promotion are to be based more and more on merit rather than seniority, the fear of undermining their own position in the firm will weaken senior workers' willingness to train young workers. Such a development will reduce the importance of the traditional Japanese way of training in which experienced senior workers served as teachers. More and more training will take place in formal settings, be it formal training provided by the employer or at training schools. Since formal training tends to be more general than firm-specific, bonding between employers and their employees will become weakened.⁴¹ As a result, labor turnover will increase. Such an increase is not necessarily bad, as we will see below in our discussion of efficient and inefficient separations. At any rate, the likely shift of training from informal to formal settings makes "jobs for the 21st Century" type policies discussed earlier relevant options for Japan to consider.

The second issue concerns Japan's need to foster an environment in which worker-employer mismatches can be corrected in an efficient manner and to promote efficient labor turnover. Japan, in effect, had strict employment protection practices, both formal and informal in the 1960's through the 1980's.

⁴⁰ Although these practices were much more prevalent among large sized employers, small and medium sized employers tried to emulate such practices, or felt formal and informal pressures to do so.

⁴¹ There is evidence that such participatory practices as small group activities have been weakening in Japan and worker unhappiness has become prevalent as a result (Chuma, Kato and Ohashi 2004).

Having compared turnover rates in Japan and the U.S., we assert that employer-employee attachment in Japan had been too strong during the prosperous years of the 70's and 80's.⁴² The so-called "life-time employment" practice resulted in too little turnover relative what's efficient, especially in large-sized companies.

Employment protection caused little problem when the economy was growing at a rapid rate. When the economy stagnates and jobs are lost, however, this practice hinders timely changes in the deployment of workers. Ironically, employment protection slows down employment recovery. Unless employers gain confidence that favorable conditions in the economy will last for a long time, they will be reluctant to hire new workers, or recall laid-off workers, because they know that it is difficult to discharge employees in downturns.

Institutional rigidities, norms and rules inhibit efficient separations. A Japanese worker who voluntarily separated tended to be stigmatized as being foot loose, and an employer who dismissed workers, even for sound business reasons, acquired a reputation of a shameful conduct and would have trouble hiring new workers. Japanese employers still face all sorts of hurdles before being allowed to dismiss workers. What is needed is for the laws and regulations that inhibit employers from effecting efficient separations to be weakened, if not eliminated, and for biases against workers changing jobs or employers dismissing workers to be reduced through education.

At the same time, inefficient separations – i.e., separations that occur even though the parties taken together are better off not separating -- must be

⁴² See, for example, Hashimoto (1990), chapter 3.

minimized. In this vein, we posit that there had been excessive amount of inefficient separations in the U.S.⁴³ Inefficient separations occur when there is information asymmetry between the employers and employees regarding their valuations of alternatives (Hashimoto 1995). For example, even when a separation is inefficient, an employee may make a unilateral decision, incorrectly, to quit for lack of communication with his employer, who does not get a chance to persuade him to stay. Similarly, an employer may dismiss a worker inefficiently because the employee refuses, incorrectly, to accept a pay cut to save his job because of his distrust of the information provided by the employer. So, the first step in promoting efficient turnover is to reduce information asymmetry so the parties do not separate by mistake. Towards this end, we encourage preservation of enterprise-based unionism and joint consultations, both of which otherwise may become diluted as the employment attachment weakens.

V. Summary

We identified some of the more serious labor market problems facing Japan, some of which are direct consequences of the macro-economy malaise during the past dozen years and others are of more long-term nature. We then discussed possible “solutions” for promoting a nimble and thriving labor market in Japan. For some of the problems, we offered concrete solution proposals, and for others we identified issues that must be addressed to facilitate formulation of

⁴³ See, for example, Hashimoto (1990).

sensible solutions. We classified the key issues into near-term, intermediate-term, and long-term issues, as summarized below.

Near-Term

The poor macroeconomic conditions are primarily responsible for many of the near term problems discussed above – reduction of worker training and job satisfaction, increasing youth idleness and underemployment, a rise of temporary and part-time employment, and gender and geographical gaps in employment and unemployment. Once an economic recovery takes hold and generates strong and sustained growths in the aggregate demand for output, employers gradually will regain confidence in the future of the economy and will begin investing in long-term employees. When that happens, many of the current unemployed and underemployed workers, as well as those who will continue to be displaced by the process of structural reforms, will be absorbed into productive, full-time employment. The practice of “trial employment,” in which some workers, fteeters included, initially hired as non-regular workers are promoted to the regular-workers status after proving themselves, is expected to expand as the economy continues to rebound. Until then, any adjustment policies are unlikely to completely solve these and other near-term problems. One policy we recommend is to subsidize training of unemployed and displaced workers for emerging skills and jobs using vocational and specialized schools.

Intermediate Term

Japan would be well advised to redirect expenditures on public work project to investment in such pro-active employment-promotion and employment-

adjustment projects as job training, retraining and mobility support. Such redirection of investment will help the economy keep up with rapidly changing industrial structure and geographical distribution of jobs.

In addition, the current arrangement in which job training subsidies for the most part are given to the firms offering in-house job training must be reexamined. A sound public policy instead may offer scholarship-type programs for job training and allow tax deductions for expenditures incurred on training and retraining. Such a policy will help foster self-reliance on the part of the worker and promote competition among employers for trainable workers, thereby promoting efficiency of resource use.

Long Term

Japan faces a number of challenging long-term labor market issues. The most challenging issue has to do with the aging of Japan's population and the consequent shrinking in the prime age workforce. To deal with this challenge, it is worth considering two alternatives. One alternative is to preserve population homogeneity by continue to bar "permanent" immigration of prime age population, who would become Japanese citizens. The other alternative is to give up homogeneity and allow immigration of carefully selected prime-age workers. The aging of the population means that the mandatory retirement system must be reexamined and the age of eligibility for social security be made more flexible.

Japanese women arguably are the most underutilized productive resource. Discrimination against women persists in the labor market, judging by the lackluster progress made in reducing pay equality. Since the mid-1980's, Japan

has made considerable progress in developing a legal framework for promoting equality between men and women in the work place. The current tax and pension systems as well as some private sector practices, which discourage wives from working full-time in high paying jobs, must be reformed. Effort needs to continue, and indeed accelerate, so Japanese women will enjoy increasing equality in employment opportunity, pay, and career advancement. As the Japanese industrial system becomes less and less based on seniority, Japan will become less and less reliant on informal on-the-job training in which older workers trained younger and less experienced ones.

