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**Structural Issues in the Japanese Labor Market**  
– An era of variety, equity and efficiency  
or an era of bipolarization? –

**Toshiaki Tachibanaki, Hiroshi Fujiki, Sachiko Kuroda Nakada**

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**Toshiaki Tachibanaki\*, Hiroshi Fujiki\*\*, Sachiko Kuroda Nakada\*\*\***

Abstract

This paper describes several structural changes in the Japanese labor market and related institutional factors with special emphasis on the labor supplies of women, older workers, youths and discouraged workers. We also discuss the implications of such structural changes on the conduct of monetary policy and necessary reforms in the labor market.

**Key Words: part-time worker, discouraged worker, Japanese employment system, unemployment**

**JEL Classification: J21, J31, E58, H55**

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## 1. Introduction

Japanese employment and income conditions are likely to remain harsh due to the strong stance of firms towards retrenchment in labor costs, according to the Bank of Japan *Monthly Report of Recent Economic and Financial Developments* for March 2000. Major Japanese statistics regarding labor market conditions, as shown in Chart 1 and Chart 2, such as the ratio of job offers to applicants (seasonally adjusted), the unemployment rate, the number of regular employees and the nominal wage per employee do not show strong signs of recovery<sup>1</sup>. In particular, the sharp rise in the unemployment rate since the year 1998 has led to a situation in which the Japanese unemployment rate now exceeds that of the United States. Against this background, views from abroad regarding the Japanese labor market seem to have changed. For example, Greenspan (2000) points out that U.S. businesses and workers appear to have benefited more from new technological developments than their counterparts in Europe and Japan. He says that since the U.S. costs of dismissing workers are lower than in Europe or Japan, the potential costs of hiring and the risks associated with expanding employment are less. Remember that it was only six years ago when Ito (1994) pointed out that many of the characteristics of the Japanese employment system made hours and total compensation flexible in their responses to aggregate supply and demand shocks. Such responses include the bonus payment system, the adjustment of working hours through overtime working, and the convention of annual recontraction of wages. Such characteristics enabled Japanese firms and workers to invest in firm-specific skills by making longer tenure with rotation useful because it entailed a relatively small risk of dismissing full-time male workers. The steep wage profile and the retirement allowance were effective mechanisms designed to make such firm-specific investments incentive-compatible. Why did Japan's unemployment rate go up during the 1990s? Are there any significant structural changes that could affect the conduct of monetary policy?

For the majority of labor economists in Japan, it would be a little surprise that many Japanese firms are now trying to cut labor costs by employing more relatively cheap part-time workers while gradually reducing their employment of regular full-time employees. The traditional responses of Japanese firms to negative shocks include at least three factors (See Tachibanaki (1998), for example). First, a reduction in working

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<sup>1</sup> A ratio of job offers to applicants of 1.0 indicates that one job is available for each job seeker. The greater this ratio is above 1.0, the more the demand exceeds supply. Therefore, it can be said that this ratio is a proxy for tightness of the labor market. For further explanation and caveats concerning this data, see Data appendix (2)-(B).

hours and overtime payment for currently employed full-time workers<sup>2</sup>. Second, less employment of new graduates. Third, an increase in *shukko* (temporary transfers between firms) and *tenseki* (transfers to another company, or change of long-term employment), both of which effectively reallocate workers within the internal labor market<sup>3</sup>. In short, a negative demand shock for a typical Japanese firm results in the reductions in working hours and in overtime payments for currently employed full-time workers, less employment of college graduates, and an increase in *shukko* and *tenseki*. Such traditional adjustment mechanisms can prevent the unemployment of core workers in large firms, if the firms can successfully reduce labor costs, and there is also an increase in *shukko* and *tenseki* in small businesses. Those who believe that such traditional responses by Japanese firms would be effective in this recession might expect that the gradual substitution of regular full-time workers by part-time workers would be just a temporary phenomenon, so that orthodox countercyclical aggregate demand management policy, such as a temporary increase in the public investment program would be sufficient to prevent mass unemployment among regular full-time workers. Such optimistic observers may not consider the necessity of structural reforms in the Japanese labor market seriously, because the aging of the population in the Japanese economy would make demand and supply conditions in the labor market favorable to Japanese workers in the future, therefore, the high unemployment rate currently observed must be reduced soon.

It is possible that during a period of high unemployment in Japan more “core” (this is really an abuse of the word, as it is merely a Japanese way of saying “insiders”), i.e., full-time regular, employees, even in large firms might be unemployed. Such a view often presumes that more “peripheral workers” (really meaning “outsiders”), i.e., women, youths, and older workers may choose to stay out of the labor force during a period of high unemployment. The first effect, particularly the potential risk of unemployment among currently hired older workers has attracted some concern<sup>4</sup>. Indeed we have a lot of studies regarding the sustainability of the so-called Japanese employment system based

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<sup>2</sup> Shinotsuka and Ishihara (1977) is the first study to point out that Japanese firms manage to maintain long-term employment for most of their regular full-time workers during economic downturns by reducing total working hours flexibly.

<sup>3</sup> See Sato (1999) for details of *shukko* and *tenseki* in the late 1990s.

<sup>4</sup> According to Lindbeck and Snower (1988), insiders are assumed to create a special, potentially important, variety of labor turnover cost by withdrawing cooperation from, and by harassing, entrants who attempt to underbid them. In the Japanese case, by precedent, it is generally very costly to fire regular full-time workers (See OECD [1999a]). Moreover, given the accumulation of firm-specific human capital, it is beneficial for both employers and employees to cope with adverse economic shocks through reductions in overtime work or overtime payments, rather than by firing workers, if the shocks are expected to be temporary.

on the examination of various aspects of the Japanese labor market (See for example, Tachibanaki and Taki [2000] and Hattori and Maeda [2000]). However, we would like to show that from the viewpoint of the overall Japanese economy, the secondary effect upon women, youths, and older workers seems to capture the dramatic changes that have been transforming the Japanese labor market. We stress the possibility that those who are believed to be discouraged might stay in the labor force and become unemployed, and the qualitative nature of those discouraged workers seem to have changed.

In particular, this paper tries to look at recent economic conditions, which seem to have been forcing Japanese firms to replace even white-collar full-time workers with part-time workers, particularly in unskilled jobs from the viewpoint of Japanese “peripheral workers”. Our opinion puts more emphasis on the so-called dualistic nature of the Japanese labor market, indicating that wage payments and other working conditions differ considerably from one particular group of workers to another. We conjecture that the recent adjustment of employment conducted by the Japanese firms could be one of the factors explaining higher unemployment among older workers, the smaller number of vacancies for younger workers and more employment for part-time workers. We suspect that those workers are forced to remain in the secondary sector, typically with low wages, little job security, and small chances of on the job training in the long run, given the current institutional framework. It is likely that firms will maintain the employment of the relatively small number of workers who have benefited from traditional long-term employment, but those who are dismissed in the middle of their careers for some reason will face the same difficulties as the youths, older workers and women.

Those views that regard the current employment adjustment as a cyclical phenomenon ignore the possibility that the aging society in Japan requires the current social safety nets to be reformed from now on. These include the pay-as-you-go defined benefit public pension system, the employment insurance system, the medical care system, and corporate pension schemes, which implicitly assume long-term employment within a firm and reasonably high rates of economic growth. Moreover, such views underestimate the risk that an aging population does not necessary mean that labor market conditions in Japan will become favorable to *all* workers. This is because the likelihood of a mismatch in skills and experiences will increase, given rapidly changing information technology which could easily replace the currently valuable human capital, institutions and/or methods of production with more advanced computer-aided technology.

We would like to stress the possibility that inflow to and outflow from the labor force by peripheral workers during a period of high unemployment can capture the

dramatic changes that have been transforming the Japanese labor market in this paper. With this aim in mind, we will discuss several important structural changes currently observed in the Japanese labor market with special emphasis on the viewpoint of those workers at the periphery of the Japanese employment system, its implications on the conduct of monetary policy, and necessary reforms in the labor market.

The organization of the rest of this paper is as follows. Chapter 2 presents an overview of Japanese labor market for the reader's convenience. Chapter 3 explains why considering the problem in the Japanese labor market from the viewpoint of peripheral workers is important. Our analysis includes consideration of whether or not the increase in the number of female part-time workers on low wages and with little job security could be related to the tax system and the social security systems which presume that "man is the breadwinner, woman the homemaker." The serious unemployment situation facing older workers could be the reflection of a situation in which there is a mismatch between their productivity and their reservation wage based on the seniority-based wage system. The mismatch actually requires older workers to choose between low-wage jobs and unemployment. The unemployment of youths should not be worried about if they prefer leisure or if they are engaged in job-searches, but they might be squeezed out of traditional long-term employment opportunities by current employees. The discouraged workers, who are believed to enjoy "luxury unemployment," should better be considered as a potential labor supply in the Japanese labor market. We argue that the omission of those workers from the discussion of unemployment might understate current Japanese unemployment problems. Chapter 4 discusses the implications of those changes in the labor market on the conduct of monetary policy. In particular, we consider the effects of the treatment of the discouraged workers on Okun's Law in the Japanese context and the relationship between inflation and unemployment and the implications of this relationship on the conduct of the Japanese monetary policy in more detail. We argue that the discouraged workers could have provided useful information for the conduct of monetary policy. For example, in retrospect, the broader unemployment rate including discouraged workers seems to have predicted future changes in the inflation rate better than the official unemployment rate in the late 1980s. Chapter 5 examines the direction of several structural reforms in the labor market, based on the discussions in chapters 2, 3 and 4. It is true that in the long run monetary policy can not and should not be used as a substitute for necessary structural reforms in the labor market. However, central bankers must address structural problems in the labor market, which could be obstacles in the achievement of price stability and financial stability, correctly. More specifically, we point out the necessity of transforming the regulations in the labor markets to meet the



current situation of the labor market, the government job creation program, and work sharing. We will also touch on the public pension system and corporate pension schemes.

## 2. An Overview of the Japanese Labor Market

Since the Japanese unemployment rate was very low and stable compare with those of the U.S. or most of the European countries in the 1970s and the 1980s, the Japanese employment system has been considered a key factor in the good performance of Japanese economy.

Taking a long view, however, we can recognize that there was a persistent rise in Japanese unemployment rate (see Chart 3). In particular, the unemployment rate surged in the 1990s, and along with the collapse of large financial companies which had been thought to be failure-proof, such as Yamaichi Securities or Hokkaido Takushoku Bank in November 1997, the rate hit 4.9 percent in February 2000. Although most countries would welcome an unemployment rate as low as 5.0 percent, Japanese people, particularly those who are typical long-term employed “sarariman (salaried man, i.e., regular wage earner)<sup>5</sup>”, find this unprecedented experience profoundly shocking.

In Chart 4, we have plotted the quarterly unemployment rate versus the job vacancy rate, using the sample period from 1963 to 1999. For the past 36 years, it seems that the Beveridge Curve for Japan, that is, the negative correlation between the unemployment rate and the vacancy rate, has been shifting outward to higher rates of both unemployment and vacancies.

Why is the Japanese unemployment rate consistently rising? And why is the Beveridge Curve shifting upward in Japan<sup>6</sup>? Can keeping the interest rate near zero either save some workers from losing their jobs or provide some unemployed people with

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<sup>5</sup> An article in *The Economist* (January 23, 1999) describes the “sarariman” as “Japan’s devoted company employee and symbol of its post-war economic miracle”. The article also pictures the life of a sarariman in the following terms: “He lives in a cramped house in the suburbs and spends too long each day on packed trains commuting to and from work. He stays late at the office, and feels he must go out drinking with his colleagues to win promotion. He is not entitled to much holiday, and takes even less. Sick leave is strictly for wimps. But it has its benefits: a secure job, a comfortable retirement....”.

<sup>6</sup> It is often said that increasing geographical, age or occupational dispersion of workers and job opportunities are causing the upward shift in the Beveridge curve. In order to examine this hypothesis, we calculated the mis-match index (see Layard, Nickell and Jackman [1991]) following Sakurai and Tachibanaki [1992] for the past 25 years by region, age and occupation. Chart 5 shows the simple five-year average of the mis-match index. Although we can observe a slight increase in occupational mis-match in the 1990s, there is no evidence of increased mis-match by region or age.

new employment opportunities?

In Chart 6, we show a model emanating from Bleakley and Fuhrer (1997), with several minor modifications done by ourselves. As Bleakley and Fuhrer (1997) explain in their paper, the outcomes for unemployment and vacancies that are summarized in the Beveridge curve can be explained by three major factors. Those are; (1) increases or decreases in job-matching efficiency, (2) labor market reallocation caused by job creation and destruction and (3) inflows and outflows to and from the labor force. Let us look into each factor briefly.

**Job matching efficiency.** It is often said that one of the essential features of the Japanese employment system as a key factor in good economic performance was high investment in skills (especially firm-specific skills). Generally, employers and employees made a relatively long-term commitment to share the cost of such investment. Facing a small or medium-sized shock, it is rational for both employers and employees to agree to reduce working time or keep real wages from rising<sup>7</sup>, so that they can maintain their contracts and acquire returns from their investments when the shock diminishes in the future. When a large shock occurs, and if firms consider it a permanent, however, it will become rational for employers to dismiss their employees to cut their future labor costs. Once the dismissal decisions have made by the firms, the higher the cost of re-training workers, the more firms will hesitate to hire new workers even after the economy recovers. In addition, even if a large shock was idiosyncratic shock to a particular industry or firm, and therefore many employment opportunities may exist in the rest of the economy, the higher the degree of firm-specific skills, the more difficult it may be for dismissed workers to find new jobs. In this sense, the commitment of high investment in the (firm-specific) skills is robust to the small or medium-sized negative shocks, but at the same time very susceptible to very large negative shocks.

The Japanese long-term employment system and the high investment in skills have made the Japanese spot labor market very “illiquid”, and this may be causing inefficiency for both workers and firms involved in the job matching process when a large shock occurs. This is one of the possible explanations of the upward shifts in the Beveridge curve, since the shifts can be observed after every large negative shocks in the past, such as the two oil shocks, the strong yen period in early 1980s, and in the 1990s. Even when laid off, however, many regular workers in big firms used to get new jobs at small firms (this includes *shukko* and *tenseki*, see Chapter 1) which always faced a shortage of labor

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<sup>7</sup> See for example, Tachibanaki (1987). He explains how the Japanese firms and workers reacted toward the negative shocks that occurred in the past.

in the past (the dual labor market)<sup>8</sup>. Chart 7 shows data from the *Short-term Economic Survey of Enterprises in Japan (TANKAN)*, which is the diffusion index of judgements on the excessiveness, adequacy or shortage of the number of employees in the various sizes of firms interviewed. In the past, we can see from Chart 7 that small firms answered that they had labor shortages, even when big or medium-sized firms had found that they had surplus labor. In the 1990s, the financial sector crisis may have caused many of these small firms which were highly dependent on the full support of their main banks to collapse (see in Chart 7 that the diffusion index of small enterprises has been showing “excessive” since 1993). Therefore, the absence of this “buffer” might have exacerbated the shock to the Japanese employment system.

**Labor market reallocation.** Regarding job creation and destruction<sup>9</sup>, because of the limitations in current Japanese statistics, unfortunately, only a few analyses are available for Japan in the past. Among the few that exist, Genda’s (1998) analysis suggests that job creation and destruction rates in the early 1990s were lower for regular, full-time, and male workers than for temporary, part-time, and female workers<sup>10</sup>. If higher rates of creation and destruction of temporary and part-time jobs are making more workers flow into the unemployment pool and are causing the posting of more new vacancies, the frequency of matching and separation between temporary and part-time workers on the one hand and temporary and part-time jobs on the other must be getting higher. Considering the fact that the ratio of part-time workers to the total labor force has been increasing substantially in recent decades (more details in the Chapter 3 (1)), the increase in the proportion of the jobs with a higher rate of job creation and destruction may be another candidate to explain the outward shift of the Beveridge curve.

**Labor force.** We must consider the third factor, i.e., inflows into and outflows from the

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<sup>8</sup> It can be said that the Beveridge Curve might have shifted further outward if these factors had not worked favorably in the Japanese labor market in the past. Shinotsuka and Ishihara (1977) posit the hypothesis that while big firms dismissed their workers during the severe recession that occurred after the first oil shock, small firms instead increased their employees simultaneously. They point out that since the cost of hiring workers in small firms was much lower than the cost of hiring workers in big firms during recessions, small firms may have found it easier to hire new employees. See also Ishikawa (1991) regarding the Japanese dual labor market.

<sup>9</sup> Davis, Haltiwanger and Schuh [1996] define “job creation (job destruction) at time  $t$  equals employment gains (losses) summed over all plants that expand (contract) or start up (shut down) between time  $t-1$  and  $t$ .”

<sup>10</sup> Tachibanaki and Morikawa (1999) report similar result by using microdata obtained from *the Census of Manufactures*. They point out that the job destruction in plants with high-wage and high male-labor ratio tends to be small.

labor force. Until the early 1980s, women tended to leave the labor market either for marriage or childcare and many of them chose to stay out of the labor force as permanent homemakers. Although there were re-entrants to the labor market, most of them worked as non-regular part-time workers after their children had grown up. Whenever recession occurred, however, it was quite common for them to withdraw from the labor market (for example, see Shinotsuka [1983], Higuchi, Seike and Hayami [1987] and Tachibanaki and Sakurai [1991]). Such a pro-cyclical inflow into and outflow from the labor force could be explained by typical common practices among Japanese firms. They usually cut back new graduate recruitment and lay off part-time workers in order to hoard regular full-time employees. It had been said that such “discouraged workers” were another “buffer” of the Japanese labor market, which in the past pushed the official Japanese unemployment rate systematically lower. In the past 10 to 15 years, this typical woman’s attitude to labor supply has tended to weaken. More women reenter the labor force after a short period of withdrawal for childcare, and they tend to remain in the labor market seeking jobs even during a recession. Indeed, women account for almost all of the growing number of part-time workers, and they have become a large component in the explanation of the dynamics of the Japanese labor market. In particular, as the downturn bit deeper into profits in 1990s, cheaper part-time workers replaced full-time regular workers. According to the *Report on the Special Survey of the Labor Force Survey* in February 2000, the number of regular full-time workers decreased by 580,000 from the previous year, while concurrently the number of part-time workers increased by 540,000.

Besides women, recent changes in the attitudes towards labor supply on the part of older workers and youths have also affected the Japanese labor market. Namely, many older workers, in their late 50s and in their 60s, remain in the labor market searching for jobs. For young people, youth unemployment has increased more than 2.5 times from two decades ago, and now accounts for 40 percent of total unemployment.

This paper identifies a third factor; i.e., changes in the labor supply of peripheral workers, which is one of the important factors that may be causing significant structural changes in the Japanese labor market. Note that we do not mean that the analysis of regular full-time workers is not important. We strive to show that our analysis is one of the more promising ways of thinking about necessary structural reforms in the Japanese labor market, including the well being of regular full-time male workers. In the next chapter, we observe the labor supplies of (1) women, (2) older workers and (3) youths in recent decades and consider how changes in their behavior are influencing the Japanese labor market. Along with these workers, we also see the recent developments in data on

Japanese discouraged workers in chapter 3(4).

### **3. Structural Change in the Japanese Labor Market**

In Chapter 3, we will examine the changes in the labor supply attitudes on the part of women, older workers and youths in these years. Put another way, this chapter will highlight two aspects of the conflicts of interest between (a) regular workers (mostly men) versus non-regular workers (mostly women) and (b) incumbent regular workers (prime-age) versus new young entrants.

Along with the establishment of the Japanese long-term employment system in the 1970s and the 1980s, the institutional factors that reinforced such employment system tend to presume rigid gender roles in which men are breadwinners (regular full-time workers) and women homemakers. Such institutional factors which were established in the old days, as we see in more detail in the following sections, are now influencing peoples' labor supply unintentionally and may be causing nontrivial distortions in the Japanese labor market.

#### **(1) Women**

##### **A. Increasing part-time workers**

In Japan, the number of women participating in the labor force has grown significantly in the past 15 years (see Chart 8). The number of women employees has increased by about 5.6 million since 1986, while the number of men employees has increased by only 3.7 million. Among the extra 5.6 million women employees, about 4.3 million of the increase has been in the number of part-time workers<sup>11</sup>, accounting for three-quarters of total female employment growth. In 2000, the ratio of female part-time workers to total female employment has reached 42 percent. This means that more than one-fifth of employees in Japan are now part-time workers (22 percent of total employees). The rate was only 12 percent in 1985. This phenomenon of increases in women's labor force

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<sup>11</sup> Definitions of "part-time workers" differ widely among countries. For differences in definitions, see OECD (1994) or OECD (1999b) for examples. Although the word "part-time" itself means "a part of full-time", a "part-time worker" in Japan does not necessarily work fewer hours than a full-time worker. According to the 1995 Ministry of Labour Report on the *General Survey of Part-time Workers*, at least 16 percent of part-time workers reported that they worked the same number of working hours as regular workers. However, regarding data on Japanese part time employment, definitions are not consistent among statistics. For data used in this paper, see the explanation in Data appendix (2)-(D). Houseman and Osawa (1998) provide comprehensive explanations of differences in the concept of part-time worker between the United States and Japan.

participation rate is common among industrial countries. In Chart 9, however, it is interesting to find that there are two types of trends in these countries. First, there are countries where simultaneous rises in women's participation rate and in the ratio of part-time to total employment are observed (Japan, France, New Zealand, for example). Second, there are countries where only the women's participation rate is growing while the part-time ratio is not, which implies that the growing number of women who work as full-time workers is larger than that of women who work as part-time workers (such as in the U.S. and Norway). In addition, among these countries in the first category, we can find that the speed of the growth in part-time employment in Japan is much faster than in any other country<sup>12</sup>.

### **B. Relative wages between full-time work and part-time work**

In order to find possible explanation of this rapid and steady increase in the number of Japanese part-time workers, let us first look at the wages of female regular full-time workers and those of female part-time workers. In Chart 10, we can see that average hourly earnings of full-time workers has increased more than 2.5 times in the past two decades, while that of part-time workers has merely doubled. As a result, the wage differential between full-time workers and part-time workers has widened greatly, as shown in the downward thick solid line in Chart 10<sup>13</sup>. The finding that the relative wages are less than 100 throughout the sample period is not the result of failure to control differences in the following characteristics, such as firm size, age and job experiences within the same firm (see Chart 11)<sup>14</sup>. Why are wage differentials between those two

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<sup>12</sup> The Netherlands (in Chart 9, indicated as 'NET') is the country where more than half of the total employed are part-time workers. The growth of part-time jobs in the Netherlands has a lot to do with the country's employment program, which has encouraged work sharing among workers. The program, which successfully reduced unemployment in the Netherlands, is a combination of welfare reform and fiscal conservatism with job creation and maintenance of overall social security, according to Visser and Hemerijk (1997). Among those reforms, regarding the job creation for part-time workers, Dutch people agree on equal treatment of part-time workers regarding wage per-hour, the social security system, legal safeguards, and period of employment. In the case of Japan, so far there is no such agreement regarding equal treatment between part-time workers and full-time workers. Therefore the increase in the number of part-time workers in Japan should not be compared without qualification to what has happened in the Netherlands.

<sup>13</sup> The differential will widen even more when we add bonuses and other fringe benefits, including social security benefits, to earnings. Regarding non-wage labor costs, see also footnote 16.

<sup>14</sup> Some readers may think that the wage differential between the two jobs may simply reflect the differences in human capital, especially the differences in the levels of educational attainment. Since wages classified by education groups are not available for part-time workers, we can not verify this idea by controlling education in the wage equation *a la* Mincer. However, when we classify full-time and part-time workers by educational level, the ratio of part-time workers to total employees has been increasing constantly in every education group in the past 15 years. For example, the ratio for the

groups increasing? Is women's labor supply toward part-time work exceeding labor demand? Let us turn to the demand side.

### **C. Demand for part-time workers exceeds supply**

Chart 12 shows the ratio of part-time job openings to part-time applicants. According to the data shown in Chart 12, the demand for part-time workers increased throughout the 1980s. In addition, it should be recognized that even during the current severe recession, the number of employers who are seeking part-time workers exceeds the number of workers seeking part-time work, while the total number of job openings is well below the total number of job applicants.

Houseman and Osawa (1998) suggest two possible factors that may have resulted in the increase in demand for part-time workers in Japan from 1982 to 1992. One is the "between industries effect", that is, changes in industrial composition of employment have increased the employers' demand for part-time workers. If the employment share of industries with a high rate of part-time employment increases, the demand for part-time workers will increase, holding other conditions constant. The other possible factor is the "within industry effect", i.e., that employers have increased their demand for part-time workers because they face greater competition than in the past, and thus have come under greater pressure to lower labor costs. Their empirical analysis regarding the increase in part-time employment in Japan over the period 1982-1992 shows that the second factor explained as much as 92 percent of total changes. We can provide supporting evidence that their finding also applies to the mid-1990s. According to the 1995 Ministry of Labour Report on *General Survey On Part-time Workers* (hereafter *GSPW*), among the reasons for hiring part-time workers, the most frequent answer given by 13,000 establishments was "to save labor costs" (38.3 percent).

If markets are perfectly competitive, such a unanimous increase in employer demand for part-time workers in all industries must drive up part-time workers' relative wage. Considering the fact that the wage differential has been continuously widening in the past, there must be some reason why the market adjustment mechanism has been distorted.

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university graduate level part-time workers to the total number of university graduate level workers increased from 16.6 percent in 1986 to 26 percent in 1999. For high school graduates, the ratio increased from 31 percent in 1986 to 47 percent in 1999. Based on those observations, we can at least assume that the difference in educational level is not the main factor in explaining the wage differential.

#### **D. Some possible explanations for the differential between full-time and part-time wages**

There has been much discussion regarding the explanations of the full-time and part-time wage differential in Japan, and this discussion has not yet reached a consensus. We here briefly review some of the points made in this discussion.

**Institutional factors.** Nagase (1997a) points out the possibility that the institutional system encourages women to work part-time for low wages<sup>15</sup>. For example in 2000 in Japan, a worker whose earnings are less than 1.03 million yen (about 10,300 dollars at the exchange rate of \$1=¥100) per year is exempted from paying income tax. At the same time, when a worker's earnings exceed 0.7 million yen (7,000 dollars), the amount of her (his) spouse's tax relief starts to decline and tax relief ends when earnings exceed 1.4 million yen (14,000 dollars). In addition, since the 1986 public pension reform, a worker (a) whose working hours per day or week are less than three-quarters of those of regular workers and (b) who earns less than 1.3 million yen (about 13,000 dollars) per year is regarded as having "dependent" status. Such workers are eligible for health insurance coverage under their spouse's plan and are entitled to receive a basic pension from the government. Such workers are exempted both from the government-mandated pension contribution and from health insurance payroll taxes<sup>16</sup>. In fact, in the *GSPW*, roughly 40 percent of female part-time workers reported that they limit their working hours in order to keep their earnings under the income tax threshold or to avoid paying health insurance and pension contributions<sup>17</sup>.

Nagase (2000) points out that the ratio of women in the age group 40 to 44 who do not pay social security taxes to total women in the same age group has grown to 22 percent in 1999 from 13 percent 10 years ago. Nagase (1997a) states that the tax threshold did not become a binding constraint for the labor supply of part-time workers because both full-time and part-time wages were considerably lower than the threshold. However, the government has not changed the level of the tax thresholds by fully indexing the realized inflation rate. She points out that for the most part-time workers, the local optimal choice of relatively low wages that maximize their after-tax income created below the tax threshold seems to be a reasonable choice, given their potential

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<sup>15</sup> Doudeijns (1998) discusses from an international perspective how the tax and benefits systems influence a second earner's incentive to work.

<sup>16</sup> This also benefits firms. Since social security payroll taxes, including employment insurance contributions, must be shared equally by employers and employees, hiring part-time workers who do not have to pay such taxes saves a firm's labor costs.

<sup>17</sup> Of course, this does not mean that every female part-time worker is not paying social security taxes. Abe, Y (1999) finds that about 30 percent of married part-time workers work more than 30 hours a week, and more than 60 percent of them pay such taxes.



hours that they may be able to work and their husbands' income. Therefore, the paradox of an increase in demand for part-time workers and a decline in the relative wage of part-time workers is consistently explained by the existence of the tax threshold. If there is a considerable number of part-time workers who limit their working hours to avoid paying taxes, then raising the hourly wage of part-time workers is not a reasonable strategy for firms even when they have strong demand for those workers. This is because the higher they raise the wage of part-time workers, the higher the risk becomes that their part-time employees adjust their working hours whenever their earnings come close to the tax threshold. If the part-time workers do indeed reduce their working hours, firms have to employ additional part-time workers in accordance with their business conditions. Since hiring new part-time workers is costly, firms may ask part-time workers to work longer hours during busy business seasons. Part-time workers, who are afraid of being dismissed for refusing firms' offers, may choose lower wages in advance to keep their income below the tax threshold (Furugori [1997]).

Abe, Y and Ohtake (1995) and Abe, Y (mimeo) argue that although such institutional factors may affect part-time workers' labor supply, these factors themselves are not the major cause of a lowering of the level of part-time wages. They point out that a substantial decrease in part-time working hours was observed from 1990 to 1995, while part-time wages increased almost 20 percent in the same period. This implies that many of part-time workers were able to shorten their working hours at the same time as their wages rose in order to keep their income below the tax threshold. Higuchi (1995) states that part-time workers who shorten their working hours in order to keep their income below the tax threshold tend to work for lower wages than those of part-time workers who do not adjust their working hours. He points out however, that it is not yet clear whether such beneficial tax treatment is pushing wages lower for a given working time or shortening part-time workers' working hours for a given wage.

**Compensated wage differential hypothesis.** Nakamura and Chuma (1994) and Chuma (1995) analyze the part-time wage function by using a hedonic approach and show that in urban areas a job, which allows workers to choose working days, and hours more flexibly tends to be accepted at a lower wage. They also find that the length of commuting time from home to workplace significantly explains the level of part-time wage in urban areas<sup>18</sup>. They point out that, in general, not only the level of wages per hour but also the

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<sup>18</sup> (Full-time) workers' long commuting times are quite common, especially in urban areas, in Japan. Furugori (1997) interviewed people who work in supermarkets in Tokyo and Cleveland, Ohio in 1992. She found that the full-time workers' average commuting time in Tokyo's supermarkets is 42.2 minutes while that of part-time workers is only 24.2 minutes. She points out that the commuting time for workers in Cleveland's super markets is not that different between full-time and part-time workers

flexibility in working days or hours and the amenity of a job (such as: job security, the length of commuting time, days of paid leave, etc.) affect the acceptance of job offers by part-timer workers. Since part-time workers are mostly homemakers and therefore responsible for household chores and childcare, they rather find jobs near where they live with low wages but allow flexible working days and hours instead (Japanese women's job choices are discussed further in the next subsection E.). Therefore, some of the wage differential could be understood as compensating to some extent for this difference.

**Faster growth rate of female full-time workers' wages.** Osawa (1993) and Abe, Y (2000) state that the widening wage differential between female full-time and part-time workers can be explained rather by the catch-up in female full-time wages relative to the male full-time wages throughout the 1980s and the 1990s. Yashiro (1980) argues that the gender wage differential in Japan can be explained by the difference in training and the accumulation of firm-specific skills. It is often said that Japanese firms pay large costs to train full-time workers by both on- and off-the-job training. However, firms do not invest as much firm-specific training for women full-time workers as they do for male full-time workers, since they expect the quit rate of women to be higher than that of men. If the attitudes of such firms have partially improved following the 1986 Equal Treatment Opportunity Law, the upward revision in female full-time workers' wage could be another possible explanation for the widening wage differential between full-time and part-time workers.

**Efficiency wage<sup>19</sup> for regular workers.** Abraham (1999) argues that paying higher wages may be a sensible way of reducing supervision costs or turnover costs among the firm's "core" work force, but that there is little obvious return from paying high wages to others performing less central tasks. She goes on to say, however, that establishments that pay high wages to workers in some tasks tend to pay higher average wages irrespective of the nature of tasks in order to maintain workplaces "morale". Therefore, hiring part-time workers from the external market at (low) market wages allows firms to lower labor costs without losing incumbent (efficiency-wage-provided) regular workers' morale. Osawa (1993) states that such behavior on the part of firms can be also seen in the Japanese labor market.

#### **E. Women's labor supply: Preference or fixed cost of childcare?**

Even if there are such tax exemptions for relatively low earnings, one may think that

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(the average time for full-time workers is 20.3 minutes while that of part-time workers is 14.8 minutes).

<sup>19</sup> Regarding efficiency wage hypothesis, see Akerlof and Yellen [1986] for example.

women can choose full-time jobs with much higher earnings instead of working in low-waged part-time jobs. Why have women increasingly chosen part-time jobs? To investigate these questions in detail, it is useful to look at the supply side.

**Many women prefer time flexibility.** According to the *GSPW*, among multiple answers, more than 50 percent of 30,000 part-time workers replied that they prefer part-time work because a part-time job allows them to choose working days and hours more flexibly. Another 27 percent replied that they chose part-time work because they wanted to shorten their working days or hours. Women who replied that they worked part-time just because they could not find regular full-time jobs totaled only 17 percent.

**Are they willingly choosing part-time jobs?** We should note that, however, the replies shown in the *GSPW* may not literally mean that the most of the part-time workers are willing to accept low-waged jobs. For example, Nagase (1997b), who empirically examined the occupational choices of married women in Japan, points out that the number of pre-school children reduces the probability that a woman will participate in the labor market, especially as an employee of a firm. She also finds that the presence of a grandmother living in the same household who can take care of children increases the likelihood of a woman choosing full-time work. The findings suggest that if there are any arrangements to take care of their pre-school children, for example the presence of another family member, Japanese women might be able to choose to full-time work even if they had pre-school children. In addition, the Japanese employment and social systems, which do not provide an opportunity for a “return match” to restart one’s career in full-time employment once one has withdrawn from the full-time regular employment market, also hinders re-entrants, regardless of one’s educational level, from working full-time.

We argue that young women in Japan face only “two corner solutions:” (a) quitting full-time work and becoming a homemaker and later reentering the job market as a low-waged part-time worker or (b) keeping her career as a regular full-time worker even at the sacrifice of the chance of marriage or having children. Moreover, according to Nagase (2000), the “two corner solutions” still apply to the young women in the 1990s despite the rise in women’s higher education enrollment<sup>20,21</sup>.

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<sup>20</sup> The more a woman is inclined to maintain her career as a regular full-time worker, the more she tends to give up becoming a wife or a mother. This fact is to some extent consistent with the calculation done by Chuo University (2000). The analysis shows that once a full-time working, college college-educated level woman withdraws from the labor market for five years, she will lose about 100 million yen (that is, about 1 million dollars at the rate of \$1=100) from her lifetime earnings.

<sup>21</sup> This phenomenon is not observed in the U.S. For example, Nagase (2000) states that only 27 percent of Japanese women who have their first child in their age group 30 to 34 keep their full-time regular jobs, while more than 60 percent of women who have less than one year-old child in the U.S.

As a result, many women who once withdrew from the labor market, regardless of their willingness, seek (low-waged) part-time jobs as re-entrants. Chart 13 shows the number of unemployed women looking for either full-time or part time jobs divided by the total female labor force (left scale). The same chart also shows the ratio of women seeking regular full-time jobs to women seeking part-time jobs (dotted thick solid line, right scale). The chart demonstrates that the number of women looking for part-time jobs increased in the past two decades. In the 1990s, the number of women looking for part-time jobs has become almost the same as the number of women seeking regular full-time jobs.

**Firms' View.** In such an environment, it may be rational for firms to hire many low-waged part-time workers rather than keep full-time working mothers who may not be able to work as much as other male regular full-time workers or other female full-time workers with no child. In addition, women who re-enter the labor market as part-time workers nowadays are mostly those who had work experience in some firm in the past. Some of those with a high educational level had to give up their career for the sake of childcare. Therefore by hiring experienced part-time workers, firms can save basic training costs.

## **F. Policy implications**

**The wage-unemployment relationship.** If such institutional factors, being set in the context of rigid gender roles where men are seen as the primary breadwinners and women as the homemakers, remain in the future, we have to be cautious about looking at the growth rate of the national average wage. The bigger the increase in part-time workers in the total labor force, and the larger the wage differential between full-time and part-time workers, the more stable (and perhaps also low) the national average wage can be observed to be. However, if an upward revision of tax threshold were made during future booms, all of a sudden female part-time workers could start working longer hours and the competition among firms might gradually increase the relative wage of part-timers. The moral of our discussion is that it is risky for a central bank to judge or forecast the macroeconomic situation just by looking at the relationship observed in the past between the average wage level and employment, i.e., the Phillips curve, without knowing what is happening to the composition of the labor market . This point will be discussed further in chapter 4.

**The inflow rate and the duration of unemployment.** In addition, under the current

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keep their full-time jobs.

strong employment protection policy<sup>22</sup> (mainly applied to full-time workers) in Japan, to stop hiring part-time workers is much easier for firms than firing full-time regular workers. This means that hiring a new part-time worker is also easier than hiring a new regular worker. The existence of strict penalties for dismissing full-time workers is consistent with the observation that the job creation and destruction rates of part-time workers are much higher than those of regular full-time workers in Japan, as we stated in Chapter 2. Therefore, one may well expect that the inflow (or outflow) rate of part-time workers who enter (or exit from) the unemployment pool must be much higher than that of regular full-time workers. To verify our conjecture, in Chart 14, we see the inflow rate and average unemployment duration for male and female workers, estimated by the Ministry of Labour (1999)<sup>23</sup>. The figures show that there is an increasing trend in the inflow rate for both male and female workers, but that the female rate is much higher than male rate. On the other hand, average male unemployment duration is much longer, and it seems to be increasing, but this trend can not be observed in female workers. In sum, while the possibility of a female worker losing her job is much greater than that of a male worker, the male worker faces greater difficulty than the female worker in getting out of the unemployment pool once he loses his job<sup>24</sup>.

The policy implication is that we must also be careful when we look at the average unemployment rate. Since the unemployment rate is a product of the inflow rate and the average duration, we should note that the nature of unemployment can be totally opposite between male and female even when the both unemployment rates appear on the surface to be moving in the same direction.

## **(2) Older workers**

Chart 15 shows that the ratio of people aged over 65 to the total population is rapidly

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<sup>22</sup> Regarding the employment protection policy, see also chapter 3(3).

<sup>23</sup> Note that this estimate is done for male and female workers, and not for full-time workers and part-time workers. However, since most of the male workers are working full-time and about 45 percent of female workers are working part-time, we consider this result as a proxy for full-time and part-time workers.

<sup>24</sup> The unemployment insurance system in Japan may be another factor explaining the male's long unemployment duration. Under the current insurance system, the amount and the duration of benefit are positively linked to a worker's tenure and age (the 1999 Employment Insurance reform amended the system partially, though the linkage still remains). Since men tend to work longer years than women do and therefore are entitled to longer and greater benefits, it may be considered that an unemployed man is more likely to remain longer in the unemployed pool to obtain his full benefits than a woman (Tachibanaki [1984] reported that 70 to 80 percent of the unemployment insurance recipients received their full benefits). Note that however, the ratio of the benefits recipients to the total unemployed was only 33 percent in 1999.

growing in Japan. As we can see from the chart, until the late 1980s, the ratio in Japan was the lowest among G-5 countries, but accelerated during the 1990s. If the current low fertility and mortality rates continue, it is said that Japan would become one of the top three aged countries in the world by 2050 (the other two are Italy and Spain).

The United Nations (2000) recently reported that it would be necessary to raise the upper limit of the working-age to about 77 years in order to achieve by 2050 the same potential support ratio<sup>25</sup> observed in 1995 in Japan. Otherwise, they estimate that 553 million immigrants, a number more than four times as large as the current population of Japan, would be needed from 1995 through 2050. These shocking and unlikely results suggest that it is inevitable that Japan will have a substantially aging population in the next several decades. Therefore, although raising people's working age to 77 years old may be questionable, (healthy) older workers will necessarily form the labor forces in Japan's aging economy in the long run.

Comparing to other industrial countries, Japan's older workers' participation rate has been quite high in the past. According to the OECD's *Labour Force Statistics 1974-1994*, the participation rate of men aged 60 to 64 in Japan was 80 percent in 1976, while those of the U.S., Germany and France were about 63, 53 and 52 percent respectively. In 1995, the rate declined somewhat to 75 percent in Japan, although it was still high compared to the other countries (53, 50, 17 percent in the U.S., the U.K. and France, respectively). What can explain those cross-country differences in the older workers' participation rate?

### **A. Industry structure**

In the past, self-employed workers in agriculture or small firms, including mom-and-pop stores, were traditional areas where older workers used to work in Japan. This is one of the possible explanations for the high participation rate of older workers in Japan<sup>26</sup>. For example, according to the Ministry of Labour Report, *Survey of Employment Conditions for Older Persons*, 40 percent of workers aged between 60 and 64 were self-employees in 1983. However, this rate declined to 35 percent in 1988 and 27 percent in 1996. In the 1980s and 1990s, the weight of tertiary industry in the Japanese economy increased rapidly while many small self-owned shops lost their competitive edge and shut down.

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<sup>25</sup> The potential support ratio is the ratio of the number of persons in working-age to the number of persons in past working age. The ratio for Japan in 1995 is about 4.8, which means 4.8 persons of working-age support one elder person.

<sup>26</sup> Tachibanaki and Taki (2000) analyze that the large share of self-employed workers in total labor forces in Japan had contributed to lowering both the level and fluctuation of the Japanese unemployment rate in early 1980s because they hardly change their labor force status.

At the same time, the large number of regular workers employed in 1960s and 1970s have recently started to move into their 50s<sup>27</sup> and are facing difficulties in finding new jobs after leaving the firms at which they were long-term employed, either by way of mandatory retirement or through dismissal during the recent recession. Chart 16 shows the number of job searching older men and the unemployment rate, as well as those of discouraged workers<sup>28</sup> who gave up searching. In the chart, we see that unemployment among older workers more than doubled in the past ten years. On the other hand, the number of male discouraged workers, especially those aged 55-64, has not changed. This implies that a large number of workers in this cohort remain in the labor market, without being discouraged, and keep searching for jobs.

## **B. Government proposals**

The Japanese government has proposed several measures, starting from several decades ago, to cope with this aging trend. It was 1966, when the government first decided to encourage older people to work beyond their retirement in their early 50s by encouraging both firms and workers to extend the mandatory retirement age to 60 or above. Despite this encouragement plan, even in 1989, the proportion of firms who extended their mandatory retirement age to 60 was below 60 percent (see Chart 17). However, the proposal was widely accepted by Japanese firms during the boom of the early 1990s. The ratio of firms who reported that their retirement age was 60 or over rose during the decade, reaching almost 100 percent in 1999<sup>29</sup>. Two decades ago, in 1978, this ratio was only 34 percent. In accordance with this encouragement plan, in the 1994 pension reform the government decided to shift the pensionable age of basic benefits gradually from age 60 to 65, starting from 2001<sup>30</sup>. This pension reform and related measures caused many older people to revise upwards their desired age of retirement, causing people to remain in the

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<sup>27</sup> These people, born during the late 1940 and the 1950s, are called “the first baby boom” generation. After most of these baby boomers bore babies (the second baby boom) in the 1970s, the fertility rate gradually declined. Two large baby booms and the following fertility rate decline are the major facts that are causing the distortion in age composition in Japan.

<sup>28</sup> Regarding the construction of the unemployment rate including discouraged workers, see chapter 3 (4) for the details.

<sup>29</sup> From 1998 onward, under the Law on Stabilizing Employment of the Elder and Others, a retirement age of over 60 years has been regulated for firms who specify a unique mandatory retirement age for their employees.

<sup>30</sup> This amendment was adopted mainly because under the current “intergenerational support” system, the Japanese pension fund will sooner or later become unsustainable as a result of the recently-established downward trend in the total labor force. In 1999, several additional public pension reform amendments were adopted. These include (a) a 5 percent cut in earnings-related benefits and (b) a gradual shift in the pensionable age for earnings-related benefits from age 60 to 65. For details of

labor market even in their late 50s and early 60s regardless of whether they were employed or unemployed.

In 1998, the government started to encourage firms to hire employees who desire to work until the age of 65. Although several big firms, such as Toshiba and Hitachi, decided to adopt a re-employment system<sup>31</sup> for the once retired employees younger than 65, most of the remaining firms hesitate to adopt this system. Based on the past experience that took more than 30 years to pull up the mandatory retirement age to 60, the government's new proposal may take quite a while to achieve its goal.

### **C. Outlook**

If our conjecture is correct, a mismatch between workers who want to work beyond their mandatory retirement age until their pensionable age and firms who have no future plan to hire older workers will continue until a labor shortage becomes apparent (in 2025, say?). The more older workers flow into unemployment pool for the purpose of searching for employment, and the longer they stay there (as the large number of baby boomers move into their 60s in the 2000s and 2010s), the greater the national average unemployment rate will be.