Finally, we conjecture that there had been too few job separations in Japan, and too many in the U.S., relative to what is optimal. We propose that measures be taken to promote efficient job separations in Japan by reducing cultural, legal, and policy biases against workers changing jobs or employers dismissing workers. Employment protection practices, formal and informal, slow down employment recovery -- Unless employers gain confidence that favorable conditions in the economy will last for a long time, they will be reluctant to hire new workers, or recall laid-off workers, because they know that it is difficult to discharge employees in downturns. Asymmetry of information between employers and employees must be reduced to minimize inefficient separations. Improved communication and transparency between the management and labor will help in this regard. The objective is to promote an efficient matching of jobs with workers and to enable the Japanese economy to become nimble and

flexible in responding to the vicissitudes of the economy in an efficient and timely manner.

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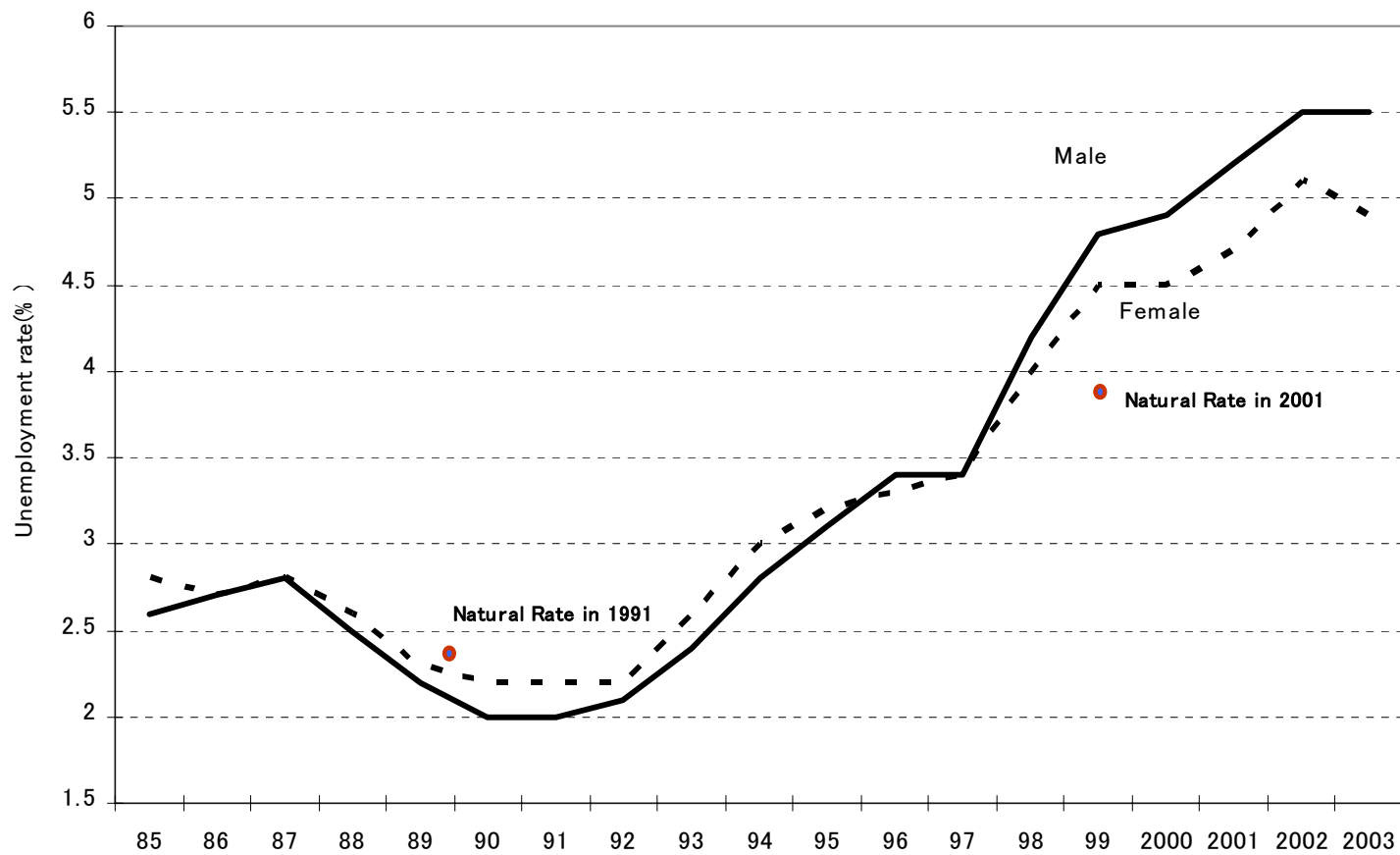
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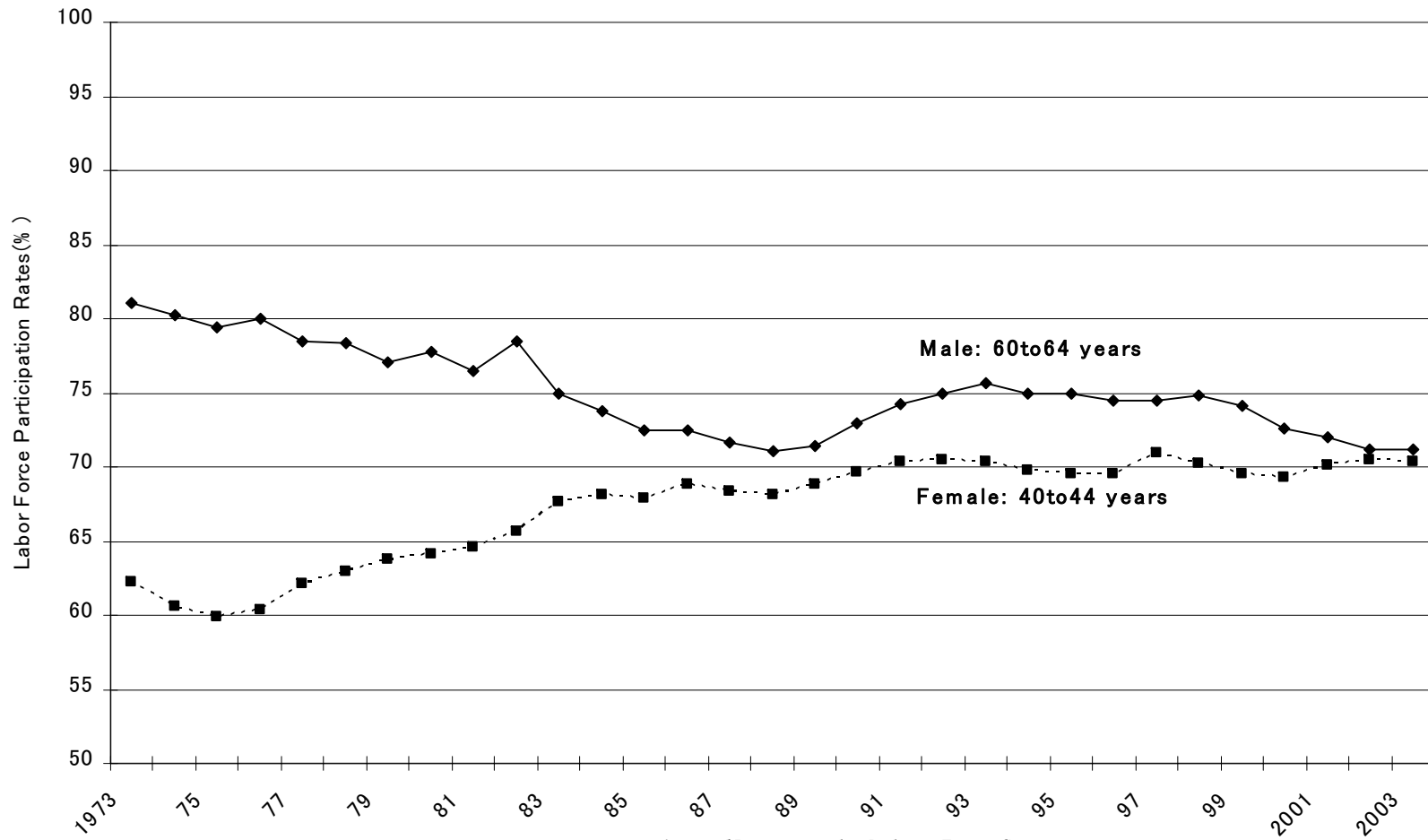
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Figure1: Unemployment Rates



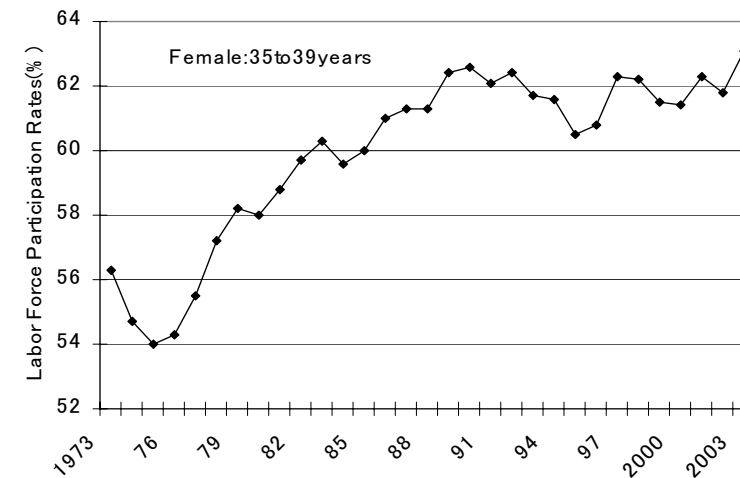
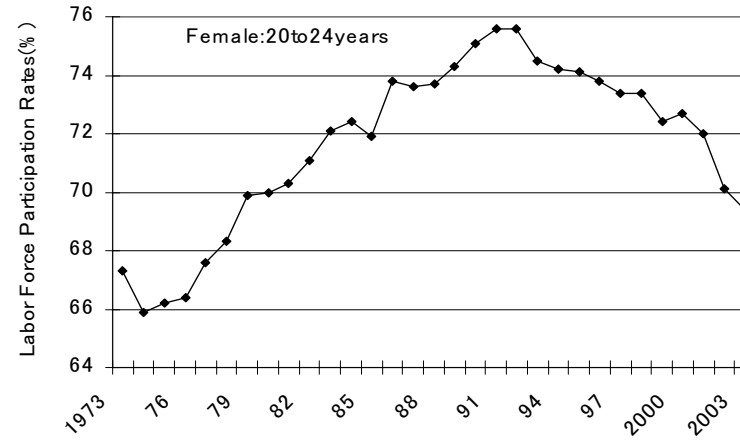
Source : Statistics Bureau Ministry of Public Management, Home Affairs, *Annual Report on the Labour Force Survey*, various years

Figure 2: Labor Force Participation Rates by Sex and Age



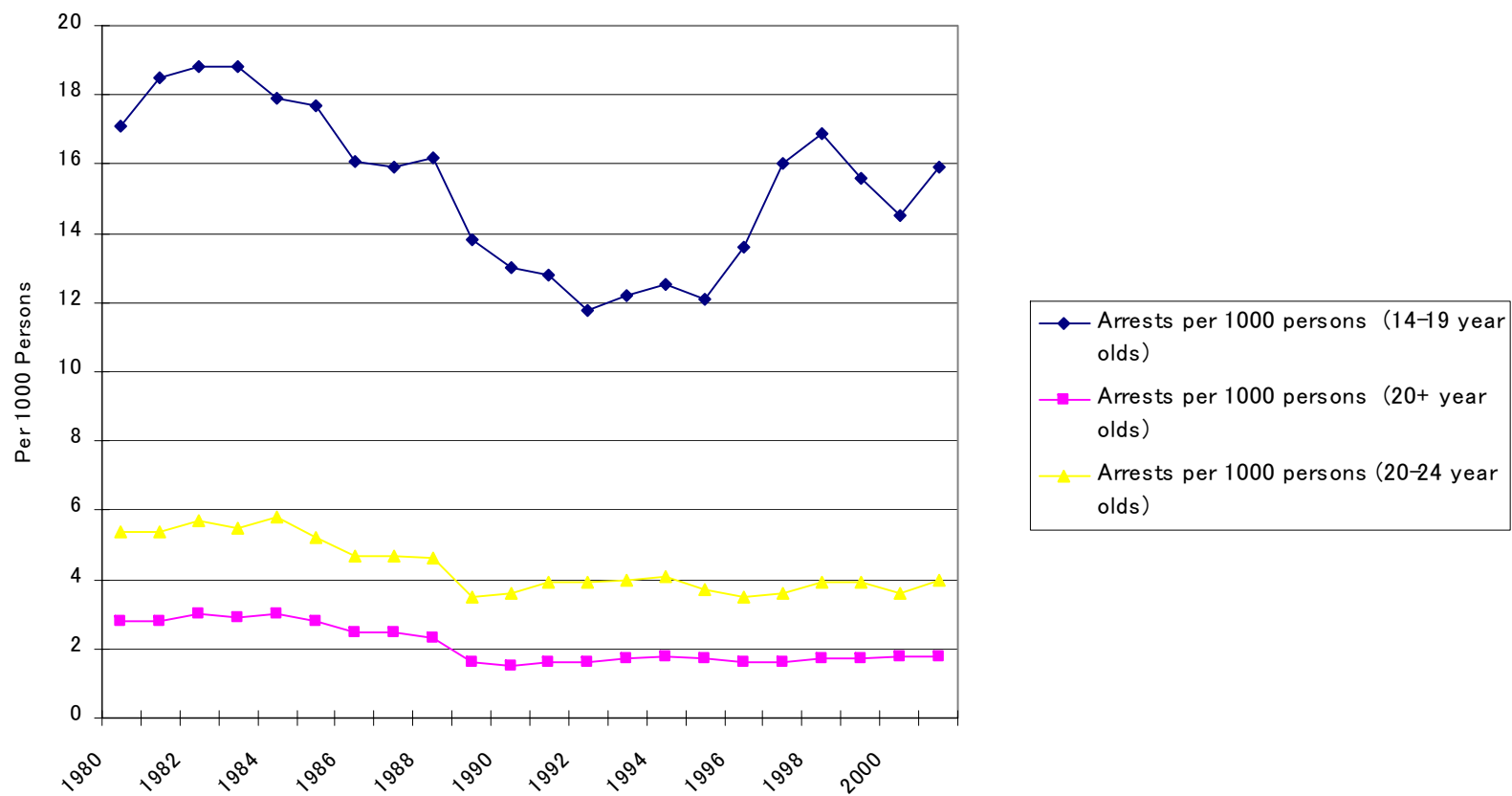
Source: Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*, various years