The major reason for a mismatch between older workers and firms is that the productivity of workers is likely to be lower than their reservation wage, typically the wage obtained at the age of retirement. Currently, a steep wage profile or deferred payment<sup>32</sup>, one of the typical features of the Japanese employment system that enabled good economic performance to be achieved in the past, are now casting heavy the burden on firms of continuing to hire older workers whose current productivity is far below their high wages. On the other hand, many older workers who are used to deferred payment and therefore think their market wages must be considerably high even after losing their firm-specific human capital are vainly trying to find high wage jobs.

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recent Japanese pension reforms written in English, see Takayama (1999).

<sup>31</sup> The re-employment system is applied to those who desire to work in the same firm after their retirement at age 60. Under this system, once the worker retires at age 60 the worker will have a new employment contract until he or she reaches the age of 65. See the Japan Institute of Labor (2000) for details.

<sup>32</sup> Under this structure, pay is lower than productivity for young workers, but rises more steeply and eventually surpasses productivity when they get old. This will strengthen workers' incentive to work in a same firm and encourages them to learn firm-specific skills (Hattori and Maeda (2000) show recent wage profiles in Japan). Seike (1995) suggests that a retirement bonus and corporate pension which are positively correlated with an employee's tenure provides another incentive to workers to remain in a same firm. However, he points out that this mechanism gradually diminishes when a worker gets his or her 50s. In addition, the corporate pension is basically not portable, and this is another factor to tie a worker to a single firm.



If mandatory retirement is set up under a deferred payment structure (Lazear [1979]<sup>33</sup>), a gradual upward shift in the mandatory retirement age must be accompanied by substantial wage decreases for an extended re-employment period. The inverse U-shape of wage profiles, however, may strongly cause disincentives for workers once their wages pass a peak and begin to fall subsequently. In addition, a unanimous large wage cut for all workers just because they have reached old age can be regarded as an income transfer from high-skilled workers to low-skilled workers within the same age cohort. This may hinder high-skilled workers' incentives, which may lead to a large welfare loss for the Japanese economy. Therefore, it may be time for a drastic change in Japan's wage structure, i.e., a change from a seniority-based to a performance-based wage structure, at least for white collar workers (those over 40 years old, say?) whose skills are not necessarily fully firm-specific. At the same time, workers may need to sustain their market value by learning new skills even under the rapid introduction of new technologies rather than simply accumulating firm-specific human capital. Central bankers must keep a close eye on what will happen to the wage structure and the employment system, which may lead to a dynamic change in the relationship between wages and unemployment in the next few decades.

### **(3) Youths**

#### **A. Increasing youth unemployment**

Another dominant factor that may be influencing the Japanese unemployment rate is that of youth. As shown in Chart 18, youth unemployment rates in Japan have been rising substantially in recent decades. In addition, the rates are much higher than the total unemployment rate.

Similar to the trend in the female labor force, increasing youth unemployment is another common phenomenon in industrial countries. Chart 19 shows major statistics summarizing the situation of youth unemployment in G-5 countries for the past 20 years<sup>34</sup>. Although the Japanese unemployment rate is still lower than those of the other four countries, its acceleration is quite rapid. In addition, as in other countries, besides Germany, the youth unemployment rate in Japan is twice as high as the adult unemployment rate<sup>35</sup>. Furthermore, Japan is the only country among these five in which

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<sup>33</sup> Lazear (1979) pointed out that mandatory retirement would terminate the contract so that a worker will not be able to receive a wage greater than his/her productivity forever.

<sup>34</sup> In this table, 'Youth' is defined as being under 24 years old.

<sup>35</sup> As is widely known, the low ratio of Germany's youth unemployment rate to the adult unemployment rate probably has a lot to do with the country's successful policy; apprenticeship.

the share of youth unemployed in total unemployed was quite stable in those two decades. When one includes unemployment of those aged between 25 and 29, which is usually considered as a “(quasi-) young” cohort in Japan, in the youth unemployment, it accounts for 40 percent of total Japanese unemployment. Along with the increase in the youth unemployment rate, the share of youth unemployment to youth population is also rising in Japan. This implies that the higher enrollment rate of this age group compared to that of older generation<sup>36</sup> is not a main cause of the high youth unemployment rate in Japan.

### **B. Luxury unemployment or demand shortage?**

**Supply side.** The severe conditions of unemployed youth documented in these statistics has not attracted the attention of most Japanese. This is partially because there is a thought among many people that if the aging society really happens (which is quite likely), the declining young cohort size should lead to lower unemployment rates, therefore the current unemployment is a temporary phenomenon<sup>37</sup>. Another reason that makes social attention weak is that youth unemployment has often been regarded as “luxury unemployment”, with available jobs being rejected in order to pursue a search for better jobs. Chart 20 shows the major reasons given by youths (age under 29) as to why they have left their initial workplace (data from the Ministry of Labor Report, *1997 Survey on Employment Conditions of Younger Persons*, hereafter *SEYP*). The third column of Chart 20 tells us that job-losers are only about 2 percent of the total. Moreover, searching for a “higher wage” does not seem to be a major concern for them. “Disliked jobs”, “disliked hours or conditions” and “inter-personal reasons” comprise about 50 percent of their reasons for not remaining in the initial workplace. The overall impression obtained from the results shown in Chart 20 may lead many people who are sympathetic to discharged unemployment to think that young people are just “shopping around” and therefore that there is no need to take it seriously. Another piece of statistical evidence that allows one to consider youth unemployment as a temporary and trivial issue is that increasing unemployed youths are mostly not breadwinners, i.e., the head of the household<sup>38</sup>. Chart 21 shows the family compositions of unemployed persons in the past

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<sup>36</sup> If a large segment of the youth population enrolls in higher education on a full-time basis, the youth labor force may decline, therefore even with the number of unemployed unchanged, the youth unemployment rate may rise, while the share of unemployed youth in the total youth population may decrease.

<sup>37</sup> Korenman and Neumark (2000) show that it is true that declining youth population shares may result in some improvements in the conditions for youth in labor markets in some countries, however, the other measures, including reform of institutional factors or aggregate demand policies should be needed to achieve substantial reductions in youth unemployment in their cross-country studies.

<sup>38</sup> The same observations can be done in other countries. For example, Alba-Ramirez and Freeman

25 years. The fourth column of Chart 21 shows that the number of “other members of the household” (i.e. not the head of the household, not the spouse of the head of the household, and not living alone) unemployed has sharply risen in these decades, and has reached almost 45 percent of total unemployed in 1999. One may well conjecture that many of them are living either with a parent or parents. This is another reason for youth unemployment to be neglected, since such young people have a place to live even when they are unemployed.

**Demand Side.** We must be cautious, however, in this discussion. While it may be observed that youths are able to quit jobs and get unemployed easily because they live with their parents, looking from the opposite side, the truth may be that they (unwillingly) choose to stay home because they cannot find good employment opportunities due to bad economic conditions. Card and Lemieux (2000) suggest that poor labor market conditions in Canada explain the reason why the proportion of youths living with their parents has increased in the country<sup>39</sup>. They report (by using Canadian panel data sets) that in regions with stronger local demand conditions and higher wages, young men and women are more likely to work, more likely to strike out on their own and move away from their parents’ home.

Could we safely apply the results obtained by Card and Lemieux (2000) to Japanese youth unemployment? One quick way to test this idea is to verify if there are ample employment opportunities for youth in Japan. Unfortunately, there is not enough data to examine our hypothesis<sup>40</sup>. For example, the ratio of the job openings for youth to youth job applicants may not be an appropriate indicator, since the gap between the number of youth unemployed and the number of youth job applicants who register at the government’s Public Employment Security Offices (PESOs)<sup>41</sup> has been widening, especially since the early 1980s. For example in 1998, the number of youth unemployed was almost three times higher than that of registered unemployed. The gap between those

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(1990) suggest that in Spain non-household-heads are more likely to be long term unemployed than others. They point out that, since the strong family system serves as a form of unemployment insurance, non-household-heads can afford to be long-term unemployed.

<sup>39</sup> According to Card and Lemieux (2000), in Canada, 77.3 percent of young men aged 16-24 lived with parents in 1994, compared to 70.3 percent in 1971 (for women, 66.3 and 55.0 percent, respectively). For Japan, according to *Employment Status Survey Results*, the rate was 71.58 percent in 1971, and 76.2 percent in 1997 (for women, 73.1 and 81.27 percent).

<sup>40</sup> Ohta (2000) is one of the few analyses in Japan that examines the influence of labor market conditions on youth unemployment. He finds that the Japanese young workers who enter the labor market during recessions are more likely to quit their first (unsatisfactory) jobs within a year than those who obtained their first jobs during boom periods. This implies that the increasing trend in Japanese youth unemployment may be partially explained by the long recession of the 1990s.

<sup>41</sup> See data appendix (2)-(B) for details.

two numbers could be interpreted to mean that younger unemployed workers tend to search for jobs more by using other means, such as in newspaper or magazine advertisements, rather than by visiting the PESOs. Another explanation is that the registered job offers may not include the kind of job that could attract young workers very much nowadays.

### **C. The market for new graduates and other young unemployed workers**

**New graduates.** Is increasing youth unemployment somehow attributable to obstacles impeding entry to the job market? Some point out that Japan's strict employment protection policy<sup>42</sup> makes it difficult for firms to hire new people during recessions. The Japanese employment protection policy strictly prohibits firms from dismissing regular employees, unless the employer can demonstrate that an appropriate effort to avoid it (the effort includes not hiring new workers) has been made in advance. Chart 22 shows the ratio of new entrants to total young unemployed. The current ratio of never-been-employed to total young unemployed is about 20 percent. Although new entrants may not be the major component of youth unemployment, we should not ignore the fact that the ratio exhibited an increasing trend in the 1990s. In particular, the ratio of new female entrants almost doubled from the trough of 1992. Genda (1999a, 2000) shows that the higher the ratio of old workers to the total employees in the establishments, the less willing the establishments will be to hire new entrants. He points out that the Japanese seniority wage profile imposes higher personnel expenses on firms who hoard many elder workers. However, the strict employment protection policy makes them continue employing high-wage older workers without hiring new relatively low-waged workers. If the strict protection policy is the reason of higher youth unemployment, the insider-outsider theory (Lindbeck and Snower [1989]: incumbent regular employees [insiders] versus new graduates [outsiders]) can be in part applied to youth unemployment in Japan.

**Those once employed.** What about the remaining 80 percent of young unemployed who

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<sup>42</sup> OECD (1999a) points out that Norway, Portugal and Japan stand out as offering the highest employment protection on their summary indicator "difficulty in dismissal," with the US and the UK at the opposite end of the spectrum. One may wonder if there is a set of out of date laws in Japan. Surprisingly, there is no statute in Japan requiring valid reasons for dismissal. However, the courts formulate strict requirements for dismissals in the form of case law. The requirements were established during the severe recession caused by the first oil shock in the early 1970s. They include the requirement "that every effort is made to avoid dismissal as a means of achieving necessary personal curtailment, i.e. the exhaustion of alternative means such as the reduction of overtime work, suspension of hiring new workers, relocation of workers" (Sugeno and Suwa [1997]). Blanchard and Portugal (1998) show that Portugal's high employment protection policy explains the longer unemployment duration in Portugal compared to that of the United States.

have been employed at least once in the past? Chart 23 shows another survey made by the *SEYP*. According to the third column of the chart, 30 percent of young workers aged under 29 are not working in the initial workplace where they obtained jobs as new entrants. For those who entered the labor force right after junior high graduation, only 36 percent remain in the same firm (see the third column). Furthermore, of those who left the first firm, the fifth column of the chart shows that almost 70 percent have changed their workplace at least twice<sup>43</sup>. If one out of every three young workers easily flow into unemployment pool, naturally the national average unemployment rate will become high.

#### **D. Looking for a better match or job-hopping?**

Are the young workers looking for a better match or just job-hopping? Unfortunately, there is only a limited number of studies that have been made regarding this question, but we may be able to make the following educated guess. For example, as Mortensen and Pissarides (1997) state, if strict employment protection reduces the incentive to create new jobs<sup>44</sup>, young workers who have quit their disliked old jobs may be vainly searching for attractive new jobs which actually do not exist in the market. Another possible explanation is that many young workers start thinking that it is worthless to work intensively and learn firm-specific skills which may become useless once the firm goes bankrupt.

If such an understanding regarding the reasons for youth unemployment is right, it not only implies that there is wasteful resource allocation now but also suggests that this will result in cumulative losses in the future. Recently, it has been argued that job searches conducted by young workers who have not yet accumulated any skills does not result in a better match<sup>45</sup>. As we saw in chapter 3(2), it is inevitable that Japan will have an aging society in the near future. If a large number of young people just job shop without adding more skills, their behavior could cause further economic loss in the future, when much higher productivity on the part of those of working age will be one of the requisites for intergenerational transfer. In addition, under current rapid technological changes and high competition with low-waged workers in developing countries, a gap

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<sup>43</sup> This observation might suggest that the same kind of analysis for the youth unemployment in the U.S., pioneered by Heckman and Borjas (1980) should be placed on the future research agenda in Japan.

<sup>44</sup> Of course, the effect of the strict employment policy has another side to the coin. If there is no such policy and firing workers is easy for firms, many workers find it worthless to learn firm-specific skills. Our concept here is that too strict a policy may sometimes be damaging to macroeconomic performance by distorting the labor market.

<sup>45</sup> See for example, Neumark (1998).

between the demand for highly-skilled workers and the demand for low-skilled workers will widen in the future. Such an economic environment could lead to higher income inequality in the future Japanese economy.

Research on Japanese youth unemployment has just started. As we have already discussed in this section, just regarding unemployed youth as “luxury shop-arounds” may result in severe damage to future Japanese economy. Further research is necessary and the development of specific policies or programs, including the role of monetary policy, should be discussed in the near future.

#### **(4) Discouraged workers**

Discouraged workers are defined as persons who are jobless and want work, but are not looking for work because they believe that they cannot find it. As we stated in Chapter 2, the discouraged workers, mostly women, who used to withdraw from the labor force whenever recession occurred, used to be one of the major factors that could potentially explain our low official unemployment rate. These workers have also been considered as “luxury unemployment” and therefore, to the best of our knowledge, macroeconomists have not paid so much attention to them. However, the sum of unemployed and discouraged workers can be regarded as one of the indicators of potential labor supply. As Greenspan [1999], for example, says, looking at the fluctuation of this potential labor supply may provide another clue as to what has been happening in the labor market in the recent past.

Let us look at the number of discouraged workers<sup>46</sup> (Chart 24). In Chart 24, male discouraged workers seem to be experiencing an increasing trend along with an increase in the official number of unemployed, and such unemployment has surged to the highest level in the past 25 years. On the other hand, for women, although the number of discouraged workers is still remarkably high, its growth rate is not that rapid compared with that observed during the past recession period.

**Observation 1: The Japanese potential unemployment rate is about 10 percent.** In Chart 25, we calculated the discouraged-workers-adjusted base unemployment rate<sup>47</sup>. “Discouraged worker adjusted-base (1)” in the chart refers to the official unemployment plus all the people both in and out of labor force who answered that they would want to

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<sup>46</sup> The figures for discouraged workers are calculated by the data from *Report on the Special Survey of the Labour Force Survey* collected in February every year. The series is only fully available from 1984 onward, since the questionnaire of the survey differs in various ways before 1983. Therefore the figures reported in this section before 1983 have been adjusted by the authors.

<sup>47</sup> The method of constructing this series is similar to the US Bureau of Labor Statistics’ U7. For details and international comparisons, see Sorrentino (1993, 1995).

work but were not seeking employment opportunities because there was “no prospect of finding a job”, divided by total labor force (including discouraged workers). Among those discouraged workers, the people who answered that they either could not take up, or were undecided about taking up, a job now when offered one, are excluded in the “Discouraged worker adjusted-base (2)”. Therefore, the discouraged workers adjusted-base (2) can be regarded as those potential workers who are ready to flow into the labor market at any minute. As shown in the chart, the potential male unemployment rate is 6 to 7 percent, and for that of females around 12 to 14 percent in 1999. This makes the average national discouraged workers adjusted-base (1) and (2) unemployment rates 10.66 percent and 9.02 percent in 1999, respectively (implying that every one out of 10 people in Japan is potentially looking for a job). Bearing in mind that the Japanese official unemployment rate is about 5 percent, the discouraged workers are still a big component in the Japanese labor market.

The detailed composition of this category of workers, however, seems to be changing in several respects.

**Observation 2: Women tend to remain in the labor force.** First, in the year 1987, when the official unemployment was the highest in 1980s, the female’s discouraged workers adjusted-base unemployment rate was 4.7 times higher than the official female unemployment rate. In 1999, the rate is just 3.4 times higher (for (2)-base, 3.5 times and 2.7 times in 1987 and 1999, respectively). The decrease in the gap between the potential unemployment rate and the official unemployment rate is to some degree consistent with the observation we saw in chapter 3(1), that women tend to choose to remain in the labor force either working as part-time workers or searching for such jobs rather than to withdraw from the labor market during recessions. However, there are still potentially 2.5 million women who are ready to flow into the labor market. This number is almost the 60 percent of the number increased in women’s part-time employment in these 15 years, as we saw in chapter 3(1). The aggregate implication of the discouraged women’s inflow to the labor market is discussed further in chapter 4.

**Observation 3: Newly discouraged workers are youths and older workers over 65.** Second, if some of the former discouraged female workers are now getting “not discouraged”, who are still discouraged? Chart 26 shows the composition of the discouraged workers. For males, the numbers of both “head of household” and “other members of household” are increasing, but the ratio of the “head of the household” to the total seems to have been decreasing in the past ten years, while the ratio of “other members of household” has been increasing. Looking at age composition, an increasing number can be seen to be in the young cohort under age 34 and the old cohort over age 65.

This is consistent with the statistics showing the severe employment situations of those cohorts in chapter 3 (2) and 3 (3). Older people between 55 and 64 are now less discouraged and are remaining in the labor force to find jobs, although male workers over the age of 65 who used to be in the “happily-retired” group, seem to be wanting jobs but being discouraged. Most of them are probably “heads of households”. On the other hand, some youths who gave up searching and drifted out of the labor force have been steadily increasing in these ten years. These young discouraged male workers, not in school, consist of 10 percent of the total now.

**Observation 4: Newly discouraged female workers are also youths and elders.** For females, the compositional shifts can also be seen in the chart. Although “spouse” is still the largest component in female discouraged workers, the ratio to the total has been continuously declining in the past ten years, while the ratio of “other members of household” is increasing. In addition, women aged 35 to 44 decreased substantially in the past decade; in the meantime, young women under age 34, many of who are probably living with their parents, are increasing. An increasing number of female workers aged over 55 are probably the typical Japanese discouraged workers observed 15 or 20 years ago, those who had played the “buffer” role in the Japanese labor market.

**Outlook.** The recent changes in composition among discouraged workers imply that the conventional “buffer” for labor market adjustment is vanishing, and that the young cohort may instead be becoming the new buffer. Although a large number of discouraged workers still exists in the Japanese labor market, the qualitative nature of the potential labor force may be changing.

To this end, let us look at the answers of discouraged workers who were asked what type of job they were potentially seeking (Chart 27). For both males and females, a substantial number of people replied that they wanted to work as part-time workers. This suggests that there is potentially a large number of people who will take part-time jobs if they are offered. If most of them start flowing into the labor force to seek low-waged part-time jobs, the macroeconomics consequence may be quite different from what we have expected based on past experience.

#### **4. The Role of Monetary Policy under Structural Changes in the Japanese Labor Market**

In chapters 2 and 3, we summarized recent structural changes in the Japanese labor



markets. Note that some of the Japanese institutional systems, particularly the tax system, the social security systems and case law regarding the strict requirements for dismissals based on the social condition in the early 1970s might have been influencing the labor supply of older workers, women and youths. From the viewpoint of dual labor markets, those institutional frameworks seem to be one of the important factors segmenting the Japanese labor market today, even though they were originally consistent with Japanese demographic structure and the Japanese economic environment, particularly in the early 1980s. Those factors that segment the Japanese labor market include unfavorable relative wages for part-time workers, the increase in female part-time workers, and the serious unemployment situation facing youths and older people. In this chapter, we will present some simple examples that explain why such structural changes in the labor market could have important policy implications for the conduct of monetary policy. In particular, we will focus on the effects of part-time workers and discouraged workers on the conduct of Japanese monetary policy.

The role of discouraged workers and part-time workers is one of the important issues not only in Japan but also in the United States. For example, the United Auto Workers (1996) argue that a larger share of the labor force is working in part-time and temporary positions, hence the problem of structural unemployment may be more severe than is suggested by the official unemployment rate statistics. However, as Poole and Wall (2000) point out, after four years of continuous economic growth, not only have more people become employed, but also more people who had been choosing to stay out of the labor force flew into the labor market and obtained jobs. The second factor is generally ignored while it is also important to consider the transformation of the labor market.

The restriction of our attention towards discouraged workers does not come from our judgement that the situation of youths and elders is unimportant. Rather, the following discussions are for the sake of clear exposition in a sense that we can make an educated guess relatively comfortably regarding the aggregate demand management policy quantitatively.

We do not deny that that discussions in the rest of this chapter are speculative, and many readers might wonder why we want to present such tentative results. However, we would like to stress that our purpose is not to produce new robust empirical results, but to *address* the nature of structural changes in the labor market, a knowledge of which might be useful for the conduct of future monetary policy. We believe this the right way to proceed.

### **(1) Short-term aggregate demand management**

An important prerequisites for the short run conduct of monetary policy, which aims at exploiting the trade-off between inflation and unemployment, is a reasonably stable empirical relationship, such as Okun's law or the stable short-run Phillips curve. Given the increase in the unemployment rates for female part-time and full-time workers, we conjecture that, recently, more female part-time workers tend to remain in the labor force even in the recession, rather than being discouraged and getting out of the labor market, as described in chapter 3. Therefore, we discuss the effects of the treatment of the discouraged workers on the trends of Japanese GDP, Okun's Law and the Japanese inflation-unemployment trade-off paying attention to their implications on the conduct of the Japanese monetary policy, by showing simple examples.

#### **A. Example1: Implication of discouraged workers on aggregate demand and Okun's law**

We see the recent change in the number of part-time female workers and discouraged workers in Japan in chapters 3 (1) and 3 (4). We may also safely suppose that, given the current institutional framework, most Japanese part-time female workers would not dare to work longer hours to increase their wage income at the sacrifice of their favorable tax treatment<sup>48</sup>. What are the aggregate implications when we take these factors into account?

First, the fall and rise in the unemployment rate including discouraged workers (discouraged workers adjusted-base (2)) is faster compared with the official rate, especially during the late 1980s to the early 1990s (See Chart 28). Therefore, the broader unemployment rate could be useful for understanding trend of Japanese output, as Poole and Wall (2000) stressed<sup>49</sup>.