Figure 2 Continued: Changes of labor force participation rates by sex and age(%)



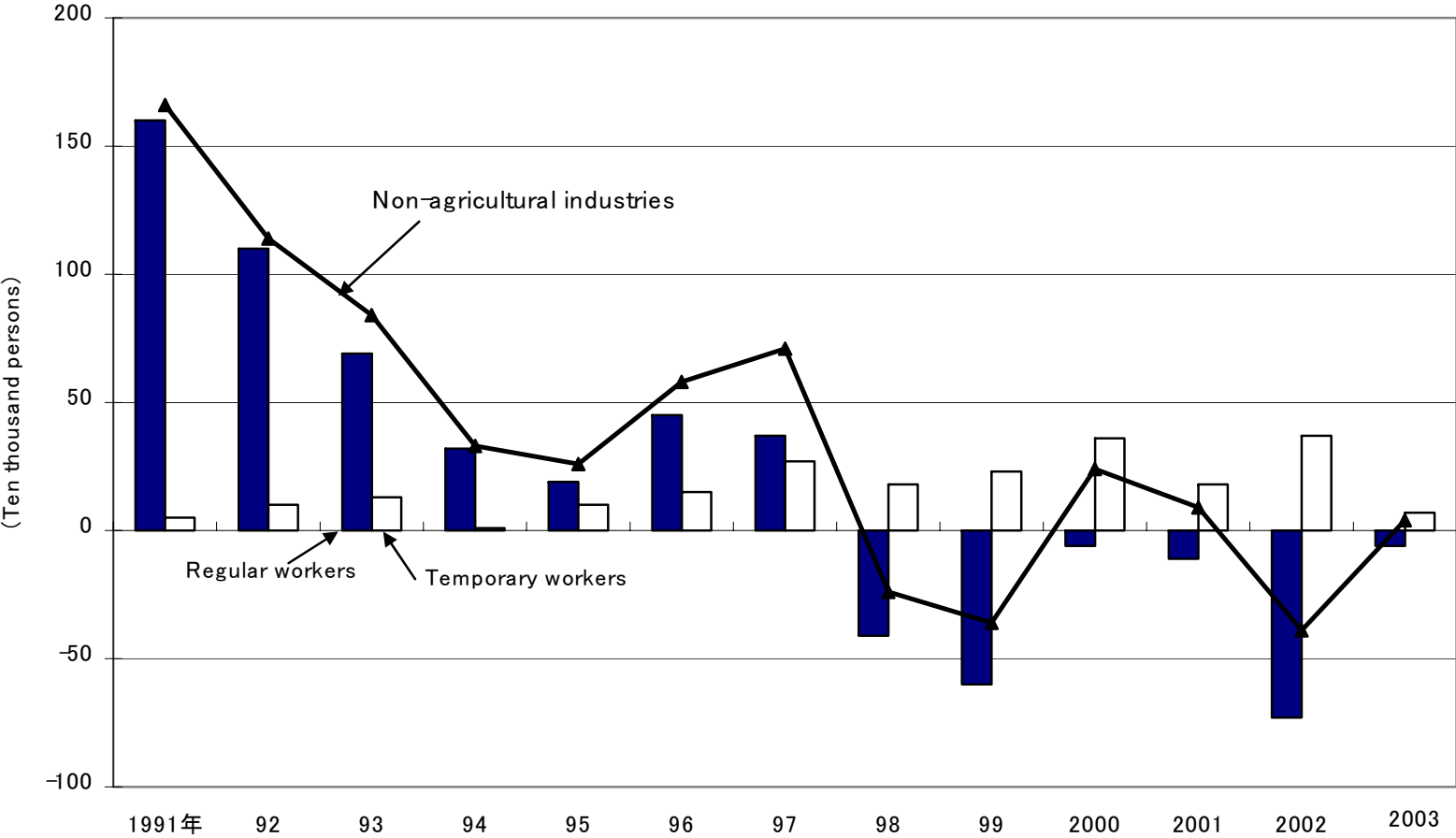
Source: Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*

Figure 3: Arrests for Violations of Criminal Law



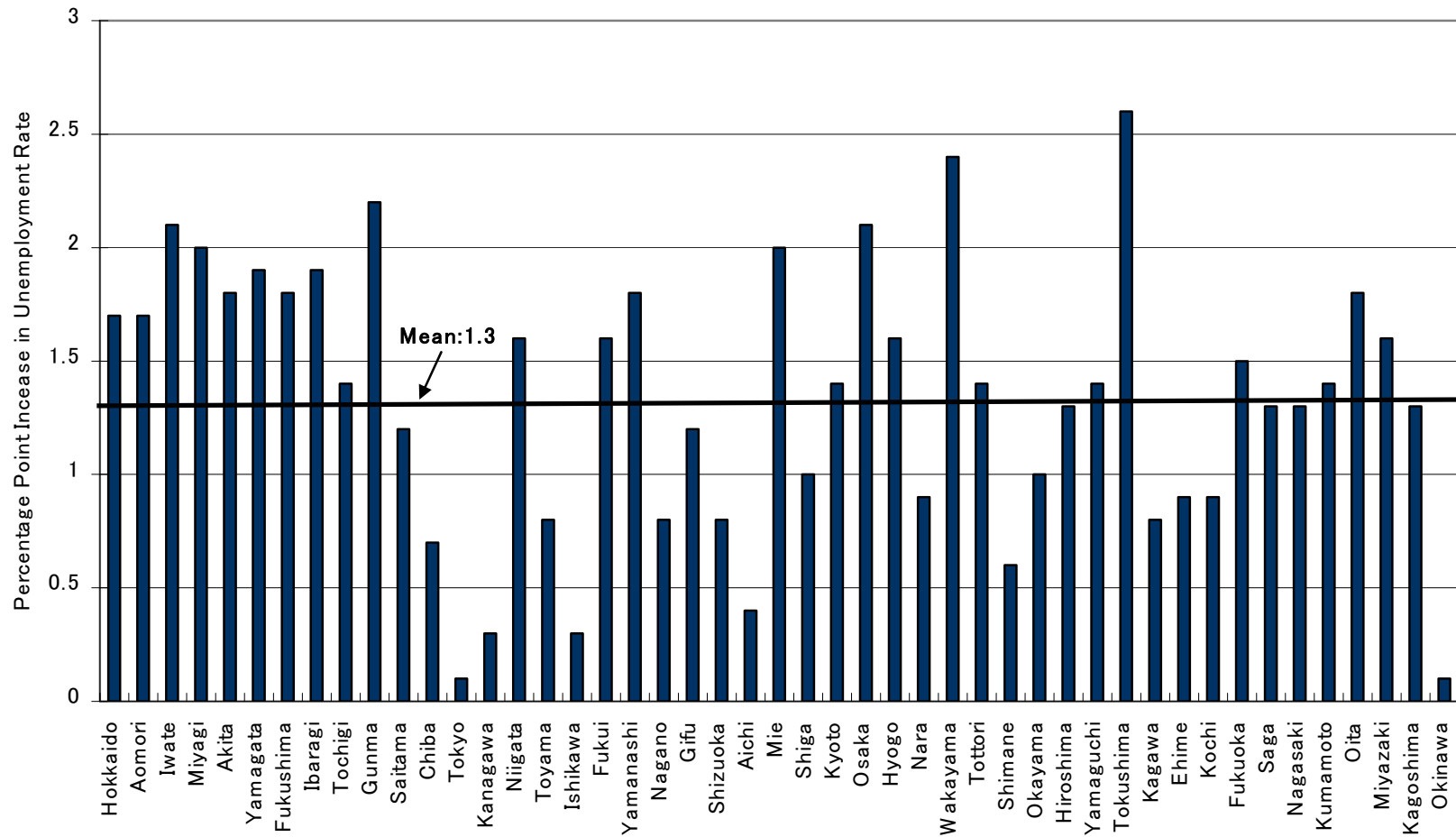
Source: National Police Agency, *Annual Report on Crime*

Figure 4: Annual Change in Number of Workers



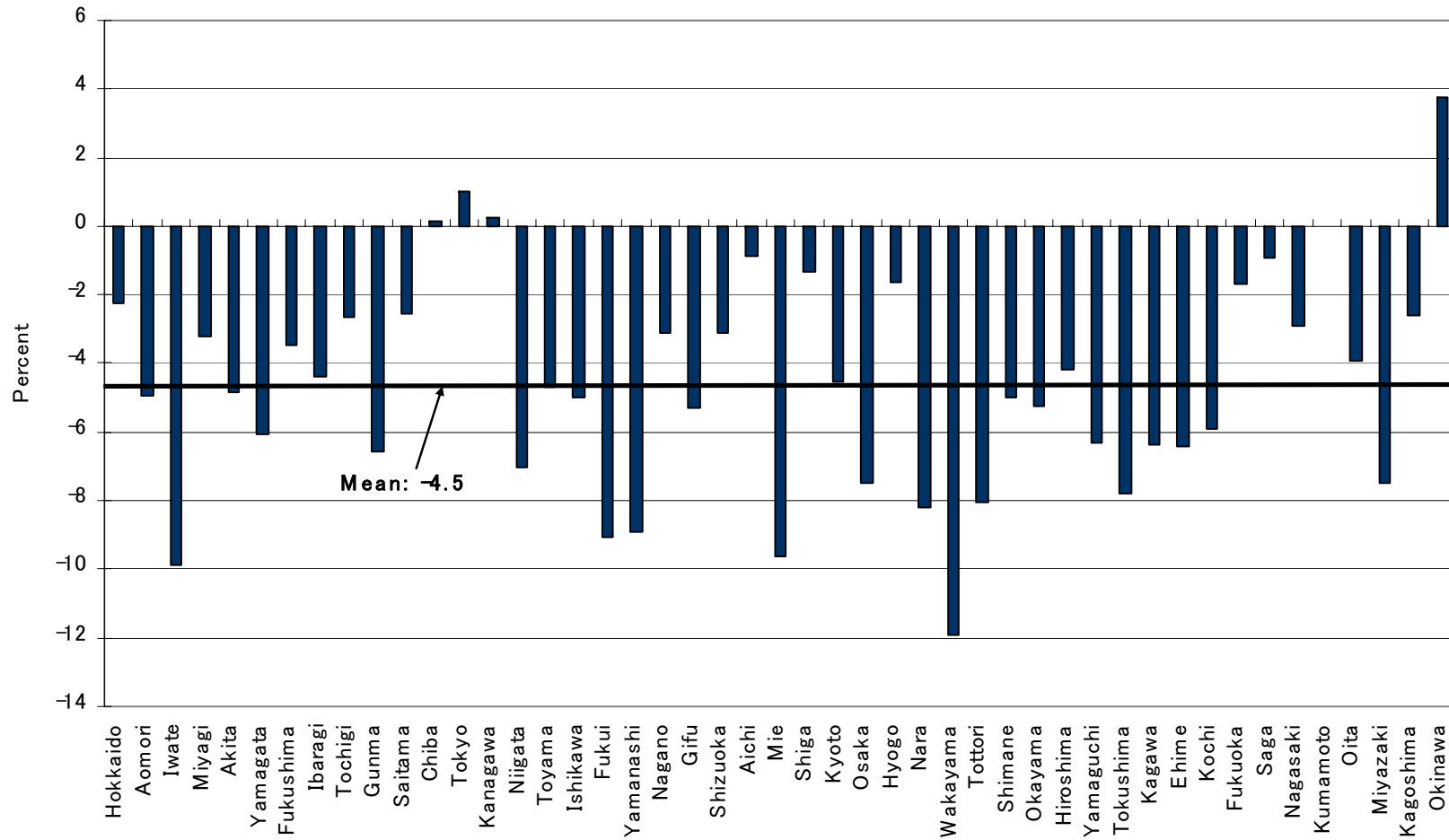
Source: Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*, various years

Figure 5: Increase in Unemployment Rate by Prefecture (1998-2003)