Second, regarding the statistical relationship between unemployment and aggregate output, once we take into account the effects of discouraged workers, given the technological progress, we would expect the Okun coefficients to be relatively small in

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<sup>48</sup> In practice, the labor supplies of men and those of women are very complex function of their earnings, their benefits from the social security system, and the relevant effective tax they are facing, and so forth. Fair (1999) points out that once taking into account of those factors, it is impossible to obtain any simple relationships between the unemployment rate and aggregate output such as the Okun's law in the general equilibrium macro econometric model. Therefore, the following discussions should be best understood as a caveat of conducting monetary policy by the information obtained from the small size macroeconomic model for the conduct of the Japanese monetary policy.

<sup>49</sup> Unfortunately, the figures for discouraged workers are calculated by the data from Report on the Special Survey of the Labour Force Survey, which is collected only once a year in February. Therefore, current statistics is not sufficient for the sake of the conduct of monetary policy for an immediate future.

size<sup>50</sup>.

For example, the ordinary least square regression of the annual log employment rate computed from the official unemployment rate on a constant term, a time trend, and log GDP yields estimates of Okun coefficients ranging from 7.3 to 10 using the sample period of 1981-1999, as can be seen in the second column in Chart 29<sup>51</sup>. The ordinary least square regressions using the broader unemployment rate (discouraged workers adjusted-base (2)) as the independent variable yields estimates of Okun coefficients ranging from 4.2 to 5.8 using the sample period of 1981-1999, as can be seen in the fourth column in Chart 29. The example shows that the effects of the discouraged workers are important for judging the levels and the relevant variables for estimating the available labor supply and therefore potential output<sup>52</sup>.

Previous empirical studies (see Yoshikawa [2000] for review) typically found that Japanese Okun coefficients had an unusually high value compared with U.S. results. Our examples show that the broader unemployment rate might still convey better information in the sense it tends to report smaller and sensible Okun coefficients (Tachibanaki and Sakurai [1991]). Further empirical investigations to obtain direct policy implications, such as an estimate of potential GDP using the broader unemployment rate or the distinction between labor hoarding within firms and discouraged workers, will be needed.

## **B. Example 2: Inflation-unemployment trade-off**

The general consensus regarding the unemployment and inflation trade-off in Japan was that “The Japanese Phillips curve was very steep,” at least by the year 1990. Regarding

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<sup>50</sup> Okun (1962) conjectured that the disparity between the size of Okun coefficients and the size of the share of labor in the neoclassical production function based on the U.S. data could be explained by the following three factors: the entry of discouraged workers into the labor force, the increase in hours of work, and the rise in the labor productivity during the boom. Although we assume technological progress to be neutral for the sake of making the following discussion as simple as possible, we do not mean that the effects of productivity measurement are not important. For example, Orphanides (1999) pointed out that the systematic mismeasurement of the output gap estimated in the 1960s in the U.S. could be squarely attributed to a delay in recognizing that the underlying trend of labor productivity had shifted unfavorably in the late 1960s. The same problem could occur in Japan. See also Lansing (2000) regarding the uncertainties in trend output and the monetary policy rule.

<sup>51</sup> Those results are consistent with the estimates obtained from the quarterly data shown in the third column, and the results of Yoshikawa (2000) and Kurosaka (1999).

<sup>52</sup> The qualitative natures of our results is also consistent with the findings of Tachibanaki and Sakurai (1991). They use the sample period of 1963-1986, and find that the Okun coefficient with discouraged workers takes the value of 31.3 while the Okun coefficient using official figures takes the value of 67.6, although Tachibanaki and Sakurai (1991) estimate the number of discouraged workers using different statistical methods. Readers might wonder if the difference between the Okun coefficients obtained from official figure and those obtained from the broader unemployment rate are statistically significant. Using the standard errors of the regression coefficients, the upper bound of the confidence interval of the former and the lower bound of the confidence interval of the latter are pretty close.

wage flexibility, the recent study by Balmaseda *et al.* (2000) computed an index of real wage rigidity in the sixteen OECD countries using the sample period 1956-1996. According to their estimates, real wage rigidity is low in Japan, the U.S., and EFTA countries<sup>53</sup>. Such empirical findings in former literatures regarding the Japanese inflation-unemployment trade-off, which can be verified quickly by Chart 30, were generally understood as the reflection of the following institutional factors in the Japanese labor markets: (i) the flexible and pro-cyclical changes in overtime work, overtime work payment, and in “bonus” payments, (ii) the moderate increase in nominal wages excluding bonuses and overtime work payment based on an agreement between workers and firms<sup>54</sup>.

However, firms had already reduced all the overtime working hours during the early period of this long recession so that by the late 1990s they faced no more overtime to cut to make real wages flexible. Moreover, near zero inflation might have made it difficult for firms to reduce real wages because for some reason workers are reluctant to accept reductions in nominal wages. Those changes may have reduced the flexibility of real wages and working hours in the Japanese labor market, as Greenspan (2000) commented. Indeed, Chart 30 gives us the impression that the Japanese short-run Phillips curve, if it ever existed, became very flat, particularly after 1995. Note that it is premature to conclude that the flat part of this curve shown in Chart 30 should be regarded as a single short-run Philips curve. As we saw in Chapters 2 and 3, factors such as low matching efficiency, high job reallocation and changes in peoples’ labor supplies may have shifted the Japanese Beveridge Curve upward recently. Otake (1999) points out that some part of the rise in the official unemployment rate by the year 1997 might be viewed as structural unemployment, since the rise in the unemployment rate accompanies the rise in job openings. In addition, Kimura (1999) rejects wage rigidity once he includes the data observed in 1998. If our interpretation is correct, the natural rate of unemployment has itself shifted upward, and that there is no stable short-run Phillips curve.

Rather than going into the detail of such debates, in the remaining part of this

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<sup>53</sup> See Tachibanaki (1987) and Higo and Nakada (1999) for a review of literature on wage flexibility and Phillips curve in Japan.

<sup>54</sup> Readers might wonder why we discuss the Japanese trade-off between inflation and unemployment using a simple Phillips curve rather than “NAIRU.” However, according to Higo and Nakada (1999), during the sample period from the fourth quarter of 1987 to the third quarter of 1997, the Japanese price-output relationship should be best understood through a Phillips curve type model rather than the NAIRU type specification (note that their analysis is not based on the unemployment rate, but on the output gap). The discussion in this section is for the sake of exposition only, hence we do not go any further into the details of model specification.

section, we would like to examine the effects of the increasing number of part-time female workers and discouraged workers on the Japanese inflation-unemployment relationship<sup>55</sup>.

Chart 31 shows two plots of the inflation-unemployment trade-off constructed from the sample period of 1981-1999, using the official unemployment rate and also using the unemployment rate taking into account discouraged workers (discouraged workers adjusted-base (2)) minus 4.32% to make the latter series take the same value in the year 1999 at point A. Chart 31 shows that the unemployment rate including discouraged workers might have conveyed different information regarding the Japanese trade-off. As we can see, the relationship between the broader unemployment series and inflation can not be obtained by a parallel shift in the official unemployment rate. Unfortunately, given the limited number of observations, it is difficult to show quantitative empirical evidence that the two series provide us with independent information, say, an estimate of equilibrium unemployment rate based on the broader unemployment rate. However, the following qualitative information obtained from the broader unemployment rate suggests that the subject deserves further investigation. For example, upon retrospect, the broader unemployment rate including discouraged workers seems to have predicted future changes in the inflation rate better than the official unemployment rate in the late 1980s. We can observe that the CPI inflation rate increased despite the moderate decrease in the official unemployment rate, while the broader unemployment rate fell substantially during that period (See Chart 28).

### **C. Policy implications**

What are the lessons for Japanese monetary policy? Our simple examples in the previous section are useful in considering the practical difficulties of conducting monetary policy. Let us focus on the example of the inflation-unemployment trade-off<sup>56</sup>.

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<sup>55</sup> One might wonder if our discussions are limited to relatively minor issues. However, Mizuno (1992) obtains the following interesting results. The ordinary least square regressions of the unemployment rate on a constant term, vacancy rate, working hours (chosen for the proxy variables for the demand conditions in the labor market), the proxy for the demographic factors (increasing the number of older people raises the unemployment rate), and the proxy for the growth of the service industry using the sample period 1965-1987 yields a positive partial correlation coefficient for the relationship between the male unemployment rate and the proxy for the demographic factors, but yields a negative partial correlation coefficient for the relationship between the female unemployment rate and the proxy for demographic factors. Since data for the male and female vacancy rates are not available after 1987, we cannot reproduce the results obtained by Mizuno (1992). However, we may well conjecture that the behavior of aggregate unemployment data should be examined carefully under the structural changes in the female labor supply discussed in this paper, because the male and female unemployment rates might be affected differently under the same macroeconomic conditions.

<sup>56</sup> Another simple example is that of the difficulties in estimating the output gap. Should we consider

Given the current benefits from the social security systems and the favorable treatment of income tax for homemakers, we may expect that even after the recovery of the Japanese economy, more part-time workers, rather than full-time workers, will be employed. In that case, for the same reduction in the unemployment rate, we may find a smaller increase in the inflation rate. Moreover, as Poole and Wall (2000) point out, if many who were previously discouraged workers are included in the labor force, the interpretation of the national average wage requires caution. This is because the wages of these newly employed persons are generally lower than the wages of those who are already employed. As these low-waged workers are added to the ranks of the employed, the average wage for all workers can remain unchanged, even if the wages of those already employed have risen.

Although the existence of a stable short-run Phillips curve in Japan is still in dispute, for the sake of clear discussion let us suppose that the central bankers and the people agree that the relevant *future* short-run Phillips curve in Chart 31 is the one using the official rate *now*. Suppose further that the central banker believes in the structural changes discussed above *ex ante*, he or she might well consider that the likely *future* movement of the relationship between unemployment and inflation would follow the vector AB in Chart 31. However, if people do not take into account this structural change seriously *ex ante*, they may insist on a higher inflation rate to reduce the unemployment rate by the same amount. They might anticipate that the inflation and unemployment rates would move on the vector AC in Chart 31. Therefore, if the central banker would like to lead the economy in this direction on the vector AB *now*, taking into account *future* changes in the labor market conditions, that intention of the central banker may not be accepted by society if people expect the future development of the economy to be along the vector AC.

Note that the discussions so far assume that there is no structural reform of the social security tax and personal income tax. However, as we have stated in the previous chapter, suppose that the upward revision of the tax threshold for part-time workers' earnings is made during a boom period at some time in the future. Then, all of a sudden female part-time workers could start working longer hours and the competition among firms might gradually increase the relative wage of part-timers. In such a situation, the knowledge of the *past* short-run Phillips curve is not so powerfully able to extrapolate the *future* relationship between unemployment and inflation.

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discouraged workers as the potential work force? If the composition of the work force is shifted from full-time workers to part-time workers, could we reasonably assume that the maximum hours worked per worker observed in the past would be the upper bound of potential working hours?

Regarding this point, Greenspan (1997) says that the implementation of monetary policy to reduce the cyclical unemployment rate presumes an understanding of the “structural” components of the unemployment rate, and that key causal connections such as a Phillips curve observed in the past, will remain fixed over time, or will evolve only very slowly. He says that, given limited knowledge, such attempts could make the economy worse on average<sup>57</sup>. If policymakers could agree that the measurement of the unemployment rate would be a serious concern, they should be careful about conducting a monetary policy based on the historical experience of the relationship between the unemployment and inflation rates, with strong emphasis on the development of unemployment data. We need more detailed research on structural problems in the labor market, and we should have a better understanding of the appropriate measure of labor market conditions. Therefore, we need to have a better understanding of the relationship between Japanese institutions and the unemployment rate.

Our discussion regarding the role of monetary policy under the structural changes in the labor market based on real-time basis information alone seems to apply to European countries. For example, IMF (1999) discusses the role of monetary policy under the structural reform in the labor market based on the European experience<sup>58</sup>. If government succeeds in implementing comprehensive and deep labor market reforms, then failure to accommodate the resulting positive supply shock would risk causing deflationary pressure. Accommodating it could require the growth of monetary aggregates in excess of the past trend growth of potential output plus the target rate of inflation, because the potential output growth rate will, for a time, be raised by the structural reforms<sup>59</sup>. In the European context, there are fairly good agreements between central bankers and the public regarding the structural problems in the Europe that exists

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<sup>57</sup> In the context of the job-creation and job-destruction cycle, monetary policy might be able to offset the aggregate disturbances, but the structural policy is relevant to speeding up the adjustment to compensate for allocative disturbances. According to Davis and Haltiwanger (1999), the effect of “aggregate disturbance” on job creation and job destruction is neutral in the sense that it does change the timing of job creation and job destruction, but it cannot have a cumulative effect on the amount of job reallocation. “Allocative disturbance” is an event that alters the closeness of the matching between the desired distribution of labor and capital inputs and the actual distribution of labor and capital inputs without any permanent effect on employment. Such a mismatch implies that there are variations in the intensity of shifts in the distribution of employment opportunities across physical locations and across points in the skills space, which could have important consequences for aggregate employment.

<sup>58</sup> Issing (1999) argues that the single largest economic problem in Europe at the moment is the high level of unemployment. He points out that the root causes of high unemployment in the European Union are structural rigidities in the labor market, tight regulation in product markets, tax and public transfer policies. Given those consideration, Issing (1999) points out that proper structural reform is the only way to achieve lasting reductions in unemployment.

<sup>59</sup> See Kamada and Muto (2000) for an analysis of monetary policy rule in Japan using the framework of the forward-looking model. Note that there are only a few Japanese studies in this field.

in labor market institutions. Therefore, some of the problems discussed in the Japanese context, for example, whether the labor market is the most serious structural issue in the Japanese economy, may not apply. However, it seems to be fairly difficult to anticipate structural changes in the labor market correctly even for experts in labor economics in Europe. For example, Lindbeck (1998) states that there are strong “structural” elements in the unemployment crisis in Western Europe, in the sense that an expansion of aggregate demand is no longer enough to solve the problem. However, he admits that statistically it is difficult to distinguish between this persistent unemployment and changes in the “equilibrium unemployment rate,” or the “sustainable” unemployment rate<sup>60</sup>.

## **(2) Zero interest rate policy, quantitative policy and labor market**

There is a growing literature which suggests that the Bank of Japan should take some other accommodative action under the current zero interest rate policy because some kinds of quantitative easing under zero inflation could reduce the cost of structural reforms (See Bernanke [1999] and Krugman [1999]. See also Fujiki, Okina and Shiratsuka [2000] for the possibility of application of those proposals in Japan and McCallum [1999] and Goodfriend [1999] for the discussions in the U.S. context). According to the Minutes of Monetary Policy Meetings, since the beginning of 2000, the board members have spent considerable time discussing whether the BOJ is reaching the stage where it can confidently say that deflationary concerns are disappearing. Therefore, the possibility of quantitative easing would not attract immediate policy concern. However, it would be useful to evaluate those proposals in relation to the working of Japanese labor market.

In our judgement, most of the proposals regarding the BOJ’s quantitative easing hinge on the promise of the quantity theory of money or the purchasing power parity theory without any quantitative assessment. For example, Bernanke (1999) states that “money issuance must ultimately raise the price level, even if nominal interest rates are bounded at zero.” Bernanke admits the importance of structural problems, but the issues regarding monetary transmission mechanisms, such as bank balance sheet channels, or wage rigidities are treated as given for the sake of discussion. He says, “If monetary policy could deliver increased nominal spending, some of the difficult structural problems that Japan faces would no longer seem so difficult.” Note that the balance sheet

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<sup>60</sup> Lindbeck (1998) interprets that various institutions and mechanisms in the European economies tend to slow down the reversion of the unemployment rate to its initial level after unemployment-creating shocks (i.e. unemployment persistence).



adjustments conducted in the Japanese banking sector and the Japanese corporate sector could have affected the balance sheet channel of monetary policy, and the employment policy of Japanese firms through the “main bank relationship<sup>61</sup>.” Abe, M (1999) examines the relationship between the main bank system, firms’ dependency on capital markets and the employment adjustment speed of firms by inspecting panel data on major firms in the chemical, steel and iron, electronic machinery, and retail and wholesale industries. Abe, M (1999) obtained the following results through probit regressions of dummy variables representing reductions in the number of employees by a constant term, the ordinary profit, and dummy variables for the main bank and the other variables, using the sample period of 1978-1995. First, dependency on the capital market increases the probability of reducing the number of employees when there are losses in terms of ordinary profit. Second, the cross effects of the loss in the ordinary profit and dependency on the capital market reveals that the more the firms are independent from the banks, the more likely they are to reduce the number of their employees. These results suggest that, under the current increasing dependency on capital markets, the effects of quantitative easing through bank balance sheet channels might not be so effective in preventing unemployment as they used to be. In other words, the effectiveness of a simple reflation policy without adequate labor market reform may not be strong enough to help Japanese workers.

To the best of our knowledge, there is no study regarding the effects of accommodative monetary policies under a zero interest rate with special emphasis on the working of the labor market in detail. Those who advocate small but positive inflation in Japan have not convincingly shown that their assertion based on wage rigidity is true in the context of the Japanese labor market (See Kimura [1999] regarding Japanese nominal wage rigidity in the 1990s). The notable exception might be Shinotsuka (2000), who argues that the zero interest rate policy might have adverse consequences on income distribution or on the accumulation of wealth to the detriment of households, and she points out the difficulty of earning reasonable returns for institutional investors. Regarding the operation of corporate pension schemes, firms find it difficult to manage the defined benefit plan due to the near-zero financial asset returns under the current zero interest rate policy and the slow growth rate of the economy. As we will see in more detail in chapter 5, changes in the accounting standard for the sake of corporate pension schemes from March 2001 have put additional pressure on the firms’ balance sheet adjustment, which could have adverse consequences for the firms’ willingness to employ

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<sup>61</sup> See Ogawa and Kitasaka (2000) the Japanese evidence on the credit channel and the bank-lending channel.

more workers. Many employees now feel that their lump-sum retirement payment, which used to be a good incentive scheme encouraging workers to accumulate firm-specific skills, may not be risk free, and that their incentives to commit to a firm might have been changing.

## **5. Structural Reforms**

In the short run, structural issues in the labor market are taken as given for the conduct of monetary policy. However, as Yamaguchi (1999) has pointed out, central bankers need to understand any major structural changes including those occurring in the labor market, and discuss their implications on price stability and financial stability. Therefore, in this chapter, we will discuss some of the issues regarding structural reforms in the Japanese labor market.

Before moving on to the details of those issues, it would be useful to consider broader views regarding the future course of structural policies in Japanese labor market. Tachibanaki (1999) points out that the benefits of Japanese social safety nets are not so benevolent compared with those of other industrial countries based on careful cross-country comparisons in terms of the tax-to-GDP ratio, the ratio of social security expenditure to GDP, the duration and replacement ratio of unemployment insurance. Those features could be explained by the tradition of private arrangements regarding the various aspects of social safety nets, such as family support, corporate pension schemes and health schemes. Nonetheless, in an era of price stability, international competition and low economic growth, it will be more difficult to ask Japanese firms to sustain such benevolent fringe benefits and welfare facilities for their employees, and difficult for the younger generation to take care of the elder generation at home at the sacrifice of outside employment opportunities. Moreover, those benefits provided by firms are generally restricted to employees in the major large companies. Therefore, as Tachibanaki (1999) advocates, Japan needs a new consensus regarding the extent of involvement of government and cooperation regarding the provision of safety nets in general.

Although we are not ready to discuss all the implications of the design of new safety net in this paper, several issues emerge from the discussion in previous chapters. These include the structural reform of current regulations in the labor market to allow a variety of agents to work efficiently irrespective of gender, age, or their former occupation. More specifically, the government can help workers to find new jobs through the job creation program, and encourage the accumulation of skills via the public job training programs instead of via Japanese firms, and design the unemployment insurance program in a

consistent manner with those activities. One of the promising ideas that addresses these issues could be work sharing. In addition to those programs that could affect the labor market directly, reform of the public pension system and corporate pension schemes are important for the sake of reducing the adverse bias in the labor supplies of women (in particular, homemakers) and older people.

One might argue that the structural changes in the labor market could be achieved only slowly. Moreover, in the long run, monetary policy may be neutral with regard to resource allocation. Therefore, one might wonder if there would be no relationship between the labor market policy and monetary policy in the long run<sup>62</sup>. In our opinion, such a view ignores the possibility that the labor market could be seriously affected by a sudden collapse of financial markets, given the global linkages in the international financial markets. In addition, the necessary reforms to the social security system designed to prepare for the coming era of slower economic growth and declining labor force have to do with well-functioning and stable financial markets (Yashiro[1999]).

The risks regarding wage income and deferred payment, which used to be hedged by the corporate sector via the long-term employment and a stable banking sector, have to be covered by adequate pooling of public employment insurance and the public and private pension systems. Moreover, workers might wish to hedge their risks of aging and illness with the benefits from the social security system and the private and public health insurance schemes. In sum, Japanese individuals might face various risks directly, rather than through the buffers of firms, banks, or families<sup>63</sup>. In this context, for example, the social security system, the pension systems, and the unemployment insurance systems must be reformed consistently to allow Japanese citizens to hedge their various risks through the financial market during their lifetime, regardless of their gender, age, occupation, and family status. Hence, central bankers should look at those reforms not only from the perspective of the development of future wages in the economy, but also with a view to efficient risk sharing in the economy over time. Let us now turn to more specific discussions.

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<sup>62</sup> Ball (1999) argues that the monetary policy and other factors that determine aggregate demand have long-term effects on the unemployment rate due to the hysteresis effect.

<sup>63</sup> Okumura (1999) argues that the resolution of the recent Japanese banking crisis now requires households to share their burdens either through future tax increases or by accepting a less benevolent social security system. These structural changes might be well expected by workers, and might affect their behavior now, rather than after the structural changes have occurred. For example, one of the major reasons for the higher Japanese saving rate might be concern for the future social security system, rather than the accumulations of wealth to prepare for purchasing their own house in the future.

### **(1) Deregulation in the labor market**

The mismatch in labor allocation is probably the most crucial reason for the high level of unemployment in Japan, as the Ministry of Labor (1999) reports. One of the causes for the discrepancy arises from the fact that some regulations on the labor market and the industrial relations system restrict the degree of labor mobility that minimizes the mismatch. For example, there are regulations governing how private firms conduct job-advertising, job-opening or job-allocation business. Various kinds of regulations and some other institutional factors prohibit employers and workers from having efficient labor allocation and mobility. Although a deregulation process is currently under way, it is desirable to strengthen it further in order to secure greater mobility of labor.