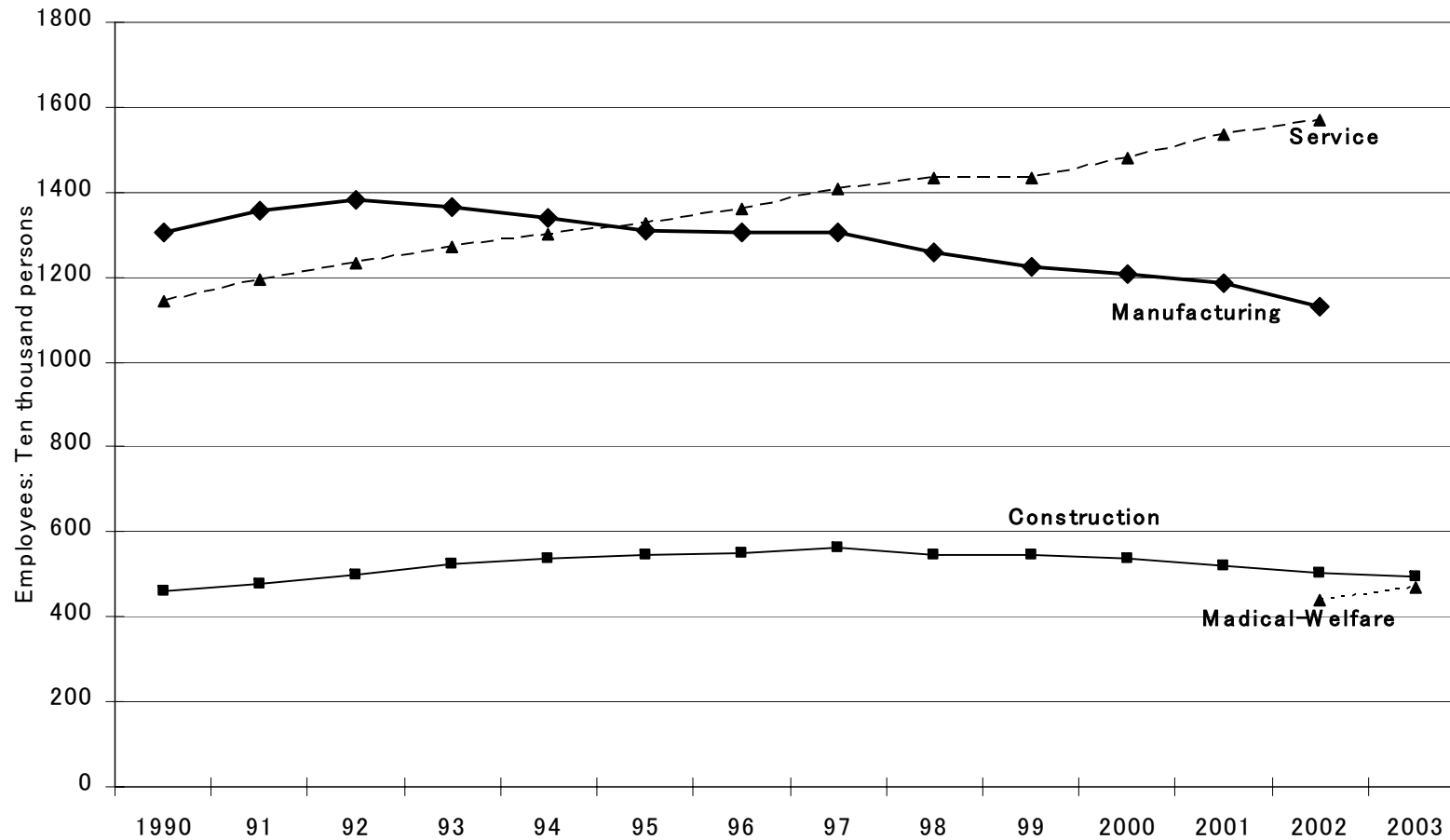
Source: Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*, various years

Figure 6: Percentage Change in Employment by Prefecture (1998-2003)



Source: Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*, various years

Figure 7: Employees in Manufacturing, Construction, Services, and Medical-Welfare Service



Source: Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*, various years

Figure 8: Public Investment as Percent of GDE in Developed Countries



Source: Japan; Cabinet Office, *Annual Report on National Accounts*
 Other Countries; OECD, *National Accounts*

Table 1 Unemployment Rate and the Rate of Idle Labor of Young Workers

		Unemployment Rate			Rate of Idle Labor*	
		Age Group			Age Group	
		Year	Total	15-19	20-24	15-19
Total	1990	2.1	6.6	3.7	14.6	11.3
	1997	3.4	9.0	6.2	18.1	13.0
	2002	5.4	12.8	9.3	24.3	17.0
Hokkaido	1990	3.0	12.5	3.8	12.5	12.9
	1997	3.8	14.3	6.5	25.0	14.7
	2002	6.0	16.7	11.5	28.6	20.7
Tohoku	1990	1.8	8.3	5.0	15.4	11.6
	1997	2.9	9.1	6.3	23.1	13.5
	2002	5.9	20.0	9.5	27.3	15.6
Minami Kanto	1990	2.2	5.6	3.8	13.6	10.6
	1997	3.8	10.5	7.0	19.0	13.0
	2002	5.4	9.1	8.7	21.1	16.0
Kitakanto/Koshin	1990	1.5	7.7	2.2	14.3	11.8
	1997	2.5	8.3	5.4	21.4	11.7
	2002	4.4	10.0	7.3	18.2	15.6
Hokuriku	1990	1.3	-	4.0	-	7.7
	1997	2.6	-	3.4	-	6.7
	2002	4.0	20.0	9.1	33.3	16.7
Tokai	1990	1.5	4.0	2.5	11.1	9.2
	1997	2.7	5.6	4.5	15.0	10.6
	2002	4.1	11.8	7.2	21.1	14.7
Kinki	1990	2.5	6.1	4.3	13.9	12.5
	1997	4.0	8.0	7.1	14.8	14.6
	2002	6.7	10.5	11.6	22.7	19.2
Cyugoku	1990	1.8	11.1	3.0	16.5	71.4
	1997	2.7	12.5	5.0	22.2	11.6
	2002	4.3	14.3	6.1	25.0	13.9
Shikoku	1990	2.3	-	6.3	-	11.8
	1997	3.2	-	5.3	-	18.2
	2002	5.2	33.3	13.3	33.3	23.5
Kyusyu	1990	2.7	6.7	5.2	17.6	14.1
	1997	3.8	13.3	6.6	23.5	14.5
	2002	6.1	20.0	12.1	29.4	19.4

*Idle labor consists of those who are not in the labor force and not in school

Source: Statistics Bureau, Ministry of Public Management, *Annual Report on the Labour Force Survey*,

various years

Table 2: Part-Time and Full-Time Workers by Sex and Age

Male Part-Time Workers/All Male Workers (%)

	All	15-24	25-39	40-54	55-64	65-
1980	6.1	8.9	4.2	4.9	9.6	24.2
1985	6.1	10.5	3.8	4.2	9.4	27.4
1990	8.3	14.9	4.9	5.7	11.2	30.3
1995	9.1	17.1	5.3	5.8	11.6	31.6
2000	10.5	23.3	5.7	6.1	13.1	35.8
2003	13.7	28.3	8.2	8.9	17.2	40.5