### **(2) Job creation**

One of the most obvious differences between Japan and the U.S. regarding the working of the labor market is the lower rate of job creation and job destruction in Japan than in the U.S., as shown by Genda (1999b) in the spirit of Davis, Haltiwanger and Schuh (1996). There are various reasons why Japan shows such a lower rate, besides the strict employment protection policy stated in chapter 2. One is inefficient access to the capital market, and the other is the lack of entrepreneur-ship. It is certainly desirable to have a situation such that the Japanese economy creates more firms, and thus more jobs. It is said that there are plenty of business opportunities in the field of caring, health, information technology, finance, etc. Stronger entrepreneur-ship and easy access to capital are highly desirable.

### **(3) Efficient skills training**

Firms have been responsible for providing employees with job training to raise their skills levels and their productivity. Japanese firms are no longer able to provide all the kinds of training they used to provide for the following two reasons. First, they do not have sufficient funds because of the recent serious recession. Second, there is no strong motivation for firms to commit themselves to training their employees partly because job training provided by employers and skill accumulated there may become rapidly obsolescent during a period in which technology is changing drastically, and partly because there is a fear that trained employees may leave their firms in future.

The public sector must play an important role in providing job seekers or the unemployed with job training in these circumstances. There are various institutions, such as professional training schools or centers, universities, etc, which can organize the preparation of job training. Employees and job seekers who desire to receive such

training have to share the training costs with the contribution from public funds.

#### **(4) Employment insurance**

The Japanese employment insurance system has until recently provided only a small amount of unemployment benefits while accumulating a huge quantity of contributions. However, recent increase in the number of unemployed eligible to obtain unemployment benefits led the employment insurance system into severe financial difficulties, particularly after 1994. More specifically, the current Japanese employment insurance system bears some relationship to the public pension system, because some of the conditions determining the payment of employment benefits are related to the age of the workers concerned. In addition, the Japanese employment insurance system does not cover most female part-time workers, and those who have short work experience, like those of the younger generation. Under such circumstances, Tachibanaki (1999) suggests the following reforms.

First, more workers should join the employment insurance system. For some reason, at most thirty percent of unemployed people receive unemployment benefit. Perhaps some of those who do not receive benefit must be female part-time workers, whose working experience is less than one year or who work less than thirty hours a week. Second, the levels and the terms of benefits could be more benevolent, if social agreement on this could be established. This is because unemployment benefits constitute the major proportion of earnings for unemployed people, together with savings. Nonetheless, under the current system, more benevolent unemployment benefits require higher contributions from both firms and workers. Some firms find it too costly to hire full-time workers given the higher contributions for unemployment benefits; therefore the introduction of a more benevolent unemployment system could increase the number of unemployed, or induce firms to hire more part-time workers. Moreover, the moral hazard of unemployment could be serious under a benevolent unemployment benefit system.

We need to have further discussion regarding the optimal mechanism design of sustainable and efficient Japanese employment insurance.

#### **(5) Work-sharing and/or wage sharing**

One of the most useful policies that prevents the rate of unemployment from increasing is the introduction of a strategy of work-sharing and/or wage sharing, as the Netherlands has successfully used to lower the rate of unemployment. Decreasing total working hours per employee is likely to raise the demand for employment, and thus is effective in lowering

the rate of unemployment. This policy can be derived by implication from the insider-outsider theory à la Lindbeck and Snower (1989) in the sense that the insider helps the outsider.

One delicate issue is the adoption of a policy which lowers the per-hour wage rate at the same time as increasing the demand for labor. This wage-sharing requires the consensus of all concerned agents such as employers, employees (both union members and non-union members), and possibly the government. This policy may be contradictory to the implication of the efficiency wage hypothesis in terms of Akerlof and Yellen (1986) in the sense that regular full-time workers have to sacrifice their relatively higher wages. Although it is not so easy to reach such an agreement on wage-sharing partly because the wage-setting framework is currently fairly decentralized in Japan and partly because skilled workers may refuse a decrease in their wages, there are signs of hope among these concerned agents<sup>64</sup>.

#### **(6) Public pension system<sup>65</sup>**

The current Japanese pay-as-you-go defined benefit public pension system faces severe financial difficulty due to slower economic growth with a declining and aging population. In the long run, the Japanese public pension system must be reformed in a consistent manner with age-free, gender-free safety nets in the labor market, which will help individuals to smooth their lifetime consumption schedules intertemporally. As we have documented in chapter 3, the current Japanese public pension system possesses some features that might have reduced the hours to work for homemakers<sup>66</sup>. In addition, young Japanese are very skeptical about the sustainability of a national pension system.

Against this background, on December 5, 1997, the Ministry of Health and Welfare suggested five alternatives regarding the reform of the public pension system in 1999. However, in the midst of a serious recession, in December 1998, the Japanese government decided to keep social security contribution rates for pensions constant from

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<sup>64</sup> During an economic boom following the implementation of work-sharing, shorter working hours, if taken for granted, might put upward pressure on nominal wages. Therefore, work-sharing should be encouraged with broad efforts to improve the flexibility of the labor market in general. We owe to Mr. Job Swank regarding this point.

<sup>65</sup> This section is based on Takayama (1999).

<sup>66</sup> Regarding the relationship between the labor supply of older workers and the public pension system, Gruber and Wise (1997) point out that social security provisions which impose a large tax on continued employment past the early retirement eligibility age, have contributed to the decline in the labor force participation of older persons in many major countries. In Japan, there is a system called “the old-age pension for active workers” that partially or totally stops the provision of benefits to older workers, depending on the amount of monthly income. Iwamoto (2000) makes the criticism that the system is hindering the labor supply of older workers.

fiscal year 1999 because the increase in the contribution rate for social security became very difficult politically. This government decision presumed that the Japanese general account should cover 50 percent (currently 33 percent) of basic benefits of the Japanese public pension by the fiscal year 2004<sup>67</sup>. The government also decided on the degree of increase in existing pension benefits in fiscal year 1999, not according to net-wage indexation, but in proportion to the increase in the CPI over the previous calendar year.

On March 28, 2000, the 1999 pension reform plan was approved by the Diet. The major features are as follows. First, earnings-related benefits are to be reduced by 5 per cent. Second, both the flat-rate basic benefits and the earnings-related pension benefits once paid are to be CPI-indexed after age 65 from fiscal year 2000. Third, the normal pensionable age for earnings-related old-age benefits is to be increased step by step from age 60 to 65 for men from fiscal year 2013 to 2025. According to Takayama (1999), whole programs specified in this law would reduce aggregate pension benefits by 20 per cent by 2025 (see Takayama [1999] for the details for the 1999 pension reform plan). However, the question of the exemption from the government-mandated pension for typical homemakers with relatively small incomes has not been resolved by this reform. Moreover, there is still no consensus on how to fund the additional government expenditures needed to provide the basic benefits of the Japanese public pension by the fiscal year 2004. Hence this could be one of the potential risks regarding lifetime income for Japanese workers.

Regarding the future outlook of the Japanese social pension system, in principle, most Japanese economists agree that the advance funded defined contribution plan must replace the pay-as-you-go defined benefit plan as the major institutional feature of the Japanese public pension system. However, their opinions regarding the specific recommendations for the necessary reforms are not unanimous. For example, they disagree about the method of funding (tax or contribution?), the relevant tax base (consumption, income or expenditure?), and the division of labor between the basic pension and employee pension insurance. Moreover, their opinions regarding the proper role of public pension system within the overall social safety nets do not converge (See Tachibanaki (2000), Hatta (1998), Takayama (2000), Yashiro (1999) for major proposals).

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<sup>67</sup> According to Takayama (1999), if increased general revenue is to be financed by the earmarked consumption-based tax, a 0.8 percent point increase in the consumption tax rate (currently 5 percent) will be necessary.

### **(7) Corporate pension schemes<sup>68</sup>**

Japanese corporate pension schemes developed originally as a system of setting aside insurance premia as necessary expenses for a lump sum retirement allowance. There are two types of corporate pension scheme in Japan. “Employees’ pension funds” were introduced in 1966. They partly provide pensions on behalf of the public pension system, while they add substantial benefits in proportion to remuneration. The “tax-qualified pension plan” was introduced in 1962.

The Japanese pension scheme is managed on the basis of a defined benefit plan rather than a defined contribution plan. Moreover, the expected deferral interest rate for employee pension funds was regulated at 5.5 percent until 1996. Therefore, in the era of low nominal interest rates in the late 1990s, many employee pension funds were forced to cut their payments, or even worse, were dissolved since they could not accumulate enough funds to meet the expected deferral interest rate. There must have been serious deficiencies in their reserves, although firms are not required to report deficiencies in reserves.

However, a change in accounting standards from March 2001 requires firms not only to report their total liability for pension and lump sum retirement payments but also to correct any shortfall in their reserve funds within 15 years. The shortfall in such reserves of listed companies now totals several tens of trillions in yen, and companies will need to respond urgently to this problem (Japan Institute of Labor [1999]).

As we stated before, given the fact that even large Japanese firms are not free from bankruptcy, many employees feel that their lump-sum retirement payment may not be risk free. Moreover, there are many independent systems of employee pension funds, which lack the portability of pension programs.

Therefore, portability between different corporate pension funds and a shift from defined benefit plans to defined contribution plans might be necessary for the sake of employees to be able to hedge their risks regarding earnings, losses or changes in their workplace. Moreover, a division of labor between the public pension system and the corporate pension scheme should be reconsidered. In this context, the development of a Japanese version of the 401K(k) plan should be observed carefully.

## **6. Conclusion**

In this paper we have considered some structural issues regarding the Japanese labor

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<sup>68</sup> This section is based on Tachibanaki and Taiten (1997), Kawamura (1999), Japan Institute of Labor (1999).



market from the viewpoint of women, youths, older workers and the discouraged workers. The opinions and evaluations regarding those structural issues may differ depending on one's gender, age, occupation, and family background.

From the viewpoint of the core Japanese workers, typically full-time male workers who have accumulated firm-specific skills through on-the-job training, their relatively favorable employment opportunities may not be sustained during the current recession, and once they lose their position, they must stay in the secondary labor market forever. Such workers would consider that the Japanese employment environment is now heading for an era of bipolarization. From the viewpoint of other Japanese workers, however, styles of jobs such as part-time work, temporary work, and even work sharing, could be very flexible and attractive employment opportunities for all Japanese workers, including "core" workers. A variety of job opportunities could be consistent with the efficient division of labor and equity of working environment, if skills training, the unemployment insurance system, tax systems, and various safety nets such as the social security systems are not specific to workplace, gender or age. The long-term goals of labor market reform to prepare for an era of low birth rate and small workforce should produce a variety of employment opportunities with some agreed sense of equity and efficiency irrespective of one's gender, age, and occupation.

Do Japanese workers face an era of bipolarization or an era of variety, equity and efficiency in the 21st century? The answer to this question should be known to all of us after ten or fifteen years. But given the rapid technological and demographic changes in the Japanese economy, we know that current decisions regarding the direction of the structural reforms in the labor market must have a crucial effect on plausible answers to this question. Although both labor economists and central bankers cannot identify the structural changes in the labor market on a real-time basis, they should try to address the nature of structural changes in the labor market and their policy implications as best as they can.

## **Data Appendix**

### **(1) Data sources**

- (A) *Labour Force Survey*, Statistics Bureau and Statistics Center, Management and Coordination Agency. An explanation of the statistics can be downloaded from <http://www.stat.go.jp/english/1540.htm>.
- (B) *Report on Employment Service*, Ministry of Labour.
- (C) *Special Survey of the Labour Force Survey*, Statistics Bureau and Statistics Center,

Management and Coordination Agency. An explanation of the statistics can be downloaded from <http://www.stat.go.jp/english/1553.htm>.

(D) *Labor Force Statistics*, OECD.

(E) *Basic Survey on Wage Structure*, Ministry of Labour.

(F) Data downloaded from [http://www1.ipss.go.jp/tohkei/Mokuji/4\\_World](http://www1.ipss.go.jp/tohkei/Mokuji/4_World).

Original data sources:

Japan: *Population Census*, Statistics Bureau & Statistics Center, Management and Coordination Agency and *Population Projection for Japan*, National Institute of Population and Social Security Research, 1997. The projection data for Japan can be downloaded from [http://www.ipss.go.jp/English/S\\_D\\_I/Indip.html](http://www.ipss.go.jp/English/S_D_I/Indip.html) (in English).

Other four countries: *The Sex and Age Distribution of World Population: 1996*, United Nations.

(G) *Survey of Employment Management*, Ministry of Labour.

(H) *Key Indicators of the Labor Market 1999*, International Labor Organization.

(I) *Survey on Youth workforce--General Survey on Diversified Types of Employment*, Ministry of Labour, 1997.

(J) *TANKAN (Short-term Economic Survey of Enterprises in Japan)*, Research and Statistics Department, Bank of Japan. The data can be downloaded from <http://www2.boj.or.jp/dlong/tk/data/cdce0300.txt>, [cdce0310.txt](http://www2.boj.or.jp/dlong/tk/data/cdce0310.txt), [cdce0320.txt](http://www2.boj.or.jp/dlong/tk/data/cdce0320.txt).

## (2) Brief explanations of some data used in this paper

(A) The Beveridge Curve in Chart 4

The definitions of the unemployment rate ( $u$ ; employee-based unemployment rate) and the vacancy rate ( $v$ ) are as follows.

$$u = \frac{U}{(U + E)},$$

and

$$v = \frac{JO - JM}{(JO - JM) + E},$$

where  $U$  stands for the number of unemployed,  $E$  is the number of employed persons,  $JO$  represents the number of active job openings, and  $JM$  is the number of job matches. For job openings and job matches, see the explanation in the next section.

(B) Vacancies and the ratio of job opening to job applicants

In Japan, the Employment Security Law of 1947 established a network of Public

Employment Security Offices (referred to hereafter as PESOs ), and the law allowed PESOs to obtain monopoly power in the employment placement service. The law has for a long time strictly regulated (fee-charging) private employment placement services<sup>69</sup>. Therefore vacant jobs are filled only through the PESOs. There are approximately 600 PESOs in Japan. The PESOs have contributed to a correction of unfair labor practices. Note that the migration of labor from rural areas to urban area was one of the most important sources of the Japanese post war economic growth. The PESOs also helped this process of labor the migration by promoting nationwide matching of job offer and job seekers.

The data used for vacancies in this paper are vacant jobs registered by job-offering firms at the PESOs. When he or she becomes unemployed, a person must first register at one of the PESOs to obtain unemployment insurance. Job seekers who have not worked previously can also register at the PESOs and seek jobs through the service they offer. All of these registered people are called job applicants. The data on such people are collected on a monthly basis. We call job offers and seekers newly registered within a month “new job openings” and “new job applicants”. We call cumulative total available job offers and seekers “active job openings” and “active job applicants”. “Job matches” is the number of job openings filled by the job applicants. The Ratio of job openings to job applicants used in Chart 12 is calculated by the number of registered active job openings divided by the number of registered active job applicants. “Job openings” has been used as a proxy variable for vacancies in Japanese studies, since this registered base data is only available in the form of time series data.

However, there are several problems in this data. This is because the job-matching services provided by the PESOs have recently been insufficient in many respects. For example, many people nowadays seek jobs by other means, for example by reading advertisements in newspapers and magazines. In particular, many unemployed youths are now searching jobs by other means than registering at the PESOs. Older job seekers though, still tend to register at the PESOs so that the number of registered-base unemployed and that of estimated unemployed are not that different. There is no particular difference between job searching techniques used by female full-time job seekers and female part-time job seekers. 30 to 40 percent of both types of job seekers report that their main method of finding jobs is registering at the PESOs. On the other hand, there must be a certain number of firms who try to fill their job vacancies through advertisements in newspapers and magazines. In addition, in these years, many firms are

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<sup>69</sup> In 1997, the government loosened this law (see Araki [1997]). In addition, the regulation of private agencies that provide temporary staff was also partially deregulated in 1999.

recruiting workers (especially new graduates) through their web sites.

### (C) Mismatch index

The mismatch index is calculated as follows.

$$\frac{1}{2} \sum_i |u_i - v_i| \times 100,$$
$$u_i = U_i / U \quad \text{and} \quad v_i = V_i / V,$$

where  $U$  stands for the number of unemployment,  $V$  is the number of active job openings minus the number of job matches, subscript  $i$  refers to a factor of mis-match, either by region, age or occupation. Regarding the occupational mismatch, the number of job applicants (for unemployment) and the number of new job openings minus the number of job matches (for vacancies) are used instead. For further explanations on vacancy data, see data Appendix (2)-(A) and (b).

For the regional mis-match, we calculated among 10 regions, namely (1) Hokkaido, (2) Tohoku, (3) Minami-kanto, (4) Kita-kanto, (5) Hokuriku, (6) Tokai, (7) Kinki, (8) Chugoku, (9) Shikoku and (10) Kyushu. The age mismatches were calculated in 8 groups, namely (1) 15-19 years old, (2) 20-24, (3) 25-29, (4) 30-34, (5) 35-39, (6) 40-54, (7) 55-64 and (8) 65 and over. For the occupational mismatch, we used ten categories, namely (1) Professional and Technical, (2) Administrative and Managerial, (3) Clerical and related, (4) Sales, (5) Service, (6) Security guards, (7) Agriculture and Fishery, (8) Transportation and Communications, (9) Construction and (10) Other manual.

### (D) Definition of “part-time workers”

The Japanese concept of part-time workers are those who are not “core” regular full-time workers. The employment conditions of typical core regular full-time workers include seniority-based wages, long-term employment, on-the-job training and various forms of employment protection. Usually, most of those conditions do not apply to Japanese part-time workers. Such part-time workers in Japan used to be a “buffer” of the Japanese labor market in the past, and they allowed firms more flexibility in wage and employment<sup>70</sup>.

For data on Japanese part-time employment, definitions are not consistent among statistics. In the *Special Survey of the Labour Force Survey*, a part-time worker is defined

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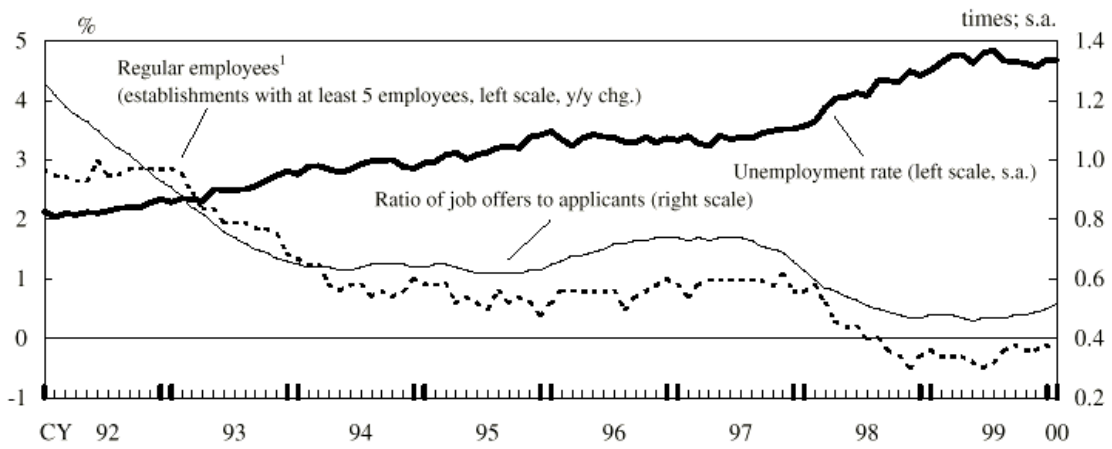
<sup>70</sup> Recently, there is a movement to protect these “peripheral” workers from inappropriate discrimination. For example, in 1999, 28 part-time workers who actually worked the same hours and days as full-time workers of the same company won in a law case which judged that more than 20 percent of wage differential between full-time workers and part-time workers to be illegal.

as someone whose position is classified as part-time by his or her employer. This definition is close to actual 'part-time workers' in Japan, and the discussion in this paper is basically based upon this statistics. For the sake of international comparison, the OECD (1999b) distinguishes part-time workers from full-time workers by setting a cut-off point at 30 working-hours per week (this definition applies to the data used in Chart 9). Note that, for some reason, the Japanese data series constructed by OECD are not that different from those in *Special Survey of the Labour Force Survey*. However, note that in the discussion of wage differentials in Chart 10 and Chart 11, only data in the *Basic Survey on Wage Structure* are available for part-time workers' wages, and that part-time workers are defined as those who work fewer hours per day or days per week than do regular workers.

(E) Wage differential in Chart 10 and Chart 11

The average wage of regular full time workers is constructed by dividing scheduled cash earnings per month by the actual number of scheduled hours worked. Scheduled cash earnings here mean amount of contractual cash earnings, not including overtime allowances. The term contractual cash earnings refers to the amount of cash wages paid to employees (including travel allowance and family allowance), before tax base. The average wage of part time workers is defined as hourly scheduled cash earnings.