Female Part-Time Workers/All Female Workers (%)

	All	15-24	25-39	40-54	55-64	65-
1980	26.0	11.6	30.3	26.7	29.0	41.4
1985	27.9	12.4	30.9	29.3	31.5	45.7
1990	31.8	18.4	33.0	34.7	35.0	46.7
1995	33.9	22.7	31.4	38.0	36.3	48.6
2000	37.7	30.4	32.1	42.1	40.5	52.5
2003	41.6	35.2	34.7	46.1	46.6	56.0

Male Part-Time Workers/All Part-Time Workers(%)

	All	15-24	25-39	40-54	55-64	65-
1980	28.3	43.3	21.7	23.4	35.4	54.7
1985	25.8	46.2	18.5	17.8	34.3	50.0
1990	28.2	45.0	20.8	19.0	36.7	50.6
1995	28.7	44.4	22.4	17.9	35.4	53.2
2000	29.1	44.0	22.4	16.9	34.1	54.7
2003	32.3	45.5	26.9	21.2	37.0	55.4

Female Part-Time Workers/All Part-Time Workers(%)

	All	15-24	25-39	40-54	55-64	65-
1980	71.7	56.7	78.3	76.6	64.6	45.3
1985	74.2	53.8	81.5	82.2	65.7	50.0
1990	71.8	55.0	79.2	81.0	63.3	49.4
1995	71.3	55.6	77.6	82.1	64.6	46.8
2000	70.9	56.0	77.6	83.1	65.9	45.3
2003	67.7	54.5	73.1	78.8	63.0	44.6

Male Full-time Workers/All Full-time Workers(%)

	All	15-24	25-39	40-54	55-64	65-
1980	68.0	50.5	73.4	68.2	67.8	72.8
1985	67.3	50.9	72.1	67.3	69.8	69.1
1990	67.0	51.3	71.4	67.5	71.2	67.3
1995	67.3	53.3	70.4	68.4	70.3	69.9
2000	67.9	53.1	69.3	69.5	70.0	70.5
2003	68.1	53.3	68.5	70.1	71.2	69.9

Female Full-time Workers/All Full-time Workers(%)

	All	15-24	25-39	40-54	55-64	65-
1980	32.0	49.5	26.6	31.8	32.2	27.2
1985	32.7	49.1	27.9	32.7	30.2	30.9
1990	33.0	48.7	28.6	32.5	28.8	32.7
1995	32.7	46.7	29.6	31.6	29.7	30.1
2000	32.1	46.9	30.7	30.5	30.0	29.5
2003	31.9	46.7	31.5	29.9	28.8	30.1

Source: Authors' calculation using the data from Ministry of Public Management, Home Affairs, Posts and Telecommunications "Labor Force Survey"

Table 3: Average Annual Percentage Change in Employment by Secotors

Sectors	1981-90	1991-97	1998-02
Agriculture, Fishery, Forestry	-2.4%	-3.3%	-3.7%
Construction	0.8%	2.2%	-2.0%
Manufacturing	1.1%	-0.6%	-3.3%
Transport-Communication	0.6%	1.4%	-0.5%
Whole Sale and Retail	1.2%	0.6%	-0.5%
Finance, Insurance	3.7%	-0.3%	-1.0%
Service	3.7%	2.4%	1.8%

Note: These magnitudes are the estimated coefficients for the dummy variables corresponding to the time period in the regression of the annual percentage change in employment

Source: Authors' calculation based on the data in Statistics Bureau Ministry of Public Management, *Annual Report on the Labour Force Survey*, various years

Table 4 Total Factor Productivity by Sector in Japan

	Total Factor Productivity (US=100)	Percent of Regular Workers Employed in Each Industry (Year 2000)	Cumulative Percent of Regular Workers Employed in Each Industry (Year 2000)
Transportation Machinery	136.58	2.23	
Finance, Real Estate	124.61	9.19	11.42
Electric Machinery	119.24	4.12	15.54
Wood Products	108.98	0.36	15.90
General Machinery	102.84	2.27	18.18
Chemicals	98.51	1.06	19.24
Ceramic and Stone Products	96.18	0.90	20.13
Primary Metal	93.15	0.96	21.09
Service	92.59	30.57	51.66
Paper, Pulp	90.03	0.59	52.25
Precision Machinery	86.68	0.56	52.82
Textile	84.62	0.43	53.25
Other MFG	83.19	1.82	55.07
Petroleum and Coal Products	82.78	0.08	55.15
Leather Goods	81.46	0.09	55.25
Clothing	81.14	1.10	56.35
Construction	81.06	8.68	65.03
Transportation	79.93	5.29	70.32
Wholesale, Retail	79.22	21.03	91.35
Metal Products	77.34	1.60	92.95
Communication	68.80	1.49	94.44
Publishing	67.37	1.32	95.77
Food and Processing	66.43	3.34	99.11
Gas	64.08	0.13	99.24
Other mining	61.88	0.09	99.33
Furniture	56.78	0.34	99.68
Electricity	46.49	0.32	99.99
Coal Mining	19.01	0.01	100.00

Source: Data are from *White Paper on Trade and Commerce* (Tsushyo Hakusho), Ministry of Economy, Trade, and Industry, 2000

Table 5: Employment Created by Government Expenditure (Public Servants, Public Investment and Social Welfare) as Percent of Total Employment

	1985 (%)	1990 (%)	1995 (%)	1999 (%)	Changes (99 - 90) (percentage point)
Total	19.8	18.9	22.1	22.5	3.6
Metropolitan Areas	16.2	15.6	18.5	18.3	2.7
Tokyo Area	15.8	14.6	17.3	17.2	2.5
Nagoya Area	16.0	15.6	18.2	18.7	3.1
Osaka Area	17.0	17.4	20.9	20.1	2.7
Non-Metropolitan Areas	23.4	22.2	25.8	26.8	4.6