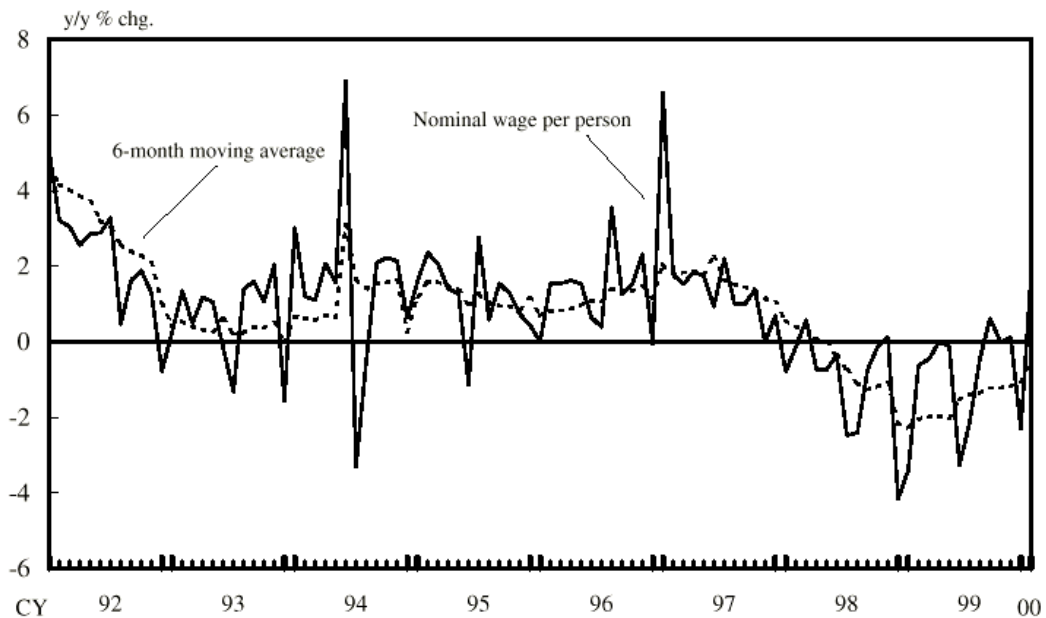
**Chart 1: The Japanese employment outlook**



Sources: Monthly Report of Recent Economic and Financial Developments March 2000, the Bank of Japan

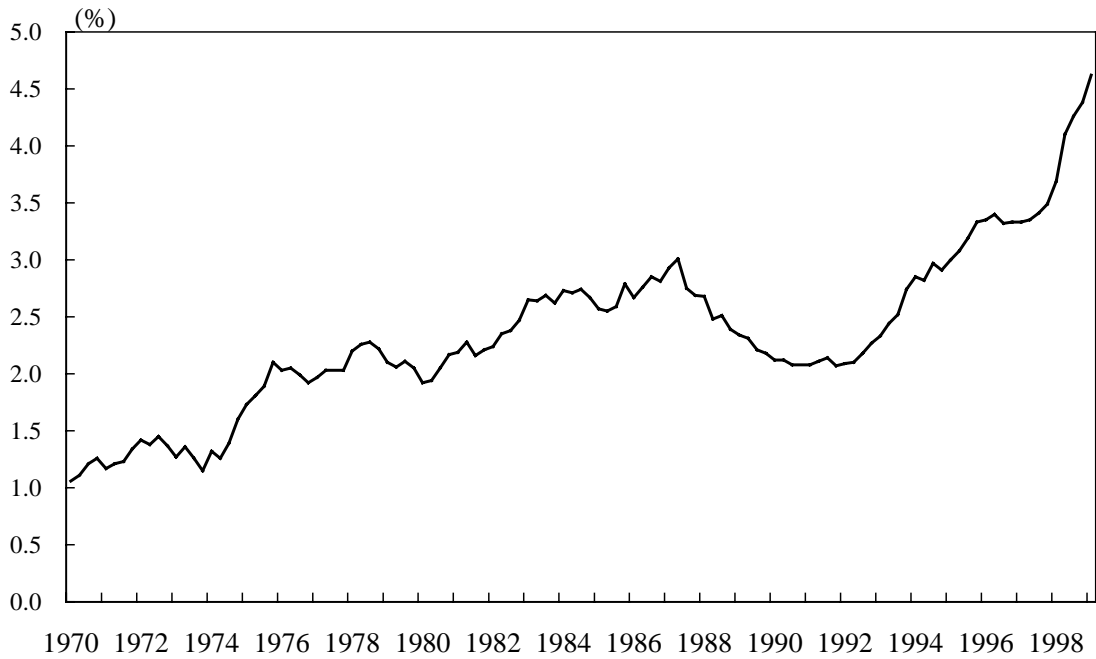
**Chart 2: Compensation of Employees**

(1) Nominal Wage per Person



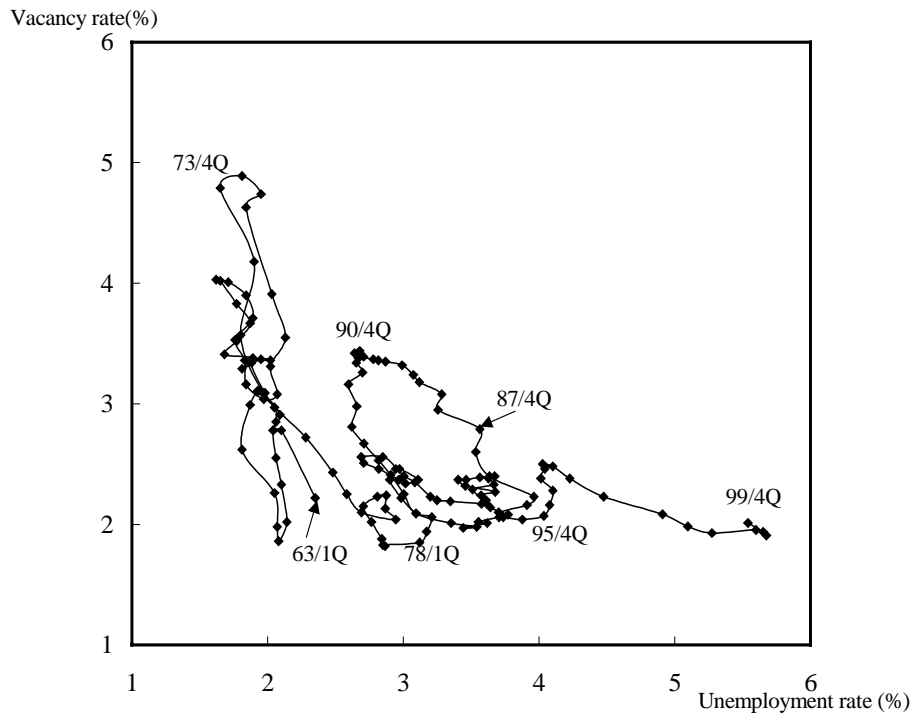
Sources: Monthly Report of Recent Economic and Financial Developments March 2000, the Bank of Japan

**Chart 3: Japanese Unemployment rate**



Source: Data appendix (1)-(A).

**Chart 4: Beveridge Curve**



Source: Data appendix (1)-(A) and (B). See also data appendix (2)-(A) and (B) for data description.

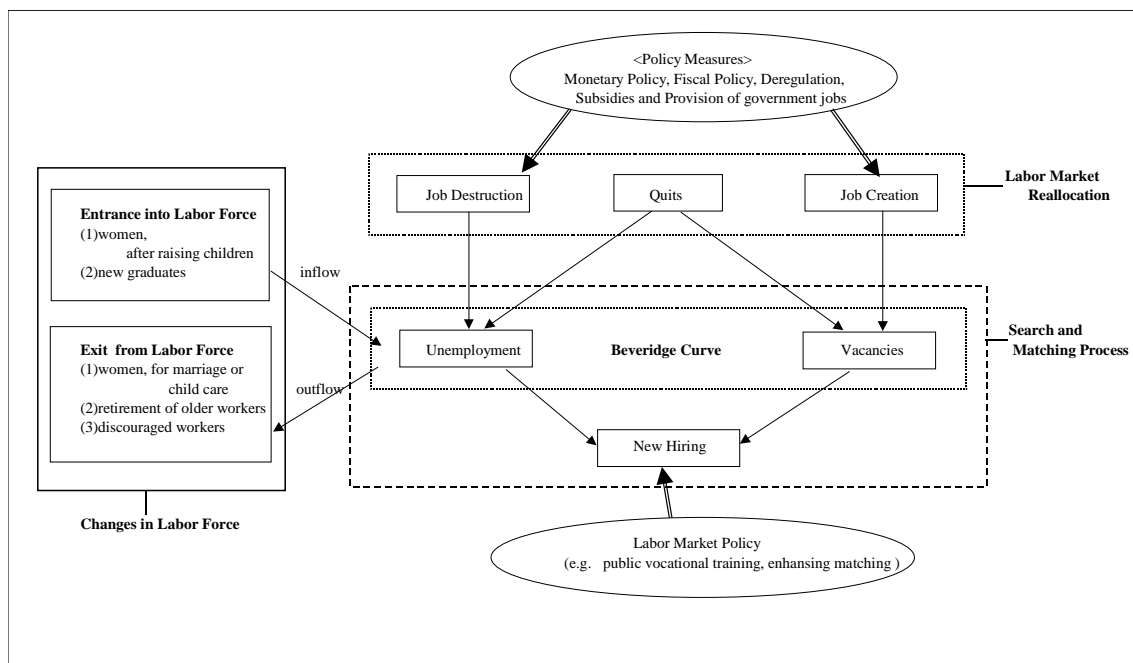
**Chart 5: Mismatch Index for Japan**

	Regional (10 groups)	Age (8 groups)	Occupational (10 groups)
late 1970s	17.39	20.09	-
early 1980s	17.32	20.26	22.96
late 1980s	16.16	20.72	22.81
early 1990s	18.64	18.14	26.88
late 1990s	17.92	19.86	24.14

Source: Data appendix (1)-(A) and (B).

Note: Mismatch index;  $\frac{1}{2} \sum_i |u_i - v_i| \times 100$ .  $u_i$  is the relative unemployment rate and  $v_i$  is the relative vacancy rate by region, age and occupation (subscript  $i$  refers to a factor of mismatch, either by region, age or occupation). For further details, see Data appendix (2)-(C).

**Chart 6**

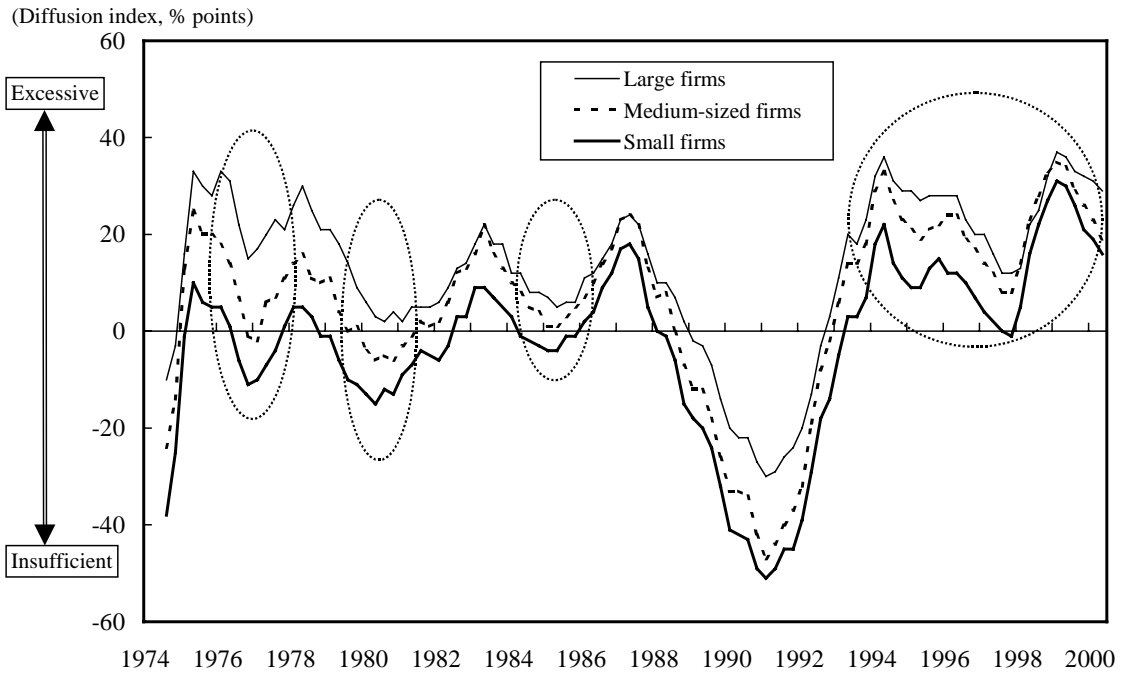


Source: Bleakley and Fuhrer (1997)

Note: A few modifications were made by Tachibanaki, Fujiki and Nakada.

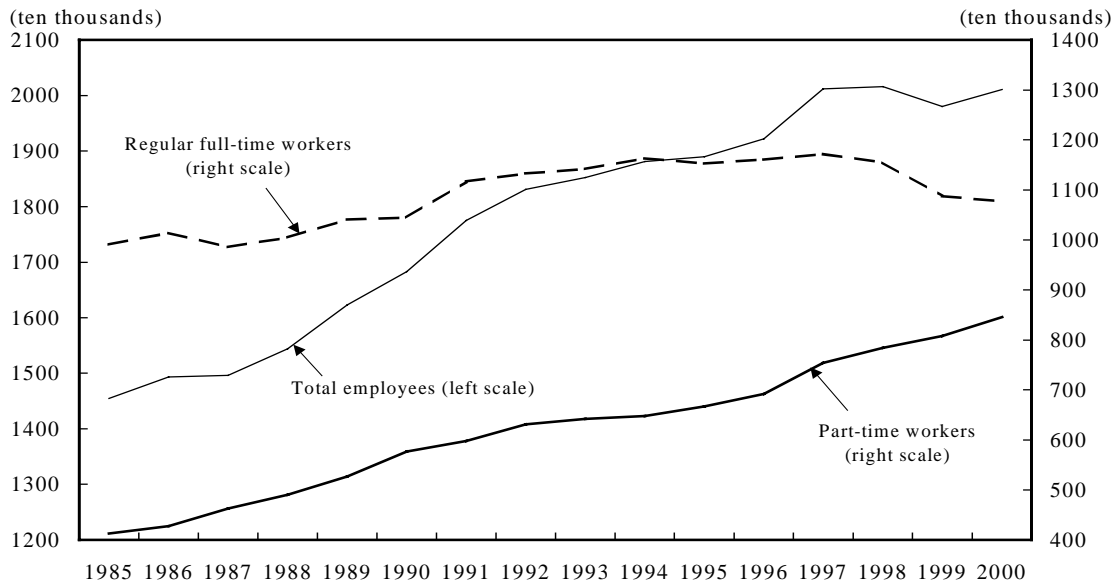


**Chart 7: Judgement on the excessiveness, adequacy or shortage of the number of employees**



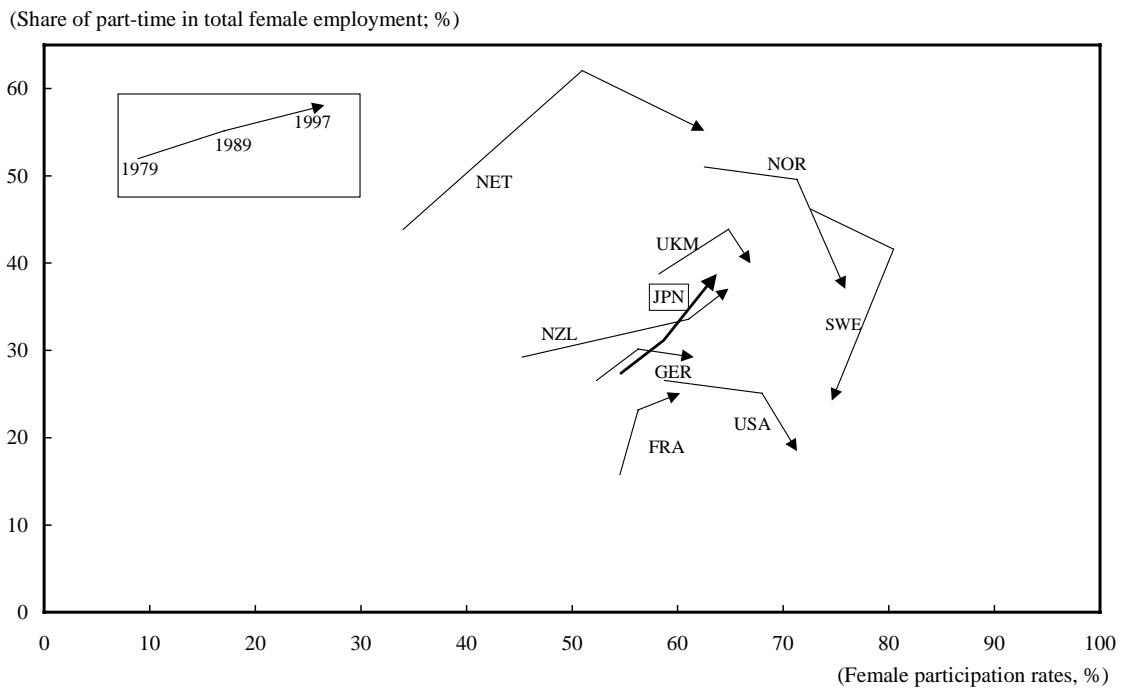
Source: Data appendix (1)-(J).

**Chart 8: The number of employed persons, Female**



Source: Data appendix (1)-(C). See also data appendix (2)-(D) for data description.

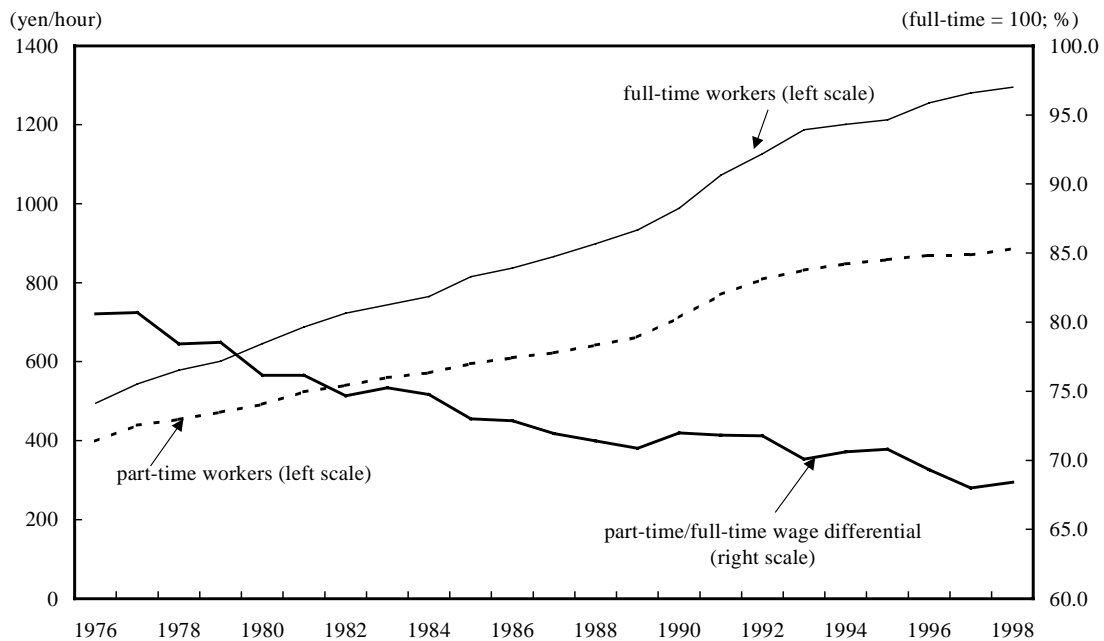
**Chart 9: Trends in female participation rates in the share of part-time in total female employment**



Source: Originally from OECD (1994). Data (Data appendix (1)-(D)) added and revised by Tachibanaki, Fujiki and Nakada.

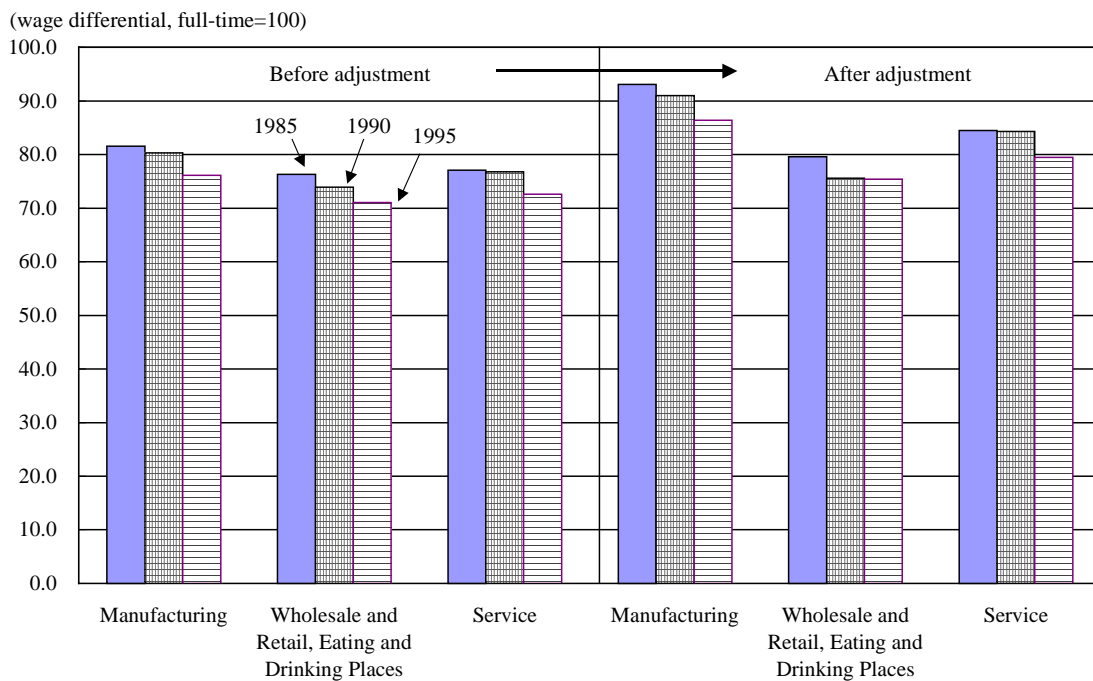
Note: Participation rates: female labor force of all aged divided by female population aged 15-64.

**Chart 10: Wages per hour and wage differential, female**



Source: Data appendix (1)-(E). See also data appendix (2)-(E).

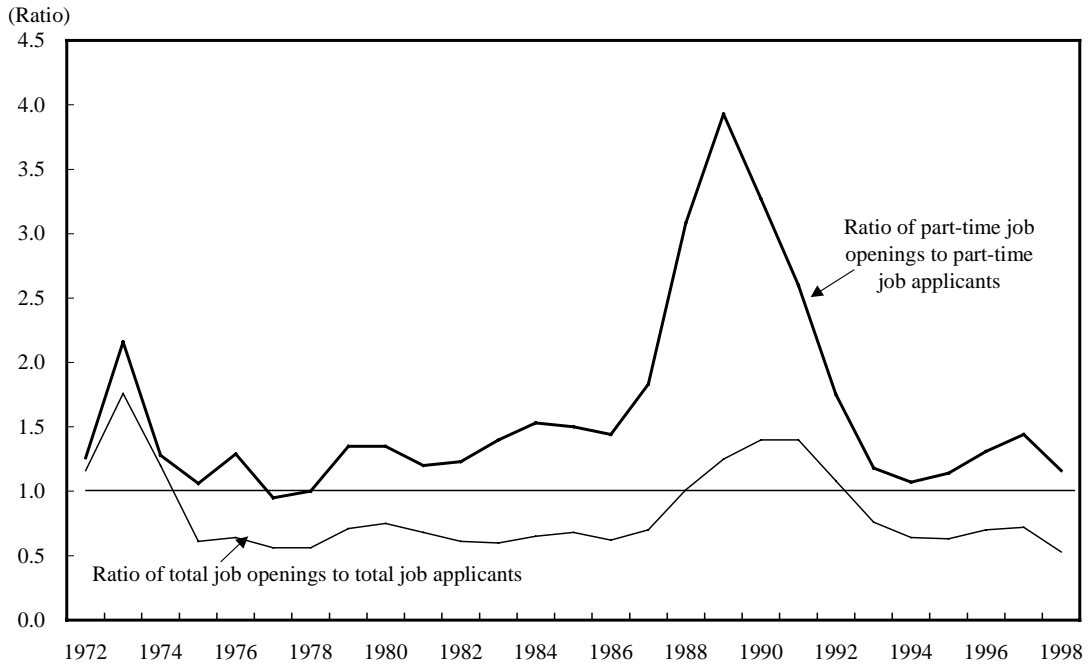
**Chart 11: Wage differentials by controlling individual characteristics, female**



Source: Calculated by Ministry of Labour, in White Paper on Labor 1997.

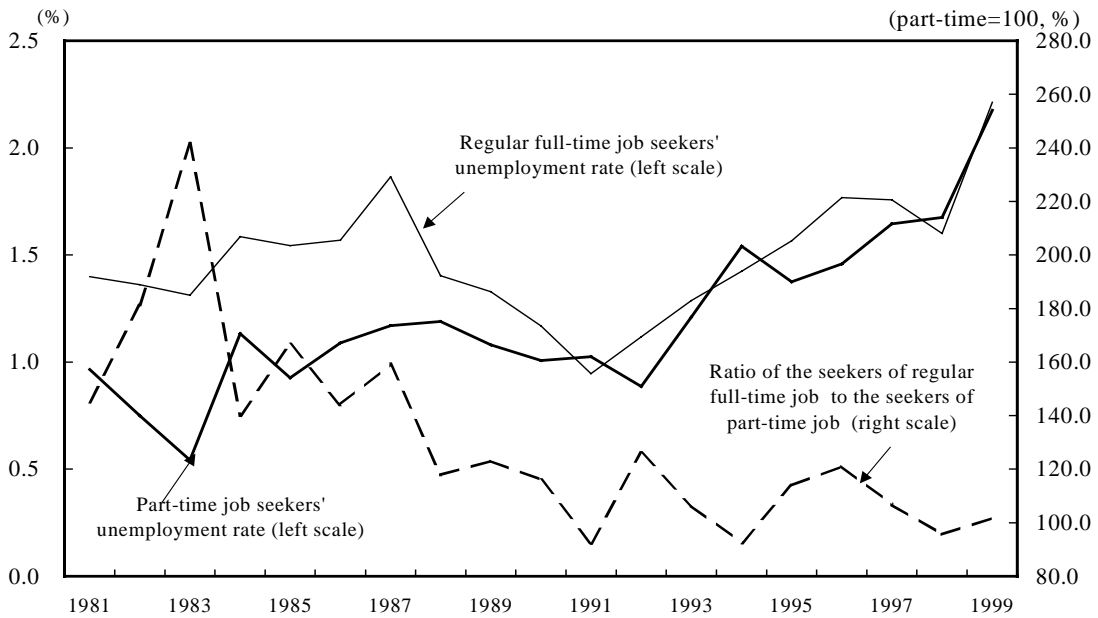
Note: Adjusted for firm size, age group and length of working period in the same firm.

**Chart 12: Ratio of job openings to job applicants**



Source: Data appendix (1)-(B). Data description is in data appendix (2)-(B).

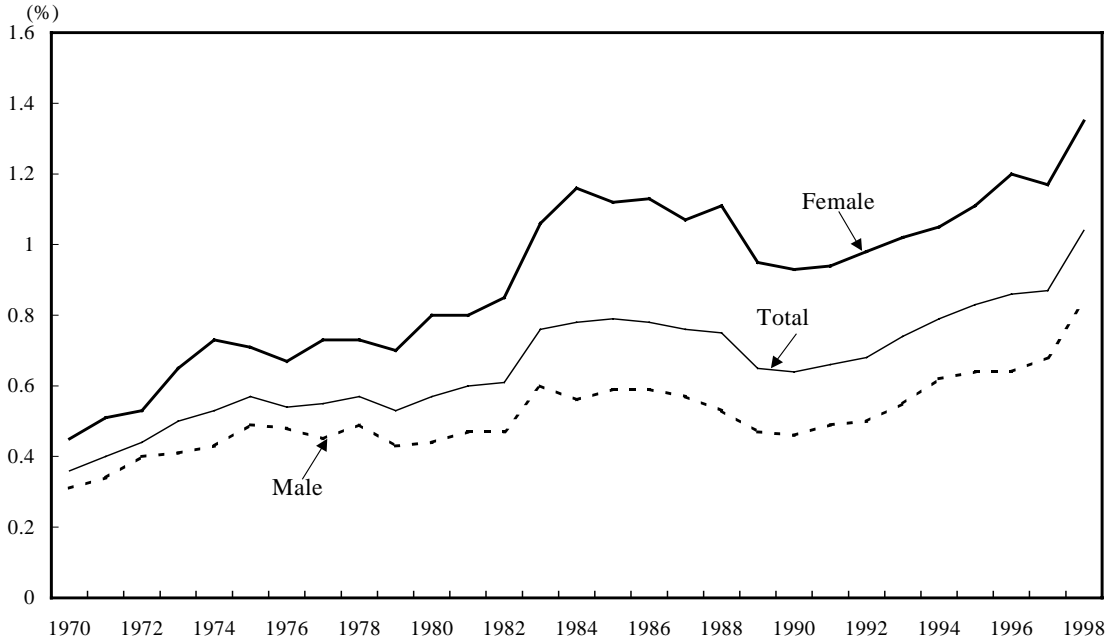
**Chart 13: Female unemployment rate by type of employment desired**



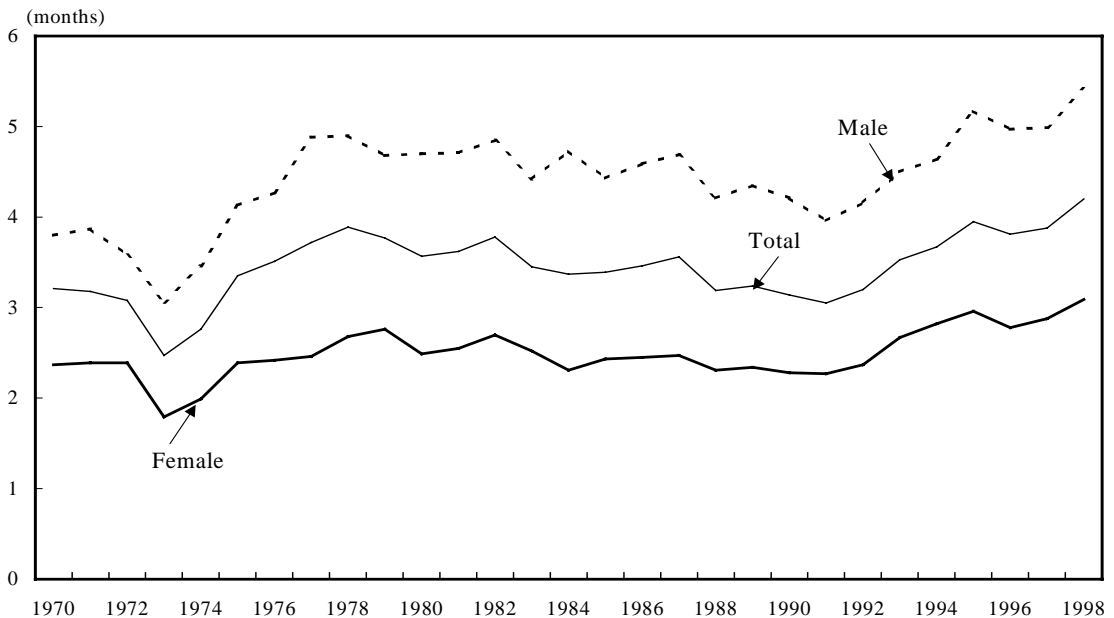
Source: Data appendix (1)-(B).

Note: The number of unemployed looking for either full-time or part time jobs divided by total labor force.

**Chart 14: Trends in rate of job separation and duration of unemployment**  
 <Monthly separation rates>



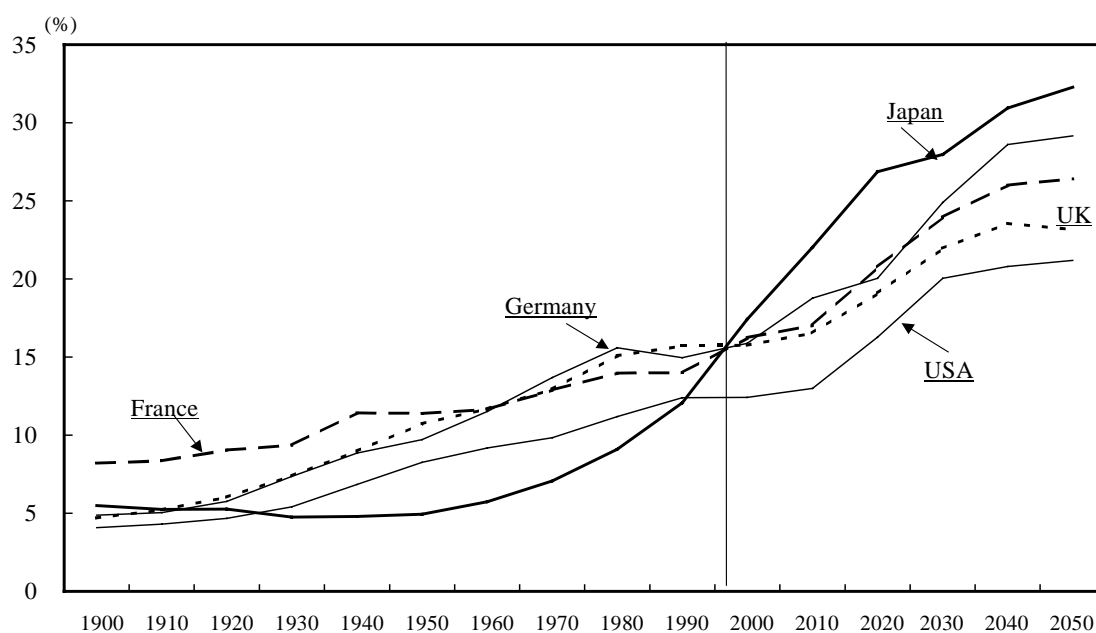
<Average duration of unemployment >



Source: Calculated by Ministry of Labour, in the 1999 White Paper on Labour.

Note: Separation rate: the monthly flow out of employment to unemployment divided by the initial level of labor force. Average duration: the average number of months of being unemployed.

**Chart 15: Ratio of those aged over 65 to total population**



Source: Data appendix (1)-(F).

**Chart 16: Unemployment and discouraged workers among those aged 55 and above**

	Unemployment (ten thousands)				Unemployment Rate (%)			
	Official number		Discouraged workers		Official number		Discouraged workers adjusted base	
	Male 55 to 64	Male 65 and over	Male 55 to 64	Male 65 and over	Male 55 to 64	Male 65 and over	Male 55 to 64	Male 65 and over
1989	21.3	3.2	21.0	21.0	3.8	1.5	7.2	10.6
1990	19.3	2.8	17.0	19.0	3.3	1.2	6.0	9.0
1991	18.0	3.7	16.0	19.0	3.0	1.5	5.4	8.7
1992	20.6	3.5	16.0	18.0	3.3	1.4	5.7	8.0
1993	25.3	4.3	15.0	21.0	4.0	1.6	6.3	8.9
1994	29.4	4.7	21.0	24.0	4.7	1.7	7.8	9.7
1995	30.5	5.8	18.0	23.0	4.8	2.1	7.4	9.6
1996	33.0	5.4	17.0	25.0	5.1	1.9	7.5	9.7
1997	35.1	6.3	22.0	29.0	5.3	2.1	8.3	10.7
1998	43.8	8.6	20.0	31.0	6.5	2.8	9.2	11.8
1999	46.0	9.0	21.0	36.0	6.7	2.9	9.5	13.0

Source: Data appendix (1)-(C).

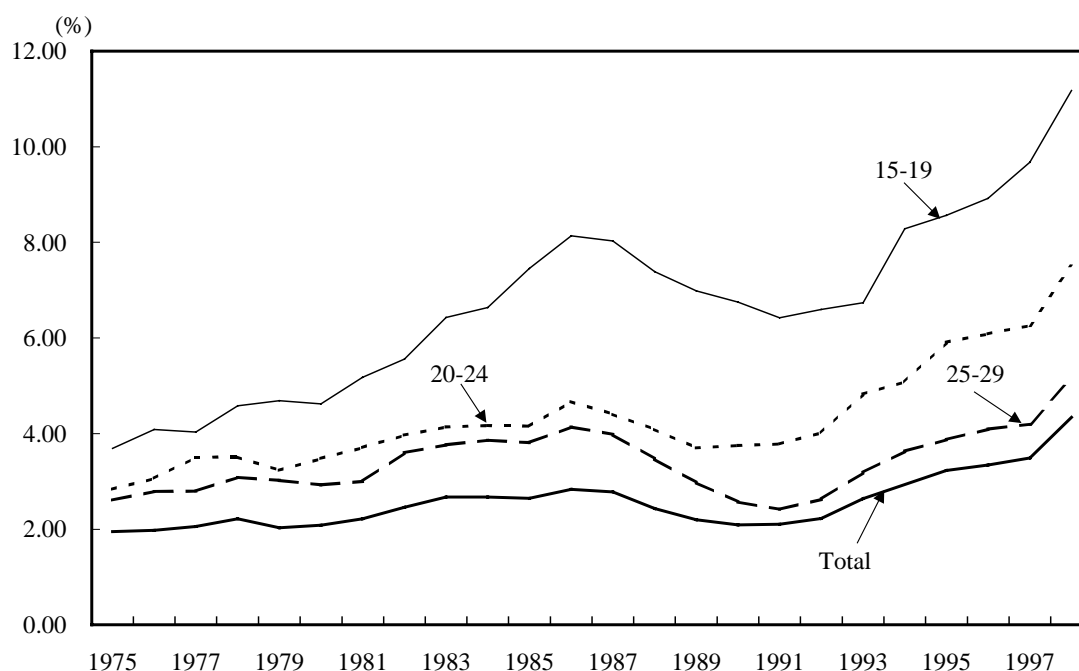
**Chart 17: Ratio of firms who set mandatory retirement by age**

year	under 59	60	over 61
1988	41.3	55.0	3.8
1989	38.2	57.6	4.3
1990	35.9	60.1	3.8
1991	29.1	66.4	4.4
1992	23.4	71.4	5.2
1993	20.0	73.8	6.0
1994	15.8	77.1	7.0
1995	14.1	78.6	7.2
1996	11.7	80.4	7.9
1997	9.7	82.0	8.2
1998	6.7	86.7	6.5
1999	0.9	91.2	8.0

Source: Data appendix (1)-(G).

Note: The ratios: Firms who set mandatory retirement at a certain age (either under 59, at 60 or over 60) divided by all the firms who report that they have a uniform mandatory retirement age.

**Chart 18: Youth unemployment rate**



Source: Data appendix (1)-(A).

**Chart 19: Youth unemployment in G-5 countries**

		Youth Unemployment Rate (%)			Ratio of Youth Unemployment Rate to Adult Unemployment Rate			Share of Youth Unemployed to Total Unemployed (%)			Share of Youth Unemployed to Youth Population (%)		
		Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Japan	1980	3.7	4.1	3.3	2.0	2.2	1.9	22.1	19.8	26.0	1.6	1.8	1.5
	1990	4.4	4.7	4.1	2.5	2.8	2.3	27.4	25.8	30.3	1.9	2.1	1.9
	1995	6.4	6.4	6.2	2.3	2.3	2.3	26.0	23.4	29.7	3.0	3.1	2.9
	1998	8.1	8.7	7.5	2.1	2.2	2.0	22.6	21.0	25.3	3.9	4.3	3.5
USA	1980	13.8	14.6	13.0	2.7	3.1	2.4	45.9	46.6	45.0	9.4	10.9	8.0
	1990	11.2	11.6	10.7	2.5	2.6	2.5	35.6	35.4	35.9	7.5	8.3	6.7
	1995	12.1	12.5	11.6	2.8	2.9	2.6	35.0	35.6	34.3	8.0	8.7	7.3
	1997	11.3	11.8	10.7	3.0	3.3	2.7	36.0	37.2	34.6	7.4	8.0	6.7
UK	1980	-	-	-	-	-	-	-	-	-	-	-	-
	1990	10.1	11.1	9.0	1.7	1.8	1.6	30.7	30.9	30.3	7.9	9.2	6.5
	1995	15.3	17.9	12.2	2.1	2.1	2.1	28.8	28.1	30.2	10.7	13.3	7.9
	1997	13.5	15.6	11.0	2.3	2.3	2.3	29.9	29.2	31.0	9.5	11.6	7.3
Germany (*: West)	*1980	4.1	3.3	5.2	1.4	1.4	1.3	27.3	24.0	30.3	2.5	2.0	2.9
	*1990	5.6	5.3	6.0	0.9	1.0	0.8	15.8	15.5	16.0	3.4	3.3	3.4
	1995	8.2	8.3	8.0	1.0	1.2	0.8	12.4	13.7	11.1	4.4	4.7	4.0
	1997	10.0	10.3	9.6	1.0	1.2	0.9	12.1	13.3	10.8	5.2	5.8	4.6
France	1980	15.1	9.7	21.8	3.5	3.2	3.5	41.7	37.0	44.9	7.2	5.0	9.4
	1990	19.1	15.3	23.9	2.5	2.6	2.3	25.8	26.4	25.3	7.0	6.1	7.9
	1995	25.9	21.0	32.2	2.6	2.4	2.7	20.7	20.2	21.2	7.7	6.9	8.6
	1997	28.1	24.6	32.8	2.6	2.6	2.6	19.3	19.8	18.9	7.9	7.7	8.1

Source: Data appendix (1)-(H).



**Chart 20: Major reasons for youths not continuing to work in the first firm that they worked for**

	All separations	Job losses	Quits										Not answered
		Discharged	Quit-wages	Quit-nonpecuniary							Quit-exogenous	Others	
			Dissatisfaction with wages	Disliked jobs	Disliked hours or conditions	Inter-personal reasons	Mismatch between own skill and one required for job	No future in the firm	To start own business	To succeed family business	Family or personal reasons, or health problem		
Total	100.0	2.1	7.9	21.5	10.7	13.0	5.7	5.7	0.2	1.2	15.2	16.1	0.6
Male	100.0	2.3	11.8	26.9	10.9	11.6	5.4	7.8	0.2	2.0	7.4	13.1	0.6
Female	100.0	2.0	4.2	16.5	10.6	14.3	6.1	3.9	0.3	0.4	22.4	18.9	0.6
15-19	100.0	1.8	0.3	25.2	14.9	33.9	0.2	4.5	-	2.3	14.0	2.8	
20-24	100.0	2.1	7.2	26.7	13.4	13.3	5.4	6.1	0.3	0.7	9.5	14.9	0.5
25-29	100.0	2.1	8.4	18.9	9.3	12.3	6.0	5.7	0.1	1.4	18.3	16.8	0.6
Junior high	100.0	5.4	10.6	24.9	15.8	19.7	3.6	2.2	-	9.7	7.1	0.9	
High school	100.0	1.7	9.0	22.8	9.1	13.4	4.5	5.3	0.4	0.6	15.0	17.5	0.6
Vocational school	100.0	2.3	8.8	16.1	13.0	15.1	9.1	8.7	0.1	1.9	11.3	13.4	0.2
Junior college	100.0	2.4	5.0	18.9	11.1	11.7	8.3	4.2	0.0	0.5	21.1	16.4	0.6
University or Graduate school	100.0	2.1	3.4	22.4	14.0	7.4	6.0	8.0	-	4.7	15.7	15.4	1.0

Source: Data appendix (1)-(I).

**Chart 21: Family composition of unemployed**

	Head of household	Spouse	Other members of household	Living alone
1975	43 (40.57)	13 (12.26)	37 (34.91)	13 (12.26)
1976	44 (41.12)	13 (12.15)	38 (35.51)	12 (11.21)
1977	43 (38.05)	15 (13.27)	41 (36.28)	14 (12.39)
1978	48 (39.34)	16 (13.11)	42 (34.43)	16 (13.11)
1979	44 (38.60)	16 (14.04)	40 (35.09)	14 (12.28)
1980	43 (36.44)	17 (14.41)	41 (34.75)	17 (14.41)
1981	49 (38.58)	18 (14.17)	43 (33.86)	17 (13.39)
1982	54 (37.76)	21 (14.69)	49 (34.27)	19 (13.29)
1983	57 (36.31)	27 (17.20)	54 (34.39)	19 (12.10)
1984	58 (36.48)	26 (16.35)	55 (34.59)	20 (12.58)
1985	56 (35.44)	25 (15.82)	57 (36.08)	20 (12.66)
1986	60 (35.09)	26 (15.20)	63 (36.84)	22 (12.87)
1987	59 (34.91)	24 (14.20)	63 (37.28)	23 (13.61)
1988	49 (32.45)	23 (15.23)	58 (38.41)	21 (13.91)
1989	43 (30.71)	22 (15.71)	55 (39.29)	20 (14.29)
1990	39 (28.89)	20 (14.81)	56 (41.48)	20 (14.81)
1991	37 (27.01)	23 (16.79)	57 (41.61)	20 (14.60)
1992	41 (28.08)	22 (15.07)	61 (41.78)	22 (15.07)
1993	50 (28.57)	26 (14.86)	71 (40.57)	28 (16.00)
1994	56 (28.72)	27 (13.85)	81 (41.54)	31 (15.90)
1995	60 (27.91)	29 (13.49)	93 (43.26)	33 (15.35)
1996	64 (28.19)	30 (13.22)	98 (43.17)	35 (15.42)
1997	67 (28.39)	29 (12.29)	104 (44.07)	36 (15.25)
1998	84 (28.57)	39 (13.27)	127 (43.20)	44 (14.97)
1999	90 (28.30)	40 (12.58)	141 (44.34)	47 (14.78)

Source: Data appendix (1)-(A).

Note: ten thousands people. Parenthesis is the ratio to the total unemployed.