	1985 (%)	1990 (%)	1995 (%)	1999 (%)	Changes (99 - 90) (percentage point)
Hokkaido	33.5	32.6	36.1	37.5	4.9
Aomori	29.6	25.6	29.5	30.3	4.6
Iwate	22.8	22.6	26.1	27.4	4.8
Miyagi	21.8	21.1	24.2	25.3	4.2
Akita	25.6	26.5	31.6	32.6	6.0
Yamagata	21.4	21.8	26.5	27.5	5.7
Fukushima	19.3	18.1	21.0	22.6	4.5
Niigata	23.1	22.3	26.4	28.0	5.7
Ibaragi	17.0	17.5	21.0	21.7	4.2
Tochigi	-	14.3	16.9	17.6	3.3
Gunma	-	15.1	18.4	19.0	3.9
Saitama	16.0	15.4	18.3	19.3	3.9
Chiba	20.0	18.5	20.7	19.7	1.2
Tokyo	14.0	13.2	15.7	15.6	2.4
Kanagawa	17.8	15.3	18.2	17.7	2.4
Yamanashi	19.7	18.0	23.3	23.1	5.1
Nagano	18.6	17.5	21.3	19.5	2.0
Shizuoka	14.9	13.9	16.2	16.6	2.7
Toyama	20.1	19.0	24.1	26.2	7.1
Ishikawa	21.2	19.0	24.7	26.7	7.7
Gifu	17.9	17.2	20.9	22.2	5.0
Aichi	14.8	14.6	16.9	17.2	2.6
Mie	18.3	18.0	20.6	21.3	3.3
Fukui	21.6	22.5	23.6	25.0	2.5
Shiga	-	16.8	18.6	18.7	1.9
Kyoto	18.6	19.2	22.1	22.1	2.9
Osaka	14.8	15.5	18.7	18.2	2.7
Hyougo	19.3	19.2	23.7	21.7	2.5
Nara	24.3	23.9	25.6	25.5	1.6
Wakayama	21.1	20.7	26.4	30.7	9.9
Tottori	-	24.1	29.6	32.1	8.0
Shimane	29.1	28.7	32.3	37.5	8.8
Okayama	21.2	19.9	25.8	26.8	6.9
Hiroshima	20.2	20.6	24.1	25.4	4.8
Yamaguchi	23.2	24.9	27.6	30.8	5.9
Tokushima	25.1	26.3	30.8	32.8	6.4
Kagawa	24.1	20.2	22.4	23.7	3.5
Ehime	21.2	22.3	26.5	27.9	5.5
Kochi	28.8	29.7	34.8	38.9	9.2
Fukuoka	23.3	20.6	22.8	24.0	3.4
Saga	24.5	25.6	29.3	29.5	3.9
Nagasaki	26.9	31.6	31.5	31.9	0.3
Kumamoto	24.8	25.1	29.5	29.4	4.4
Oita	24.6	24.2	28.5	28.2	4.1
Miyazaki	26.2	25.8	31.2	32.8	7.0
Kagoshima	26.9	27.1	32.0	33.3	6.2
Okinawa	36.3	33.4	38.4	38.4	5.0

Source: Higuchi, Y., T. Nakajima, M. Nakahigashi, and K. Hino (2002)

Table 6: Expenditures on Employment Policies as Percent of GDE in Developed Countries

	Japan		USA		UK		Germany		France	
	1990-91	98-99	1990-91	98-99	1990-91	97-98	1990	1999	1990	1998
Unemployment Rates	2.1	4.1	5.4	4.5	5.8	7.2	4.9	10.5	8.9	11.8
1 Public Employment Services	0.03	0.03	0.07	0.06	0.18	0.16	0.22	0.23	0.12	0.16
2 Job Training	0.03	0.03	0.08	0.04	0.21	0.07	0.38	0.35	0.33	0.31
3 Policy for Youth	---	---	0.03	0.03	0.17	0.12	0.04	0.08	0.20	0.32
4 Subsidy for Wage	0.07	0.02	0.01	0.01	0.02	---	0.17	0.40	0.09	0.46
5 Policy for Handicap	---	---	0.04	0.04	0.02	0.02	0.23	0.25	0.06	0.09
6 Unemployment Benefit	0.22	0.52	0.47	0.25	0.94	0.82	1.09	2.11	1.29	1.48
7 Early Retirement	---	---	---	---	---	---	0.02	0.01	0.55	0.32
Active Employment Policy (1+2+3+4+5)	0.13	0.08	0.23	0.18	0.60	0.37	1.04	1.31	0.80	1.34
Passive Employment Policy (6 + 7)	0.22	0.52	0.47	0.25	0.94	0.82	1.11	2.12	1.84	1.80
Total	0.35	0.60	0.70	0.43	1.54	1.19	2.15	3.43	2.64	3.14

Source: Unpublished OECD Study

Table 7: Effects of Social Capital on Total Factor Procutivity

	1975	1998	change %
Hokkaido	0.11323	0.0864373	-23.7%
Aomori	0.062478	0.0926678	48.3%
Iwate	0.025507	0.0993669	289.6%
Miyagi	0.25805	0.173778	-32.7%
Akita	0.057218	0.0843304	47.4%
Yamagata	0.10731	0.10022784	-6.6%
Fukushima	0.21697	0.1877784	-13.5%
Niigata	0.19212	0.1610562	-16.2%
Ibaragi	0.53093	0.273905	-48.4%
Tochigi	0.28225	0.1955032	-30.7%
Gunma	0.73279	0.385651	-47.4%
Saitama	0.55358	0.3700216	-33.2%
Chiba	0.59005	0.359521	-39.1%
Tokyo	0.6909	0.362023	-47.6%
Kanagawa	0.45998	0.2636428	-42.7%
Yamanashi	0.50469	0.231657	-54.1%
Nagano	0.35372	0.1636825	-53.7%
Shizuoka	0.73981	0.360816	-51.2%
Toyama	0.2715	0.1485236	-45.3%
Ishikawa	0.23858	0.1608055	-32.6%
Gifu	0.6031	0.30088	-50.1%
Aichi	0.52173	0.3418746	-34.5%
Mie	0.51417	0.233984	-54.5%
Fukui	0.30283	0.1628704	-46.2%
Shiga	0.82082	0.361947	-55.9%
Kyoto	0.61502	0.312363	-49.2%
Osaka	0.46271	0.2891313	-37.5%
Hyogo	0.36683	0.2139145	-41.7%
Nara	0.40656	0.2514963	-38.1%
Wakayama	0.13262	0.12223205	-7.8%
Tottori	0.21978	0.1437627	-34.6%
Shimane	0.25116	0.1265414	-49.6%
Okayama	0.36447	0.1892652	-48.1%
Hiroshima	0.29778	0.1724162	-42.1%
Yamaguchi	0.17021	0.1391209	-18.3%
Tokushima	0.056167	0.1298176	131.1%
Kagawa	0.057899	0.1446734	149.9%
Ehime	0.26849	0.1719337	-36.0%
Kochi	0.15749	0.0956867	-39.2%
Fukuoka	0.13962	0.14446012	3.5%
Saga	0.13921	0.1120033	-19.5%
Nagasaki	0.33104	0.174088	-47.4%
Kumamoto	0.32173	0.1573191	-51.1%
Oita	0.29097	0.1795235	-38.3%
Miyazaki	0.1633	0.1226981	-24.9%
Kagoshima	0.34515	0.1660168	-51.9%
Okinawa	0.12262	0.063441	-48.3%

Source: Higuchi, Y., T. Nakajima, M. Nakahigashi, and K. Hino (2002)