**Chart 22: Ratio of new entrants to youth unemployment**

	total	male	female
1988	18.6	20.3	16.6
1989	16.6	15.7	18.1
1990	16.4	15.0	11.7
1991	13.0	14.7	11.2
1992	14.9	18.7	10.5
1993	14.9	16.8	13.1
1994	17.9	18.6	16.8
1995	19.6	20.3	18.9
1996	22.8	23.0	22.5
1997	20.6	22.3	18.7
1998	22.5	21.5	20.3

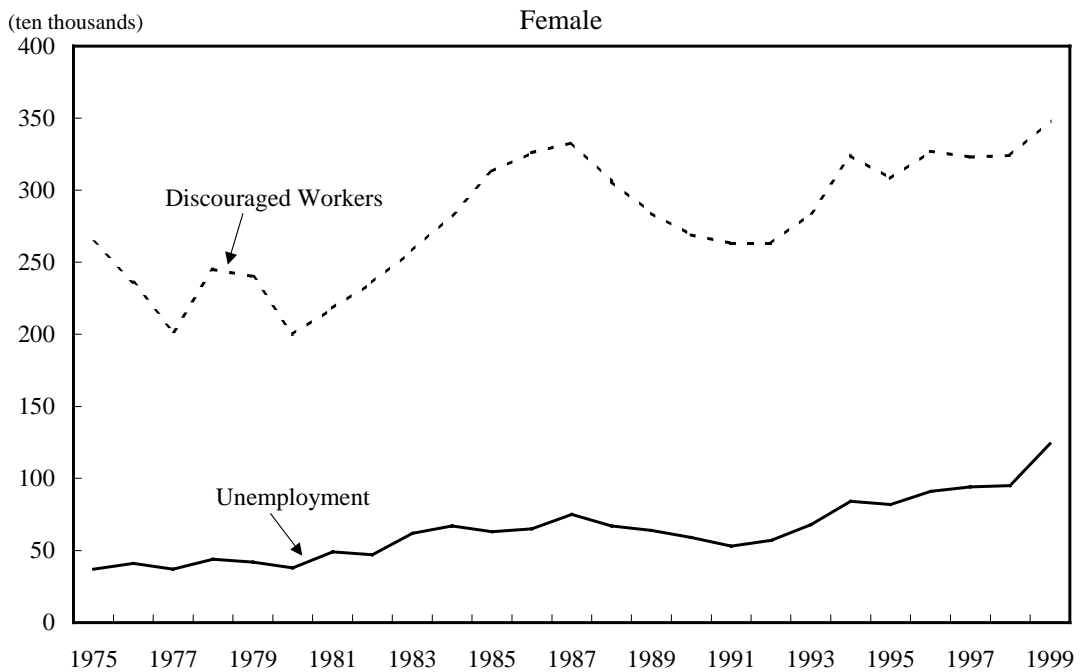
Source: Data appendix (1)-(C).

**Chart 23: Ratio of young workers who are still working in the first firm that they worked for to total young workers**

	total	still working	number of job changed of those who are not working in the first firm					not answered	
			once	twice	third	more than fourth	no answer		
total	100.0	69.9	(100.0)	31.4	47.9	15.0	5.2	0.4	1.9
male	100.0	73.1	(100.0)	24.7	49.1	17.5	8.2	0.5	2.0
female	100.0	66.1	(100.0)	37.5	46.9	12.7	2.5	0.4	1.9
junior high	100.0	36.4	(100.0)	19.8	39.0	23.9	17.1	0.2	8.2
high school	100.0	59.3	(100.0)	28.7	46.9	17.4	6.6	0.4	1.9
vocational school	100.0	70.9	(100.0)	34.0	49.9	13.2	2.6	0.3	2.1
junior college	100.0	72.8	(100.0)	36.9	50.7	10.4	1.4	0.5	2.2
University or Graduate school	100.0	87.0	(100.0)	40.2	51.3	6.8	1.0	0.7	1.2

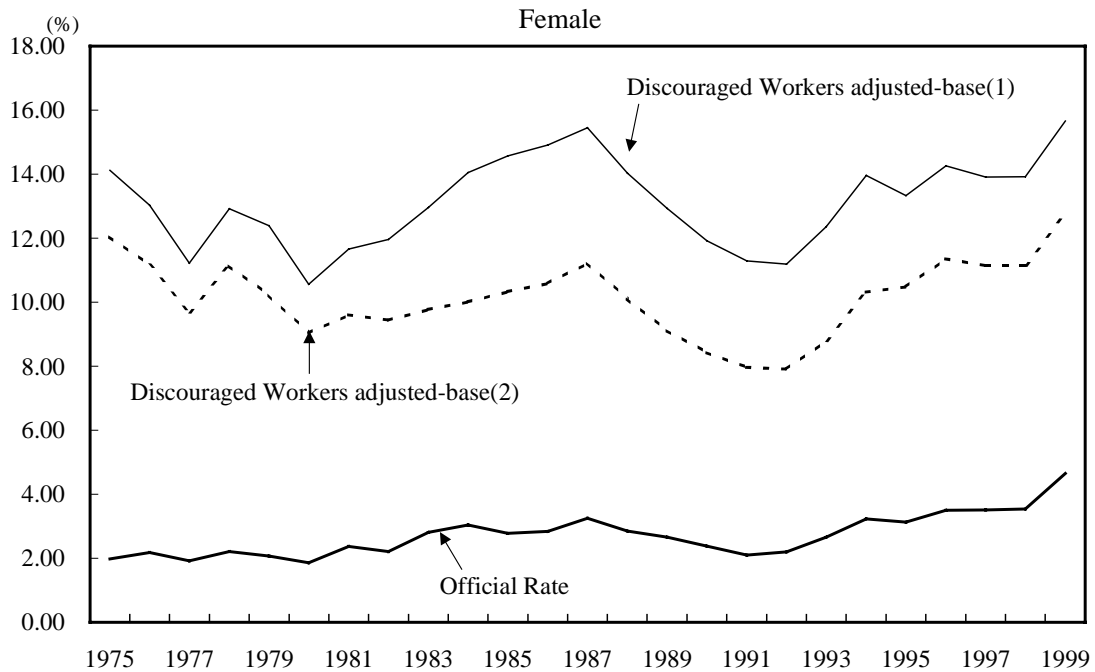
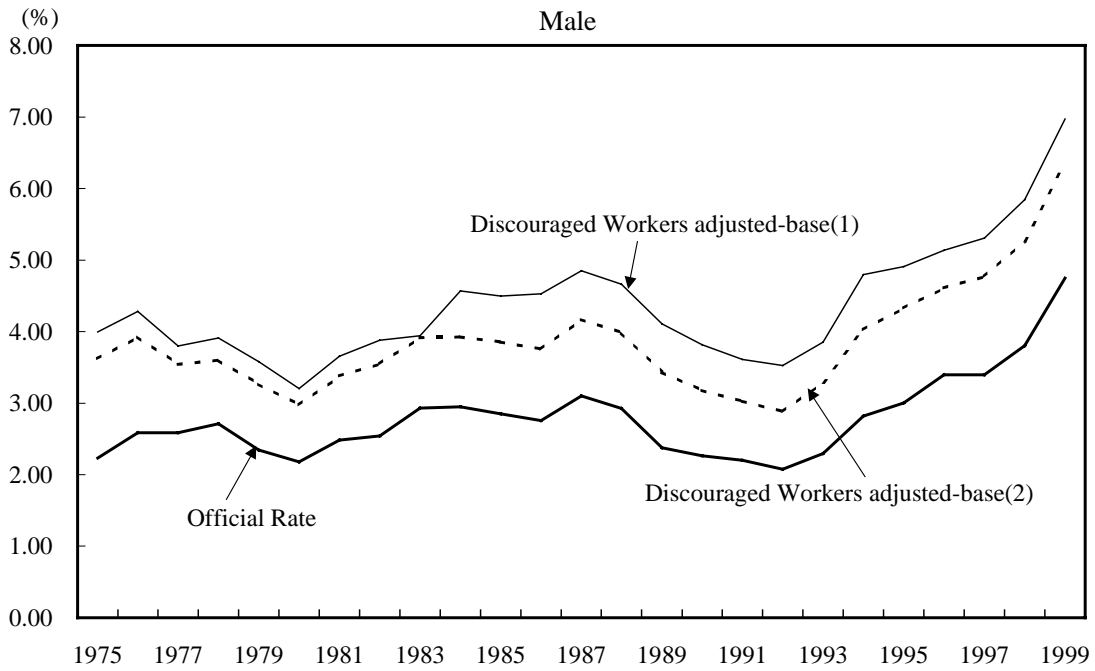
Source: Data appendix (1)-(I).

**Chart 24: The number of discouraged workers**



Source: Data appendix (1)-(C).

**Chart 25: Unemployment rate, with discouraged-workers-adjusted base**



Source: Data appendix (1)-(C).

**Chart 26: Composition of discouraged workers by family and age**

	Male				Female			
	Head of household	Spouse	Other members of household	Living alone	Head of household	Spouse	Other members of household	Living alone
1989	39 (60.00)	0 (0.00)	16 (24.62)	10 (15.38)	9 (3.17)	219 (77.11)	44 (15.49)	12 (4.23)
1990	32 (54.24)	0 (0.00)	20 (33.90)	7 (11.86)	9 (3.35)	204 (75.84)	40 (14.87)	16 (5.95)
1991	31 (56.36)	0 (0.00)	16 (29.09)	8 (14.55)	9 (3.44)	201 (76.72)	40 (15.27)	12 (4.58)
1992	29 (50.88)	0 (0.00)	15 (26.32)	13 (22.81)	9 (3.44)	200 (76.34)	40 (15.27)	13 (4.96)
1993	33 (53.23)	0 (0.00)	21 (33.87)	8 (12.90)	9 (3.17)	223 (78.52)	41 (14.44)	11 (3.87)
1994	41 (50.62)	0 (0.00)	25 (30.86)	15 (18.52)	9 (2.78)	242 (74.69)	55 (16.98)	18 (5.56)
1995	38 (48.72)	0 (0.00)	27 (34.62)	13 (16.67)	10 (3.25)	229 (74.35)	54 (17.53)	15 (4.87)
1996	37 (52.11)	0 (0.00)	23 (32.39)	11 (15.49)	10 (3.06)	244 (74.62)	54 (16.51)	19 (5.81)
1997	45 (56.96)	0 (0.00)	21 (26.58)	13 (16.46)	10 (3.11)	242 (75.16)	53 (16.46)	17 (5.28)
1998	46 (53.49)	0 (0.00)	27 (31.40)	13 (15.12)	10 (3.10)	238 (73.68)	57 (17.65)	18 (5.57)
1999	52 (54.74)	0 (0.00)	26 (27.37)	17 (17.89)	11 (3.16)	257 (73.85)	63 (18.10)	17 (4.89)

	Male							
	15~24 (total)	15~24 (in school)	15~24 (graduated)	25~34	35~44	45~54	55~64	over 65
1989	19 (29.69)	18 (28.13)	1 (1.56)	1 (1.56)	1 (1.56)	1 (1.56)	21 (32.81)	21 (32.81)
1990	20 (33.33)	19 (31.67)	1 (1.67)	1 (1.67)	1 (1.67)	2 (3.33)	17 (28.33)	19 (31.67)
1991	17 (30.91)	15 (27.27)	2 (3.64)	2 (3.64)	0 (0.00)	1 (1.82)	16 (29.09)	19 (34.55)
1992	15 (26.32)	14 (24.56)	1 (1.75)	1 (1.75)	3 (5.26)	4 (7.02)	16 (28.07)	18 (31.58)
1993	23 (37.10)	21 (33.87)	2 (3.23)	1 (1.61)	1 (1.61)	1 (1.61)	15 (24.19)	21 (33.87)
1994	27 (32.93)	26 (31.71)	1 (1.22)	4 (4.88)	3 (3.66)	3 (3.66)	21 (25.61)	24 (29.27)
1995	30 (37.50)	27 (33.75)	3 (3.75)	4 (5.00)	3 (3.75)	2 (2.50)	18 (22.50)	23 (28.75)
1996	23 (31.94)	20 (27.78)	3 (4.17)	3 (4.17)	1 (1.39)	3 (4.17)	17 (23.61)	25 (34.72)
1997	24 (30.00)	21 (26.25)	3 (3.75)	2 (2.50)	1 (1.25)	2 (2.50)	22 (27.50)	29 (36.25)
1998	28 (32.94)	25 (29.41)	3 (3.53)	3 (3.53)	1 (1.18)	2 (2.35)	20 (23.53)	31 (36.47)
1999	30 (31.58)	26 (27.37)	4 (4.21)	5 (5.26)	1 (1.05)	2 (2.11)	21 (22.11)	36 (37.89)
	Female							
1989	23 (8.10)	13 (4.58)	10 (3.52)	54 (19.01)	91 (32.04)	60 (21.13)	43 (15.14)	13 (4.58)
1990	23 (8.52)	15 (5.56)	8 (2.96)	49 (18.15)	81 (30.00)	55 (20.37)	47 (17.41)	15 (5.56)
1991	25 (9.51)	14 (5.32)	11 (4.18)	48 (18.25)	81 (30.80)	54 (20.53)	42 (15.97)	13 (4.94)
1992	21 (8.02)	13 (4.96)	8 (3.05)	52 (19.85)	80 (30.53)	53 (20.23)	43 (16.41)	13 (4.96)
1993	24 (8.45)	15 (5.28)	9 (3.17)	52 (18.31)	88 (30.99)	59 (20.77)	46 (16.20)	15 (5.28)
1994	35 (10.77)	22 (6.77)	13 (4.00)	63 (19.38)	87 (26.77)	69 (21.23)	57 (17.54)	14 (4.31)
1995	34 (11.04)	21 (6.82)	13 (4.22)	56 (18.18)	88 (28.57)	66 (21.43)	52 (16.88)	12 (3.90)
1996	35 (10.67)	24 (7.32)	11 (3.35)	63 (19.21)	84 (25.61)	74 (22.56)	55 (16.77)	17 (5.18)
1997	29 (9.01)	19 (5.90)	10 (3.11)	61 (18.94)	82 (25.47)	69 (21.43)	62 (19.25)	19 (5.90)
1998	35 (10.84)	24 (7.43)	11 (3.41)	60 (18.58)	80 (24.77)	69 (21.36)	60 (18.58)	19 (5.88)
1999	38 (10.92)	25 (7.18)	13 (3.74)	64 (18.39)	81 (23.28)	75 (21.55)	69 (19.83)	21 (6.03)

Source: Data appendix (1)-(C).

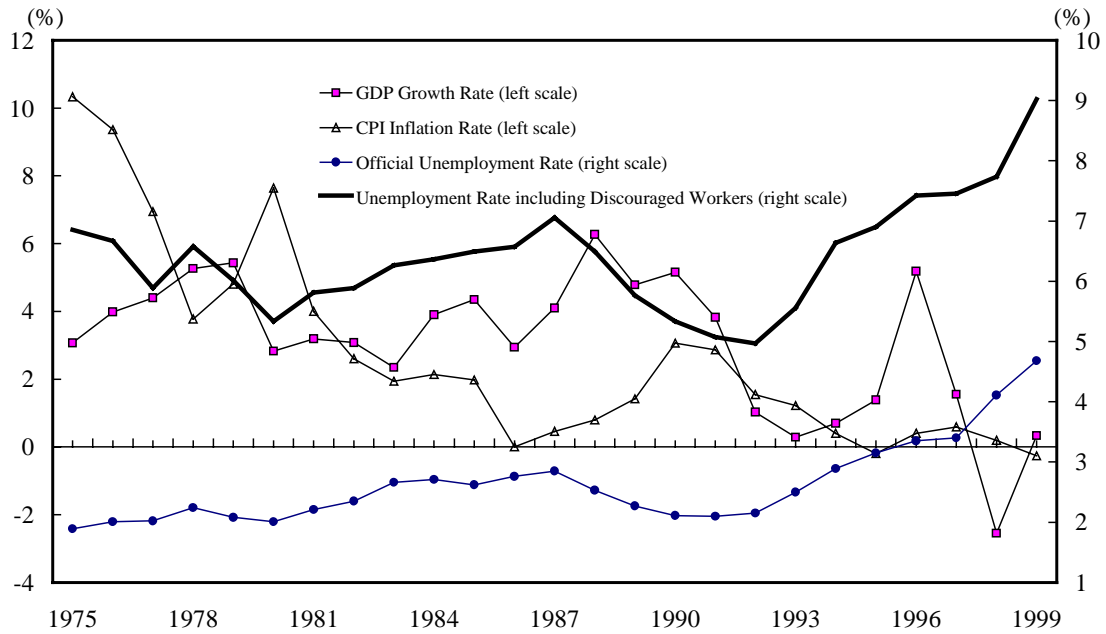
Note: Ten thousands people. The ratio to the total is shown in parenthesis.

**Chart 27: Employment type desired by discouraged workers**

	<b>Male</b>				
	Full-time	Part-time	Self-employed	Piece-worker	Other
1996	18.87	53.77	5.66	2.83	18.87
1997	19.28	56.63	2.41	4.82	16.87
1998	18.18	60.23	3.41	4.55	13.64
1999	20.41	58.16	3.06	3.06	15.31
	<b>Female</b>				
1996	12.47	64.72	2.92	13.00	6.90
1997	11.24	67.44	2.33	13.18	5.81
1998	10.04	69.11	1.54	13.51	5.79
1999	12.88	66.44	2.03	13.56	5.08

Source: Data appendix (1)-(C).

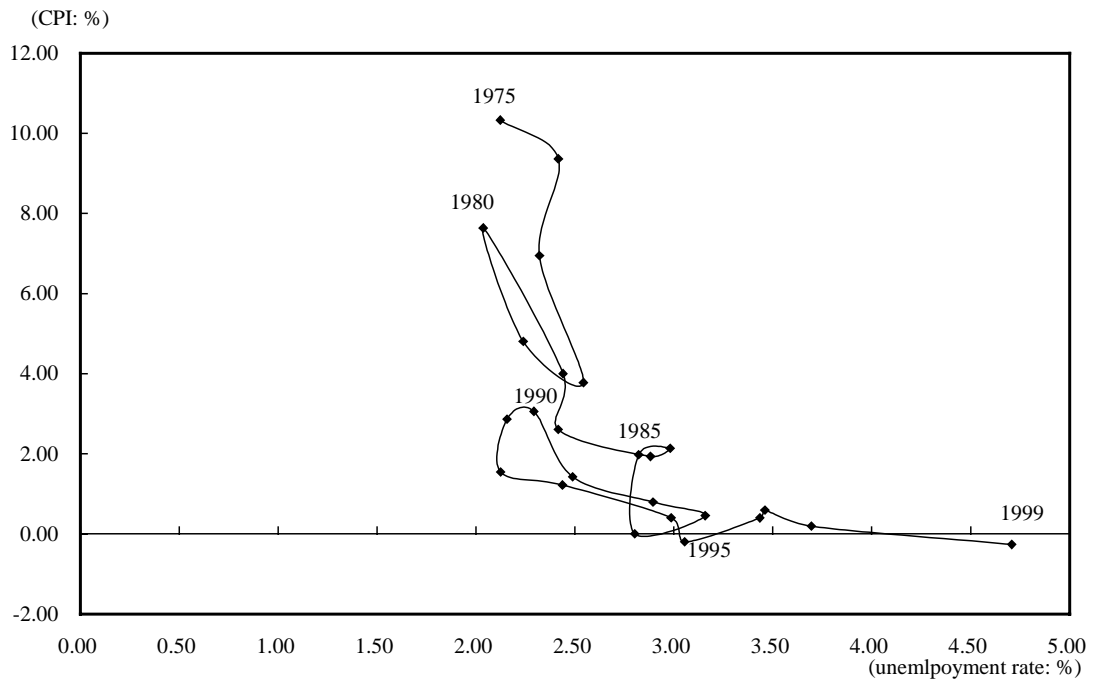
**Chart 28: GDP, inflation and unemployment in Japan**



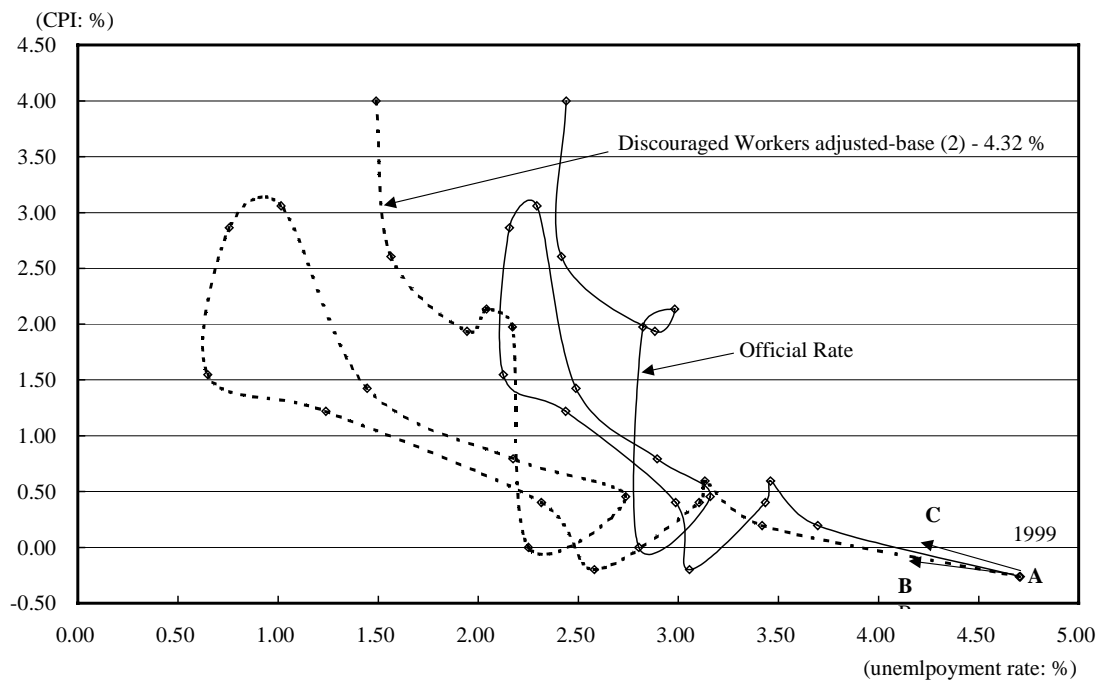
**Chart 29: Japanese Okun coefficients**

Sample periods	Annual data, official rate	Quarterly data, official rate	Annual data with discouraged worker	Yoshikawa [2000]	Kurosaka [1999]	Hamada and Kurosaka [1982]	Hamada and Kurosaka [1984]
1953-1965						15.24	18.00
1956-1965	18.04+						
1965-1973	42.35*	42.56				40.32	
1965-1974	77.65*	66.18					32.00
1974-1980	7.72	10.86*	n.a.			5.38	
1974-1982	20.19	23.89	7.80				13.00
1981-1995	<b>10.05</b>	10.12	<b>5.62</b>	10.50			
1980-1998	<b>9.05</b>	9.13	<b>5.78</b>		10.50		
1981-1999	<b>8.29</b>	8.45	<b>5.22</b>				
1986-1999	<b>7.34</b>	7.59	<b>4.19</b>				

**Chart 30: Japanese inflation and unemployment (1975-1999)**



**Chart 31: Japanese inflation and unemployment (1981-1999)**





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